Breaking Barriers: Understanding Factors Constraining Women's Career Choices and Progression in the South African Construction Industry

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Abstract

Purpose
This paper examines the barriers constraining women's career choices and progression within the South African construction industry.

Methodology
The study adopted a mixed-method research approach, employing a questionnaire survey of construction industry workers listed in the Construction Professions Register, Builders Collective and the Housing Assembly Organisation. It also used interviews, to validate the quantitative data. The data collected was analysed using descriptive and inferential statistics, including factor analysis.

Findings
The study found that 39 of the 46 barriers identified have normalized values greater than 0.5 and, therefore, are classified as critical. From a ranking perspective, the top five barriers to the career choices and progression of women in the construction industry are male domination in construction industry careers, gender bias, an unfriendly workplace cultures, lack of strategies and policies for gender balance, and educational expenses. Also, personal and socio-cultural factors, as well as pay disparities, were found to hinder women from pursuing and advancing in construction careers. Furthermore, the KMO score for this study is 0.778, which is greater than the standard threshold, meeting the required standards of the Principal Component Analysis. The results show that there is no evidence of a substantial deviation from sphericity, and there are significant correlations between the variables.

Research Limitations
This study draws upon literature from other countries due to the limited literature available, specifically focusing on South Africa. However, such references may overlook the country's distinctive political history of racial segregation, which influences the research findings. South Africa's racial history, characterized by apartheid and its lingering effects, has significantly shaped the socio-economic landscape of the nation.

Practical Implications
This study concludes that women will choose construction as a career and progress in the construction industry, if targeted interventions and supportive environments promote gender inclusivity and encourage their professional growth.

Originality
This research will help shape initiatives to overcome barriers such as systemic gender bias, underrepresentation, and unfriendly workplace culture, with regards to women's professional aspirations and career progression within the construction sector.

Keywords:
Career Progression, Gender bias, Professional development, Socio-cultural factors, South Africa

Introduction

This research examines the barriers affecting women's career choices and progression in the construction industry. According to Park *et al.* (2019), career progression is the growth and advancement of an individual's professional path, including acquiring new skills, responsibilities and positions. Owusu *et al.* (2018) noted that the socio-cultural environment of an individual plays an important role in shaping their career aspirations and the barriers they expect to encounter. Career choices are described as the decisions an individual makes regarding their professional path, and are influenced by a complex interplay of personal interests, skills, values and external factors (Owusu *et al.,* 2019).

The construction industry is one of the most male-dominated in the world, with male representation of more than 90% (Hasan et al., 2021). Even though opportunities for women in the construction industry appear to be increasing, they are still minimal (Hirschi and Läge, 2007; Norberg and Johansson, 2021). In Australia, Brazil, and Indonesia, 16.2%, 10% and 2% of the construction jobs, professional and management roles, and workforce are women (Liem *et al.,* 2021; Zhang *et al.,* 2021). The South African construction industry is no exception, with a male workforce of 91% compared to 9% female (Stats, 2022). Men also occupy 92% of managerial roles, whereas 8% of women in managerial positions are predominantly in the education and health sectors (Stats, 2022).

Although there has been a growing presence of women in traditionally male-dominated sectors such as construction, they frequently face obstacles in career progression compared to men despite having similar experience and educational qualifications (Siddiky and Akter, 2021; Ndweni and Ozumba, 2021). The working conditions within the industry have prompted many women to leave their jobs, while younger and skilled females find the industry unattractive (Scott-Young *et al.,* 2020). Zhang *et al.* (2021) described the number of women filtered out of the construction industry pipeline even while others are arriving, as a leaky pipeline.

Various researchers, including Liem *et al.* (2021), Zhang *et al.* (2021), and Loosemore and McCallum (2022), hold the view that male domination in the construction industry exposes women as the minority to unpleasant experiences such as harassment, macho culture, non-transparent recruitment practices, poor gender inclusivity, unfair treatment, discrimination and gender stereotypes. Scholars have found that most women in the construction industry are experiencing work-life imbalances due to the unpleasant environment, which encompasses long hours and hostile working conditions (Zhang *et al.,* 2021; Loosemore and McCallum, 2022; Windapo, 2024).

Governments and organizations globally have identified the lack of transformation in the construction industry as a problem and implemented initiatives such as the National Development Plan, and Gender Equality and Women's Empowerment to deal with these issues in South Africa (Stats, 2022). Furthermore, the South African government implemented interventions for gender equality through policies such as the Broad-Based Black Economic Empowerment (BBBEE) Act which also offers women preference in procurement, which has yielded positive results (Windapo, 2024). The UK industry made conscious efforts to empower women, which saw an increase of 6% to 15% of female staff promoted to managerial positions (Liu and Zhu, 2017). Although previous literature has explored factors influencing career decisions, gaps remain in understanding the barriers women face when transitioning into the construction industry, or to higher positions within it.

The significance of this study lies in its focus not only on identifying the barriers to female career choices and progression in the construction industry, but also on understanding the underlying reasons contributing to these impediments. The construction industry presents opportunities for job creation and societal upliftment because of its economic relevance (Ozumba and Ozumba, 2012); however, the underrepresentation of women in this industry indicates a loss of human capital. Stakeholders can foster an inclusive and equitable environment that aligns with contemporary gender diversity initiatives, if these barriers to choice and progression are understood and addressed. The following sections comprise the literature review, the research methodology, findings, discussion of the findings and conclusions.

Literature review

A narrative literature review was conducted to identify the barriers affecting women's career choices and progression in the construction industry, presented in the following subsections.

Overview of Barriers Affecting Women's Career Choices and Progression in the Construction Industry

The construction industry is widely known for gender imbalance, particularly in leadership roles. For instance, Kodagoda and Jayawardhana (2022) highlight that the presence of women in the construction industry is minimal. In the United Kingdom, women represent less than 5% of the workforce, holding only 6% of managerial positions (Seidu *et al.,* 2020). This female underrepresentation suggests that women face barriers to entering and progressing within the sector. In contrast, South Africa has made notable progress in addressing gender disparities, with 51% of contractor enterprises registered with the Construction Industry Development Board (cidb) owned by women (Stats SA, 2022). However, systemic challenges impede their full participation and career advancement (Stats SA, 2022).

Despite an increase in women's participation in areas such as site preparation and building construction, there was a notable decrease in the participation of women in civil engineering, where representation has experienced a drop of 20.1% since 2017, to only 14.5% of the workforce within that sector (Stats SA, 2022). The overall decline in participation in the workforce among women, from 54.6% in 2017 to 50.7% in 2022, illustrates the need for sustained efforts to promote gender equity in the industry (Stats SA, 2022).

Barriers constraining women's career choices in the construction industry.

The barriers affecting women's career choices in the construction industry are multifaceted. A summary of all these types of barriers is included in Table 1.

Barriers Constraining Women's Career Choices

Personal Interests and Self-Efficacy: Personal interests and self-efficacy beliefs significantly influence women's career choices. Research indicates that women often lack confidence in their abilities, which can deter them from pursuing careers in construction (Fulford, 2019). Additionally, societal expectations and traditional gender roles exacerbate this issue, leading women to a self-imposed fear of engaging in construction-related activities (Shen and Luen, 2022).

Socio-Cultural and Economic Factors: The socio-cultural context significantly influences women's career choices. Gender roles, social inequality, and educational disparities contribute to the challenges women face in pursuing careers in construction (Ozumba and Ozumba, 2012). The intersection of identity and socio-economic status further complicates the landscape, with marginalized groups experiencing compounded discrimination (Ketchiwou *et al.,* 2022). Furthermore, economic constraints often limit women's access to education and training, reinforcing traditional gender roles and perpetuating the cycle of underrepresentation in the construction industry (Mbukanma and Strydom, 2022).

Organizational Barriers: Organizational culture and policies also play a critical role in constraining women's career progression. According to Naoum *et al.* (2020), male-dominated environments, inflexible work practices, and a lack of support mechanisms hinder women's advancement. The 'glass ceiling' concept illustrates the invisible barriers that prevent women from reaching leadership positions (Rahim *et al.,* 2018). Furthermore, the lack of mentorship and sponsorship opportunities exacerbates women's challenges in navigating their careers (Agyekum *et al.,* 2024).

Barriers constraining women's career progression in the construction industry

The barriers constraining women's career progression in the construction industry are also incorporated into Table 1.

Barriers Constraining Women's Career Progression

Table 1 shows that the barriers affecting women's career choices and progression in the construction industry are deeply rooted in societal, organizational and cultural contexts. Gender discrimination, organizational policies, lack of support mechanisms, work-life balance challenges and traditional stereotypes collectively hinder women's progression in this sector.

Underrepresentation and Gender Discrimination: The construction industry is characterized by significant gender disparities, which manifest as barriers to women's progression. Research indicates that women are underrepresented in the construction workforce, particularly in leadership roles (Kodagoda and Jayawardhana, 2022). As noted by Alves and English (2018), gender discrimination is a pervasive issue; women often encounter biases that limit their opportunities for promotion and career development. Norberg and Johansson (2021) assert that women face various forms of discrimination, from wage disparities to biased recruitment practices. The 'ideal worker' norm, which traditionally expects women to prioritize family responsibilities, further complicates their career trajectories (Norberg and Johansson, 2021). This societal expectation creates a conflict for women, who often navigate between career aspirations and familial obligations.

Furthermore, the relationship between personal agency and external factors influences women's perceptions of their career opportunities. Research by Bryce *et al.* (2019) indicates that women with an internal locus of control tend to make more purposeful career decisions, leading to better outcomes than those who perceive their opportunities as externally constrained.

Organizational Barriers and Cultural Norms: The organizational culture in the construction industry is predominantly male-dominated, which poses significant challenges for women.

Oyewobi *et al.* (2019) note that the scarcity of women in senior ranks reflects broader organizational structures that perpetuate gender inequality. Naoum *et al.* (2020) cite male-dominated cultures and inflexible work practices as primary barriers to women's advancement. The lack of mentorship and professional development programmes tailored for women also restricts their career progression (Seidu *et al.,* 2023). This absence of support is compounded by a hostile workplace culture, where women frequently experience unwelcoming environments that deter their participation (Osei *et al.,* 2023).

Work-Life Balance and Traditional Stereotypes: The demanding nature of construction work often leads to conflicts between professional and personal responsibilities, making it challenging for women to achieve a satisfactory balance (Shen and Luen, 2022). Traditional stereotypes about women further constrain their career aspirations. Mbukanma and Strydom (2022) argue that societal expectations and cultural values shape women's career orientations, often limiting their ambitions in male-dominated fields like construction.

Table 1 thus summarizes the barriers identified in the literature. These barriers were used in the questionnaire.

Table 1: Summary of the identified barriers to the career choices and progression of women in the construction industry

Theoretical Framework

This study employs the Social Cognitive Career Theory (SCCT) and Gender Labelling Theory to understand the barriers to women's career choices and progression in the construction industry. Figure 1 shows the study's theoretical framework, which integrates these theories.

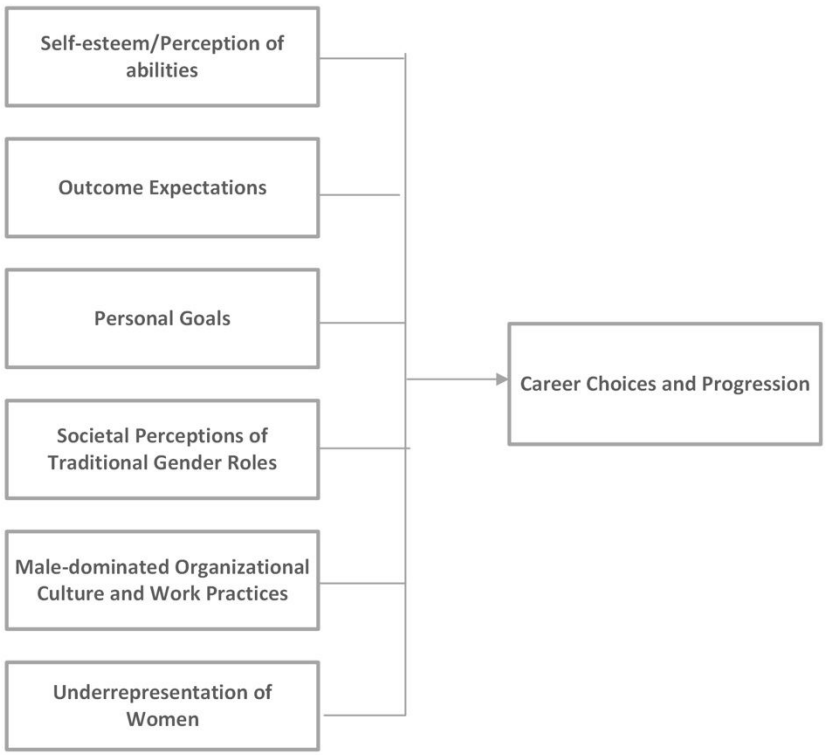

Figure 1: Barriers to Women's Career Choices and Progression

Source: Author's own work

Social Cognitive Career Theory (SCCT)

According to the Social Cognitive Career Theory (SCCT) developed by Lent, Brown and Hackett (1994), individuals' career interests, choices and achievements are influenced by the relationship between self-efficacy beliefs, outcome expectations, and personal goals, all within social and contextual environments. SCCT proposes that factors such as self-esteem, outcome expectations and personal goals shape an individual's career choices (Agyekum *et al.,* 2024).

SCCT theory is widely used to investigate career development and progression in underrepresented or marginalised groups in STEM, engineering and construction (Fouad and Santana, 2018; Agyekum *et al.,* 2024). Research indicates that in such sectors, male-dominated organizational cultures, limited networking opportunities and subtle discrimination tend to undermine women's self-efficacy and aspirations (Bryce *et al.,* 2019; Gregor *et al.,* 2021). Empirical evidence from South Africa established that self-perceptions of ability, nurtured or stifled by environmental support and barriers, shape women's willingness to enter and remain in the construction industry (Chileshe and Haupt, 2010; Aneke *et al.,* 2021).

Gender Labelling Theory

Gender Labelling Theory posits that societal perceptions, stereotypes and cultural labels attached to gender impact both how individuals are treated and how they see themselves in occupational roles (Ridgeway and Correll, 2004; Zhang *et al.,* 2021). In the context of male-dominated fields like construction, gender labelling often manifests as the association of technical roles with masculinity, which undermines women's professional confidence and discourages their career ambition (Owolabi *et al.,* 2023). Gender labelling is relevant in the context of the South African construction sector, where cultural and historical legacies of patriarchy and gendered work division interact with organisational practices (Sangweni and Root, 2015; Akala, 2018).

The SCCT and Gender Labelling Theory are complimentary - while SCCT focuses on how women's self-belief and career aspirations are shaped by the environment, Gender Labelling Theory helps elucidate how that environment is structured by societal perceptions of gender/gender stereotypes and institutionalised barriers (Ridgeway and Correll, 2004; Sangweni and Root, 2015; Fouad and Santana, 2017). Integrative uses of these frameworks can be seen in Chan (2022) where the research applied an SCCT perspective to understand how cultural and gender norms play a role in shaping female underrepresentation in Science, Technology, Engineering and Mathematics. Wang *et al.'s* (2025) research draws upon SCCT to discuss the barriers contributing to the underrepresentation of women in the UK construction industry, comprising of, Industry perception, motivation, environment, skill gap, role models, well-being, organisation support, satisfaction, career development, family responsibility and institutionalised inequality. Zhang *et al.* (2021) highlighted gender label effects` associated with the transition processes of women from university into work in the Australian construction industry.

The literature review suggests that the barriers to women's career choices and progression are rooted in societal, organizational and cultural contexts. However, previous studies may overlook specific socio-cultural aspects and their interaction with educational and economic

factors. Therefore, this research examines the barriers women face when transitioning into the construction industry or higher positions, to understand the interaction between individual, institutional, and societal barriers to women's career decisions and outcomes in this industry. The study draws on both SCCT and Gender Labelling Theory to explain not only how internal (psychological) and external (contextual) factors function, but also how they interact to cause career and progression barriers for women. The following sections present an overview of the research methodology used and the inquiry's findings.

Research Methodology

This research is grounded in a pragmatic philosophy that focuses on moving the research beyond theoretical exploration (Kaushik and Walsh, 2019) to identify tangible strategies for addressing the barriers constraining women's career choices and progression in the construction industry. The study adopted a mixed-method research approach, involving questionnaire surveys and interviews, to capture broad responses from diverse participants across varying job roles and educational backgrounds in South Africa. A probability sampling strategy was utilized, to randomly select a representative sample of respondents from a sample frame of 7 112 construction professionals listed in the Construction Professions and Projects Register (Times Media, 2015). The sample size was calculated using a confidence interval of 95% and a margin of error of 5% (https://www.surveymonkey.com/mp/sample-size-calculator/). This resulted in a sample size of 365 construction professionals. This figure was multiplied by four to address issues with low response rates (Manfreda *et al.,* 2008). Additionally, all 14 members of the Builders' Collective and 55 Housing Assembly Organisation members were surveyed. A total of 199 completed surveys that consisted of valid responses were obtained, representing a response rate of 13%. To validate the findings, eleven interviews were conducted with high-ranking female participants who had not participated in the initial survey.

A structured questionnaire comprising closed and open-ended questions and a semi-structured interview protocol were developed, aimed at identifying individual experiences related to barriers to women's career choices and progression. The questionnaire is divided into several sections to gather detailed information about women's career experiences in the South African construction industry.

The first section collects basic demographic information about the participants, such as age, education and work experience. The second section examines workplace culture, the environment, and relationships at work. The third section focuses on career progression, exploring how women move forward in their careers and the challenges they face. In contrast, the fourth section identifies barriers to progression, highlighting specific barriers that prevent women from growing in their roles. The final section of the questionnaire covers support systems, examining the help and resources available to women as they build careers in the male-dominated industry. Cronbach's alpha was used in assessing the reliability of the survey instrument and yielded a value of 0.976, indicating a high reliability level. According to guidelines, an alpha of 0.90 or above is considered optimal, above 0.80 is good, and above 0.70 is acceptable. The Shapiro-Wilk test showed a p-value less than 0.001, indicating that the data was not normally distributed. This lack of normality implies that non-parametric methods may be more appropriate data analysis methods.

The data collected was analysed using descriptive and inferential statistics. The descriptive statistics, such as percentages and the mean score ranking, provided an overview of the

participants' demographics and assessed the criticality of 46 barriers, prioritizing them based on perceived impact. The Mann-Whitney U test, a non-parametric statistical method, was used to compare the perceptions between male and female respondents on the barriers to career choices and progression in the South African construction industry. The test analyses gender-based perception differences by comparing the median ranks, offering an approach that accounts for the ordinal nature of the perception data (Saka and Chan, 2021). Using Principal Component Analysis (PCA), factor analysis was employed to identify key underlying barriers affecting career progression among women in construction. The information collected from the interviews was analysed using thematic analysis.

The study follows ethical guidelines to ensure participants' rights and privacy. Participants were informed about the study's purpose and their right to withdraw at any time, ensuring informed consent. Confidentiality was maintained by anonymizing all responses and protecting the identity of the participants. Ethics approval was obtained from the University of Cape Town Ethics Committee, confirming that the study met ethical standards. Data protection measures were also in place, with all data securely stored and used solely for research purposes. The following section presents the data collected, the analysis, and a discussion of the findings.

Data Presentation, Analysis and Discussion

Background Details of the Survey Respondents

The study sought to know the demographic information of the respondents in the study. The data collected in this regard is presented in Table 2.

Table 2: Demographic Information of Survey Participants

Table 2 reveals a predominance of female participation in the study: 125 females (62.81%) and 73 males (36.67%) participating. In terms of age distribution, the majority of respondents fell within the 35 to 44 age range, accounting for 84 individuals (41.38%); this was followed by the 45 to 54 age group comprised of 56 respondents (27.59%), suggesting that the sample is predominantly composed of middle-aged individuals. Geographically, the respondents were spread across various provinces, with KwaZulu-Natal having the highest representation of 53 participants (26.63%), followed by the Western Cape with 46 respondents (23.12%), indicating a diverse provincial representation.

Regarding academic qualifications, the largest group comprised individuals with diplomas, with 68 respondents (34.17%). This was followed by those with other qualifications, such as Matric Certificates (55, 27.64%) and vocational qualifications (20, 10.05%). Notably, 22 participants (11.06%) reported having no formal education, while 16 (8.04%) were apprentices. A few respondents held advanced degrees, including 17 with master's degrees (8.54%) and one with a PhD (0.50%). The data on years of experience indicated that 68 respondents (34.17%) had 0 to 5 years of experience, making this the largest group. This was followed by those with 6 to 10 years (51, 25.63%) and 11 to 15 years (48, 24.12%), suggesting a relatively young workforce. Regarding job positions, most respondents identified as directors (93, 46.73%), indicating a significant representation of senior-level professionals with adequate insights into the study problem.

The type of organizations represented in the survey varied, with micro-enterprises comprising the largest group of 69 respondents (34.67%), followed by small enterprises with 56 participants (28.14%), medium-sized enterprises with 25 (12.56%), large enterprises with 16 (8.04%), and 33 participants (16.58%) identified as "other," suggesting a diverse organizational landscape. Lastly, professional affiliations showed that a significant number of the respondents (78, 39.20%) did not belong to any professional organization. Among those who did, the most common affiliations were with the Association of Construction and Project Managers (ACPM) (15, 7.54%) and the South African Council for the Project and Construction Management Professions (SACPCMP) (14, 7.04%). It can be inferred from Table 4 that the data collected is obtained from a sample of predominantly female, middle-aged, and well-educated participants, with a significant representation of directors and individuals from micro and small enterprises, with diverse experience.

Ranking of the Barriers to Career Choices and Progression of Women in the Construction Industry

The study sought to know the perception of the respondents on the barriers impacting women's career choices and progression in the construction industry on a scale of 1 to 5, where 1 is very insignificant, and 5 is very significant. The top 18 ranked barriers out of the 46 proposed, with significant differences between the male and female perspectives of the barriers impacting women's career choices, are presented in Table 3.

Table 3: Ranking of the Barriers to Female Career Choices and Progression

The mean value for the 46 identified barriers ranged from a maximum of 3.87 with a Standard Deviation (SD) of 1.239 for A1 to a minimum mean value of 3.08 with an SD of 1.421 for F4 (construction-related courses are difficult). The critical barriers identified are those with normal values greater than 0.5. Only 39 of the 46 barriers identified have normalized values greater than 0.5 and, therefore, are classified as critical. From a ranking perspective, the top five barriers are A1, B1, A2, E9 and F1. The male-dominated nature of the construction industry was highlighted as a significant barrier, where women often face explicit and implicit gender bias (A1, B1). The data indicated that few female peers, supervisors and managers contribute to a challenging work environment for women. Furthermore, the respondents noted that the construction industry is highly competitive and often unwelcoming, lacking the necessary support for women (A2).

The study sought to find out whether there were significant differences in the respondents' perceptions of the barriers to career choices and progression in the construction industry, based on gender. The 46 identified barriers were analysed using the Mann-Whitney U test to determine whether there were significant differences in the perceptions of the respondents based on gender. Only three of the 46 identified barriers obtained significance values less than 0.05, indicating a significant difference in the respondents' perception concerning the significance of barriers C6, C4 and B2, and inferring that there is a significant difference in the perception of stereotypes and income inequality as barriers to women's career choices and progression in the construction industry.

The data collected reveals that male domination and gender bias are perceived as top barriers to female career choices and progress in the construction industry. The predominance of male domination and gender bias creates an environment that is often unwelcoming and competitive, leading to feelings of insecurity and isolation among female workers. Also, the lack of

supportive facilities and mentorship opportunities exacerbates these challenges, hindering women's career progression.

Grouping of the Critical Barriers Constraining Women's Career Choices and Progression

The 39 identified barriers to women's career choices and progression, which were found to be critical variables, were subjected to Factor Analysis to classify the barriers according to applicable factors. Table 4 shows the results of the KMO and Bartlett's Test.

Table 4: KMO and Bartlett's Test for Barriers to Women's Career Choices and Career Progression

Table 4 shows the results of the KMO and Bartlett's Test for Barriers to Women's Career Choices and Career Progression. The KMO score for this study is 0.778, which is greater than the standard threshold, meeting the required standards of the PCA. Bartlett's test of sphericity analysis yielded a chi-square test result of 3620.676 and a significance value of 0.001, which is less than 0.05. The results show that there is no evidence of a substantial deviation from sphericity, and there are significant correlations between the variables.

The results from the tests conducted and shown in Table 6 meet the conditions required for the factor analysis. The Principal Component Analysis (PCA) was conducted using the varimax rotation approach on the 39 critical barriers drawn from the 199 sample responses. For the sample size to provide an adequate component analysis, the sample size should be in the ratio of 1:5, which represents the number of variables to the sample size. The 39 critical barriers multiplied by five samples for each of the components yield 195 samples that are required to continue with the factor analysis. With 199 samples, this study has met the requirements. Table 4 shows a summary of the results of the factor analysis carried out.

Table 5: Varimax Rotation Factor Structure for Barriers to Women's Career Choices and Career Progression

Table 5 shows five underlying components with relevant eigenvalues greater than one and a value of 69.48% for the total Variance. This meets the standard requirement of 60% total variance (Kothari, 2004; Creswell, 2014). Thirty-four critical barriers are represented by one of the five underlying barrier groups – Gender Stereotyping, Bias and Discrimination (women face explicit and implicit biases impacting their self-perception and opportunities within the field); Work-life Balance Challenges (higher demands for family responsibilities affect women more than men, limiting their career flexibility); Relational (the lack of female role models and mentorship networks impedes women's progression); Systematic and Organizational (discriminatory practices and toxic workplace cultures disproportionately affect women's experiences in the industry); and Socio-cultural and Individual-related barriers (factors such as personal circumstances and lack of awareness of available career opportunities contribute to women career impediments). Each barrier maintains a factor loading greater than 0.5, contributing to the group factor's interpretation (Kothari, 2004; Creswell, 2014).

Interview Results

In this study, eleven respondents who did not take part in the questionnaire survey were interviewed to gain deeper insights into the barriers faced by women in the construction industry. The background details of the respondents are presented in Table 6.

Table 6: Background Details of Interview Respondents

It can be seen from Table 6 that the respondents have substantial experience in their respective roles, which provided valuable perspectives on the barriers to women's career choices and progression in the construction industry. The respondents' respective backgrounds in safety management, skills development, quantity surveying, engineering, project management and works inspection, allow them to address broader issues related to barriers women face in leadership and technical roles, gender equality and workforce development in the construction sector. Key themes drawn from the interviews include the underrepresentation of women in leadership roles, societal stereotypes, recruitment biases, and challenges in balancing work and family life:

Gender Representation and Roles: The interviewees viewed women as underrepresented in leadership, executive and technical roles within the construction industry. The interviewees noted that representation is improving in entry-level and middle-management, but senior/board-level roles remain dominated by men.

> According to Interviewee 1: "*women appear more in middle and junior management roles in any organization*."

Challenges faced by Women: The interviewees noted that women encounter unique challenges that differ from those faced by men, including a lack of support from both male and female colleagues and mentorship. They noted a lack of formal mentorship/programmes to help women advance in their careers. Women also face more significant challenges balancing work and family responsibilities than men do, which can hinder their advancement.

> As noted by Interviewee 1, "*Support networks and mentorships are lacking when it comes to females in leadership roles*." Also, Interviewee 1 emphasized, "*Once we knock off….your work is never done because when you get home, you still have to tend to the kids*."

Perceptions and Stereotypes: The interviewees highlighted that societal perceptions and stereotypes about women's capabilities in construction hinder their career progression.

> According to Interviewee 2, "*There are very common stereotypes that a woman shouldn't be doing physical work…..which has to do with the male upbringing and male beliefs about what women in male dominated sectors can do*."

> Interviewee 5 also noted that "*the industry still has the perspective that men can do jobs better than women*".

Additionally, the interviewees viewed that the recruitment process is often biased against women, with management holding stereotypical views.

> Interviewee 2 shared an example: "*Management repeatedly questioned how a woman could operate a forklift……the problem lay with management's stereotypical views and beliefs*."

Furthermore, the interviewees noted that job ads and recruitment questions often disadvantage women by focusing on family status or physical ability.

> While Interviewee 4 notes that "*Job ads that use masculine language and stress physical requirements can discourage female applicants*," Interviewee 10 posits that "*recruitment often prioritizes romantic relationships over competence*."

Career Progression Disparities and Gender Pay Gap: The interviewees noted that women often overperform to achieve the same recognition and advancement as their male counterparts and that career advancement is hindered by both formal biases and informal 'boys' club' networking. They note that women constantly have to prove their abilities, unlike men who are often accepted at face value.

> According to Interviewee 3, "*Women are often held to a higher standard due to assumptions about their competence.*"

Furthermore the interviewees noted the significant pay disparities between men and women in the construction industry noting that women often earn less than men for similar roles.

> Interviewee 1 stated, "*Most organizations still have a mentality….a woman's salary should be like an allowance,"* and according to Interviewee 3 "*The pay gap now appears more evident in the private sector than in the public sector*."

Health and Safety Concerns: The interviewees noted that gender-specific health and safety issues exist, particularly concerning women's physical capabilities and pregnancy. There is inadequate provision of gender-specific PPE, sanitation and facilities; pregnancy and female-specific health risks are often overlooked; and women face a higher risk of harassment and personal safety concerns, especially on-site and in male-dominated settings.

> Interviewee 2 pointed out, *"There definitely are gender-specific health and safety issues….during pregnancy, women shouldn't be exposed to certain situations."*

> According to Interviewee 7, "*Separate toilets and sanitation bins for females are often lacking on-site*" and

> Interviewee 8 remarked that "*Women continue to work hard even if they are pregnant – only resting during annual or maternity leave*."

The interviewees highlight persistent barriers but also incremental improvements in gender representation, policy and support. They advocate for increased support systems, mentorship opportunities, and cultural change to ensure equitable participation and progression of women in the construction industry. However, they noted that this requires collective effort and a change in mindset.

> Interviewee 1 stated, "*The construction field is becoming more inclusive and accessible for women…if the women who are already in leadership positions work towards being advocates for our rights*."

Discussion of Findings

This paper examines the barriers constraining women's career choices and progression within the South African construction industry. The findings of this enquiry are discussed according

to the three strands of information obtained – the literature review, questionnaire survey and interview findings. The barriers to women's career choices and progressions are discussed in the following sections:

Gender Representation, Roles, Career Progression Disparities and Gender Pay Gap

The study found an underrepresentation of women in leadership and technical roles in the construction industry. This aligns with existing literature, such as Kodagoda and Jaywardhana (2022), which underscores the minimal presence of women in construction, particularly in leadership positions. Despite some progress in South Africa, where 51% of contractor enterprises are owned by women (Stats SA, 2022), systemic challenges persist. Interviewee 1's observation that "women appear more in middle and junior management roles" reflects the ongoing struggle for women to break through the glass ceiling and progress to senior positions.

The study also revealed significant career progression and pay disparities between men and women. Interviewee 1 noted that "most organizations still have a mentality…that a woman's salary should be an allowance," highlighting the gender pay gap. These findings align with Oo *et al.* (2020), who report on the construction industry's pay inequality and compensation disparities.

Barriers to Women's Career Choices and Progression

The data indicates that women encounter the following barriers to career choices and progression in the construction industry.

Lack of Support and Mentorship: Support and mentorship are important for career advancement. This finding is consistent with Naoum *et al.* (2020), who highlight the absence of support mechanisms as a barrier to women's career progression. Interviewee 1 emphasized the lack of support networks, stating, "Support networks and mentorships are lacking when it comes to females in leadership roles." It was found that women often face more significant challenges in balancing work and family responsibilities compared to men, which is aligned with previous findings by Shen and Luen (2022).

Perceptions and Stereotypes: Societal perceptions and stereotypes about women's construction capabilities hinder their career progression. The study also found significant differences in the perception of male and female respondents on19 barriers (see Table 5). This finding is supported by previous research by Fulford (2019) and Hasan *et al.* (2021), who noted the pervasive gender bias and discrimination in the industry. Interviewee 2 highlighted the impact of stereotypes, stating, "There are pervasive stereotypes that a woman should not be doing physical work." These biases contribute to a challenging work environment and affect women's self-efficacy and aspirations, as proposed in the Social Cognitive Career Theory (SCCT) (Agyekum *et al.,* 2024).

Organizational Policies and Practices that Favour Men: The study revealed that organizational policies and practices favoured men, impacting women's advancement opportunities. This finding is supported by Naoum *et al.* (2020), who established that male-dominated environments, inflexible work practices, and a lack of support mechanisms hinder women's advancement.

Health and Safety Concerns: Gender-specific health and safety issues, particularly concerning women's physical capabilities and pregnancy, emerged as barriers to women's career choices and advancement. Interviewee 2 pointed out that, "There are gender-specific health and safety issues…..during pregnancy, women should not be exposed to certain situations." This aligns with the findings of previous research by Osei *et al.* (2023), which highlights the need for gender-sensitive health and safety policies in the construction industry.

The implications of the research for policy and practice are that to promote gender equality in the construction industry that engenders the advancement of women; there is a need for targeted interventions, such as the development of support systems, mentorship programs and policies that address the identified barriers.

Conclusion

This research examines the barriers to women's career choices and progression in the construction industry, highlighting the challenges that persist despite some advancements in gender representation. The findings reveal the underrepresentation of women in leadership and technical roles and disparities in career progression and pay between genders. While the construction industry presents significant opportunities for economic growth and job creation, the underrepresentation of women signifies a loss of potential human capital. It emerged from the surveys and interviews conducted that women in the construction industry face barriers, including a lack of support and mentorship, societal stereotypes and organizational policies that favour male employees. Furthermore, the findings align with the Social Cognitive Career Theory, suggesting that women's self-efficacy and aspirations are influenced by their perceptions of the work environment.

Based on these conclusion, the following recommendations are made to address the barriers identified in the study: Construction companies should establish mentorship programmes that support networks specifically designed for women in construction towards fostering a sense of belonging and providing guidance for the career advancement for women in the industry; companies should also review and revise their organizational policies to include flexible work arrangements that accommodate family responsibilities. They should utilise transparent recruitment and promotion practices, as well gender-sensitive health and safety policies to promote gender equity and the participation of women in the workforce; construction stakeholders should develop training programs that address gender biases and promote awareness of the capabilities of women in construction to help shift perceptions and stereotypes; the government and construction companies should provide scholarships, internships and exposure of women to the industry to foster interest and confidence among female students. Future research should explore the long-term impacts of these strategies, investigate the effectiveness of initiatives designed to empower women in construction and explore the long-term impact of digital tools and technology on reducing gender barriers in the construction industry.

Acknowledgement

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Response to review comments
Paper ID: EDI-02-2025-0148
Paper Title: Breaking Barriers: Understanding Factors Constraining Women's Career Choices and Progression in the South African Construction Industry

Reviewer 1 Comments		
Comments	**Response to Comments**	**Manuscript Sections**
The literature review starts with a brief intro of barriers women face in the construction industry and then proceeds with an analysis of the literature presented in several tables. Was a systematic literature review conducted? If so, then methodological info is missing (e.g., how many articles were analysed, how selected, how analysed, selected from where and why, etc.). If this was not a systematic literature review, then you cannot have these tables and an analysis, and more narrative writing of the literature would be needed. As it currently stands, it appears that the author(s) have conducted an empirical analysis of the literature, which I would applaud, assuming that the info outlined above is added.	Thank you for highlighting this ambiguity. A narrative literature review was conducted, and this has been stated at the outset of the literature review section. The summary given by Table 1 is used to support the key narrative threads, by linking studies and themes more explicitly for the reader.	Literature Review (first two paragraphs, tables, opening passage of Methods)
As for the theoretical framework, there is nothing wrong with these two frameworks, however, it is not clear from the literature review as to why these frameworks are best suited for the particular study. This is because some narration of the literature is almost entirely missing in the literature section.	We appreciate this comment. We have expanded the literature review to provide a detailed rationale for selecting Social Cognitive Career Theory (SCCT) and Gender Labelling Theory. SCCT emphasizes self-efficacy and outcome expectations within social and contextual environments, it helps in understanding women's navigation through a male-dominated industry,	Literature Review (end of section), Theoretical Framework

	while Gender Labelling Theory helps the understanding of how external stereotypes and cultural labels influence women's career perceptions and choices. Additionally, the literature review has been revised to present a brief overview of each theory, justification for the use of the theoretical frameworks, and how the frameworks are linked. Integrated references to relevant empirical studies (in South Africa and globally) are provided, showing that these frameworks have been successfully used in the study of gendered career barriers. The closing section of the literature review has set out how the chosen frameworks are linked with the study's aims.	
As for method, I am OK with the survey and the response achieved but we would need to know how many practitioners are in the register and how many were contacted to understand the response rate.	Thank you for pointing out the gap in reporting survey methods. The sampling frame has been clarified in the revised paper.	Methodology (Survey Section)
Also, two interviews following a survey hardly constitutes a mixed method as interviewing two people is not relevant. Therefore, either more interviews need to be conducted or these two need to be removed because this is not how the mixed method is normally done. There should be at least 6-8 interviews and their point should be to discuss the survey results.	We agree with the reviewer that the qualitative component, as originally constituted, is insufficient for a mixed-methods claim. In the revision, we have increased the total number of semi-structured interviews to 11. This increase strives for diversity across experience, geographical location, and job roles, to ensure depth and diversity of perspectives. Further, we have clarified the rationale for the interviews: specifically, that the qualitative	Methodology (Qualitative section), Results/Findings, Discussion

	interviews enable contextualization and explanation of patterns observed in the survey by elaborating on nuanced forms of bias, mentorship needs, or work-life balance issues. Additionally, the interview results have been integrated with our quantitative findings, demonstrating true mixed-methods integration in both the results and discussion sections.	
The rationale for the method is currently missing in the paper, e.g., even with just two interviews, there is no explanation as to what this brought to the study.	We acknowledge this omission and have provided a rationale for the method —explaining that the interviews were intended to provide richer, in-depth insights into the survey's quantitative findings, offer illustrative examples of barriers, and illuminate context-specific subtleties that are not easily captured in closed-ended questionnaires. Furthermore, the interview insights were used to validate and nuance the survey results and were integrated methodologically via triangulation.	Methodology (Mixed Methods rationale), Findings, Discussion
Finally, it is not clear how theoretical frameworks were used and applied and what the contribution of the paper would be, other than just a new case study.	Thank you for flagging the need for more analytical clarity. The paper has been revised to articulate, step by step, how SCCT and Gender Labelling Theory informed the questionnaire design through items mapping to self-efficacy, perception of gender labels, organizational support and barrier typologies. These theories also informed the subsequent analysis through factor analysis grouping, interpretation of findings in terms of internal/external motivations. They also articulate	Theoretical Framework, Methodology, Discussion, Conclusion

	structural/cultural barriers to women's career choices and progression in the construction industry. In the Discussion and Conclusion section, we have clarified the paper's contribution, highlighting how we extended theoretical application in the South African construction sector; the identification of underexplored, intersectional barriers; and practical implications of the study findings for career support of women, policy, and education.	
Reviewer 2 Comments		
The findings as presented in the abstract seems too descriptive. Can the results be presented with more details perhaps based on the ranking of the factors or the % of variance explained in the PCA outcome, etc.?	Thank you for your suggestion. The abstract has been revised to include more detailed results, specifically highlighting the ranking of factors and the percentage of variance explained in the PCA outcome.	Abstract
State clearly the research questions/objectives	The research questions and objectives have been stated clearly.	Introduction
The introductions needs to be rewritten. too many isolated paragraphs. ensure coherence and clarity of thought process/line. can the first line of the introduction be rephrased.	Thank you for your comments. The Introduction has been revised for better coherence and clarity, the researcher has reorganized the paragraphs and rephrased the opening sentence as suggested.	Introduction
Elements/factors with same mean (tie values) deviation can be sorted/ranked using the values of the SD... lower SD are ranked first when there is a tie.	Thank you for your comments. The tied factors have been sorted according to their standard deviation, with lower SD values ranked first.	Table 3

Table 3 summarizes Tables 1 and 2.. can tables 1 and 2 be deleted and table 3 expanded to include the references?	Thank you for your suggestion. As recommended, we have removed Tables 1 and 2 from the manuscript. Table 3 has been renumbered as Table 1. It has also been expanded to include the corresponding references for each entry.	Table 1 (previous Tables1-3)
I seem to have a little concern with the "qualitative". Just two interviews.. what is the basis of selection, spread?? why not more interviewees to ensure a balance and objectivity???	Thank you for your comments. The number of interviews have been expanded from two to eleven. Details regarding the selection criteria, as well as the profile of the interviewees, are included in the revised manuscript.	Methodology and Data Presentation, Analysis and Discussion.
Check references for completeness and adherence to journal's referencing format.	The references have been reviewed for completeness and adherence to the journal's required referencing format.	Reference list
Overall, it is a commendable output...	Thank you very much for your compliments.	

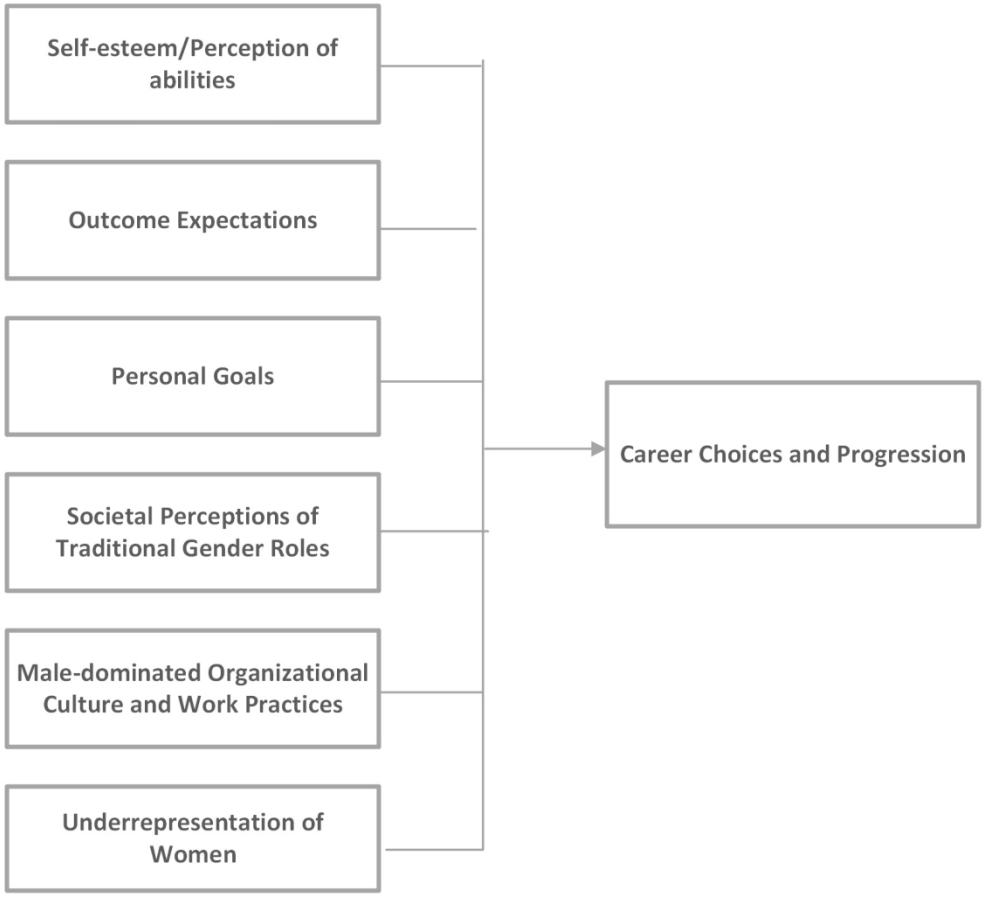
Thanks for your input that has helped in improving the quality of the paper.

Table 1: Summary of the identified barriers to the career choices and progression of women in the construction industry [new Table 1 includes all concepts from Tables 1, 2 and 3]

Code	Barrier	References
A1	Male domination in construction industry careers. Underrepresentation of women in the industry. Few female peers, supervisors, and managers	Fulford (2019); Afolabi *et al.* (2019); Kodagoda and Jayawardhana (2022)
A2	Highly competitive environment, being unwelcoming and lacking support, such as mentorships and professional development programs tailored for women	Osei *et al.* (2023); Naoum *et al.* (2020) (Seidu *et al.*)
A3	Queen bee syndrome in the workplace: women competing and hindering other women.	Kark *et. al.* (2024)
A4	Difficulty in finding work-life balance. Lack of flexible work conditions and arrangements (career breaks or access to part-time duties).	Shen and Luen (2022); Naoum *et al.* (2020)
A5	Qualification gap between women and men.	Alves and English (2018)
A6	Career insecurity (short-term contracts, grant-dependent positions).	
A7	Lack of supportive facilities in the working environment (e.g. creche, single-sex toilets).	Stromquist *et al.* (2013)
A8	Slow career progression and limited access to leadership opportunities.	Akinlolu and Haupt (2021); Naoum *et al.* (2020)
A9	Difficulty in returning to construction industry careers after a pause or leave.	Kolegraff (2024)
A10	Difficulty in securing positions in the same geographical area as their partners or children.	Fielden *et al.* (2000)
B1	Explicit and implicit gender bias favouring men. Institutional discrimination. Construction industry education is directed at boys. Lack of girls' exposure to construction-related experiences.	Fulford (2019); Alves and English (2018); Naoum *et al.* (2020); Olowabi *et al.* (2023)
B2	Income inequality/gender pay gap.	Oo *et al.* (2020); Akosah-Twumasi *et al.* (2018)
B3	Passive-aggressive attitude, intimidation towards women, and unwelcoming or hostile workplace culture towards them	Osei *et al.* (2023)
B4	Women are discouraged or dismissed from managerial and leadership positions.	Naoum *et al.* (2020); Akinlolu and Haupt (2021)
B5	Prejudice against women's resilience, performance and intelligence.	Alves and English (2018); Lekchiri and Kamm (2020)
B6	Bullying or sexual harassment against women	Osei *et al.* (2023)

C1	Traditional stereotypes about women, who are perceived with lower physical and mental abilities, and construction -related courses are viewed as difficult.	Lekchiri and Kamm (2020); Alofabi *et al.* (2019)
C2	Women are perceived as less rational and more emotional.	Lekchiri and Kamm (2020)
C3	The perception that the construction industry is not an appropriate workplace for women.	Hasan *et al.* (2021); Lekchiri and Kamm (2020)
C4	Fear of not conforming to traditional societal views, lack of respect for women in construction industry careers	Lekchiri and Kamm (2020)
C5	Preferential treatment for men	Fulford (2019) [institutional bias]; Alves and English (2018)
C6	The perception that women's common role in society is being a primary carer for children or other family members.	Lekchiri and Kamm (2020); Phillips and Blustein (1994)
D1	Lack of self-confidence about own skills and abilities.	Fulford (2019)
D2	Self-imposed fear of construction-related activities.	Shen and Luen (2022)
D3	Lack of confidence to apply for positions and promotions.	Fulford (2019) [self-efficacy]; Seidu *et al*.; Akinlolu and Haupt (2021)
D4	Lack of personal interest in construction-related fields.	Nwokolo and Chukwuma (2021)
D5	Lack of awareness of educational opportunities in construction fields.	Agyekum *et al*. (2024)
D6	Lack of awareness of career opportunities in construction-related fields.	Seidu *et al.* (2022) [as part of lack of support/mentoring]
D7	Personal circumstances (female role in family, pregnancy, maternity).	Phillips and Blustein (1994); Shen and Luen (2022)
D8	Effect of life stage and family expectations.	Shen and Luen (2022); Lekchiri and Kamm (2020)
D9	Girls have less curiosity, desire, appetite and motivation towards information or knowledge about construction.	Afolabi *et al.* (2019)
E1	Lack of professional mentorship, career counselling and supervision opportunities for females.	Seidu *et al.* (2022)
E2	Lack of support networks, including career sponsors and professional groups, contributes to women feeling out of place in construction-related fields.	Seidu *et al.* (2022)
E3	Lack of female mentors/role models.	Seidu et al. (2022); Fulford (2019)
E4	Lack of encouragement from men.	Seidu et al. (2022)
E5	Lack of encouragement from women.	Seidu et al. (2022)
E6	Lack of encouragement and support from family members and friends/peers.	Phillips and Blustein (1994)

E7	Lack of access to vocational construction-related training and development opportunities.	Seidu et al. (2022); Agyekum et al. (2024)
E8	Ineffective programs to attract women to challenging and competitive jobs and positions.	Osei et al. (2023); Seidu et al. (2022); Afolabi et al. (2019)
E9	Lack of strategies and policies for gender balance in construction-related fields.	Naoum et al. (2020); Kodagoda & Jayawardhana (2022)
F1	Educational expenses and costs.	Akosah-Twumasi et al. (2018)
F2	Time required to acquire construction related qualification	Akosah-Twumasi et al. (2018) [wider education costs]; Seidu et al.(2022)
F3	Construction industry education directed at boys. Lack of girls' exposure to construction-related experiences.	Owolabi et al. (2023)
F4	Construction-related courses are difficult.	Afolabi et al. (2019)
F5	Difficult to balance work, education and family/other life commitments.	Shen and Luen (2022); Phillips and Blustein (1994); Akosah-Twumasi et al. (2018)



Theoretical Framework Figure 1: Barriers to Women's Career Choices and ProgressionSource: Authors own work

318x290mm (144 x 144 DPI)

Table 2: Demographic Information of Survey Participants

Answer choices	Frequency	Percentage (%)
Gender		
Female	125	62.81
Male	73	36.68
I prefer not to say	1	0.5
Age Category		
18 – 24	1	0.49
25 - 34	22	10.84
35 - 44	84	41.38
45 - 54	56	27.59
55 - 64	31	15.27
65+	9	4.43
Provinces		
KwaZulu-Natal	53	26.63
Western Cape	46	23.12
Eastern Cape	28	14.07
Gauteng	24	12.06
Mpumalanga	17	8.54
Limpopo	10	5.03
Northern Cape	7	3.52
Free State	7	3.52
North West	7	3.52
Academic Qualifications		
Apprentice	16	8.04
Vocational Qualification	20	10.05
Diploma	68	34.17
Master's degree	17	8.54
PhD	1	0.50
No formal education	22	11.06
Other	55	27.64
Years of experience		
0-5 Years	68	34.17
6-10 Years	51	25.63
11-15 Years	48	24.12
16-20 Years	21	10.55
21+ Years	11	5.53
Job Position		
Junior Employee	21	10.55
Senior Employee	15	7.54
Junior Management	8	4.02
Senior Management	12	6.03
Main Lead	6	3.02

Director	93	46.73
Other	44	22.11
Organization Type		
Micro Enterprise	69	34.67
Small Enterprise	56	28.14
Medium-sized Enterprise	25	12.56
Large Enterprise	16	8.04
Other	33	16.58
Professional Affiliation		
ASAQS	3	1.51
SACQSP	2	1.01
ECSA	9	4.52
ACPM	15	7.54
SACPCMP	14	7.04
SAIA	5	2.51
None	78	39.20
Other	73	36.68

Table 3: Ranking of the Barriers to Female Career Choices and Progression

Barriers	Male		Female		All respondents				Mann-Whitney U test
	Mean	SD	Mean	SD	Mean	SD	Rank	Normalization	
A1	3,93	1,181	3,77	1,334	3,87	1,239	1	1	0,135
B1	3,63	1,323	4,19	1,108	3,86	1,264	2	0,987341772	0,368
A2	3,87	1,108	3,77	1,309	3,83	1,185	3	0,949367089	0,089
E10	3,83	1,102	3,84	1,393	3,83	1,218	3	0,949367089	0,534
F1	3,72	1,223	3,97	1,278	3,82	1,243	4	0,936708861	0,639
E8	3,65	1,178	4,03	1,354	3,81	1,257	5	0,924050633	0,207
E3	3,52	1,329	4,16	1,186	3,78	1,304	6	0,886075949	0,368
E2	3,54	1,41	4,1	1,193	3,77	1,346	7	0,873417722	0,690
E4	3,63	1,103	3,97	1,14	3,77	1,123	7	0,873417722	0,210
E9	3,72	1,223	3,81	1,493	3,75	1,329	8	0,848101266	0,275
C2	3,54	1,501	4,06	1,34	3,75	1,452	8	0,848101266	0,240
A10	3,7	1,093	3,74	1,341	3,71	1,191	9	0,797468354	0,764
E1	3,5	1,41	4,1	1,193	3,69	1,379	10	0,772151899	0,725
A9	3,63	1,142	3,77	1,334	3,69	1,217	10	0,772151899	0,198
C5	3,48	1,295	3,97	1,251	3,68	1,292	11	0,759493671	0,232
C6	3,39	1,437	4,03	1,169	3,65	1,365	12	0,721518987	0,014
C4	3,33	1,492	4,1	1,106	3,64	1,395	13	0,708860759	0,009
B2	3,3	1,38	4,03	1,08	3,6	1,31	14	0,658227848	0,045

Key:

- SD – Standard Deviation

Table 4: KMO and Bartlett's Test for Barriers to Women's Career Choices and Career Progression

KMO and Bartlett's Test	Value
Kaiser-Mayer-Olkin (KMO) Measure of Sampling Adequacy	0.778
Bartlett's Test of Sphericity, approx. Chi-Square	3620.676
df	1035
Sig.	0.001

Table 5: Varimax Rotation Factor Structure for Barriers to Women's Career Choices and Career Progression

Code	Barrier	Eigenvalue	% of Variance explained	Cumulative % of Variance explained
Group 1	**Gender Stereotyping, Bias and Discrimination-related Barriers** (Barrier C1, C6, C4, C3, B6, C5, C2, B3, B5, B1 and B2).	15.579	45.820	45.820
Group 2	**Work-life balance-related Barriers** (Barrier A10, A9, A1, A6, A5, A2, A8 and E4).	2.490	7.324	53.144
Group 3	**Relational-related Barriers** (Barrier E3, E1, E6, E2, E7 and E5)	2.289	6.734	59.878
Group 4	**Systematic and Organizational-related Barriers** (Barrier E9, E10, E8 and F1).	1.799	5.292	65.169
Group 5	**Socio-cultural and Individual-related Barriers** (Barrier D6, D7, D5, D2 and D8)	1.460	4.293	69.482

Table 6: Background Details of Interview Respondents

Code	Gender	Experience	Role	Qualification	Location
Interviewee 1	Female	10 years	Safety Officer	Diploma	Western Cape
Interviewee 2	Female	20 years	Skills Development	PhD	Western Cape
Interviewee 3	Female	12 years	Quantity Surveyor	BSc (Hons)	Western Cape
Interviewee 4	Female	5 years	BIM Modeller	Not specified	Gauteng
Interviewee 5	Female	24 years	Senior Project Mgr	MSc.	Western Cape
Interviewee 6	Female	18 years	Associate Director	MSc.	International
Interviewee 7	Female	20 years	Project Engineer	BSc.	Gauteng
Interviewee 8	Female	18 years	Deputy Director	MBA	Limpopo
Interviewee 9	Female	10 years	Project Manager	MEng	International
Interviewee 10	Female	12 years	Director	BSc (Hons)	North West
Interviewee 11	Female	8 years	Chief Works Inspector	BTech	Western Cape