

Why do South African women choose careers in construction?

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Abstract

This article analyses the factors influencing the choices of careers in construction by South African women.

Literature was reviewed on challenges facing women in construction which contribute to their choices of careers in a traditionally male-dominated industry such as construction. Questionnaires were conducted with multiple samples that included construction organisations, construction students and professional women working in construction.

The study found that women had a role to play in the construction industry and that they could build successful careers within the sector. However, this was not easy given the various barriers to entry such as gender-based discrimination against them, the harsh work environment of the construction, the lack of sufficient knowledge about the industry itself, and the lack of successful women in construction as role models. There was evidence of discrimination and sexual harassment. All these factors impacted negatively on the choices of careers in construction by South African women.

The study stimulates debate about how the low representation of women in construction can be addressed and how construction careers for women can be promoted and encouraged.

This article makes a contribution to understanding the factors that have marginalised women in a male-dominated industry and provides some indication of approaches to attract more women into the sector. Consequently, the resource pool will be enlarged given the prevalent acute skills shortage in the industry.

Keywords: Discrimination, education, gender, built environment, career choices, culture, cultural background

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Abstrak

Hierdie artikel analiseer die faktore wat die beroepskeuse van Suid-Afrikaanse vroue in die konstruksiebedryf beïnvloed.

'n Literatuurstudie is gedoen oor die uitdagings wat vroue in konstruksie in die gesig staar wat bydra tot hulle loopbaankeuses in 'n tradisioneel manlikgedomineerde industrie soos konstruksie.

Die studie het bevind dat vroue 'n rol te speel het in die konstruksie-industrie en dat hulle suksesvolle loopbane binne die sektor kan bou. Dit was nietemin nie maklik om die industrie te betree gegewe die verskeie struikelblokke soos geslagsgebaseerde diskriminasie teen hulle, die harde werksomgewing van die konstruksie, die gebrek aan genoegsame kennis oor die industrie en die gebrek aan suksesvolle vrouerolmodelle in konstruksie nie.

Die studie stimuleer debat oor hoe die lae verteenwoordiging van vroue in konstruksie aangespreek kan word en hoe konstruksieloopbane vir vroue bevorder en aangemoedig kan word.

Hierdie artikel maak 'n bydrae tot die begrip van die faktore wat vroue in 'n manlikgedomineerde industrie aan die rand plaas en verskaf 'n aanduiding van pogings om meer vroue tot die industrie aan te trek. Gevolglik sal die hulpbronnepot vergroot gegewe die oorwegend akute vaardigheidstekort in die industrie.

Sleutelwoorde: Diskriminasie, opleiding, geslag, bouomgewing, loopbane, kultuur, kultuuragtergrond

1. Introduction

Women encounter pervasive gender issues in their chosen careers which require specific strategies to deal with them (Phaahla, 2000). In particular, they need to contend with gender role stereotyping which believes that a set of traits and abilities is more likely to be found among one sex than the other (Schein, 1978: 259). Women have been defined as inferior to men and they are therefore assigned the position of minors in both public and private spheres of life (National Gender Policy Framework, 2003). In addition, they arguably accept secondary roles without hesitation (Mathur-Helm, 2005: 63). Although women constitute the major segment of the South African population they account for only 35.2% of the eligible working age (Statistics South Africa, 2009). Gender inequality in the workplace is underpinned by job segregation and perceived roles associated with gender groups (Kornegay, 2000). In the construction industry with the number of women presently low, the implication is that individuals, the industry, and ultimately the community all suffer the consequences of only fully utilising the potential of one gender. Women are therefore a wasted resource (Mathur-Helm, 2005: 57). However, prevailing attitudes suggest that change will not be easy because the dominantly male makeup of the construction industry is a deterrent to women who fear isolation, discrimination and

harassment should they pursue careers in that sector. The nature of the workplace culture in construction is critical in explaining the underachievement of women in construction careers. This culture militates against their equal progression through the somewhat exclusionary and discriminatory environment that characterises the sector. Women without an in-depth knowledge of the cultural influences on construction careers soon become disillusioned with the discrimination and the lack of opportunities for themselves. They are regarded by males as added competition for the limited promotional opportunities that exist, and experience entrenched sexism (Bennett, Davidson & Gale, 1996: 273). Consequently, male attitudes are adversarial and confrontational. In addition, many young men still believe that women are both physically and psychologically unsuited to construction work, despite paying lip service to the notion that "women can do anything" (Thompson, 1996: online).

Typically young people start contemplating their career choices at approximately the age of 16 or in their last years of high school. Gender-based career stereotyping makes it particularly difficult for young girls to establish their own career choices or to diverge from the career choices dictated by their parents. A sense of isolation is another reason for high defections, with women having little chance of meeting other women working in construction. Education at school level is only part of the battle to recruit more women into the construction industry. Male builders need to accept women in the building workplace (Thompson, 1996: online).

There is a relationship between higher education and the employment choices of women (Phaahla, 2000). Women tend to congregate in areas considered traditional outlets for female employment. Female staff and students are typically drawn to faculties such as the humanities, education and the social sciences. Generally women do not make up large numbers in technology and applied science areas of study. Consequently, the jobs available to women are limited for social and economic reasons. The position of women is further exacerbated by the fact that gender in South Africa is also racially and culturally segmented, creating inequalities that are race-bound. White and Black women have extremely different levels of experiences regarding job and development opportunities (Mathur-Helm, 2005: 67).

While more enlightened senior management staff may have recognised the undesirable and debilitating effects of an entrenched male culture, there was little evidence to suggest that there had

been any significant erosion of it within the ranks of middle managers, employers or employees (Greed, 2006: 74). Women are still regarded as secondary to men in South African business culture (Mathur-Helm, 2005: 63). There is a view that women do not show leadership potential and behave differently from traditional male leaders (Mathur-Helm, 2004; Guppy & Rick, 1994). According to Johnson (1999), they are emotional and cannot shoulder responsibilities. What women do is rarely defined as leadership, given that masculinity is an implicit construct of leadership (Kloot, 2004: 472).

The South African definition of gender equality is guided by a vision of human rights which incorporates acceptance of the equal and inalienable rights of all men and women (Kornegay, 2000). Indeed, the rights of women need to be viewed as human rights. 'Equality' is specified and enshrined in the *Bill of Rights of the South African Constitution* (South Africa, 1996). Section 9(3) of the *Constitution* provides that no one may unfairly discriminate directly or indirectly against anyone on any grounds such as, for example, race, gender and culture. This prohibition on discrimination forms an integral part of processes to achieve social justice in South Africa. Gender equality, therefore, requires that the underlying causes of discrimination be systematically identified and removed in order to give women and men equal opportunities in every sphere of life:

In short, the economic integration of women, which comes only when market barriers are lowered and women are given an equal chance to attain decent work, remains a necessity for economic development and a worthy goal in its own right (ILO, 2008: 4).

In South African society women historically faced the burden of unpaid household labour in addition to income-generating work. A rigid and uncompromising organisation of working hours and environment prevented them from performing well, considering that they needed to take time off for childcare and other family responsibilities (Ellison, 2001; Wilson, 1998). Often these demands reduced their chances of full-time paid employment. In addition, in terms of the South African *Employment Equity Act of 1998*, labour market discrimination arises when employers make decisions about employees for reasons that are not related to genuine work requirements (South Africa, 1998). Discrimination is most obvious when an employer focuses on irrelevant personal characteristics instead of work performance or merit. As a result women in many organisations have to work extra well and hard to gain any prospect of promotion. Unfortunately women have not been benefiting

from government policies and legislation to advance their careers (Mathur-Helm, 2005: 58). There is, therefore, no correlation between policy and practice.

The generally accepted and popular image of construction is that of a male-dominated industry requiring brute strength and tolerance for outdoor conditions, inclement weather and bad language (Fielden, Davidson, Gale, & Davey, 2001). Women, therefore, have three choices, namely to be successful by behaving like men, to fail to adapt to the culture and leave, or by not acting like men to remain in unimportant positions (Bennett *et al.*, 1996: 275; Sachs, Chrisler & Devlin, 1992). According to Agapiou's study (2002), the image and perception of an industry were significant factors in determining career choice. In addition, the construction industry is perceived as being the epitome of crisis, conflict and masculinity, manifesting in the unsociable, confrontational behaviour that discourages women and ethnic minorities from considering construction as a meaningful career. The industry had an industry-wide problem with 'image', which made both men and women reluctant or uninterested in the industry (Gale, 1994). In their study Haupt & Smallwood (2005: 4) found that South African students had very limited knowledge and understanding of the construction industry. According to Fielden *et al.* (2001), the general lack of knowledge and information about the industry, the career opportunities, and what qualifications are offered further compound the problem of the low representation by women in the sector. Parents, teachers and school children generally believed that jobs in the construction industry were limited to bricklaying, joinery, painting and decorating.

Against the background that issues of gender equality have been extensively studied in advanced economies but less so in countries with less advanced economies, this paper highlights the findings of a study conducted in South Africa to examine the factors that influence the career choices of women, with the emphasis on the construction industry. The study examines the interconnection between gender, culture, religion, masculinity and the unattractive image of the construction industry as well as the career choices of women in South Africa. In particular, it provides insight into the popularity of careers in construction among women relative to other industrial sectors. It explores the prevalence of discrimination against women in construction and its overall impact on their final career choice preferences.

2. Methodology

A purposive sampling approach was adopted to gather data on the research topic. Construction companies, construction students, and professional women working in construction were surveyed using self-administered questionnaires. Data was encoded and analysed using SPSS (Statistical Package for Social Scientists).

The views of a convenience sample of 1 435 industry practitioners, 141 first- and final-year construction students and 17 professional women from the Gauteng and Western Cape provinces, where arguably most construction activity in South Africa generally occurs, were canvassed. The industry survey included 11 questions on aspects of gender practices and policies within their organisations. The student and professional women survey instruments included 83 and 33 statements, respectively, to which respondents were required to respond typically using a 5-point Likert scale of agreement.

3. Industry survey

The industry sample consisted of 1 435 participants in construction workshops held in all 9 provinces in South Africa over a 12-month period. The profile of the sample is shown in Table 1.

Table 1: Industry sample profile

<i>Industry participation</i>	<i>%</i>	<i>Province</i>	<i>%</i>
Architect	8.0	Eastern Cape	16.2
Contractor	19.6	Free State	5.5
Engineer (consultant)	21.3	Gauteng	15.7
Manufacturer	1.5	Kwazulu-Natal	23.8
Private sector client	5.8	Limpopo	3.5
Public sector client	19.4	Mpumalanga	5.9
Project manager (consultant)	7.6	Northern Cape	4.0
Quantity surveyor (consultant)	7.0	North-West	3.0
Co-contractor	3.6	Western Cape	19.2
Supplier	1.0	Many provinces	3.4
Other	5.4	Total	100.0
Total	100.0		
<i>Average annual turnover</i>	<i>%</i>	<i>Average annual employment</i>	<i>%</i>
<R1million	16.4	<_10	30.6
_>R1million <_R5million	25.4	>11<_50	25.9
>R5million <_R20million	18.8	>50<_100	8.6
>R20million	39.4	>100<_250	8.2
Total	100.0	>250	26.7
		Total	100.0

It is evident that the sample comprised mostly consulting engineers (21.3%), contractors (19.6%) and public sector clients (19.4%) who operated mostly in the Kwazulu-Natal (23.8%), Western (19.2%) and Eastern Cape (16.2%) provinces of South Africa. Most participants had average annual turnovers greater than R5 million.

Table 2: Average annual employment of females

<i>Number</i>	<i>%</i>
<10	90.5
>10<50	5.2
>50<100	.9
>100	3.4
Total	100.0

In addition, nearly all the participants (95.7%) employed on average less than 50 workers per annum with 90.5% of the sample employing less than 10 females on average per annum in their organizations.

Table 3: Employment categories of females

<i>Employment category</i>	<i>%</i>
Secretarial	69.1
Management (administration)	42.5
Unskilled (labourers)	31.2
Skilled (artisans)	19.9
Supervisory	17.3
Semi-skilled (operators)	16.2

Table 3 confirms that women are mostly employed to perform secretarial (69.1%) and administrative (42.5%) roles. Where they were employed on construction sites they were mostly employed at the level of labourers (31.2%).

Table 4: Gender-based issues

<i>Issue</i>	<i>Yes %</i>	<i>No %</i>	<i>Don't know %</i>
Same rights benefits and opportunities as males	92.2	3.1	4.7
Separate toilet and ablution facilities provided	83.2	14.9	1.9
Equal advancement and promotion opportunities	87.6	4.9	7.5
Paid same rates of pay (wages and salaries) as males	69.2	7.3	23.4
Visible management endorsement of non-discriminatory practices gender-based education programmes and information	65.2	18.5	16.3

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Simple clear and unambiguous communication of gender equity policy	55.2	22.7	22.1
Available funding targeted at improving status and qualifications of female employees	51.1	25.0	23.9
Written gender equity policy in place	44.5	34.9	20.6
Provision of gender-based educational material	27.8	50.0	22.2
Practices that might be regarded as discriminatory because worker was female	8.8	64.3	26.9

Relative to being asked about the prevalence of certain gender-based issues and practices in their respective organizations, nearly all the respondents reported that females were afforded the same rights, benefits and opportunities as males (92.2%). Similarly, most of them reported that separate facilities such as toilets and ablutions were provided for females (83.2%) who were afforded equal advancement and promotion opportunities (87.6%). However, substantially less reported that funding was available targeted at improving the status and qualifications of female employees (51.1%), written gender equity policies were in place (44.5%), and gender-based educational material was provided to employees (27.8%). Notably, nearly 25% of the respondents did not know what the situation was in their organisations relative to gender-related issues and practices.

Relative to observed gender-based discriminatory practices, respondents cited examples of these as follows:

'Decision not to award a tender to a woman because of skepticism'.

'Engineers undermine me and threaten to work me out'.

'No ablution facilities provided on site'.

'Female engineers had to be accompanied to rural sites due to danger'.

Comments suggestive of prevailing attitudes towards females in construction included:

'Too many unqualified females are appointed to top positions'.

'[Gender] equity is not a priority for management'.

'Heavy construction work negatively affects women's reproductive organs'.

'Nature of industry has not encouraged women to apply'.

'Construction sites are not suited to women'.

'Family responsibilities interfere with their [women's] progress'.

'Fellow workers are shocked at my [woman] excellent performance'.

4. Student survey

While the validity of students' views has been questioned (Ross & Elechi, 2002), their views need to be considered, given that they are one of the three cooperative partners in the cooperative construction education model (Haupt, 2003). The student sample was drawn from two major universities in the Western Cape and Gauteng provinces, namely the University of Johannesburg (55.3%) and the Cape Peninsula University of Technology (44.7%). The sample was constituted as follows:

- Junior (first- and second-year) students - 43.6% (males = 31.2%; females = 51.2%), and
- Senior (third- and fourth-year) students - 56.4% (males = 68.8%; females = 48.8%).

From Table 5 it is evident that most (60.8%) of the students majored in quantity surveying majors, 37.5% in construction management, and the remaining 1.7% in civil engineering. In terms of gender representivity, males dominated the sample.

Table 5: Student sample profile

<i>Institution</i>	<i>%</i>	<i>Programme</i>	<i>%</i>
CPUT	44.7	Construction Management	37.5
UJ	55.3	Quantity Surveying	60.8
Total	100	Civil Engineering	1.7
		Total	100
<i>Year /level of study</i>		<i>Gender</i>	
Junior	43.6	Male	61.0
Senior	56.4	Female	39.0
Total	100	Total	100

4.1 The impact of discrimination

Students were presented with five statements relative to gender-based discriminatory practices in construction. Their responses are presented in Table 6.

Table 6: Discrimination against women in the construction workplace

Rank	Statement	Sample		Males		Females	
		Mean	SD	Mean	SD	Mean	SD
1	Women on construction sites are not respected to the same extent as men	3.5	1.2	3.2	1.2	4.0	0.9
2	Women are likely to be sexually harassed on site	3.4	1.2	3.4	1.3	3.4	1.1
3	The fact that there are more male professionals in construction intimidates women	3.1	1.1	3.3	1.1	2.8	1.0
4	Women are more suited to administrative than production functions on site	2.9	1.3	3.4	1.2	2.1	1.1
5	Female students are intimidated by the male students in classes	2.2	1.2	2.2	1.2	2.2	1.1

The sample means suggest feelings of neutrality concerning issues of discriminatory practices except for disagreement on intimidation of female students by their male counterparts in class. Both male and female students agreed similarly that women were likely to be sexually harassed on site. They also disagreed that female students were intimidated by male students in their classes. However, female students agreed more strongly that women on construction sites were not respected to the same extent as men and were more negative about being intimidated by there being more male professionals in the industry. While males tended to agree, women tended to disagree that women were more suited to administrative than production functions on site.

There were linear relationships between the gender of students and their responses to issues of discrimination. The Spearman's correlation coefficient of 0.353 at the 0.01 level (2-tailed) suggests that females were more likely to agree that women on construction sites were not respected to the same extent as men. Similarly, a correlation coefficient of -0.457 at the 0.01 level (2-tailed) suggests that they were more likely to disagree that women were more suited to administrative than production functions on construction sites. In addition, the weak correlation coefficient of -0.188 at the 0.05 level (2-tailed) suggests that they were more likely to disagree that they were intimidated by there being more male consultants in the industry.

The Mann-Whitney tests suggested that responses were significantly gender-biased relative to women not being respected on construction sites to the same extent as men and women being more suited to administrative than site production function on construction sites. This

finding was confirmed by the Kolmogorov-Smirnov test statistics. The Chi-square tests confirmed that the association was not caused by chance and that there was some association between gender and responses to issues of discrimination.

Table 7: Impact of discrimination of women on career choices

	Male (%)	Female (%)
Discrimination impacts careers in construction negatively resulting in women rather choosing other careers	49.2	50.8
Discrimination creates a sense of being inferior	56.5	43.5
Discrimination results in less women in construction industry	0.0	100.0
Because of discrimination women tend to avoid construction and adhere to the conventional careers such as nursing	39.3	60.7
Men think they can do all things whereas even women can do men's work	0.0	100.0
Most women become unsure of the available choices in the industry and end up dropping out of construction	39.3	60.7

Table 7 shows the split by gender of responses to each of the issues concerning discriminatory practices in the sector. More than half of the respondents (females) reported that discrimination impacted construction career choices negatively, resulting in women choosing careers in other sectors. In addition, a similar proportion of the sample (males) suggested that discrimination created among females a sense of being inferior to their male counterparts. Only females reported that discrimination resulted in less women being employed in construction and that men thought they were the only ones who could do all things. Similar proportions of the sample (females) reported that because of discrimination women tended to avoid the sector and were unsure of the career possibilities in construction.

4.2 The impact of the low representation of women

Table 8: Impact of women on skills shortages

Rank	Statement	Sample		Males		Females	
		Mean	SD	Mean	SD	Mean	SD
1	An increasing number of women in construction will contribute to the improvement of skills shortage in the construction industry	3.5	1.1	3.3	1.1	3.8	0.9
2	The low employment of women in construction contributes to the skills shortage in the construction industry	3.2	1.2	3.0	1.2	3.6	1.1

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The sample means suggest agreement on the impact of women on skills shortages. However, female students agreed more strongly that increased numbers of women would reduce the skills shortage and that the low employment levels of women in the sector in fact contributed to the existence of the skills shortage. However, there was a statistically significant correlation albeit weak between gender and student responses to the impact of the low employment of women in construction to the skills shortage in the industry. The Spearman's correlation coefficient of 0.275 at the 0.01 level (2-tailed) suggests that females were more likely to agree that this was the case. Similarly, a correlation coefficient of 0.230 at the 0.05 level (2-tailed) suggests that they were more likely to agree that increased numbers of women in the industry would contribute to a reduction in the skills shortage.

4.3 Relationship between culture, historical background and career choice

Table 9: Relationship between cultural beliefs, career choice and career success

Rank	Question		Yes (%)	No (%)	Unsure (%)
1	Do you believe that cultural beliefs will influence the success of your career in the construction industry?	S	20.6	64.0	14.7
		M	20.3	60.8	19.9
		F	19.6	71.7	8.7
2	Do you believe that the cultural differences between males and females influence their career choice?	S	44.9	42.6	12.5
		M	50.0	35.1	14.9
		F	30.4	58.7	10.9
3	If yes do you believe that this influence contributes to the low representation of women in construction	S	52.3	31.8	15.9
		M	54.1	23.0	23.0
		F	50.0	40.6	9.4
4	If yes do you believe that this contributes to the prevalence of discrimination against women who have entered the construction industry	S	45.2	43.3	10.6
		M	42.4	42.4	15.3
		F	48.4	45.2	6.5

As is evident from Table 9 there are no apparent significant differences between the views of males and females on the influence of culture and historical background on their potential career success. However, a greater proportion of females disagreed that cultural beliefs would influence their success (71.7%) and that the cultural differences between the sexes would influence their choice of career (58.7%). While women generally tended to have more negative or positive

views, there were no significant statistical correlations between gender or year of study and responses regarding cultural and background influences.

4.4 Influences behind career choices

Table 10: Influences behind construction career choices

<i>Student statements</i>	<i>Sample (%)</i>	<i>Males (%)</i>	<i>Females (%)</i>
Opportunities	27.2	27.2	11.5
Looking at something I constructed makes me feel good – passion	11.0	8.5	0.0
Fascinated by the beauty of buildings	10.0	13.6	8.6
My background and family members	15.8	15.3	11.5
The fact that there were few women	7.5	0.0	20.0
To challenge the perception that construction is for males	7.5	0.0	22.9
Successful women in construction	2.8	1.7	5.7

Table 10 shows the relative proportions in the sample of males and females who responded to the statements on the influences behind choosing careers in construction. It is evident that males were more likely to be influenced by opportunities in the industry (27.2%), background and family members (15.3%), and fascination with buildings (13.6%). On the other hand, females were more likely to be influenced by the challenge presented by the male-dominant nature of the industry (22.9%) and the paucity of women employed in the sector (20.0%).

Table 11: Influences behind not selecting careers in construction

<i>Statement</i>	<i>Sample (%)</i>	<i>Male (%)</i>	<i>Female (%)</i>
Nothing	27.8	30.8	26.7
Poor working conditions	14.3	15.3	10.0
Poor safety and risk	10.0	11.5	6.7
Money	7.8	7.7	3.3
Discrimination against women	7.7	0.0	13.3
Lack of understanding of career opportunities in construction	6.7	7.7	6.7
Negative image of the construction industry	5.5	5.7	26.7
Lack of employment in construction	4.4	3.8	3.3
Sexual harassment by men	4.4	0.0	6.7

Similarly, Table 11 shows the proportion of the sample by gender who responded to the statements on the influences for not choosing careers in construction. The findings suggest that nothing would

deter both males (30.8%) and females (26.7%) from pursuing careers in construction if that was their choice. However, males were more likely to be deterred by poor working conditions (15.3%) and the poor H&S performance and risk management records (11.5%) of the industry. Females were more likely to be deterred by the negative image of the industry (26.7%), discrimination against women (13.3%), and poor working conditions (10.0%).

Using a three-point scale where 1 = low, 2 = medium and 3 = high, students were asked to rate the influence of careers in other sectors over construction.

Table 12: Influence of career choices in other sectors over construction

Rank	Influence	Sample		Male		Female	
		Mean	SD	Mean	SD	Mean	SD
1	The dangerous nature of the construction work	2.3	0.7	2.3	0.7	2.4	0.7
2	Challenging work environment	2.3	0.7	2.4	0.7	2.3	0.8
3	The inability to work and have influence in a male-dominated industry	2.3	0.7	2.3	0.7	2.3	0.7
4	Male dominance of the industry	2.3	0.7	2.3	0.8	2.2	0.7
5	The seemingly discriminatory environment of the construction industry	2.2	0.7	2.2	0.7	2.3	0.7
6	Knowledge of the construction industry	2.2	0.7	2.2	0.7	2.2	0.7
7	The masculine and unattractive image of the construction industry	2.0	0.7	2.0	0.8	2.0	0.7
8	Career expectations and financial prospects	2.0	0.8	2.1	0.8	2.0	0.7

The results in Table 12 suggest that the challenging work environment, the dangerous nature of construction, the inability to work and influence a male-dominated industry, male dominance of the industry, discriminatory working environment and lack of knowledge of the industry were rated as being medium to high influences on women choosing careers in other sectors instead of construction.

5. Analysis of student survey findings by year of study

The responses of students were further analysed to determine the impact, if any, of the year of study on their responses. However, there were no statistically significant correlations between year of study and student responses save for a weak linear negative relationship between year of study and female students being intimidated by

male students in classes. In this case the Spearman's correlation coefficient of -0.241 at the 0.05 level (2-tailed) suggests that as students progressed through their studies over time females would feel less threatened by the male students in their classes.

6. Professional women survey

The professional women sample consisted of 17 construction industry professional women working in various construction industry organisations at junior, middle and senior management levels.

6.1 The impact of discrimination

The sample was presented with nine statements related to the impact of discrimination on their careers. Their responses are shown in Table 13.

Table 13: Discrimination against women in the construction workplace

Rank	Statement	N	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	Mean	St Dev
1	Women experience discrimination on entering the construction industry	17	0.0	0.0	5.9	47.1	47.0	4.4	0.6
2	Women who work on construction sites are most likely to experience a higher prevalence of discrimination relative to those who work for consulting firms	17	0.0	5.9	17.6	52.9	23.6	3.9	1.2
3	Women experience discrimination in construction and do not experience upward mobility in comparison to their male counterparts	17	0.0	23.5	11.8	47.1	17.6	3.6	1.1
4	Males discriminate against pregnant women in construction	17	0.0	35.3	11.8	35.3	17.6	3.4	1.2
5	My contribution as a professional woman is not regarded as equally important as that of my male counterparts	17	11.8	20.4	11.8	23.5	23.5	3.2	1.4
6	Women who fall pregnant while working in the construction industry experience a higher prevalence to discrimination than those in other sectors	17	0.0	11.8	23.5	35.3	17.4	3.1	1.3
7	Women working in construction do not have the same opportunities to develop as their male colleagues	17	0.0	29.2	23.5	23.5	11.8	2.9	1.2

8	I have experienced discrimination in my workplace	17	5.9	17.6	23.5	35.3	17.7	2.9	1.2
9	The nature of the construction industry poses a threat to the career development of women in construction	17	0.0	41.2	17.6	11.8	29.4	2.1	0.9

From Table 13, it is clear that nearly all the women (94.1%) believed that women experienced discrimination while working in the construction industry. About three-quarters (76.5%) believed that this discrimination was more prevalent on construction sites than in consultancies. In addition, 64.7% agreed that women in construction did not enjoy the same opportunities for upward mobility as their male counterparts. More than half (52.7%) believed that pregnant women experienced discrimination which was more prevalent in construction than in other sectors. More than half (53.0%) of the respondents had experienced discrimination at work. Almost half (47%) reported that their contribution as professional women was not regarded as equally important as that of their male counterparts. In addition, 41.2% believed that the nature of the construction industry posed a threat to the career development of women in the sector.

6.2 The impact of low representation of women

The responses to two questions related to the impact of the low representation of women on the skills shortage experienced by the construction sector are shown in Table 14.

Table 14: Impact of women on skills shortages

Rank	Question	N	Yes (%)	No (%)	Unsure (%)	Mean	SD
1	Do you believe that the Employment Equity Act is addressing the skills shortage in construction?	17	50.0	14.3	35.7	1.9	0.9
2	Do you believe that the low number of women choosing careers in construction contributes to the skills shortage?	17	80.0	20.0	0.0	1.2	0.4

Half (50.0%) of the women believed that the Employment Equity Act was addressing the low representation of women in construction and subsequently the skills shortage in the industry. However, most (80.0%) of them held that despite this legislation low numbers of women in the construction industry exacerbated the skills shortage.

6.3 Influence of culture, nature of industry and career choice

Participants in the study were presented with three statements on the influence of culture and the nature of the industry on the career choices of women. Their responses are shown in Table 15.

Table 15: Cultural beliefs, nature of the industry and career success

Rank	Statement	N	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	Mean	St Dev
1	I would encourage other young women to pursue a career in construction because I believe that there is a place and a need for females in the industry	17	0.0	0.0	0.0	29.4	70.6	4.7	0.5
2	Women's cultural beliefs and background influence their success in the construction industry	17	5.9	23.5	29.4	11.9	29.3	3.3	1.3
3	My experience within the construction industry confirmed my expectations and beliefs of the industry as being male-dominated and discriminatory towards women	17	0.0	35.4	23.5	35.5	5.9	3.1	0.9

Professional women strongly agreed (mean = 4.7) that they would encourage women to consider careers in construction, as there was a need for more women in this field. However, they were somewhat neutral (mean = 3.3) regarding the influence of their cultural beliefs and background on their prospects of successful careers in the sector. They were somewhat surprisingly neutral (mean = 3.1) about whether their experience in the industry had confirmed their views about the industry being both male-dominant and discriminatory towards women. It is possible that as they gained experience and acceptance in the industry over time they became less sensitive to the male dominance and discrimination.

6.4 Influences behind career choices

It is evident that job opportunities in the South African construction sector driven by government initiatives, their desire to demonstrate their ability to compete equally with men in a male dominated

industry, availability of bursaries, influence of family and opportunities for financial independence were regarded as influences in choosing careers in construction.

Comments by women included, *inter alia*,

'I wanted to prove that women are strong and are capable of handling the harsh realities of construction activities'

'The fact that women are taken as powerless and unable to do what men can do. I want to be independent as an African woman who can do things without having to depend on male counterparts'

'I was attracted by non-formal clothing, the fact that work on site was not office-based, and jobs are constantly changing'

7. Student views versus professional women views

The findings suggest that experience of the industry by professional women tempered their views relative to the industry itself when compared with the responses of students. The findings suggest that there might be a relationship between the perceptions held by the female students about their success in construction and their experience of the sector. The responses of the professional women working in the construction industry suggest that this prospect is likely. Similarly, the experience of women in the industry suggested that as they gained more experience and acceptance in the industry they were able to hold their own and develop more realistic views of the nature of the sector.

8. Discussion

Despite government efforts to increase the participation ratio of women in construction, bodies such as the South African Women in Construction (SAWiC) and Construction Industry Development Board (CIDB) suggest that while there have been increases these have been marginal and at the lowest end of the CIDB contractor grades. Table 16 shows the respective CIDB contractor grades.

Table 16: CIDB contractor grading and breakdown of registered contractors

Contractor grading designation	Maximum value of contract	Total	Women owned	% of Total
1	R200 000	67 119	32 593	49
2	R500 000	4 735	2 206	47
3	R1 500 000	1 271	600	47
4	R3 000 000	1 718	692	40
5	R5 000 000	1 096	407	37
6	R10 000 000	877	274	31
7	R30 000 000	435	94	22
8	R100 000 000	121	10	8
9	No limit	119	1	1
Total		77 491	36 877	48

Source: CIDB 2003: online

The CIDB register of contractors has 77,491 construction enterprises of which 48% are owned by women, namely 36,877. However, 88.4% of these enterprises fall within the lowest category of registration, namely grade one. An additional 7.6% are in grades two and three. Only 4% are registered in grades four and higher. Only ten contractors are registered in grade 8. It is likely that the low numbers of qualified women entering the industry contributes to the lack of women-owned contractors in the higher grades of the CIDB register.

The survey of industry stakeholders confirmed that most construction firms employed small numbers of women per annum in their organisations. These women were mostly employed to perform secretarial and administrative roles. Where they were employed on construction sites they were typically employed at the level of labourers, suggesting that women were regarded to be more suited to administrative than production functions on site. Female students, in particular, opined that women on construction sites were not respected to the same extent as men, and were intimidated by there being more male professionals in the industry. There is evidently a need for women to review their own professional roles and accept themselves as competent professional women in their own right.

Nearly all the respondents reported that females were afforded the same rights, benefits and opportunities as males in their organisations, had separate facilities such as toilets and ablutions and were afforded equal advancement and promotion opportunities. However, substantially less reported that there was available funding targeted at improving the status and qualifications of female

employees, written gender equity policies in place, and gender-based educational material provided. These findings suggest a lack of visible and tangible commitment to empower women in their organisations.

Perceived or real discriminatory practices impacted negatively on career choices by women in construction. Arguably, if jobs or work climate were developed to provide a more desirable work environment devoid of overt and covert sexism and racism and inflexible working structures, an increase in the numbers of women attracted to work in construction would likely result. The current situation results in large reserves of skill and talent remaining untapped. The study found that increasing the numbers of women in the sector would reduce the skills shortage and that the low employment levels of women in the sector in fact contributed to the existence of the skills shortage. However, Dainty, Bagilhold, Ansari, & Jackson (2004) suggest that women have a poor initial understanding of the culture of the industry and the inherent difficulties of working in a male-dominated and -oriented environment. The findings of the study supported the view that there was a general lack of knowledge by women of the industry itself and the career opportunities offered by it, suggesting that there might be a relationship between knowledge of the construction industry and the choice of careers in construction.

The study found no significant differences between the views of males and females on the influence of culture and historical background on their career success. Contrary to common belief, cultural beliefs and backgrounds were not major influences on women's career choices. However, females agreed more strongly that neither cultural beliefs would influence their success nor the cultural differences between the sexes would influence their choice of career. Given the challenging work environment, dangerous nature of construction, inability to work and influence a male-dominated industry, male dominance of the industry, discriminatory working environment and lack of knowledge of the industry women were more likely to choose careers in other sectors instead of construction.

Women tended to believe that legislation such as the Employment Equity Act created the platform for addressing the low representation of women in construction. However, most of them held that despite this legislation there continued to be low numbers of women in the construction industry that exacerbated the skills shortage. Evidently, more than merely legislation is needed.

The study findings suggest that it is possible that, as they gained experience and acceptance in the industry over time, women became less sensitive to male dominance and discrimination. The study also found that women in construction did not enjoy the same opportunities for upward mobility as their male counterparts. Pregnant women experienced discrimination which was more prevalent in construction than in other sectors and many women had themselves experienced discrimination at work. The contribution of women as professionals was not regarded as equally important as that of their male counterparts. Clearly, the current nature of the construction industry posed a threat for the career development of women in the sector.

9. Conclusion

The findings of this study confirm the gender bias that still exists within the South African construction sector. The male-dominant nature of the industry accompanied by gender-based discriminatory practices experienced by women employed in the industry are challenges that need to be overcome if increasing numbers of women are to choose careers in construction. Legislation by itself is insufficient to boost the present low numbers of women and significantly reduce the skills shortage that their increased employment will produce. The overall poor image of the industry presents as a further inhibitive factor to women choosing to work in construction. The industry needs to make a more visible and tangible commitment to empowering women at all levels in their organisations by providing equal opportunities for women. Gender relations need to change. Access to construction education needs to be widened and the specific barriers, image and culture addressed. However, it is also necessary for women to review their own roles and accept themselves as competent women in the industry in their own right.

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