

AN ANALYSIS OF THE FACTORS INFLUENCING THE CHOICES OF CAREERS
IN CONSTRUCTION BY SOUTH AFRICAN WOMEN

By

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I dedicate this work to my mother Sekelwa, her late sister Welile, and my grandmother Suliwe. These are three generations of the strong women who gave me life and love in abundance. To all the future female construction managers, those studying towards a career in construction and those yet to be born, this research is also dedicated to you, may the triumph over gender barriers that make career choices in construction somewhat difficult.

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LIST OF ABBREVIATIONS

BE	Built Environment
BIBC	Building Industry Bargaining Council
CI	Construction Industry
CPUT	Cape Peninsula University of Technology
EEA	Employment Equity Act
MBA	Master Builders Association
RSA	Republic of South Africa
SA	South Africa
SACPCMP	South African Council for the Project and Construction Management Professions
SACI	South African Construction Industry
SAIB	South African Institute of Building
SAWIC	South African Women in Construction
SPSS	Statistical Package for Social Sciences
UJ	University of Johannesburg
WCP	Western Cape Province
WPN	Women's Property Network

ABSTRACT

Abstract of Dissertation Presented to the Higher Degrees Committee of the Cape Peninsula University of Technology in Fulfilment of the Requirements for the Degree of Master of Technology in Construction Management

AN ANALYSIS OF THE FACTORS INFLUENCING THE CHOICES OF CAREERS IN CONSTRUCTION BY SOUTH AFRICAN WOMEN

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The construction industry in South Africa defines a large sector of the economy. The total construction spend in 2002 exceeded R57.5 billion, of which 29.5% came from public sector orders and tenders, 13.6% from public corporations, and 56.9% from the private sector. The size and markets of a construction firm influence its level of professionalism and working practices. Gendering and sexual division of labour are important issues. Presently the construction industry employs a limited number of women at all levels. Additionally there is a low level of participation and representation of women on the committees of the learned societies associated with the industry. The low number of female students majoring in construction management at South African higher education institutions results in a limited number of qualified female construction managers. The consequent gender imbalance suggests a lack of empowerment of women in construction. Historically, job discrimination was institutionalized by law, including job reservation clauses. These laws were abolished following recommendations by the Weihahn Commission of Enquiry in 1979.

In South Africa discrimination on the grounds of race and gender constitutes an unfair labour practice. Further, the South African Constitution outlaws discrimination in Section 8.2, but makes provision in Section 8.3 for measures designed to achieve adequate protection and advancement of persons or groups or categories of persons disadvantaged by unfair discrimination. This study explored the factors enhancing or impeding career mobility for women in the South African construction industry, with the aim of investigating the factors influencing the choices of careers in construction by South African women. Relevant literature was comprehensively reviewed. Previous relevant research was studied. Both quantitative and qualitative research methods were used to gather data from multiple samples. Key findings included that women had a role to play in the construction industry and that they could build successful construction careers. However, there were various barriers to entry such as, for example, discrimination against women due to gender bias, the work environment on site and lack of sufficient successful role models. These factors impacted negatively on the choices of careers in construction by South African women.

CHAPTER 1 INTRODUCTION

1.1 Background

The challenging nature of the construction workplace and its impact on the careers of women has formed the basis of several studies. The ultimate aim of these studies was to develop packages of recommendations to address the barriers to the advancement of women in their careers. For example, they compared the careers in construction of matched pairs of men and women in order to establish the reasons for any disparity in their progression and experiences (Dainty *et al.*, 2001).

Historically, the construction industry is characteristically a male dominated sector in terms of employment at all levels (Haupt and Smallwood, 2004). Recruitment at senior and management levels by construction has been homogeneous, with a marked propensity for companies to attract, recruit and select men. This has led to a demonstrable under-representation of women (Dainty *et al.*, 2001).

The percentage of women employed in the construction industry globally is less than 10%. The percentage of women that are professionally registered or act as role models and leaders by managing their own construction firms is even less (Geerstemar, 2005). The South African construction industry has been described as the most untransformed industrial sector, because the industry is still dominated by white male management (Haupt 2005).

With the number of women in construction trades dismally low, the implication is that individuals, the industry, and ultimately the community all suffer from only fully utilising one sex. But prevailing attitudes suggest change will not be easy because the highly male makeup of the construction industry is a deterrent to women who fear isolation, discrimination and harassment should they pursue construction industry careers. Many young men still believe women are both physically and psychologically unsuited to construction work, despite paying lip service to the notion that “women can do anything” (Thompson, 1996).

The construction industry defines a large sector of the economy. The size and markets of a construction firm may strongly influence the level of professionalism and working practices. These factors are influenced by and influence the gendering of construction and its sexual division of labour (Gale, 1994). The construction industry holds a unique place in the labour market. It is responsible for the fabric of society; it affects our quality of life and is often at the cutting edge of development and innovation (Fielden *et al*, 1999). The construction industry has a particularly low participation rate for women, both for those employed in the industry and for those engaged in training. Equal opportunities present a challenge in the construction industry, one of the most male dominated industrial sectors. Much remains to be done to promote the construction industry to girls considering their options for careers when they leave school (Agapiou, 2002).

While the entry of women into site surveying and construction management is relatively recent, there have always been greater numbers of women at the “*soft*” end of the construction spectrum in housing, but men still comprise the majority. It would

seem that women's "place" is already clearly circumscribed as being in the more soft part of the construction industry (Greed, 2000). Male consulting professionals distinguish between housing and construction. The view being that housing is not "real" building; hence it is referred to as the "soft" part of construction. The building site is still used as the great excuse as to why women should not go into construction (Greed, 2000).

The construction industry is not only the most male dominated of all the industries in the world, but it also appears to exhibit the greatest degree of vertical segregation. Women are principally engaged in clerical, secretarial, personnel and protective services, with a high percentage employed in part-time positions. In addition to occupational segregation, the type of organisation within which they are employed also segregates women. For example, more women are employed by Housing Associations than by any other sector within the industry (Fielden *et al*, 1999).

The industry is under-utilising the full range of skills and talents in the population because of continuing unequal opportunities for some groups within society. Therefore, creating inefficiency and ineffectiveness by projecting a non – pluralistic image, results in shrinkage in the pool of potential role players and customers of the industry (Dainty *et al*, 2001). Literature in the late 1970's dealing with the specificity of the position of women in the workplace or society, irrespective of nationality and class position presented women as a homogeneous group bonded together by one characteristic held in common – their oppression in all aspects of life. Descriptions of this oppression covered, inter alia, mental breakdowns, discrimination in jobs and education, sexuality, and dependence on men. These writings and research

refer to the numerous ways in which oppression is experienced by women in their various industries (Kuhn & Wople, 1978).

Literature on gender-based inequalities in access to resources, knowledge, skills and modern means of production exists, but no rigorous analysis (or theoretical explanation) is available on the implications for choice of techniques and allocation of resources. Similarly, existing studies lament the low rate of adoption of improved technologies among women but shed little light on the multidisciplinary character of the constraints to their wider dissemination (Ahmed, 1985). It has long been known that women in general experience barriers in their career development. These barriers apply particularly to women who choose careers in non-traditional occupations such as the construction industry where, for example, of all industrial sectors, the smallest representation of women is found (Bennet *et al.*, 1999). Making one's way through the minefields that are found in the academic professions is difficult for anyone, but issues encountered by women in academia and their chosen careers are pervasive and require specific strategies to deal with them (Phaahla, 2000).

Anecdotal evidence suggests that huge gender inequalities exist in many realms of life. Girls receive less formal education, and thus more women than men are illiterate and innumerate. The proportion of women in wage employment is far lower than for men, and their access to and control over income and assets is limited. Women are hugely under-represented in policy and decision making at all levels. It is estimated that around 30% of all households worldwide are female-headed and these constitute some of the poorest (Visvanathan, Duggan and Wiegersma, 1998).

Any review of the historical origins of gender discrimination in South Africa must begin with the law, particularly the Roman law, since it is the earliest source of South African law and heavily patriarchal in nature. The Roman concept of *patria potestas*, for example, originally accorded to a man the power of life and death over his wife and children in certain situations. The array of sweeping powers conferred by Roman law upon male heads of household under the concept of *patria potestas* is perhaps the most important source of gender discrimination in South African law (Zaal, 1995). The patriarchal marital power, which imposed inferior status upon women married in community of property, was a Roman law concept that lived in South Africa until 1 December 1993 (Zaal, 1995).

Historically, job discrimination was institutionalized by law, including job reservation clauses (Republic of South Africa (RSA), 1956). These laws were abolished following recommendations by the Weihahn Commission of Enquiry in 1979. In South Africa discrimination on the grounds of race and gender constitutes an unfair labour practice (RSA, 1988). Further, the South African Constitution outlaws discrimination in Section 8.2, but makes provision in Section 8.3 for measures designed to achieve adequate protection and advancement of persons or groups or categories of persons disadvantaged by unfair discrimination (Horwitz *et al.*, 1996; RSA, 1996). The danger in post – apartheid South Africa is the amalgamation of African customary law and Roman Dutch legal philosophies into a new national hybrid system, because where two patriarchal systems combine, women are disadvantaged by the consequent mutual reinforcement of anti – female tendencies (Zaal, 1995).

Young people seriously contemplate their career choices by the age of 16. Gender-based career stereotyping makes it particularly difficult for young girls to establish their own career choices or to diverge from the career, which their parents dictate (Thompson 1996). A sense of isolation is another reason for high defections with women having almost no chance of meeting other women working in the industry and, therefore, lacking the support structures they need. Education at school level is only part of the battle of ensuring that there are more women being recruited into the construction industry. 'It is a two way thing,' 'Male builders also have to accept women in the building workplace' (Thompson, 1996: 2). There is a relation between higher education and women's employment. Women tend to congregate in areas seen as traditional outlets for female employment. Female staff and students are to be found in faculties such as humanities, education and social sciences. Women do not constitute part of what may become a preferred area of study - technology and applied sciences. The result is that the jobs available to women are limited for social and economic reasons (Phaahla, 2000).

In South Africa choosing a career in the construction industry has not been a popular choice by women. A significant lower proportion of the female labour forces are found in the construction industry than other industrial sectors (Geerstemar, 2005). The percentage posts occupied by women in the construction industry in South Africa is 12.4% compared to the social industry where 55% of the posts are occupied by women (Geerstemar, 2005). The percentage of women employed in the construction industry would be much worse, if not for the inclusion of secretarial and head office administrative staff, which is predominately female. It may be concluded that the number of women active in technical, professional and managerial roles is low.

Women made significant progress in choosing careers in the sciences since 2003, but made far less progress in choosing careers in engineering, particularly construction management (Geerstemar, 2005).

Based on qualitative research studies it was found that the reservations held by girls, some parents, and teachers about the construction sector, are to do with issues such as the physical nature of the work, the social dynamics of working in a male-dominated environment, and the availability of career paths on the completion of apprenticeship training. There is a paucity of knowledge among parents about which occupations there are in the construction industry and the pathways that exist following apprenticeship training (Agapiou, 2002).

Central to explaining women's career under-achievement in the construction industry is the nature of the workplace culture. This has been shown to militate against their equal progression through the exclusionary and discriminatory work environment that it promotes. Women entering the industry without an in-depth knowledge of the cultural influences on construction careers soon became disillusioned with the discrimination and lack of opportunities that they confronted. Their male peers perceived them as added competition for the limited promotional opportunities available, which incited resentment and discriminatory behaviour from their male colleagues (Dainty *et al*, 1999). Furthermore, in addition to having to deal with the overt resistance to their development, women also had to conform to work practices geared towards men's needs. These included long working hours, geographical instability and hence, an expectation that they would subordinate their personal lives. This work ethos had endured because of the attitudes of male middle

managers, which were empowered to impose such work doctrines within their own autonomous project environments (Dainty *et al*, 1999).

While more enlightened senior management staff may have recognised the undesirable and debilitating effects of an entrenched male culture, there is little evidence to suggest that there has been any significant erosion of it within the ranks of middle managers, employers or employees (Thompson, 1996). Globally women have increasingly been strengthening the articulation of their rights with respect to equality in decision-making and balance in gender representation (Visvanathan, 1998). As a result of the industrialization of economies, it is necessary to integrate women into economic systems through necessary legal and administrative changes.

Women have always been part of the development process and economic growth (Visvanathan, 1998) although not given due recognition for their contribution which is not often as visible as that of their male counterparts. Further, the perception exists that women are unskilled and therefore worthy of only low wages (Nisonoff, 1998) and non-managerial and non-supervisory forms of work. To explain and describe inequality between the sexes, contemporary feminism has turned to anthropology with many questions in its search for a theory and a body of information. The subjugation of women is a fact of our daily existence, yet it neither began with modern capitalism nor automatically disappears in social societies (Reiter, 1975)

In looking at the various cultures it is found that sexual inequality appears widespread and that the institutions in which it is embedded have a long and complex history. To truly understand the phenomenon its roots must be traced in their many permutations and transformations (Reiter, 1975). In the early 1990's it was predicted that, at the current rate of change, it would take some 400 years for women and men

to be equally represented in top positions of power. International research and literature document the tardiness of the process and offer a variety of explanations to this prediction, ranging from the inequalities and discrimination, organizational structures to organizational settings, organizational cultures, professions, vocations and management styles (Hojgaard, 2002).

The Employment Equity Act No 55 of 1998 recognizes that apartheid and other discriminatory laws and practices have led to disparities in employment occupation and income within the national labour market. Further these disparities have created such pronounced disadvantages for certain categories of people such as females, that simply repealing discriminatory laws cannot redress them (RSA, 1998). The stated purpose of the Employment Equity Act No. 55 of 1998 is to achieve workplace equity relative to the under-representation of designated groups in employment such as women. To achieve this end every employer is required to promote equal opportunity in employment through the elimination of unfair discriminatory policies and practices. This Act further expects employers to implement affirmative action measures to redress the disadvantages in employment experienced by designated groups, in order to ensure their equitable representation in all occupational categories and levels in the workforce. The Act specifically prohibits unfair direct and indirect discrimination on the basis of gender and sex (RSA, 1998).

Madikizela and Haupt (2004) surveyed 363 participants as part of a study relative to gender issues in construction during a series of multi – stakeholder workshops and seminars. In another study four years later 1,072 industry stakeholders were surveyed as part of a study relative to gender issues in construction (Haupt and

Smallwood, 2008). The findings of these studies are compared in Table 1. It is evident from both studies that there was a generally low representation of women within the organizations that were surveyed.

Table 1.1 – Comparison of findings

	Madikizela & Haupt, 2004	Smallwood & Haupt, 2008
N	363	1072
No women employed	1%	3%
Employment of <10 women	70%	87%
Gender equity policy in place	49%	43%
Poor communication of gender policy	42%	46%
Provision of educational material on gender issues	34%	26%
Non- discriminatory employment practices	66%	65%
Equal opportunities for promotion of women	87%	88%
Availability of funding for the promotion of women	48%	52%

Despite legislation such as Employment Equity, the South African construction industry appears slow to achieve workplace gender equity. From Table 1 it is evident that 70 % and 87.2% respectively of employers had less than 10 women employed. Less than half (49% and 43% respectively) of the samples responded that their firms had a written gender equity policy in place. These largely took the form of corporate policy. According to less than 50%; (42% and 46% respectively) of the respondents the gender policy was not communicated to workers in simple, clear and unambiguous terms. Just more than a third (34%) and a quarter (26%) of the respondents respectively provided their workers with educational material on gender issues. Further only 66% and 65% of the firms had management that visibly endorsed non-discriminatory employment practices and education programs or information about gender issues. While 87% and 88% respectively of respondents reported that

their firms provided equal opportunities for female workers to be promoted, only 48% and 52% respectively indicated that funding was available specifically targeted at improving the status and qualifications of their female employees. Relative to whether there had been any discriminatory practices against workers because they were women, 11% reported such practices had taken place in their firms. Comments such as “If employed, women would not be treated equally and would face harassment from employers and fellow workers” confirm the deep - routed reluctance of the industry to transform itself and redress the gender disparities in employment, occupation and income within the South African construction industry (Madikizela and Haupt, 2004). Women are under-represented in management, particularly in the traditional project-based industries of construction and engineering. The experiences of women in both the traditional and non-traditional project environment offers an opportunity to investigate the importance and nature of gender relations and the "gendering" of organisations and project organisations (Cartwright and Gale, 1995). There is no doubt that organizational cultures are essentially gender biased. All organizations embody a male managerial culture because when both organizations and management systems were first formed only males were in the workforce (Still, 1994)

1.2 Problem statement

The research problem may be stated as follows:

Considering the perceived unattractiveness of the construction industry, a low number of women are choosing careers in the construction industry due to several factors that impact career choice, resulting in the poor implementation of the provisions of the South African Employment Equity Act, lack of women empowerment, and a shortage of skills in the construction industry.

1.3 Hypotheses

The hypotheses to be tested in this study are:

- H1. The construction industry is unattractive to women as a career choice
- H2. Low numbers of women are choosing to follow careers in construction.
- H3. Women have little knowledge of the construction industry resulting in unrealistic career expectations.
- H4. Male dominance of the construction industry is a primary negative factor that discourages women from embarking on careers in construction.
- H5. The work environment of the construction industry militates against women's ability to work on a construction site.
- H6. The cultural upbringing of women influences their choice of careers in the construction industry.
- H7. Where women have chosen construction careers they have been discriminated against
- H8. The lack of employing women in construction contributes to the skills shortage in the industry.

1.4 Aim

The aim of this research is to investigate the factors influencing the choices of careers in construction by South African women.

1.5 Objectives

The primary objectives of the study are:

- To establish the basis for women choosing the construction industry as a career.
- To determine the extent of the popularity of careers in construction among women relative to other sectors.
- To investigate the expectations of women in relation to the knowledge they have of the industry before entering it.
- To determine the comparative levels of representivity of men and women across all levels of employment in construction and whether the dominance of one gender discourages the other from pursuing careers in it.
- To investigate the influence of the work environment of the construction site on recruitment to the industry by gender.
- To investigate the relationship between the cultural backgrounds of women and the career choice preference within the construction industry
- To evaluate the prevalence of discrimination against women who have entered the construction industry

To investigate the impact, if any, of the employment of women on the skills shortage experienced by the construction industry.

1.6 Methodology

The methodology for this study will be based on an approach that assesses the relationship between several factors such as image of the construction industry and the decision of women to work in the construction industry. An extensive review of the literature related to the research topic will be done that will include a survey of previous studies in the field. To test the hypotheses and achieve the objectives of the study the research methodology will include both qualitative and quantitative methods. The qualitative research will be carried out using self-administered questionnaires and interviews with selected samples of women currently working in or studying towards future employment in the Construction Industry and will include construction industry employers' stakeholders. The quantitative research will consist of a questionnaire developed from the literature review and the content analysis of the interviews. Collected data will be statistically analyzed using the Statistical Package for Social Sciences (SPSS) and the findings from this analysis will be discussed and compared against the literature reviewed. Conclusions will be drawn from the analysis and recommendations will be made for further studies relative to the subject.

1.7 Limitations

This research project is subject to the following limitations:

The student sample will be limited to built environment students registered for their first and final years in Western Cape and Gauteng Province tertiary institutions.

The industry sample will be limited to construction organizations involved with the industry, to investigate perceptions of women in construction organizations and also on women who are employed by construction companies.

1.8 Assumption

It is assumed that all students, organizations and construction companies as well as their employees approached to participate in the surveys will have sufficient knowledge about the subject and co-operate and respond accurately without any prejudice to the questions asked of them.

1.9 Definitions of Key Terms & Concepts

Building: includes: Any structure attached to soil. Any building or such structure or part thereof which is in the process of being erected or any prefabricated building or structure not attached to the soil (Occupational Health and Safety Act, 1993)

Construction Work: Is the erection, maintenance, alteration, renovation, repair, demolition or dismantling or addition to a building or any similar structure (Occupational Health and Safety Act, 1993)

Culture: An aggregate product of the processes occurring in human society and typically consist of social phenomena as beliefs, ideas, language, customs, rules and patterns (Faure and Rubin, 1993)

Cultural upbringing: As used in study means the body of learned behaviors which one has been taught in the process of their growth within the environment of their family homes as well as their society (Faure and Rubin, 1993)

Discrimination: Any distinction, exclusion, restriction or preference based on race, colour, descent, or national or ethnic origin which has the purpose of nullifying or impairing the recognition, enjoyment or exercise, on an equal footing, of human rights and fundamental freedoms in the political, economic, social, cultural or any other field of public life (Sunila Abeyeseekera, 2001)

Empowerment: Refers to the process of "conscientisation" which builds critical analytical skills for an individual to gain self-confidence in order to take control of her or his life. Empowerment of women is an essential process in the transformation of gender relations because it addresses the structural and underlying causes of subordination and discrimination (Kornergay, 2000)

Equality of Opportunity: Refers to a fundamental human right embedded in the Constitution of South Africa. This Gender Policy Framework aims towards the achievement of *equality of opportunity*, in access to and share of employment opportunities, services and resources as well as in equality of treatment by employers and service providers (Kornergay, 2000)

Equality of Treatment: Refers to meeting the specific and distinct needs of different social categories of women and men. This can often involve special programmer and the commitment of additional resources, for example in the case of women and men with disabilities. Equality of treatment does not mean treating all men and all women in exactly the same way (i.e. in a gender blind fashion) as this would only serve to perpetuate existing disparities (Kornergay, 2000).

Gender: Refers to culturally and historically specific concepts of femininity and masculinity, and the power relations between men and women. Gender is not the same as sex; it refers to the social construction of sex roles and the relations between the sexes (van den Hombergh, 1993).

Knowledge: Is information that can be recalled (Haupt, Chileshe and Miller, 2005)

Skills: The learned ability to bring about pre-determined results with maximum creativity, often with minimum outlay of time and energy or both (Haupt, Chileshe and Miller, 2005)

1.10 Chapter outline

Chapter One: Introduction - This chapter is a synopsis of the background of the participation of women in the construction industry, highlighting factors of the historically male dominated image of the industry. The problem statement, hypotheses and objectives of the study, which are congruent to this background, are included in this chapter.

Chapter Two: Literature Review – This chapter will highlight and discuss literature on the discrimination against women, the construction industry as well as past and current legislation relative to discrimination, in order to formulate an understanding of the subject of the study. Literature on past research conducted, which is relative to this study, will also be discussed.

Chapter Three: Research Methodology - The research instrument comprising of the methodologies, which are used to effectively test the hypotheses and achieve the objectives of the study will be discussed in this chapter.

Chapter Four: Analysis of the questionnaires - The analysis of the data using the SPSS application will be presented in this chapter. This chapter will also identify data, which is collected but is not entirely relevant in achieving the set objectives of this study.

Chapter Five: Analysis of the findings and literature - The findings will be discussed and compared to the literature reviewed in this chapter. This chapter will also identify data, which is collected but is not entirely relevant in achieving the set objectives of this study.

Chapter Six: Summary of Conclusions and recommendations - In this chapter, the study will be summarized, with conclusions being drawn from the research findings; recommendations will be made relative the domino effect of the comparison of the literature to the findings.

1.11 Chapter summary

This chapter outlined the framework of the entire research study. The preliminary literature review focused on the historical background of the construction industry particularly with regard to the participation of women. The problem statements relating to the participation of women in construction and the relationship between the image of the construction industry and the career choices by women in construction were stated in this chapter. The aim of this study was to investigate the impact that the cultural background and the masculine image of the construction have on careers choices in construction by women

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

In this chapter literature will be reviewed that will conceptualize the problem statement, hypotheses and objectives of the study. In particular this literature review will include reference to the historical background, societal and domestic roles of women and the relationship between these and the roles, which they play or could, play in their workplaces, in this case the construction industry.

2.2. The Historical Background and Role of Women

Historically the greater majority of African women have been farmers. Typically on most days they have to work in the fields from four to eight hours, aided only by a simple hoe to provide basic food for their families. They then have to work a second labour day fetching firewood and water, and drying, shelling, storing and cooking the food from their garden, all the while caring for their children (Henn, 1995). In historically rural African areas, very poor levels of household infrastructure multiply the time needed for household chores (Phaahla, 2000). The typical labour day of rural women has changed little since the pre-colonial era, except that it has become longer and therefore harder. The social constraints, which shaped the economic and domestic work of a woman in the pre-colonial period, still hold, although modified by the colonial integration of African rural economies into international economic systems (Henn, 1995)

Traditionally the adult primitive woman was first and foremost a wife, whose life was centered in her home and family. A woman passed at marriage from under the authority of her father to that of her husband; consequently the husband's authority as such was not challenged. Neither the wife nor anyone else in that environment disputed important decisions, for example with regard to the home, the upbringing of the children and the betrothing of daughters and sons, and so forth as these rested with the husband and him alone (White, 1995).

“They say ‘life brutalizes.’ That they recognize it explains why, for all that has been said to the contrary, they remain painfully human. They are women of tremendous strengths, these women of the shadows. One of their strengths, and not the least, is their silence which outsiders have understood as submission” (Beneria, 1892: xi.)

Several pertinent questions are raised and framed against the historical background and societal and domestic roles of women. These include according to White (1995) the following:

What is the role of women in African families?

Are adult women merely passive breeders, under the jurisdiction of their husbands?

Are women in fact creatures of such intense sexuality that only the institution of marriage and the firm hand of a husband can control them?

Do African women actually run their families from behind the scenes, and African men just take the credit for workings of a women's daily life?

All the above are relevant questions to investigate the factors influencing the choice of careers in construction by South African women. The cultural roles that women are given the opportunity to take in their homes and societies and effectiveness they have in decision and the ability to excel in these roles, will impact

on their ability to be assertive when deciding on a career choice. Historically women globally have lived and survived in patriarchal societies. In these societies patriarchy is an autonomous system of social relations between men and women in which men are dominant (Garmarnikow, 1978). Women have been fighting for equal rights for well over 100 years. The centre of struggle lies in changing institutionalised patterns of behaviours and allocations of social roles (Sacks, 1982).

A division of productive labour by age and sex is historically a defining characteristic of humanity that distinguishes humans from other animals. While carrying, bearing, and nursing babies is certainly productive labor, no human society has defined this as the totality of women's labour. Therefore in all societies, women combine the physical activities of childbearing with the physical activities of producing food and material objects. In human societies, physical activities are performed in the context of social relations. Childbearing and childrearing involve at least a relationship of motherhood, and production involves, most commonly, wifehood and sisterhood. What is striking about the productive activities assigned to women is their variety and importance in providing subsistence. Almost every productive task undertaken by humanity is assigned to women in one or another place. Yet "men's work" and "women's work" have been defined very differently by different societies (Sacks, 1982).

The subjugation of women is a fact of daily existence. Yet it neither began with modern capitalism nor automatically disappears in social societies. In the past research of various cultures it was found that sexual inequality appeared widespread and that the institutions in which it was embedded had a long and complex history (Reiter, 1975). Women are an unequal and disadvantaged group in South Africa. This inequality and disadvantage is further compounded by variables such as race, class, culture and geographic location. It is systemic and entrenched in the structures, norms

and values of the South African state and civil society. This prejudiced state is pervasive but is also often hidden, complex and insidious. The emancipation of women and the attainment of equality in the political, economic, social and cultural spheres of life is a long term process of transformation that fundamentally challenges the way in which society is organized (Albertyn, 1995).

The transformation of the South African state is a long-term process namely from an authoritarian regime benefiting a few, to an open and accountable government committed to the upliftment of the poor, oppressed and previously excluded communities, groups and persons. It involves fundamental changes to both civil society and the state and places overwhelming demands on the time; skills and resources of both women and men (Bernstein, 1985). South African women have lived in a society split by the cleavages of apartheid. This ideological system effectively divided the people of South Africa into separate groups. From the enforced divisions differences in the position of women arose. These have shaped the lives of South African women from different racial backgrounds. Their life roles were laid down at birth, in the first place by skin colour, and the second place by sex and economic class. To an overwhelming extent the whole life of a female child, her education, her possibility of achievement, jobs and status, as well as everything affecting her personal relations, is predetermined by these three factors. If she questioned the role into which she had been cast, and then she would find that there was no way she could change it save by changing the whole society. This dilemma applied to men as well as women, but it applied most forcibly to African women (Bernstein, 1985).

South Africa's first democratic elections in April 1994 not only delivered a victory for the struggle against apartheid and for the African National Congress (ANC), but also heralded a new era for women, who had been the backbone of the

liberation struggle. A milestone along the way was the victory won by the women who demonstrated outside the World Trade Centre in protest against the exclusion of women from the Multi – Party Negotiating Process. National Women’s Day, 9 August, in 1993 marked a change in direction for women in South Africa. The Parliamentary Joint Standing Committee on Justice met to consider legislation aimed at the promotion of equality between women and men and the prevention of family violence (Kadalié, 1995). A few months later, in December 1993, the Prevention of Family Violence Bill was passed, outlawing rape within marriage expediting and increasing the accessibility of interdict procedures for victims of domestic violence (Kadalié, 1995). Furthermore the interim Constitution was recognised which outlawed unfair discrimination on grounds of sex or gender, and provided for the establishment of a Commission on Gender Equality.

2.3 Profile of South African Women and their societal and workplace roles

African women constitute the poorest socio-economic sector of the South African population, while most of the economically active white, Indian and coloured women are found in the clerical, sales, supervisory, technical, and manufacturing sectors. The majority of African women who are employed are concentrated in service and agricultural work. The small percentage of African women in the professional sector is found mostly in the teaching and nursing professions. The majorities of African women are unemployed and live in impoverished rural areas (Kadalié, 1995).

Research studies have shown that to be accepted women need to behave – or feel they need to behave like men. Gender values have been described as a continuum for both men and women and suggested that women holding similar values as male counterparts are drawn to similar occupations. This perhaps is oversimplification or

convenience. However managing diversity is about acknowledging diversity. Part of acknowledgement is an attempt to understand the needs of women. For women to be empowered they must have certain basic social and economic conditions – conditions which are provided by employment. The conditions women require cannot be assumed to be the same as those required by men (English, 2006).

In spite of the fact that South Africa is considered by some international indicators to be among the upper-middle-income countries of the world, the majority of South Africans live either in abject poverty or in fear of becoming poor and the majority of these people are women living in peri-urban and rural areas (Kornergay, 2000). Typically, of all the households in the South African rural areas, over 50% are headed by women, despite the fact that an estimated three million adult women are functionally illiterate (Kadalie, 1995). Post-apartheid South Africa is marked by its rapidly shifting cultural geographies where the position of women illuminates critical issues about how the political and social structure negotiates its contradictions and safe spaces (Ali – Dinar, 2006).

While South Africa is a developing country, some lessons can be learnt from Europe regarding the entry of women into the construction industry. The first world has already displayed that providing access to training and work for women is not enough if gender entrenched stereotypes of women's occupations continue to be held by employers. In addition, the recruitment literature of the construction industry is gender biased, offers no career advice to women, and still unaccommodating of women entering it (English, 2006).

2.4 Impacting factors on career choices

The image of construction is that of a male-dominated industry requiring brute strength and tolerance for outdoor conditions, inclement weather and bad language.

Previous research has identified image and perception of an industry as significant factors in determining career choice. Six percent of students surveyed in the United Kingdom (UK) chose a professional construction career as one of their preferred choices, and two percent a labouring construction trade, namely bricklaying or carpentry. Among older students, construction was more popular with 12% citing it as their most preferred choice, and 16% their least preferred option (Agapiou, 2002). 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 (Gale, 1991).

The construction industry has an industry – wide problem with ‘image’, which makes both men and women reluctant or uninterested in the industry. This problem is compounded by the general lack of knowledge and information about the industry, the career opportunities it can offer and what qualifications are offered. Parents, teachers and school children believe that jobs in the construction industry are limited to bricklaying, joinery, painting and decorating. Construction is still viewed as a highly gendered activity, which is perpetuated by the industry itself through its continuing use of gender, biased terminology, such as, for example, craftsman, chain boy or foreman (Fielden *et al*, 1999).

2.5 Perceptions of parents and girls

‘Things are changing but despite all the law if someone doesn’t want to employ a woman they won’t’ (Agapiou, 2002:239).

There is a general perception among parents and girls that if a woman wanted to work in a particular area she would be ‘generally accepted by her co-workers’. Despite the belief by many parents ‘that girls can do anything, there remain tensions

for some parents between wanting to support their daughters, yet at the same time being hesitant about the difficulties that may be encountered. As one mother said ‘As much as we have nice airy-fairy ideas and they may be policies written on paper, the reality is we live in a society where everyone will look after themselves and I don’t believe too many employers will take on tradeswomen as yet. It’s still an unknown quantity’ (Agapiou, 2002).

While parents and significant others do have influence over what subject options are chosen by their daughters and what outcomes they may lead to, it appears that the girls themselves exercise a degree of control over what they choose to study at high school. With many parents being subject to time constraints, they may find it difficult to consult key personnel in schools and therefore rely on information coming home with the student (Agapiou, 2002).

2.6 Career choice

Education and training are critical to the growth and development of the economy of any country. At a social level, the route to upliftment in all areas is education. At an economical level, shortcomings in delivery of educational development programmes in educational institutions could ultimately lose South Africa foreign investment if there is not the skilled workforce to produce the outcome the investor has supported (English, 2006)

One of the most crucial issues in resolving social inequity is the education of girls. It has been proven to reduce fertility and infant mortality rates, promote better health, nutrition and quality of life among families, encourage greater economic productivity and labour force participation and improve overall social and economic development. Increasing girls' access to education must include the participation of all sectors of society. Parents play a critical role in their children’s development and are

primarily responsible for the environment in which children are socialized. Conscious decisions to favour and value male family members hinder girls' development from birth. While structural poverty plays a pivotal role in these decisions, parents' own biases and their unwillingness to work around the obstacle of poverty help to reinforce the subordination of girls within the family (Pan American Health Organisation, 1994)

Unlike men, recent female entrants to the industry were unlikely to have been advised to join the industry by friends and family or by guidance teachers, or to have been advised by same-sex role models with experience of working in construction. Rather, they tended to have been the subject of targeted recruitment campaigns or had read literature specifically aimed at attracting them to the industry. Consequently, they had a poor initial understanding of the culture of the industry, and the inherent difficulties of working in such a male dominated environment (Dainty *et al*, 1999). The choices of a few of the students (16.6% of the 95.2%) had been influenced by their teachers and/or guidance teachers. These findings suggest that they were not major role players in guiding the career choices of students. This survey also established that students had very limited knowledge and understanding of the construction industry and what it produced (Haupt & Smallwood, 2005).

Furthermore, construction higher education, which for most formed the interface between career choice and working in the industry, was found to have provided a sheltered environment, and to have presented a sanitised view of the realities of working life in the sector (Dainty *et al*, 1999). These factors resulted in younger women becoming disillusioned with the reality of career opportunities when exposed to them and in many seeking alternative positions outside of the industry as a result. In contrast, mature women and the majority of men in the sample had not been subject to such recruitment initiatives. They were more likely to have gained an

insight into the realities of the industry from the experiences of a friend or family member within the industry, and experienced the same disappointment with the opportunities available to them once they had entered it (Dainty *et al.*, 1999).

In 2004 Haupt and Smallwood surveyed 1,300 students at 20 high schools in the Western Cape and found that careers in other industrial sectors were identified as being much more appealing than construction, with only 4% considering a career in construction or building. The predominating factors influencing their career choice were salary, working conditions, opportunities for promotion and lifelong learning.

The gender specific attitude of choosing a particular career subject would not be remarkable if these different career subjects did not also imply different job and career opportunities. Consequently, the gender specific inequality structures observed in society were reinforced, such as differences in income and status, leading positions and political participation (Birgit, 2002). As with many concepts prevalent in business and management literature, career is often written about as if it were gender free. In fact the concept of a career in construction is deeply gendered. The psychological career contract between employer and employee traditionally was not mutually beneficial to women. Although the idea of a linear progression is now being jettisoned as the normative path for career, for many women this has never been the case. As a result very few women have careers similar to the traditional male pattern (Wilson, 1998).

The careers of women have been characterised by limited opportunities, low paid part-time work, breaks of different lengths for childcare and other domestic responsibilities, and unhelpful assumptions about commitment and capability. This is true both for women in general and women aspiring to be managers. Upward mobility remains, however, one of the conventional measures of organisational and career success (Wilson, 1998). A fundamental aspect of the disinclination theories rests upon

women being rationally and/or physiologically inclined to take on the domestic role within a relationship, including childcare. This inclination would then manifest itself in a disinclination to pursue a career or higher-level management responsibilities within the work place (Louise, 2001).

Anecdotal evidence repeatedly suggests that women leave the construction profession to have children, with the implication that this is their preferred life choice. In investigating these concepts it is therefore imperative to look at the reality of women's choices within the respondent group, with regard to this homemaker/childcare role (Louise, 2001).

2.7 Lack of knowledge of acquiring qualifications in construction

The improvement of knowledge of construction work and the academic importance of acquiring such knowledge still lacks sufficient attention within the construction industry, despite the fact that proper understanding and management of this resource is of immense importance for the achievement of better organisational performance (Pathirage, *et al.*, 2006).

Jobs in the construction industry worldwide are seen as dangerous. The image of the construction industry could be improved among several different demographic groups, including youth, parents, educators, and guidance counselors. For example, youth and guidance counselors are not aware of the skills required by many occupations in construction. Furthermore, the construction industry is experiencing a shortage of workers. This current shortage is complicated by two trends: the growth of the industry, and the retirement of the “baby boomers” (Pathirage, *et al* 2006). Further, the construction industry has difficulty-recruiting individuals from two general demographic groups: youth and non-traditional labor pools such as women. The industry has difficulty-recruiting individuals from these demographic groups for

several reasons, including a lack of awareness of job opportunities in the industry and a poor industry image (Pathirage, *et al* 2006).

2.8 Level of Schooling, Masculinity and Recruitment

The lack of women in construction has been a concern for many years now. The studies into the low representation of women in construction have been invaluable in pinpointing the factors militating against the participation of more women in the construction workplace, and in particular, recruitment into the construction professions (Shanmugam *et al.*, 2006). For the past ten years the construction industry has been at its busiest and is suffering from skill shortage in both craft and manual trades such as bricklaying, plumbing and painting, and at the professional level, in engineering, quantity surveying and estimating. The issue regarding the lack of women in construction has been made more prominent recently, attracting government and industry-wide attention, due to the potential skill shortage facing the industry (Shanmugam *et al.*, 2006)

Researchers have focused on how to improve the participation of women in the construction workplace but have aimed rather towards solving the labour resources crisis and skill shortages than improving equal opportunities for women. Despite the number of recent recruitment initiatives, the industry has failed to make significant progress in recruiting more women (Shanmugam *et al.*, 2006).

2.9 Religion and Masculinity

2.9.1 Religion

Over the twenty years deep changes in religious life and public policy have converged in ways that have transformed both. In religion, they involve not only

intensified political engagement (including the broadening of what had been a regional movement into a national one), but also shifts in the arenas and forms of worship. Denominational structures are in eclipse. Congregations are now only one of many settings in which believers practice their beliefs. Clergy are as likely to be called to ministries in care giving, service provision, and agency management as in traditional pastorates (Hall, 1998).

On the public policy side, the barriers separating church and government have been swept aside as education, health, and human services tasks, once regarded as federal government responsibilities, have been shifted to localities and into the hands of private-sector—often faith-based—actors. Since organized religion and faith communities have a long history of commitment to the needs of the dependent and disabled, the increasing importance of faith-based service provision has not been regarded as anything new or different. But there are other reasons, the most important of which have to do with the architecture of public perception (Hall, 1998).

Today, places of worship regardless of creed have become platforms for an astonishing range of educational and social services. Church lounges serve as meeting places for self-help groups. Parish houses have been converted into child daycare centers and day schools. As social services have become more central to the ministries and finances of congregations—many of them urban bodies with declining memberships—municipal planners have noted an alarming growth in acquisitions by churches of adjoining properties not only to house service provision activities but also for church-sponsored economic development activities (job training and commercial enterprises), affordable housing, and other publicly funded initiatives (Hall, 1998).

2.9.2 Role of religion in defining gender roles

Scholars of religion have endless debates about the phenomenon itself; because religion involves such a broad category of human existence, any definition that applies in one place may not apply in another, with resulting boundary wars over what is properly religious and what is not. Keeping all this in mind, it is nonetheless possible, especially if the focus is generally on the three monotheistic religions of Christianity, Judaism, and Islam, to say that religion involves the beliefs and practices of those who are moved by a conviction that there exists a Supreme Being who guides the affairs of human beings based on ethical commandments that have behind them the authority of an omnipotent deity (NORFACE Research Programme Specification, 2006).

The social science of religion, it follows, deals with the analysis of those beliefs and practices. An economist who looks at consumer purchasing is not studying religion, but one who focuses on the costs and benefits of church attendance is. A political scientist who studies governance in labour unions is not, but one who focuses on how denominations reach decisions about public policy issues is. Political scientists have shown that religious affiliation is linked to voting behaviour and, more importantly, religion plays an important role in understanding what people become active in civic life more generally (NORFACE Research Programme Specification, 2006).

Above and beyond this work, however, a number of relatively new approaches have begun to flourish that hold particular promise for an understanding of religion in modern societies, which can be incorporated into the programme of research. For example rational choice theory, with its intellectual origins in economics, has led some economists to treat religion as a subject worthy of their discipline's assumptions and approaches. If religion is becoming more important in the public life of Western

liberal democracies, its impact on public policy is likely to take new forms that require new subjects of study. In addition, the study of education could contribute to an understanding of religion as a social force. For example, does education play an important role in the transmission of beliefs and practices from one generation to the next? (NORFACE Research Programme Specification, 2006).

Since discrimination on the basis of sex in all societies often starts at the earliest stages of life, greater equality for the girl child is a necessary first step in ensuring that women realize their full potential and become equal partners in development. The word 'gender' refers to the social and cultural aspects attributed to the biological distinction between men and women. Gender is a learned attribute as opposed to a biological trait. In other words, though one may be born male or female, one learns to become a man or a woman (Pan American Health Organisation, 1994).

Children internalize gender-role expectations early on in life (usually by the age of five), through a process referred to as socialization. Family, education, culture, socio-economic status, religion, region and ethnicity all play an important role in socialization (Pan American Health Organisation, 1994).

All societies have implicit conceptions of gender, or stereotypes, which they use to differentiate the treatment of girls and boys. The gender roles that a society assigns to its children will have a determining effect on their future: their access to food and education; their labour force participation; their status in relationships; and their physical and psychological health. Girls are less likely to be educated, especially beyond the primary level. They are often kept at home as additional domestic, agricultural or informal labour. An increasing impediment to girls' education is the spread of HIV and AIDS, which forces many of them to leave school to care for sick family members. Even girls who are educated often end up in lower-paying jobs with

less opportunity for professional development (Pan American Health Organisation, 1994).

Sons and daughters provide different social, economic and psychological benefits. Changes in gender-role stratification may be associated with a substitutability of sons and daughters, that is, sons and daughters may provide the same values to parents (Gary & Evans, 2004).

The development of human rights is one of the areas that support the anthropological view of globalisation: the history of the evolutionary process of human civilization is one in which the strengthening of individual rights, as opposed to group rights, is a definite trend. In more recent times, the ease and extent to which information is capable of being spread has increased awareness of global human behavioural patterns and quality of life. The global population is now more aware of what behaviour is acceptable and what is not, and who is enjoying what quality of life and where. As an example, internal resistance is increasing in countries and societies where women and children's rights are abused or non-existent (Gary & Evans, 2004).

2.9.3 Masculinity

The concept of masculinity, formulated twenty years ago, has considerably influenced recent thinking about men, gender, and social hierarchy. It has provided a link between the growing research field of men's studies (also known as masculinity studies and critical studies of men), popular anxieties about men and boys, feminist accounts of patriarchy, and sociological models of gender. In social theories of gender there has often been a tendency toward functionalism that is, seeing gender relations as a self-contained, self-reproducing system and explaining every element in terms of its function in reproducing the whole (Lindsay & Miescher, 2005).

The dominance of men and the subordination of women constitute a historical process, not a self-reproducing system. Masculinities are configurations of practice that are constructed, unfold, and change through time. Masculinities are likely to involve specific patterns of internal division and emotional conflict, precisely because of their association with gendered power. Relationships with fathers are one likely focus of tension, given the gender division of labor in childcare, the “long hours culture” in professions and management, and the preoccupation of rich fathers with managing their wealth. Ambivalence toward projects of change on the part of women are likely to be another, leading to oscillating acceptance and rejection of gender equality by the same men (Lindsay & Miescher, 2005).

Furthermore Lindsay & Miescher, (2005) found that at the same time, bearers of masculinity are not necessarily “cultural dopes”; they may actively attempt to modernize gender relations and to reshape masculinities as part of the deal. A good example is the “new public management” in public-sector organizations, which rejects old-style bureaucracy and believes in “flatter” organizations, equal opportunity, and family-friendly employment policies. Yet even the modernization of masculinities may not solve problems. An analysis of masculinities has a growing relevance in the present moment of gender politics. In the rich countries of the global metropole, the shift from neoliberalism (*the radical market agenda formulated in the 1970s*) to neo-conservatism (*adding populist appeals to religion, ethnocentrism, and security*) has made gender reaction an important political and cultural issue. In the developing countries, the processes of globalization have opened gender orders to new pressures for transformation.

According to Kabeer (2008) the processes of globalisation sweeping across the world today are being driven by neo-liberal ideologies, which celebrate untrammled market forces, the free movement of capital and the sovereignty of the citizen-

consumer. Labour remains subject to many more restrictions than capital, but it too has become a global resource. As governments are increasingly forced to pursue competitive advantage in the global economy through the construction of flexible labour markets, in which workers can be hired and fired with impunity, women have emerged as the flexible labour force par excellence.

Women workers are less likely to be organised than men. They can be paid less on the grounds of their purported secondary earner status, and they have less bargaining power because of the limitations placed on their labour-market options by their unpaid domestic responsibilities. There are now increasing numbers of women from all age groups in the labour market, even in contexts where male employment is stagnant or declining; but they remain confined to the lower paid, more casual segments of the informal economy (Kabeer, 2008).

Kabeer (2008) also stated that there continues to be a great deal of debate about whether women's entry into paid work represents empowerment or exploitation. Far less attention has been paid to how men have responded to the challenge posed by women's paid work to their traditional roles as family breadwinner. It is clear that male-breadwinner ideologies are both pervasive and persistent, meaning that some amount of resistance from men - particularly those who have lost out in the shift to flexible labour markets - can be expected. This is certainly the story that is emerging from studies around the world - but with one interesting caveat (Kabeer, 2008).

This is that it is mainly men in their roles as husbands - rather than as fathers, brothers or sons - who are the main sources of this resistance; and their resistance is aimed at paid work by their wives. It appears that male identity and power relations are far more closely bound up with the appearance, if not the fact, of women's financial dependence within marriage than in other gender relationships within the family. The complex negotiations through which women and men are attempting to

come to terms with women's increasingly visible role as breadwinners is leading to unexpected reconfigurations of personal and family life across the global economy. It is not yet clear whether these reconfigurations represent a crisis in the relations of social reproduction or a transition to new forms (Kabeer, 2008).

2.10 Health and Safety in Construction

Greed (2000) suggested that the construction industry is one of the largest industry sectors in South Africa and contributes significantly to the national economy. It is critical to the future success and improvement of the economic and social infrastructure. It is also one of the largest employers and has responsibility to set excellent health and safety standards. Construction is a business like any other and construction sites operate like any other place of work. The safety, health and welfare of all stakeholders must be taken into consideration when a construction project is being planned and managed. Construction work is hazardous by nature and employees are exposed to many dangers when working on a construction site. The improved economic climate in the last decade has seen greater demand for housing and improved infrastructure, this putting pressure on the construction industry to deliver at quicker pace and thus resulting in more accidents as contractor cut short cuts, in order to meet the demand.

According to Greed (2000) it is the social and legal responsibility of every construction company to undertake activities with due regard to the health, safety, and welfare of all workers on site and those who may be affected by the site's activities.

The South African Occupational Health and Safety Act No 85 of 1993 has the mandate to ensure that employers provide for the health and safety of persons at work and their health and safety in connection with the use of plant and machinery; the protection of persons other than persons at work against hazards arising out of or in

connection with the activities of persons at work; to establish an advisory council for occupational health and safety; and to provide for related matters. However, there is a perception that the type of construction work is not conducive for women and that despite the Act employers do not necessarily take the extra step to ensure that women feel safe and protected while at work on the construction site (Haupt & Madikizela 2004).

Furthermore, research shows that women are faced with sexual harassment at many construction sites and this does not contribute to their health and safety on sites. (Greed, 2000).

2.11 Barriers to women entering and working within construction

Literature identifies barriers to women entering and working within construction arising from, inter alia, the industry image, career knowledge among children and adults, selection criteria, recruitment practices and procedures, sexist attitudes, male dominated culture, and the work environment (Fielden *et al*, 1999). There have been a number of significant research projects that have explored aspects of women's under-representation and underachievement within the construction industry. These have demonstrated that, given an appropriate level of knowledge and insight, women could be attracted to the sector in greater numbers than at present (Dainty *et al*, 2001).

A large body of the literature on women at work has devoted itself to the identification of the specific problems and potential barriers to career advancement experienced by women once they entered the workplace. Many of the issues raised related to problems encountered by women, which they experienced essentially by virtue of their biological sex type and societal attitudes and expectations of their wider familial role. Unlike men, the majorities of women had discontinuous work patterns

and withdrew periodically from the labour force to raise children (Cartwright and Gale, 1995).

First, in the "managerial and administrative category" women are concentrated in "specialist" positions (including personnel and public relations) rather than mainstream management. Second, within the "professional and technical" category women are significantly under-represented in the engineering and technical occupations compared to their male counterparts. (Fielden *et al*, 2001).

The image of the construction industry is seen as promoting adversarial business relationships, poor working practices, environmental insensitivity, and a reputation for under-performance. The construction industry itself has, until recently, neither formally acknowledged that the under-representation of women is an important issue, nor promoted any initiatives or research into this area (Fielden *et al*, 2001). Women are not enhanced by an industry that continues to foster a males-only image and remains entrenched in a culture that undermines the value of women. Attempts to address the issue of equal opportunities through legislation have been relatively ineffective, and have had no significant impact on the number of women currently employed in the construction industry (Fielden *et al*, 2001).

2.12 Culture

The meaning of the term "culture" has changed greatly over the last 40 years. The word "culture" is no longer simply associated with the cultivation of soil and plants but has been redefined so that it describes the very fabric of society. Society is multifaceted and within each facet different "cultures" are thought to exist. The "culture" which exists within the construction industry may be very different to that which exists within other industries (Barthorpe *et al*, 2000).

Culture is learned through a process of socialization, which starts in infancy within the family system and is continued in the education system. Culture is a system of shared meaning that enables people to communicate and interpret everyday life (Schein, 1985).

Hofstede (1991) identifies five dimensions that influence national culture, namely, the principles of power distance, uncertainty avoidance, individualism versus collectivism, and masculinity versus femininity and long-term versus short-term orientation.

2.12.1 Power distance

Power distance is defined as the extent to which less powerful employees in organisations expect and accept that power within those organisations is distributed unequally. Therefore, high power distance suggests a stronger belief in inequality. In all organisations, individuals differ in skill, education, status and power. High power distance is argued to underlie higher wage differences, steep structures and more supervisory personnel (Hofstede, 1991).

2.12.2 Uncertainty avoidance

Uncertainty avoidance concerns the extent to which employees of organisations feel threatened by uncertain, unknown, ambiguous or unstructured situations. Societies scoring low in uncertainty avoidance do not feel threatened by opinions that differ from their own and can accept uncertain situations (Hofstede, 1991).

2.12.3 Individualism versus collectivism

Individualism refers to the 'looseness' of the ties or relationships between individuals. Collectivism, on the other hand, refers to relationships between people, which are integrated, strong and cohesive (Hofstede, 1991).

2.12.4 Masculinity versus femininity

Masculinity refers to a society in which emotional gender roles are distinct. Men are supposed to be assertive, tough and focused on material success. Women are supposed to be more modest, tender and concerned with the quality of life. Highly masculine countries have steep career patterns and dominance of organisational interests over the private lives of people (Hofstede, 1991).

2.12.5 Long-term orientation versus short-term orientation

Long-term orientation refers to a society that fosters virtues orientated towards future rewards, like perseverance and saving money (thrift). Short-term orientation refers to a society that fosters virtues related to the past and present, in particular, respect for tradition and fulfilling social obligations (Hofstede, 1991).

These cultural dimensions are useful in determining how cultural differences impact on the choice of careers in construction by of South African women. The recognition of corporate culture is not a new concept. Over 2,000 years ago in ancient Greece the Athenians when at war were urged to adhere to values such as democracy, informality in communication, the importance of individual dignity and promotion based on performance. Such values can still be viewed as inherent today within many companies across the globe. The concept of culture has long been on the agenda of many management theorists (Barthorpe *et al.*, 2000).

To the extent that culture consists of "the learned behaviors of a given human society," women and men figure equally in the cultural system. However, the cultural "template" within which we speak is constantly being negotiated, revised, and reproduced, and the power to participate in this process of negotiation has historically been divided along gendered lines. Among the earliest human societies, organized by kinship groups, different types of work were probably allocated to women and men; for example food preparation and cooking for women and hunting and building for men. Some scholars have argued that, despite this division of labor, male kinship groups were the original cultural template among human societies <http://www.cge.org.za/>

While the prevalence of matriarchy in early human society is unknown, in many societies family descent was traced through the mother rather than through the father; these societies were described as "matrilineal." In historic times, however, most dominant world cultures have been patrilineal, although some examples of matriarchy/matrilineality can be found. The vast majority of these dominant cultures have systematically limited the power of women in their social, political, and religious institutions. And, while dramatic progress in women's rights has been made in some countries, women continue to be under-represented politically, under-compensated economically for equal work (as compared to men), and restricted in many major religions from access to positions of authority. <http://www.cge.org.za/>

The culture and values of an organisation are imperative in matching organisational resources to the environment. For an organisation to be effective, congruence must exist between the organization's values, resources and environment (Barthorpe *et al.*, 2000).

2.13 Organisation Culture

"Culture is the mother; organizations are the children." (Harrison, 2000: 6)

Culture within organizations is reflected in the way that people perform tasks, set objectives and administer the necessary resources to achieve objectives. Culture affects the way that people make decisions, think, feel and act in response to the opportunities and threats affecting the organization. Culture can also be explained as being "the way in which things happen around here", therefore reflecting the underlying assumptions about the way in which work is performed, what is acceptable and what is not acceptable, and what behaviour and actions are encouraged and discouraged (Barthorpe *et al*, 2000).

The culture and style of work organisation in general and project management in particular will almost certainly have an important influence on how, why and when things are done on projects and who does them. The culture of an organisation is determined by a variety of factors, including:

- History and ownership;
- Size;
- Technology employed;
- Type of business activity;
- External environment and product market; and
- People, particularly organizational founders and leaders (Cartwright and Gale, 1995).

The culture of an organisation develops over time in response to a complex set of factors. Through the accumulation of many years' work various key influences can be identified as playing an important role in the development of any culture within an organisation (Barthorpe *et al*, 2000).

Though a company may have distinctive subcultures (which are often counter-cultures), the dominant culture tends to prevail. Culture is strongly influenced by the core ideology of top management and in the case of South African business

organizations; the "dominant" prevailing culture is influenced by 87% male, demonstrating a male majority and influence with the organization culture (Mnganga, 2003).

A commonly shared view within organizations is that even the most talented women, if they are young will at some point marry, follow their husband if they relocate and have children. This means that they cannot be relied on as a solid succession pipeline for senior and top management. As such it is seen as risky to promote women into key positions of responsibility. While the question of family responsibilities is a key issue, it provides a useful means to detract attention from the organization culture barriers that women face in many working environments. It locates the problem squarely with the women (Mnganga, 2003). Organizational culture is the cement that binds an organization together. However it also excludes others. The majority of South African businesses are based on Western cultural norms and women have traditionally been excluded from involvement in the majority of economic life in the country. The pressure from government and legislation has now forced businesses to reassess their culture. This has happened very slowly and women continue to find it very difficult to fit into the dominant organizational culture of many businesses. The main reason for this is that women are expected to conform to a culture that is inherently foreign to them and if they do not then they are not able to qualify for promotional opportunities (Jongens, 2006).

Women and men organize their lives differently according to their gendered roles. Their participation in decision-making processes, access to justice or the legal system and economic resources is not equitable. The manner in which gender relations are defined in the workplace often mirrors the division of labour in the home, where roles are based on gender stereotypes. Therefore, for example, women tend to be well represented in positions that are synonymous with motherhood, caring

and "nimble fingers". These have limited advancement prospects and lower benefits. Men on the other hand are over-represented in positions that command significant decision-making power, higher salary scales and prospects for advancement (<http://www.cge.org.za/>)

Discrimination in recruitment, remuneration, inflexible working conditions, as well as insufficient services such as child care continue to restrict employment and advancement opportunities for women. Negative attitudes also stand in the way of women's advancement. Discrimination manifests itself differently across the spectrum of organizational practices. Very often, gender discrimination, (as distinct from sex discrimination), can be very hard to pick out. This is because it is very subtle, it is based on beliefs and practices that have been there for centuries and regarded as "normal" (<http://www.cge.org.za/>).

In the hierarchy of organizational elements, culture comes just below "vision", and just above (inter-personal) "relationships". Culture is not simply an accumulation of the various, complex and often fraught inter-personal relationships of an organization. It is the very expression of the organization's character. Together with the organization's mission, vision and strategy, the organizational culture constitutes an organization's identity. As the mission, vision and strategy express the outer purpose of the organization, its work in the world, the organizational culture expresses its inner life and character - the way in which it pursues its work in the world (Soal, 2000).

2.14 Hierarchy Culture

The organisational culture is formal and highly structured and held together by formal rules and policies. People are governed by procedures. The management of employees is concerned with secure employment and predictability. The leaders pride

themselves with being good co-ordinators and organisers. The long-term concern is with stability, performance and smooth, efficient operations. Success is defined in terms of dependable delivery, smooth scheduling and low cost (Soetan 2001).

Culture is seen in the African social contexts transcending the arts or artifacts, folklore, literature, music, dance and other artistic paraphernalia. Culture is versatile and all- embracing of both material and non-material objects and concepts. It entails the totality of a people's norms, ethos, values, beliefs, *raison d'etre*, codes of socially acceptable conducts, modes of life, religion, philosophy and ideology. It also includes communal informal education and technology. Culture therefore structures 'and determines the way social institutions shape life as well as cultivated and imposed behaviour communally transmitted from one generation to another. Because development involves changing such cultural attitudes and institutions, cultural approach is one of the determinants of the success or failure of development strategies in many parts of Africa (Soetan 2001).

The history of many African societies in general contains ample evidence of capitalism. The simple/ traditional egalitarianism flaunted is a smokescreen for; beneath the veneer of the so-called communalism lay the pursuit of individuality, industry and thrift. Cultural assets are cultural values, beliefs and practices and their usefulness in promoting wealth creation and social equity (Soetan, 2001).

Culture is both evolutionary and revolutionary. Culture goes through an internal evolutionary process involving growth, greater heterogeneity and coherence. It also goes through a process of change and adaptation as a result of contact with other cultures, the influence of a dominant culture and the influence of the mass media or communication technologies (such as the Internet) etc. As a result, culture must be seen as a dynamic mechanism that must adjust and adapt to external and internal conditions of existence (Soetan, 2001).

2.15 Cultural Diversity

Cultural diversity offers a range of human resources with the potential for improving the creativity and productivity of organisations. However, the merging of different cultures can also cause conflict and make cultural integration difficult. Learning to work with different cultures is an essential skill for successful organisations in both domestic and international markets (Iles, 1995).

The following five key competencies are crucial in learning to work with different cultures, namely:

Cultural awareness (understanding the differences);

Communicative competence (communicating across the differences);

Cognitive competence (acknowledging stereotypes);

Valuing differences; and

Gaining synergy from the differences (Iles, 1995).

Workforce diversity embraces the growing heterogeneity of organisations. Workforce diversity comprises all alternative groups, which in the South African context include women, Africans, Indians, Coloureds, disabled persons, gays, lesbians and the elderly (Robbins *et al*, 2001). What emerges from studies is that diversity and equality in the construction workplace are inter-related. This relationship is because greater diversity cannot be achieved without greater equality of opportunity to enter and remain in the industry. Cultural change in the construction workplace is also inter-linked with investment in educational training material about careers in the construction industry. Equal opportunities present a challenge in the construction industry, one of the most male-dominated industrial sectors. For instance, women are significantly under-represented in construction craft training programmes, craft occupations and the professions (Agapiou, 2002).

Central to explaining women's career under-achievement is the nature of the workplace culture. This has been shown to militate against their equal progression through the exclusionary and discriminatory work environment that it promotes. Women entering the industry without an in-depth knowledge of the cultural influences on construction careers soon became disillusioned with the discrimination and lack of opportunities that they confronted. Their male peers perceived them as added competition for the limited promotional opportunities available, which incited resentment and discriminatory behaviour from their male colleagues. Furthermore, in addition to having to deal with the overt resistance to their development, women also had to conform to work practices that neglected their workplace needs (Dainty *et al*, 1999). These included long working hours, geographical instability and hence, an expectation that they would subordinate their personal lives. This work ethos had endured because of the attitudes of male middle managers, which were empowered to impose such work doctrines within their own autonomous project environments (Dainty *et al*, 1999).

Women are under-represented in management, particularly in the traditional project-based industries of construction and engineering. The experiences of women in both the traditional and non-traditional project environment offers an opportunity to investigate the importance and nature of gender relations and the "gendering" of organisations and project organisations (Cartwright and Gale, 1995). There is no doubt that organizational cultures are essentially gender biased. Organizations embody a male managerial culture because when both organizations and management systems were first formed only males were in the workforce (Still, 1994).

Despite the advent of women into both the workforce and management, and the introduction of anti-discrimination, equal opportunity and affirmative action laws, there has been little fundamental change to the underlying culture. Instead, a gendered

substructure dominates work activities with men making the decisions and women helping them carry them out. Some major construction organisations are concerned that their top women executives, whom they had been grooming for senior roles, were leaving the organisation for self-employment or lesser status roles. A few organisations have realized that culture may be a precipitating factor in the women's decisions when choosing a career. However, none has known how to deal with this "discovery" because of the dominance of the male managerial culture (Still, 1994).

Gender and the gendering of cultures have been little considered by organizational theorists until quite recently. The terms "sex" and "gender" are often confused. Sex is a biological type. Individuals are born having a male or female sex type. However, gender is socially constructed and subsequently learned. Because it is socially constructed, individuals may tend to be more male or female in a gendered sense (Cartwright and Gale, 1995).

There is, of course, a strong association between biological sex type and gender values. Once uncoupled from biological sex, the concept of gender can be applied to cultures as having a masculine or a feminine dimension. It is suggested that masculine cultures are likely to be dominated by power relationships and are results-oriented. Feminine cultures are likely to be more concerned with interpersonal relationships and be process-oriented. Power cultures are likely to be experienced by the vast majority of men and women as being less satisfying than are task or team cultures which place a greater emphasis on expert knowledge than on positional power and allow members more individual autonomy (Cartwright and Gale, 1995).

2.16 Under-representation of women in the construction industry

As increasing numbers of women enter the construction trades, concerns about their health and safety are growing. In addition to the primary safety and health

hazards faced by all construction workers, there are safety and health issues specific to female construction workers. The small percentage of females within the construction trades and the serious health and safety problems unique to female construction workers have a circular effect. Safety and health problems in construction create barriers to women entering and remaining in this field. In turn, the small numbers of women workers on construction worksites foster an environment in which these safety and health problems arise or continue (Sugarman *et al*, 1999).

Nearly 60% of women aged 16 and over participate in the workforce worldwide. While women have made some gains in occupations traditionally occupied by men, construction trades remain overwhelmingly male dominated. On many jobsites women construction workers are not welcome. Sex discrimination and anti-women attitudes are still prevalent on worksites, despite the fact that sex discrimination is illegal (Sugarman *et al*, 1999).

Several studies have shown that female construction workers suffer from gender and sexual harassment, a factor associated with low job satisfaction as well as psychological and physiological health symptoms and workplace injuries. Isolation—working as the only female on a job site or being ostracized by co-workers—evokes both fear of assault and stress. Many tradeswomen report that they are reluctant to report workplace safety and health problems lest they be tagged as complainers or whiners, straining further their workplace relationships and jeopardizing their employment situation (Sugarman *et al*, 1999).

The construction industry training system, dominant management styles, and employment practices contribute to the maintenance of traditional attitudes, which alienates women entering the construction industry (Thompson, 1996). This shows that women are not only under-represented within the industry but that their distribution throughout the industry is highly skewed, with almost two thirds working

in secretarial or clerical roles. Further differences between men and women indicate that female input is not as efficient as male input because their skills are not utilized in areas where they could make a significant difference to the production levels of the industry (Fielden *et al*, 1999).

A large body of the literature on women in construction work has been devoted to the identification of the specific problems and potential barriers to career advancement experienced by women once they enter the workplace. Many of the issues raised concerned problems encountered by women, which they experience essentially by virtue of their biological sex type and societal attitudes and expectations of their wider familial role. Unlike men, most women have discontinuous work patterns and withdraw periodically from the labour force to raise children (Cartwright and Gale, 1995).

International trends suggest an interrelationship between the growth in the service economy and the nature of women's participation in the workforce. As services expand, there is more possibility for skilled and experienced women to exit from large companies to start their own companies, or join smaller companies in the service sector. This development gives women flexibility and access to the disposable income, which in turn fuels the growth in services. Those that remain in corporations continue to experience barriers to advancement to the top (Mnganga, 2003). Top management in South African organizations where major decisions are made are still held by mostly white males and they as an elite group will if there is no commitment continue, continue to maintain their privileged position by closing off opportunities to women and black people. SA statistics reveal that women make up only 41% of the workforce and only 1.9 % of these women are company CEO's, 14.7% are women executive managers and 7.1% are company directors and presidents_(Mathur – Helm, 2005).

2.17 Legislation

South Africa has emerged from a bitter history of colonialism and apartheid into an era characterised by a democratically elected and constitutional government with a Bill of Rights, which prohibits discrimination on the basis of race, colour, gender, religion and ethnicity. The conception of such an ideal emerged from people whose history is steeped in institutional racism where rights, life chances and the distribution of goods and services were predicated along racial lines (Kornergay, 2000).

More importantly, respect for the dignity of individuals was determined by the colour of their skin and, further within the various racial groupings, by their gender designation. The socio-cultural dictates of all groups defined women to be inferior to men and as such assigned to them the position of minors in both the public and private spheres of life. In the private sphere, women were less likely to lead in decision-making. In most interpersonal relationships men had more power. This historical legacy of patriarchy influenced essential informal and formal human relationships with a marked impact at the workplace (Kornergay, 2000).

Since the introduction of a new dispensation in 1994, the South African Government has entrenched in its constitution, the Bill of Rights. It is in the section on the Bill of Rights, that “equality” is specified and enshrined. Section 9(3) of the constitution provides that the State may not unfairly discriminate directly or indirectly against anyone on one or more grounds, including race, gender, sex etc. Eradicating all forms of discrimination in the labour market is one of the fundamental objectives of the Government (Phaahla, 2000).

This reversal of the previous status quo is demanded by the constitution and is an integral part of processes that will help achieve social justice in South Africa. Governments who claim to uphold democracy and justice often espouse the criterion of equality. Gender equality on one hand entails that the underlying causes of

discrimination are systematically identified and removed in order to give women and men equal opportunities in every sphere of life (Phaahla, 2000) South Africa is in a process of transition. One of the key objectives in this process is the transformation of gender relations. The challenge is to shape the broad transformation project in a way, which acknowledges the centrality and compatibility of the transformation of gender relations to the broader institutional change process. This requires a fundamental review of what has come to be accepted as 'business as usual' (Kornergay, 2000).

The need for policies on employment equity arises, in the first place, from recognition of continuing inequalities associated with past discrimination, associated primarily with race and gender. Given these inequalities, measures to achieve employment equity necessarily reflect an analysis of the nature and extent of discrimination in the workplace, and its relationship to past discrimination outside the labour market (Department of Labour, 1996). Given that the need exists for both the industry and the population, for skilled workforce, it would seem an obvious move for South Africa to encourage employment of women. Political policy is not sufficient to elicit change; monitored equal opportunity actions that target women are required. To bring women into the industry positively, the image of construction and level of self-awareness of employability in construction held by women and by protagonists in the construction industry need to be changed. Arising from this barriers must be dissembled and initiatives taken to achieve the entry of women into the construction industry workforce either as employees or as entrepreneurs (English, 2006).

2.17.1 The Constitution of the Republic of South Africa, 1996 (Act 108 of 1996).

The Constitution was drafted in terms of Chapter 5 of the interim Constitution (Act 200 of 1993) and was first adopted by the Constitutional Assembly on 8 May 1996. In terms of a judgment of the Constitutional Court, delivered on 6 September

1996, the text was referred back to the Constitutional Assembly for reconsideration. The text was accordingly amended to comply with the Constitutional Principles contained in Schedule 4 of the interim Constitution. It was signed into law on 10 December 1996. The objective in this process was to ensure that the final Constitution was legitimate, credible and accepted by all South Africans.

To this extent, the process of drafting the Constitution involved many South Africans in the largest public participation programme ever carried out in South Africa. After nearly two years of intensive consultations, political parties represented in the Constitutional Assembly negotiated the formulations contained in this text, which are an integration of ideas from ordinary citizens, civil society and political parties represented in and outside of the Constitutional Assembly. The Constitution therefore represents the collective wisdom of the South African people and has been arrived at by general agreement.

According to the Bill of Rights in Chapter 2 of the Constitution, everyone is equal before the law and has the right to equal protection and benefit of the law. Equality includes the full and equal enjoyment of all rights and freedoms. To promote the achievement of equality, legislative and other measures designed to protect or advance persons or categories of persons, disadvantaged by unfair discrimination may be taken. The state may not unfairly discriminate directly or indirectly against anyone on one or more grounds, including race, gender, sex, pregnancy, marital status, ethnic or social origin, colour, sexual orientation, age, disability, religion, conscience, belief, culture, language and birth. No person may unfairly discriminate directly or indirectly against anyone on one or more of the grounds stated above.

2.17.2 The Labour Relations Act of the Republic of South Africa

The purpose of this Act is to advance economic development, social justice, labour peace and the democratisation of the workforce by giving effect to and regulate

the fundamental of rights of persons in the work place. The Labour Relations Act is implemented in coloration to the constitution as well the employment equity act to ensure that there is fair an equal treatment of all persons in the workplace.

2.17.3 The Employment Equity Act of the Republic of South Africa, 1998 (Act 55 of 1998)

The purpose of this Act is to achieve equity in the workplace by promoting equal opportunity and fair treatment in employment through the elimination of unfair discrimination. Implementing affirmative action measures to redress the disadvantages in employment experienced by designated groups, in order to ensure their equitable representation in all occupational categories and levels in the workforce. Prohibition of unfair discrimination in the construction workplace in accordance with the Chapter 2 of the Act is that the construction industry must take steps to promote equal opportunity in the workplace by eliminating unfair discrimination in any employment policy or practice. It may not unfairly discriminate, directly or indirectly, against an employee, in any employment policy or practice, on one or more grounds, including race and gender.

Employment equity does not provide a panacea for all the evils of past discriminatory policies. It forms part of a broad complex of measures that enhance overall social and economic equality in ways that support productivity, democracy and diversity. Policies aimed at promoting employment equity gain their urgency from the deep inequalities that rend our society. Income distribution in South Africa is among the most unequal in the world (Department of Labour, 1996). The Department of Public Works White Paper (1999) on construction entitled “Creating an Enabling Environment for Reconstruction, Growth and Development in the Construction Industry” proposes a strategy and programs to uplift and transform the construction industry well into 21st century (Department of Public Works, 1999).

A central goal of this strategy is enhanced delivery to meet the needs of South Africa's majority population and to ensure that the role of the construction industry is maximized in the development of the economy, the development of the economy, the development of the country's human resources and in the democratization of society. The proposed program embraces the development of a more stable delivery environment as a foundation for sustainable skill formation, improved quality, productivity, and health safety. Also proposed are programs aimed at developing new capacity and the emerging sector, and at enhancing the role and delivery capacity of the public sector as fundamental to the clearing of delivery bottlenecks (Department of Public Works, 1999).

From the labour sector it is suggested that the labour market inherited from the past regime require substantial changes. There are severe structural problems, which require active policy intervention. These include vigorously addressing the legacy of labour market segmentation by redressing the employment of women enacting employment equity legislation, more resources directed towards education and training and recognition of prior learning (Department of Public Works, 1999). Construction employers are increasingly working to identify and remove discriminatory practices. This has been necessitated by both legislation and a need to widen the pool of potential candidates for jobs, particularly in order to address skills shortage concerns. It has been widely argued that the removal of discriminatory employment practices and the provision of equal opportunities is good for business and gives a competitive edge (Dainty *et al*, 2004).

Some beneficial effects of equal opportunities are direct and quantifiable, such as the reduction in costs related to staff turnover, reduced litigation fees, and the accessing of largely untapped reserves of skill and talent through a wider pool of applicants. However, there is also now a noticeable widening of the debate around the

business benefits of diversity. Indirect benefits have been highlighted, including improved customer service, and enhanced staff morale (Dainty *et al*, 2004).

If the construction industry is to begin to benefit from these quantifiable and qualitative benefits of a diverse workforce, there is a clear need to begin to develop robust policies and organization-level approaches in accordance with current and informative legislation which begin to break down institutionalized barriers to non-traditional entrants. The effective development and implementation of equal opportunities policies and practices is crucial for creating equity within the construction industry at all levels (Dainty *et al*, 2004).

Lessons from socialist and even advanced capitalist countries have shown that there is not an automatic relationship between legislation and social change. Constitutional rights do not necessarily guarantee equality for women (Kadali, 1995). Equal opportunity legislation internationally has not dealt adequately with hostile business cultures that present both direct and indirect barriers to the advancement of women in business. Whilst Employment Equity policies and Affirmative Action programmes have succeeded to a limited extent in bringing the question of race to the forefront of business transformation, the centrality of the gender

Formal equality prescribes equal treatment of individuals regardless of the actual circumstances pre-supposing that all persons are equal bearers of rights. Substantive equality on the other hand recognizes a world of diverse disparate groups. It acknowledges that all persons are not equal bearers of rights and that these

differences need to be taken into account. A substantive perspective acknowledges specific disparities experiences to black women in particular (Mnganga, 2003).

2.18 Chapter summary

The construction industry plays an important role in the lives of societies worldwide, as they provide the most valuable need in people's lives, a habitat. The construction industry employs the majority of the labour force in South Africa and worldwide and thus has the opportunity of being influential in ensuring that unemployment is decreased. However the construction industry faces the challenge of not succeeding in effectively utilizing both genders in ensuring that it delivers the product, as it suffers from skills shortage as a result. The challenge for the industry is that of unlocking doors to give people, particularly women, who have previously been excluded from the industry, the opportunity to play meaningful roles in all areas of the construction industry.

Women are under-represented in construction especially on construction sites which have historically been regarded as "no go" zones for women. Ironically, while

the industry continues to complain about the increasing skills shortage against the background of less and less young people considering construction as a viable career and the regular occurrence of accidents, injuries and fatalities on construction sites that perpetuate the negative image of the industry, it remains reluctant to attract women at all levels of employment. There are many contributions to this challenge in South Africa and the premise of these is the history of the country, the historical background of women highlights the many obstacles against the progression of women, which now places barriers in the career development and negatively influences their career choice within the construction industry.

CHAPTER 3 METHODOLOGY

3.1 Introduction

Research design is the strategy for answering the questions or testing the hypotheses that stimulated the research in the first place (Pinsonneault & Kraemer,

1991). The starting point in research is to focus clearly on the fact that the ultimate purpose is to add something of value to the body of accumulated knowledge and formulating conclusions and recommendations that will enlighten and improve upon already existing research (Amaratunga et al, 2002). This chapter provides details of the research methodology outlining the methods employed in analyzing the data that is gathered during this research.

3.2 Purpose of this research

This particular study aims to identify factors that impede career mobility for women in South Africa by discussing the problems facing them as they contemplate careers in the construction industry. The study seeks to investigate whether there is a difference in the perceived image of the construction industry between males and females and whether this perception is influenced by the expectations of women before entering the industry. It investigates whether there is a relationship between the perceived image of, and recruitment to, the construction industry by sex. An investigation of whether males and females have different levels of knowledge of the construction industry forms part of this study. Further, the relationship between the cultural backgrounds of women and their career choice preference within the construction industry is also examined.

To improve the validity of the research findings, the triangulation approach was adopted for data gathering. This approach consists of combinations of qualitative and quantitative methods strengthened with the literature review.

3.2.1. Qualitative research

Qualitative data has the natural setting as the direct source of data, and the researcher is the key instrument. Qualitative research establishes the meaning of relationships in terms of influences and actions. It is not concerned with the scale of activities, such as is the case with quantitative research, where for example 65 per cent of people had a particular opinion. The aim of qualitative research is to articulate the range of scenarios, which may occur under different circumstances. A qualitative approach is concerned about the depth of information required to make sense of an individual's actions and experiences (Murphy, 1995).

It is a general way of thinking about conducting qualitative research. It describes either explicitly, the purpose of the qualitative research, the role of the researcher, the stage of research, and the method of data analysis. Qualitative research uses unreconstructed logic to get at what is really real -- the quality, meaning, context, or images of reality in what people actually do, not what they say they do. Unreconstructed logic means that there are no step-by-step rules, that researchers ought not to use prefabricated methods or reconstructed rules, terms, and procedures that try to make their research look clean and neat (Murphy, 1995).

3.2.2 Quantitative research

Quantitative research is an extreme of empiricism according to which theories are not only to be justified by the extent to which they can be verified but also by an application to facts enquiry (Amaratunga *et al.*, 2002). Quantitative investigation look for distinguishing characteristics, elemental properties, empirical boundaries and tend to measure how much and how often. Quantitative information is usually gathered by asking the same set of questions to a specific sample of a reference population, with answers recorded in numeric codes or actual numbers (Maxwell, 1998).

3.2.3 Combining qualitative and quantitative approaches

Qualitative and quantitative approaches were used in order to determine whether the career expectations of women change once they work in the construction industry, in comparison to men, Furthermore to also identify whether these expectations have a direct relationship with the career choices of women (Fielding & Schreier, 2001).

3.2.4 Approaches to the triangulation paradigm

Triangulation is clearly a core issue in any approach to methodological combination, and is becoming increasingly popular among researchers. However, triangulation is not the only way in which qualitative and quantitative methods can be combined. Besides triangulation, two other approaches to method combination can be distinguished: sequencing and what is termed "hybrids" (Fielding & Schreier, 2001).

3.2.5 Sequencing

In the case of sequencing, qualitative and quantitative methods are employed within one and the same study, although in different phases of the research process. The most common example would be a qualitative phase of data collection which is followed by a quantitative phase of data analysis, as in the case of interviews which are coded and for which coding

frequencies are determined; alternatively, data analysis might involve the construction of types by means of cluster analysis, and the reduction of categories to a smaller number of dimensions by means of multiple correspondence analysis. (Fielding & Schreier, 2001).

Sequencing in this sense can be employed within otherwise "quantitative" studies, which aim at hypothesis testing. To the extent that qualitative research wishes to go beyond individual cases and to say something about the sample at large, maybe even the population, sequencing can also be part of a qualitative research strategy, taking place whenever a generalisation of qualitative findings occurs on an aggregate level. Looked at from this perspective, sequencing may even be said to constitute an inherent characteristic of many typically "qualitative" approaches, such as grounded theory, objective hermeneutics, and comparative casuistic (Fielding & Schreier, 2001).

3.2.6 Hybrids

These are approaches, which do in themselves constitute a combination of qualitative and quantitative elements. These elements may be so closely "packed" as to be practically indistinguishable systematic content analysis which combines the (qualitative) coding of texts with the (quantitative) calculation of coefficients of interrater agreement. More often, hybrid approaches comprise a number of phases,

some of which are qualitative, others quantitative; all, however, are equally necessary for achieving the objective of the approach (Fielding & Schreier, 2001).

To the extent that these latter approaches combine qualitative and quantitative research phases, these "hybrids" are very similar to the strategy involved in sequencing. Hybrids and sequencing differ, however, in the sense that hybrids require precisely one and only one specific combination of qualitative and quantitative phases, whereas in sequencing any kind of combination is possible (Fielding & Schreier, 2001).

3.2.7 Advantages of using combined approaches

The value of, and need for, objective, methodologically sound research is undeniable. Only through sound research designs is it possible to eliminate threats to validity and draw scientifically valid conclusions to inform practice. While the value of the more traditional research approach is recognized, a more interactive, reciprocal research and development model has a critical role to play in conducting research that combines evidence from previous research studies with the professional wisdom of those doing literacy work in the field (Cordelli & Wrigley, 2004).

The best research design is a mixed method design that integrates qualitative and quantitative research. This type of design begins with a strong research methodology with quantitative methods that are enhanced with qualitative measures of key processes and outcomes.

Qualitative methods, such as interviews and case studies, improve the design by providing data that can give insights into how findings work and how findings can be translated to practice. By itself, a quantitative method can identify what works, but has limited explanatory power: there is little information about how students learned and how instruction worked, for example (Cordelli & Wrigley, 2004).

With qualitative designs there is rich information about learners and teaching, but the information about what worked is more subjective and cannot be generalized. By combining the two methods, it is possible to obtain a much richer understanding. In other words, using a rigorous design the quantitative methods can inform about *what* works, while the qualitative methods can inform about *how* it works (Cordelli & Wrigley, 2004).

3.3 The Research Method

In order to achieve the objectives of this study the views of three samples, namely 141 first and final year construction students, 1,435 construction industry employers and 17 professional women working in construction were canvassed using self-administered structured questionnaires. The questionnaires were designed to explore the nature of the employment of women in the industry as well as the employment practices of employers. The questionnaires were administered during a series of workshops on compliance with construction regulations attended by multiple industry stakeholders. The data collected was encoded and analyzed using the Statistical Package for the Social Sciences (SPSS).

3.4 Survey Research

Survey research is a common approach and relatively simple in design. In this type of research a series of questions is posed to willing participants, responses are summarised with percentages, frequencies or statistical indices and then inferences about a particular population are drawn (Leedy & Ormrod, 2001).

3.4.1 Questionnaire Design

A questionnaire enables a researcher to organise the questions and receive replies without actually having to talk to every respondent (Walliman, 2005). The questions are fixed and are the same for each respondent. Most of the questionnaires were hand-delivered and responded to in the presence of the researcher. This option might be time consuming but yielded a high response rate.

The value of the questionnaire is that since it contains mostly close-ended questions, it will be reasonably easy to complete. The questionnaire does not entail much data collection

from respondents (Fellows and Liu, 1997). A major drawback of the questionnaire is industry fatigue. It may thus be difficult to obtain wide responses as typically responding to student questionnaires does not rate highly on the list of priorities of many a business organisation (Naoum, 1998).

The objective of the questions was to find out what the participants knew, did, felt and thought cultural impact on career choices in construction by South African women. For these specific study two types of questions were used in the questionnaire survey:

3.4.1.1 Open Ended Questions

When respondents have and take the time to reflect on answers to questions, this provides the opportunity to get more meaningful information than from closed questions. This also assists in receiving responses that provide a clear indication of what the respondent feels about the topic. Open-ended questions provide a wealth of information provided respondents feel comfortable about expressing their opinions; provide the respondents an opportunity to express themselves freely resulting in a greater variety of information; virtually eliminate the possibility of the investigator's bias (Kumar, 2005). The student questionnaire had six (6) open ended questions, and the professional women questionnaire had a total of two (2) open ended questions. The questions helped the researcher gain better understanding and able to better interpret and analyse some of the answers for the closed ended questions.

3.4.1.2 Closed Questions

Closed-ended questions, as they provide 'ready made' categories within which respondents reply to the questions asked by the researcher, help to ensure that the information needed by the researcher is obtained (Kumar, 2005).

The respondents were given a set of alternative choices from which they could choose to answer the question such as, for example, "yes," "no," multiple choice, a rating or a ranking. Closed questions can usually be answered quickly, allowing researchers together

large amounts of information quickly. However, the disadvantage is that respondents may rush through the questions and not take enough time to think about their answers.

This type of questioning was regarded as beneficial to this topic as the questions and answers provided were instrumental in identifying and providing input related to the hypothesis presented. The student questionnaire consisted of a total of eighty three (83) closed ended questions, and the professional women questionnaire had thirty three (33) closed ended questions.

3.4.2 Bias

The primary goal of research is to arrive at valid conclusions through scientific enquiry. Valid conclusions can only be reached in observational or experimental research if bias can be eliminated. Bias is defined as a systematic deviation from the truth which can potentially take place in the design, implementation, or analysis of a study. In most cases, bias cannot be completely eliminated, but it can be minimized (Dunn *et al.*, 2003).

Measurement bias exists when the researcher fails to control for the effects of data collection and measurement. And sampling bias exists when the sampling procedure introduces bias. The sample selected for this study was purposive namely students and construction industry practitioners. This sampling technique was done because the researcher had predefined groups in mind. Purposive sample is very useful for situations where you need to reach a targeted sample, as in the case of this study where the researcher's targeted sample was specific. In selecting the sample the researcher did not limit the participants to those that related to the subject.

3.4.3 Validity

Any measurement procedure needs to be valid and reliable. Reliability refers to the confidence that the measuring instrument will generate the same numeric value when repeated on the same object (Gaur and Gaur, 2006). A measuring instrument is valid when it measures what it is actually supposed to measure. If an instrument is considered to be reliable, it does not necessarily mean that it is also valid. According to Babbie and Mouton (2003) a way to ensure reliability is to use measures that have proven their reliability in previous research. Another way to measure reliability is by using the test-retest method which measures the same object twice and correlates the results (Gaur and Gaur, 2006). The measure is reliable if it generates the same answer in repeated attempts. Establishing reliability in this way is, however, difficult as the respondent who repeatedly undergoes the same test cannot remain neutral to the test. Other ways of assessing reliability include Cohen's *kappa coefficient* for categorical data and Cronbach's *alpha* for internal reliability of a set of questions (Gaur and Gaur, *ibid*).

In terms of measurement procedures, validity is the ability of an instrument to measure what it is designed to measure (Kumar, 2005). In fact, the research is concerned with investigating a hypothesised casual relationship between an independent variable and dependent variable. If such a relationship is found, inferences are drawn about the population and, perhaps, a variety of circumstances in which the relationship may apply beyond those of the particular study carried out (Fellows & Liu, 1997).

Therefore, validity is premised on the assumption that what is being studied can be measured or captured, and seeks to confirm the truth and accuracy of this measured and captured data, as well as the truth and accuracy of findings or conclusions drawn from the data (O'Leary, 2004).

3.4.4 Reliability of the questionnaires

Reliability is premised on the notion that there is some sense of uniformity or standardisation in what is being measured, and that methods need to consistently capture what is being explored (O’Leary, 2004). An instrument is proven reliable if it provides the same results on repeated trials. A research instrument is reliable if it is consistent and stable, and, hence, predictable and accurate. Reliability will be analysed using SPSS by calculating the correlation of values of items for questions of which responses are predicted.

An appropriate reliability test for a single occasion data collection is Cronbach’s coefficient alpha which is an estimate of internal consistency of responses to different scale items (Tredoux & Durrheim, 2002). Cronbach’s alpha coefficient varies from 0 to 1; the more the coefficient is closer to 1, the more reliable.

The Cronbach’s alpha coefficient is calculated as follows:

$$r_{\alpha} = \frac{n}{n-1} \left(1 - \frac{\sum \sigma_j^2}{\sigma^2} \right)$$

Where: r_{α} = sum of the item variance

σ^2 = variance of the total score of the scale

n = number of items

3.4.5 Questionnaire Administration

One of the main primary data collection instruments in research is the survey questionnaire. Modes of data collection by questionnaire differ in several ways, including the method of contacting respondents, the medium of delivering the questionnaire to respondents, and the administration of the questions. Questionnaires are an inexpensive way to gather data from a potentially large number of respondents. Often they are the only feasible way to reach a number of reviewers large enough to allow statistically analysis of the results. A well-

designed questionnaire that is used effectively can gather information on both the overall performance of the test system as well as information on specific components of the system. If the questionnaire includes demographic questions on the participants, they can be used to correlate performance and satisfaction with the test system among different groups of users (O'Leary, 2004).

Self-administered questionnaires are instruments in which the respondents are required to complete the questionnaires themselves. In this specific study, the questionnaires were administered and collected by the researcher. Survey instruments were distributed to a group of respondents gathered at the same place at the same time. Although anonymity could not be guaranteed while the research was in progress, confidentiality was ensured throughout the process. As part of the introduction to the administration of the questionnaire, both the researcher and the purpose of the study were introduced and the process was explained in English (O'Leary, 2004).

3.5 Sampling and Sample Selection

Sampling is concerned with drawing individuals or entities in a population in such a way as to permit generalisation about the subject of interest from the sample to the population. The most critical element of the sampling procedures is the choice of the sample frame which constitutes a representative subset of the population from which the sample is drawn. The sample frame adequately represents the unit of analysis.(O'Leary, 2004). The sample size was selected with the understanding that the full population could not be surveyed because of cost and time factors, in order to present a true representation of the total population, purposive sampling was used. This was done by first identifying the various stakeholders such as tertiary students, construction industry employers, and 25 professional women working in the industry. The selected areas for the research are Gauteng and Western Cape provinces.

Purposive sampling was used in order to achieve the objectives of this study; this consists of handpicking supposedly typical or interesting cases (Blaxter *et al*, 2001). According to Walliman (2005) and O'Leary (2004), purposive sampling is labelled as "theoretical sampling". It is a useful sampling method consisting of getting information from a sample of the population that one thinks knows most about the subject matter (Walliman, 2005). O'Leary (2004) indicated that there is a growing recognition that non-random samples can credibly represent the populations, given that the selection is done with the goal of representativeness in mind. Furthermore, "purposive" highlights the importance of conscious decision-making in non-random sample selection (O'Leary, 2004).

3.6 Data analysis

Data analysis encompasses the compilation and interpretation of the data collected. Analysis will depend on the nature and form the data has been recorded. Since the data has been recorded using qualitative and quantitative approaches, the analysis will be done accordingly. Whether it is qualitative or quantitative data, the main rule of any form of analysis is to move from raw data to meaningful understanding (O'Leary, 2004).

3.6.1 Qualitative analysis

The analysis of qualitative data consists of abstracting from the raw data all points that a researcher considers to be relevant to the topic under investigation. Qualitative data is analysed thematically. Thematic analysis can include analysis of words, concepts, literary devices, and/or non-verbal cues (O'Leary, 2004). During the interview, especially a semi-structured one, interviewees are not always straight forward to the point. The researcher may have some few basic questions but often the conversation takes direction upon the response of the interviewee.

3.6.2 Quantitative analysis

Quantitative analysis uses the syntax of mathematical operations to investigate the properties of data (Walliman, 2005). Quantitative data is analysed statistically. Statistical analysis can be:

3.6.2.1 Descriptive

Descriptive statistics are used to describe and summarise the basic features of the data in a study, and are used to provide quantitative descriptions in a manageable and intelligible form (O'Leary, 2004). Descriptive statistics measure the central tendency (mode, median, mean); the dispersion (standard variation) will be adopted.

3.6.2.2 Inferential

Inferential statistics draw conclusions that extend beyond the immediate data (O'Leary, 2004). Raw data from the closed-ended questions will be captured using Statistical Package for Social Sciences (SPSS) and subsequent calculations will be generated then interpreted.

3.6.2.3 Testing the hypothesis

A hypothesis is a hunch, assumption, suspicion assertion or idea about a phenomenon, relationship or situation, which one intends to investigate in order to find out how right she/he is (Kumar, 2005). A hypothesis may either be rejected or not rejected. As a hypothesis is usually constructed on the basis of what is commonly believed to be right, disproving it might lead to something new that has been ignored by previous researchers (Kumar, 2005).

3.7 Chapter summary

This study has examined the interconnection between gender, culture, religion, masculinity and the unattractive image of the construction industry and the career choices of women in South Africa by questioning the effectiveness of promoting the need for women to acquire education within the construction industry to address issues of development, skills shortage limitation and gender equity. The questionnaires developed for this study were targeted at gathering information and relevant data to support the assumptions and hypothesis of this research

CHAPTER 4 DATA ANALYSIS

4.1 Introduction

Research is concerned with examining the relationship between variables. Statistical evidence is necessary to establish the strength of relationships between the variables that the data represents and to draw conclusions from the empirical data. The data gathered from the questionnaires were analyzed using the Statistical Package for Social Sciences (SPSS). The results of the data analysis are presented. The data were collected and then processed. The following fundamental goals drove the collection of the data and the subsequent data analysis. Those goals were:

- To develop a base of knowledge about what factors influence the career choices in construction by South African women;
- To determine if current perceptions of the construction industry differed between males and female students pursuing careers in construction; and
- To determine whether there was a relationship between the culture of the construction industry and career choices of females.

4.2 Describing the culture and environment of the construction industry

In addressing the environmental characteristics that describe the nature of the construction industry literature and results of current and past research on the image of the construction industry in South Africa and elsewhere served as a secondary data source for this research. For the purpose of this research the literature sources were selected to provide an explanation of the theoretical rationale of the problem being studied as well as to indicate what research has already been done and how findings relate to the problem at hand. The selected sources primarily assisted in tackling the problem of the research study. The understanding of what other researchers had done assisted in preparing to investigate the problem with deeper insight and more complete knowledge.

4.3 Primary data

4.3.1 Self-administered questionnaires

Questionnaires were developed as a method of collecting data from the target population, namely construction organisations, 1st and 4th Year Built Environment students and professional women working in the construction industry. These questionnaires were informed by the review of relevant literature. The questionnaires were designed to measure characteristics, attitudes, motivations, and opinions as well as past, current, and future conduct.

4.3.2 Construction Industry Survey

A national survey was conducted among 1,435 South African construction industry organisations. The profile of the sample is shown in Table 4.1 in terms of the demographic areas of operations of the organizations, nature of activities, average annual turnover, and size of the average labour force. Most (21.3%) of the participants in the profile were engineering practices while 19.6% were contractors and 19.4% public sector clients. The majority (23.8%) of the participants operated primarily in Kwazulu Natal with 19.2% practicing in the Western and 17.7% in Gauteng. A further 16.2% had business practices in the Eastern Cape. Just over a third (39.4%) of the participants had an annual turnover of >R20 million, and the rest <R20 million. Most of the businesses (30,6%) employed less than ten employees.

Table 4.1 Participants demographics and business practice

N=1,435	
Business Practice	
Engineering Practices	21.3%
Contractors	19.6%
Public sector clients	19.4%
Architects	8.0%
Project Managers	7.6%
Quantity Surveying Consultants	7.0%
Private sector clients	5.8%
Co-contractors	3.6%
Manufacturers	1.5%
Suppliers	1.0%
Other	5.4%
Province of primary business practice	
Kwazulu Natal	23.8%
Western Cape	19.2%
Gauteng	17.7%
Eastern Cape	16.2%
Mpumalanga	5.9%
Free State	5.5%
Northern Cape	4.0%
Limpopo	3.5%
Multiple Provinces	3.4%
North West	3.0%
Average Annual Turnover	
<R1mil	16.4%
>R1mil < R5mil	25.4%
>R5mil < R20mil	18.8%
>R20 mil	39.4%
Average size of labour force	
< 10	30.6%
>11 < 50	25.9%
>50 < 100	8.6%
>100 < 250	8.2%
>250	26.7%

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4.3.2.1 Female employment and remuneration

Table 4.2: Female construction employment

> 10 Females	$\geq 10 \leq 50$ Females	$\geq 50 \leq 100$ Females	100 <
88.5%	7.0%	1.1%	3.4%

Table 4.2 suggests that most of the respondents (88.5%) employed less than 10 female workers, and very few employed 10 or more females, namely 11.5%.

Table 4.3: Zero female employment by job categories

Management	Secretarial	Supervisory	Skilled	Semi-skilled	Unskilled
59.2%	34.6%	84%	81.6%	86.1%	72.9%

The findings in Table 4.3 suggest that females are still viewed as best suited to perform secretarial functions in construction employment with 65.4% of firms reporting that only females were employed exclusively in this job category. The findings also indicate that a very large number (84%, 82%, 86% and 73%) of the respondents failed to employ women as supervisors, skilled workers, semi-skilled workers, and unskilled workers respectively. This finding suggests that the construction industry is still male-dominated with few opportunities given to females especially in categories of employment that require menial work on construction sites.

4.3.2.2 Gender policy and equity promotion

From Table 4.4 it is evident that less than half of the respondents (44.5%) had written gender equity policies in place while only more than a quarter (27.8%) provided educational material on gender issues.

Table 4.4: Gender policy and education

	Yes	No	Don't know
Written gender equity policy	44.5%	34.9%	20.6%
Provision of educational material on gender issues	27.8%	50.0%	22.2%
Females workers entitled to same and opportunities as male workers	92.2%	3.1%	4.7%
Separate facilities provided for female workers	83.2%	14.9%	1.9%
Management visibly endorse non-discriminatory employment practices & education programs on gender issues	65.2%	18.5%	16.3%
Simple clear and unambiguous communication of gender equity policies	55.2%	22.7%	21.9%
Provision of funding targeted at improving the status and qualifications of female workers	51.1 %	23.5%	25.4%

The communication of their firm's gender equity policy to workers in simple, clear and unambiguous terms was reported by 55.2% of respondents. However, of concern is the number of the respondents (21.9%) that were unaware of what was happening in their organizations relative to gender equity issues, which could be indicative that they did not have a policy to communicate.

According to 65.2% of respondents, management visibly endorsed non-discriminatory employment practices and education programs or information about gender equity issues.

This endorsement, for example, took the form of:

Workers attending gender equity workshops and/or seminars;

Targets to increase female participation in the workplace; and

Provision of brochures, email communications, management directives, staff news bulletins and conditions of service.

It is evident from Table 4.4 that while most of the firms (92.2%) of respondents endorsed the rights of females to equal treatment substantially less, namely 51.1% reported any special financial provision for the improvement of the status and qualifications of existing female workers.

Comments drawn from the written responses of participants included:

“Equity is not a priority for management”

“Too many unqualified women have been appointed in top positions”

“Males struggle with unqualified females – affirmative action posts”

“Lack of supportive groups”

“Heavy physical work – not suitable for women”

“People underestimate women in the man’s workplace”

“Cultural resistance among labourers”

4.3.2.3 Summary of industry survey findings

From the survey it is evident that women are still not respected on construction sites because their ability to work in construction is underestimated in the industry. The findings also suggest that while organisations claim that their female workers are entitled to the same opportunities as their male colleagues, they are not as committed to providing finances targeted at improving the status and qualification of women.

There is a belief that there are too many unqualified women appointed in top positions which are seen as merely affirmative action positions. The findings also reveal that equity is not a priority for management and that there is cultural resistance towards women doing manual labour on construction sites.

4.3.3 Construction student survey

A sample of 141 construction students was surveyed at 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, namely

- 1st year students - 37.3%;
- 2nd year students - 6.3%;
- 3rd year students - 1.6% ; and
- 4th year students - 54.8%. The majority (60.8%) of the students were Quantity Surveying majors, 37.5% were construction management majors, and 1.7% civil engineering majors as reported in Table 4.5. These students were presented with several statements, closed ended questions and open ended questions relative to their views of issues affecting women in construction.

Table 4.5: Student Sample Profile

<u>Institution</u>	N	%
CPUT	63	44.7
UJ	78	55.3
Total	141	100
<u>Year /level of study</u>		
1 st Year	47	37.3
2 nd Year	8	6.3
3 rd Year	2	1.6
4 th Year	69	54.8
Total	126	100
<u>Program</u>		
Construction Management	45	37.5
Quantity Surveying	73	60.8
Civil Engineering	2	1.7
Total	120	100
<u>Gender</u>		
Male	74	61.0
Female	47	39.0
Total	121	100

For each of the following statements students were required to express the extent to which they agreed with the statements on a 5-point scale where 1=strongly disagree, 2=disagree, 3=neutral, 4=agree and 5=strongly agree.

Table 4.6: Image of industry and role of women

Rank	Statement	N	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	Mean	St Dev
1	Women can build successful careers in construction	120	5.0	5.7	8.5	34.8	46.1	4.1	1.1
2	Women have a role to play in construction	140	2.1	5.7	15.7	37.1	39.3	4.0	0.9
3	The Employment Equity Act has increased the number of women in construction.	138	3.6	5.1	18.1	45.7	27.5	3.9	0.9
4	Males are more suited to construction work	140	8.6	12.9	20	27.9	30.7	3.6	1.3
5	The masculine image of industry is a barrier to entry by women	136	5.9	18.4	35.3	30.1	10.3	3.2	1.0

It is evident from Table 4.6 that most (80.9%) of the students reported that women could build successful careers in construction. Further, 76.4% of the students agreed that women had a role to play in construction. With regard to the Employment Equity Act and its role in the construction industry, almost three-quarters (73.2%) of the students agreed that the implementation of the Act had increased the number of women in construction. More than half (58.6%) of the students agreed that males were more suited to construction work. Less than half (40.4%) of the students agreed that the masculine image of the industry was a barrier to entry by women. From Table 4.6 it is also evident after ranking the means of their responses that students agreed most strongly that women could build careers in construction (mean=4,1), had a role to play in the industry (mean=4,0) and that the Employment Equity Act increased numbers of women in construction (mean=3,9).

Table 4.7: Involvement of women in construction education

Rank	Statement	N	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	Mean	St Dev
1	Most construction studies lecturers are males	135	2.2	6.7	5.2	38.5	47.4	4.2	0.9
2	The majority of students in classes are male	137	3.6	6.6	7.3	35.8	46.7	4.1	1.1
3	Higher Education institutions need to increase the number of female academic staff in construction departments	140	3.6	8.6	28.6	32.1	27.1	3.7	1.1
4	More women need to make construction a career choice	141	5.0	9.9	26.2	24.8	34.0	3.7	1.2
5	Increasing the number of women in construction will improve the image of the industry	141	7.1	13.5	20.6	33.3	25.5	3.6	1.2
6	Construction departments at higher education institutions encourage the enrolment of female students	137	5.1	12.4	36.5	34.3	11.7	3.4	1.0
7	Most lecturers should be male because they know construction	137	27	40.1	16.8	7.3	8.8	2.3	1.2
8	The numbers of female students in classes are decreasing	138	14.5	33.3	31.2	13.8	7.2	2.2	1.1
9	Female lectures do not know enough about construction	136	33.1	30.9	18.4	9.6	8.1	2.2	1.2

The results in Table 4.7 suggest that more than half (58.8%) of the respondents reported that more women needed to make construction a career choice, and a similar proportion (59.2%) reported that higher education institutions needed to increase the number of female academic staff in construction departments. Furthermore, 58.8% reported that increasing the number of women in construction would improve the image of the construction industry. More than three-quarters (82.5%) of the respondents reported that the majority of students in construction classes were still male while 21% agreed that female students in classes were decreasing. About two-thirds (67.1%) of the respondents reported that they did not believe that most lecturers should be male because they know construction, and a similar number (64%) reported that they did not believe that female lecturers knew enough about construction. From Table 4.7 it is further evident after ranking the means of their responses that students agreed most strongly with lecturers being male (mean=4,2) followed by the majority of students in classes being male (mean=4,1). They also tended to agree that higher education institutions needed to increase the number of academic female staff (mean=3,7), and more women needed to make construction a career choice (mean=3,7). They tended to disagree that most lecturers should be male because of their knowledge of construction (mean=2,3), that the numbers of female students in classes was decreasing (mean=2,2) and that female lecturers did not know enough about construction (mean=2,2).

Table 4.8: Site conditions

Rank	Statement	N	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	Mean	St Dev
1	Women are less likely to accept inadequate welfare facilities than men	135	5.9	13.3	37.8	31.9	11.1	3.5	1.0
2	Mechanisation of the construction process will promote participation by women	134	1.5	10.4	41.0	38.1	9.0	3.4	0.9
3	Women are less likely to accept unsafe conditions than men	133	9.0	21.1	10.5	40.6	18.8	3.3	1.3
4	Women are less likely to be willing to work in extreme temperatures	133	7.5	21.8	27.1	33.8	9.8	3.2	1.1
5	Current welfare facilities e.g. toilets for women are in adequate	135	10.4	16.3	32.6	30.4	10.4	3.1	1.1
6	Some construction materials present manual material handling problem for women	134	8.2	23.1	26.9	29.9	11.9	3.1	1.2
7	Current provision for vertical movement on site is inappropriate for women	133	8.3	27.1	39.8	18.8	6.0	2.8	1.0
8	Women have 'special' personal hygiene issues/ requirements that affect their employment in construction	137	15.3	26.3	29.2	19.7	9.5	2.8	1.2
9	Ultra violet radiation poses more of a threat to women	131	13.7	26.7	38.2	16.8	4.6	2.7	1.0
10	Appropriate work attire is not readily available for women	133	19.5	30.1	18.8	24.1	7.5	2.6	1.2
11	Transport to and from, and between sites is inappropriate for women	134	13.4	42.5	23.1	14.9	6.0	2.5	1.1
12	Generally personal protective equipment (PPE) is not suited to women	134	22.4	35.1	26.9	12.7	3.0	2.3	1.1

From Table 4.8 it is evident that less than half (41.6 %) of the respondents reported that they did not believe that women had 'special' personal hygiene issues/ requirements that affected their employment in construction, and 41.8% agreed that some construction materials presented manual material handling problems for women. Less than half (43%) agreed that women were less likely to accept inadequate welfare facilities than men. With regard to transport more than half (55.9%) disagreed that transport to and from and between construction sites was inappropriate for women. A smaller percentage (15.7%) agreed that generally personal protective equipment (PPE) was not suited to women. Students tended to disagree with most of the issues raised given that all the means of their responses were less than 3. For example, they disagreed most that transport to and from work was inappropriate for women (mean=2,5) and that generally PPE was unsuited for women (mean=2.3).

Table: 4.9 Capability of women to work in construction

Rank	Statement	N	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	Mean	St Dev
1	Older women (>40 yrs) are less suited to the physical construction process than men of the same age	135	5.2	18.5	17.8	40.0	18.5	3.4	1.1
2	Women are not as physically capable as men	136	8.1	19.1	16.9	33.1	22.8	3.4	1.3
3	Women are as physically capable as men	134	16.4	20.9	22.4	23.9	16.4	3.0	1.3
4	The work environment of the construction site has a negative influence on the recruitment of women	136	4.4	21.3	27.9	36.8	9.6	2.9	1.0
5	Women are more likely to be absent from work	139	10.1	20.1	21.6	35.3	12.9	2.3	1.3

The findings of Table 4.9 suggest that there was agreement that women were not as physically capable as men. Almost half (46.4%) of the students agreed that the work environment of the construction site had a negative influence on the recruitment of women. Furthermore 48.2% of students reported that women were most likely to be absent from work. Students tended to agree that older women were less suited to the physical construction process than men of equal age. They also tended to agree that women were not as physically capable as men (mean=3,4). Further, they disagreed most that women were more likely to be absent from work (mean=2.3). They also tended not to support the notion that the work environment of the construction site had a negative influence on the recruitment of women (mean=2,9).

Table: 4.10 Discrimination against women

Rank	Statement	N	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	Mean	St Dev
1	Women on construction sites are not respected to the same extent as men	134	7.5	13.4	19.4	41	18.7	3.5	1.2
2	Women are likely to be sexually harassed on site	133	10.5	14.3	19.5	37.6	18.0	3.4	1.2
3	The fact that there are more male professionals in construction intimidates women	138	7.2	24.6	26.8	30.4	10.9	3.1	1.1
4	Women are more suited to administrative than production functions on site	135	20	20.7	23	23	13.3	2.9	1.3
5	Female students are intimidated by the male students in classes	136	4.4	21.3	27.9	36.8	9.6	2.2	1.2

From Table 4.10 it is evident that more than half (55.6%) of students reported that they believed that women were likely to be sexually harassed on site. Further, 59.7% reported that they believed that women on construction sites were not respected to the same extent as men, and 41.3% agreed that that there being more male professionals in construction intimidated women. A further 46.4% agreed that female students were intimidated by male students in the class. After ranking the means of their responses it is evident that they tended to agree mostly that women were more likely to be less respected than their male counterparts (mean=3,5) and that they were likely to be sexually harassed (mean=3,4). Further, they tended to strongly disagree that female students would be intimidated by male students in their classes (mean=2,2).

Table 4.11: Career preferences

Rank	Statement	N	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	Mean	St Dev
1	Being a chartered Accountant or medical doctor is more attractive and popular to women than being a construction manager	139	8.6	21.6	12.9	30.2	26.6	3.4	1.3
2	Women prefer careers in other sectors such as commerce & IT than the construction industry	137	13.9	11.7	21.2	31.4	21.9	3.3	1.3
3	I would encourage other women considering careers in other sectors to rather choose a career in construction	139	9.4	19.4	27.3	27.3	16.5	3.2	1.2
4	The work environment of the construction site discourages women to consider careers in construction	139	10.1	20.1	21.6	35.3	12.9	3.2	1.2

It is evident from Table 4.11 that students had rather neutral feelings about the issue of career preferences in that they tended to agree that being a chartered accountant or medical doctor was more attractive and popular to women than construction management (mean=3,4) and that women preferred careers in other sectors such as commerce and IT (mean=3,3).

They agreed less strongly that they could encourage women to rather choose construction as a career (mean=3,2) and that women were discouraged by the construction work environment to choose careers in the sector (mean=3,2). This finding suggests that the construction industry was not considered hugely popular to women and viable as a career choice in comparison to other career options and that the work environment was an influencing factor although not necessarily strongly so.

Table 4.12: Comparison of popularity of construction careers to other sectors

Question	N	Yes (%)	No (%)	Unsure (%)
Do you believe that careers in construction are less popular to women in comparison to other sectors	124	66.1	24.2	9.7

The responses in Table 4.12 confirm this conclusion with about two-thirds (66.1%) of the students reporting that they believed that careers in other sectors were more popular to women than construction.

Table 4.13: Influence of cultural beliefs and historical background

Rank	Statement	N	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	Mean	St Dev
1	Women who believe in the cultural role of women being merely wives are less likely to embark on careers in construction.	138	3.6	15.9	23.9	39.1	17.4	3.5	1.0
2	Women who believe in the historical traditional roles of women are less likely to choose a career in construction	137	6.6	13.1	22.6	40.9	16.8	3.4	1.1
3	The traditional historical roles that women & men played in society, makes it difficult for men to accept their female colleagues	138	4.3	18.8	29	34.8	13.0	3.3	1.1
4	Cultural beliefs and backgrounds play a major role in the career decisions of women	136	6.6	16.9	30.1	33.1	13.2	3.2	1.1
5	Women who have aspirations of being a mother are more likely to be attracted to careers in other sectors than in construction because of the harsh working environment	138	7.2	21.0	21.7	34.8	15.2	3.2	1.2

From Table 4.13 it is evident that almost half (46.3%) of the students agreed that cultural beliefs and backgrounds played a major role in the career decisions of women. More than half (57.7%) reported that women who believed in the historical traditional roles of women were less likely to choose a career in construction. A further 56.5% reported that women who believed in the cultural role of women being merely wives were less likely to embark on careers in construction. According to half (50%) of the students women who had aspirations of being a mother were more likely to be attracted to careers in other sectors than construction because of the harsh construction working environment. About half of the students (47.8%) reported that the traditional historical roles that women and men played in society made it difficult for men to accept their female colleagues. When ranking the responses by the means it is evident that most means were slightly above the neutral value of 3 ranging between 3,5 and 3,2, suggesting that students tended to agree with the statements but not strongly so. This finding suggests that cultural beliefs and backgrounds were not considered to be largely influential when choosing careers in construction.

Table 4.14: Influence of knowledge of the construction industry

Rank	Statement	N	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	Mean	St Dev
1	There is a need for the construction industry to provide more knowledge about the career opportunities for women within construction	139	3.6	7.2	20.9	31.7	36.7	4.0	1.1
2	More knowledge of the Employment Equity Act and research conducted on the participation of women in construction will improve the popularity of construction careers amongst South African women	136	3.7	10.3	29.4	39	17.6	3.6	1.0
3	Women are aware of the different career opportunities within the construction industry	138	3.6	19.6	27.5	35.5	13.8	3.4	1.1
4	Women expect to have successful careers within the construction industry because they have enough knowledge of the industry	139	3.6	15.8	36	35.3	9.4	3.3	0.9

Table 4.14 suggests that just less than half (49.3%) of the respondents reported that women were aware of the different career opportunities within the construction industry. Just more than two-thirds (68.4%) of the respondents reported that there was a need for the construction industry to provide more information on the career opportunities for women in the sector. Furthermore, 56.6% reported that more knowledge of the Employment Equity Act and research conducted on the participation of women in construction would improve the popularity of construction careers among South African women. There was particularly strong agreement that the need for more information on careers opportunities for women in the industry would improve the likelihood of choosing construction as a career (mean=4.0). However, they agreed less that women expected successful construction careers because they had enough knowledge on the industry (mean=3,3).

Using a three-point scale where 1= low, 2=medium and 3=high, students were asked to rate their knowledge of the industry prior to choosing their careers in construction. Table 4.15, suggests that almost half (49.6%) of the students had a mediocre knowledge of the industry and slightly more than a quarter (27.4%) of them had a high knowledge of the industry prior to enrolling in construction studies. This finding suggests that there was a lack of knowledge about construction itself and careers within construction among current construction students. This finding is important considering that the construction industry is experiencing an unprecedented boom.

Table 4.15: Knowledge of the construction industry

	N	1 (%)	2 (%)	3 (%)	Mean	St Dev
Knowledge of the construction industry	117	23.1	49.6	27.4	2.2	0.7

Figure 4.1 depicts where students sourced information about the industry. Only a minority (16.3%) of respondents reported gaining their knowledge through their involvement in construction while 22.1% reported gaining the information via the internet, 14% received their knowledge from their education and the remaining 14% acquired this information from their families. The students knowledge of the construction industry was mediocre (mean=2.2).

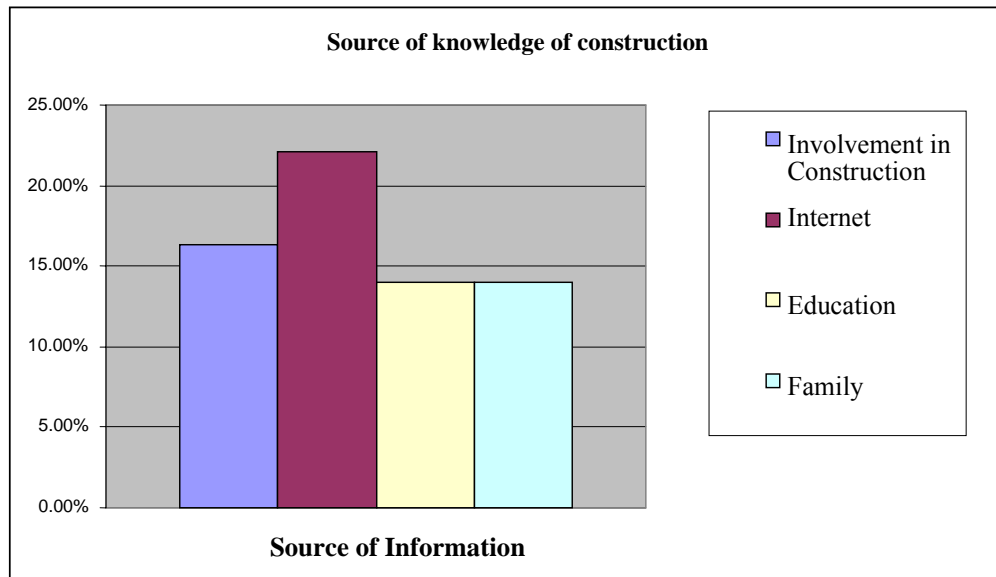


Figure 4.1 Source of Knowledge of Construction

Table 4.16: The impact of women on the skills shortages

Rank	Statement	N	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	Mean	St Dev
1	An increased number of women in construction will contribute to the improvement of skills shortage in the construction industry	136	4.4	11.0	30.9	34.6	19.1	3.5	1.1
2	The low employment of women in construction contributes to the skills shortage in the construction industry	137	5.8	26.3	21.2	29.2	17.5	3.2	1.2

From Table 4.16 it is evident that almost half (46.7%) of the students reported that the low employment of women in construction contributed to the skills shortage in the construction industry. On the other hand, about one-third (32.1%) responded negatively and 21.2% were either neutral or unsure about this issue. Just more than half (53.7%) of the respondents reported that an increased number of women in construction would contribute to the improvement of the skills shortage in the construction industry. However, they did not strongly agree that this would occur (mean=3,5).

Table 4.17: The relationship between cultural beliefs, career choice and career success

Rank	Question	N	Yes (%)	No (%)	Unsure (%)	Mean	St Dev
1	Do you believe that cultural beliefs will influence your career in the construction industry	136	20.6	64.0	14.7	1.9	0.6
2	Do you believe that the cultural differences between males and females influence their career choice	136	44.9	42.6	12.5	1.6	0.7
3	If Yes, do you believe that this influence contributes to the low representation of women in construction	56	52.3	31.8	15.9	1.6	0.7
4	If yes, do you believe that this contributes to the prevalence of discrimination against women who have entered the construction industry	47	45.2	43.3	10.6	1.1	0.9

Table 4.17 suggests that only 20.6% of the students reported that cultural beliefs would influence their careers in the construction industry. However a higher percentage (44.9%) reported that the cultural differences between males and females had influenced their career choices. Just more than half (52.3%) of these respondents reported that this influence contributed to the low representation of women in construction. A further 45.2% reported that this influence ultimately contributed to the prevalence of discrimination against women who had entered the construction industry.

It is evident from the mean scores that were all less than 2 that students mostly disagreed with the statements relative to cultural beliefs and their impact on their choice of career. The respondents who responded affirmatively were asked to elaborate on how the discrimination of women in construction impacted on the choices by women of careers in a traditionally male dominated industry. Their responses are shown in Table 4.18.

Table 4.18: Impact of discrimination of women on career choices

Students statements	N	(%)
Negatively, would rather choose other career	34	23.5
Tendency of being inferior	34	8.8
Results in less women in construction industry	34	8.8
They tend to avoid construction, they stick to the conventional ones such as nursing	34	5.9
Men think they can do all things whereas even women can do men's work	34	5.9
Most women become unsure of the choices and end up dropping out of construction	34	5.9

From Table 4.18 less than a quarter of the students (23.5%) reported that the impact of discrimination of women in construction on their career choices was negative and that they would rather choose other careers in other industries. A minority of students (8.8%) reported that women had a tendency to be inferior while a further 5.9% reported that women tended to avoid construction and stuck to conventional careers such as nursing. The responses to a further 8 closed ended questions with regard to the educational and historical background of women are shown in Table 4.19.

Less than half (40.9%) of the students came from communities where women were educated, and more than half (58.5%) of the students came from households where their mothers were educated. Almost half of the students (46.2%) agreed that women who grew up in a household where the mother was a housewife were less likely to choose careers that were traditionally not suitable for women. About two – thirds (61.5%) of students agreed that this background might influence the career choice preferences of women. All mean scores of responses to the statements relative to the influence of the family background on their career choices were less than 2 suggesting strong disagreement with them.

These findings suggest that women from communities where women are educated would be motivated to further their studies. Evidently, cultural and historical backgrounds influenced the choice of careers in construction.

Table 4.19: Education background and influences of women

Rank	Question	N	Yes (%)	No (%)	Unsure (%)	Mean	St Dev
1	Are the majority of women from your community educated?	132	37.1	40.9	21.2	1.9	0.8
2	Do you believe that women who grew up in a household where the mother was a housewife are less likely to choose careers that were traditionally not suitable for women?	130	46.2	39.2	14.6	1.7	0.7
3	While growing up, were women in your community encouraged to further their studies?	130	50.0	36.2	13.8	1.6	0.7
4	If, yes do you believe that this may have an influence in the career choice preferences of women?	130	61.5	19.8	18.7	1.6	0.8
5	Is your mother educated?	130	58.5	36.9	4.6	1.5	0.6
6	Do you believe you have something to contribute to the industry with your education?	125	90.4	7.2	0.8	1.2	1.1
7	Do you see yourself graduating after fourth year?	129	94.6	3.9	1.6	1.1	0.3

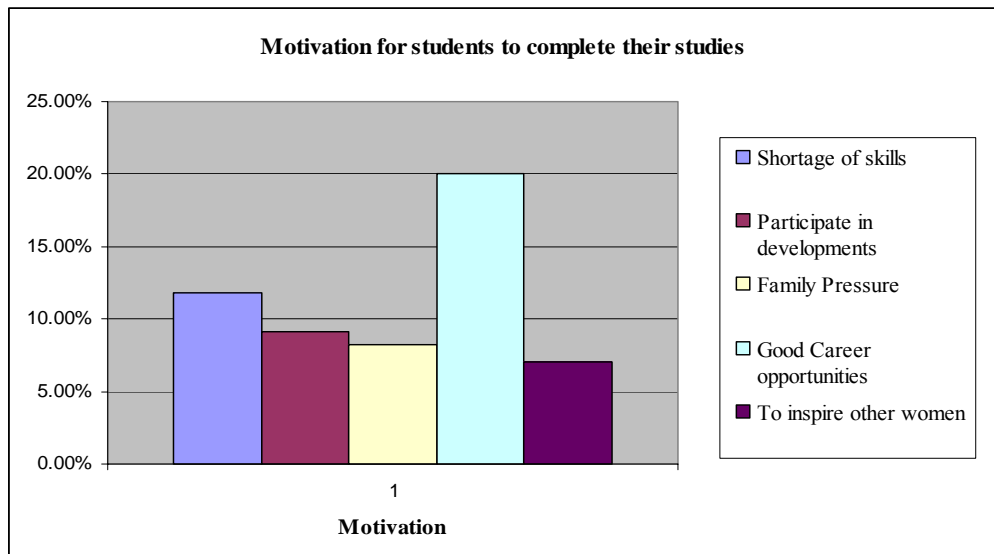


Figure 4.2: Motivation for students to complete their studies

From Figure 4.2 it is evident that less than a quarter of the students (20%) reported that the prospect of career opportunities in construction was a great motivator in completing their studies. A lesser number of students (11.8%) reported that there was a skills shortage gap in the construction industry which needed to be closed by qualified professionals. Only 7% of the students reported that they were women and wanted to participate in the industry and inspire other women.

Table 4.20 Influences behind career choices in construction

Students statements	N	(%)
Opportunities	106	18.0
Looking at something I constructed makes me feel good, passion	106	11.0
Fascinated by beauty of buildings	106	10.0
My background and family members	106	9.1
The fact that there where few women	106	7.5
To challenge the perception that construction is for males	106	7.5
Experience in construction	106	6.0
Successful women in construction	106	2.8

From Table 4.20 it is evident that 20 % of the students were influenced by the prospect of career opportunities in the industry, 11% were influenced by the passion they had for the industry, while a further 9.24% cited their background and family members as their influences. A very small percentage (2.8%) reported that they were encouraged or influenced by the track record of successful women in construction.

Table 4.21 Influences behind not selecting careers in construction

Statement	N	(%)
Nothing	90	27.8
Poor safety and risk	90	16.6
Money	90	7.8
Discrimination against women	90	7.7
Lack of understanding of career opportunities in construction	90	6.7
Lack of employment in construction	90	3.3
Sexual harassment done by men	90	3.3
Negative image of the construction industry	90	2.2

With regard to factors influencing them not to study towards a career in construction Table 4.21 suggests that 27.8% reported that nothing could have influenced them not to choose a career in construction. Safety and risk in construction were cited by 16.6% of the students as an influence against careers in construction and 7.7% that discrimination was one of the influences for not choosing a career with a further 3,3% reporting sexual harassment by males as an influence.

Table 4.22: Rating of influences behind career choices in construction

Rank	Influence	N	1 (%)	2 (%)	3 (%)	Mean	St Dev
1	Career expectations	122	13.1	32.0	54.9	2.4	0.7
2	Challenging work environment	122	9.8	32.0	58.2	2.4	0.7
3	Educational experience	124	23.4	25.0	51.6	2.3	0.8
4	Financial Prospects	123	17.1	26.0	56.9	2.3	0.8
6	Knowledge of the construction industry	121	14.9	45.5	39.7	2.2	0.7
5	Ability to work and have influence in a male dominated industry	122	21.3	32.8	45.9	2.2	0.8
7	Exploration of the unknown	122	27.0	39.3	33.6	2.0	0.8
9	Encouraged by knowledge of women who have had successful careers in construction	121	50.4	24.0	25.6	1.8	0.8
10	Convinced by parents	119	55.5	27.7	16.8	1.6	0.8
11	Cultural Background	117	62.4	18.8	18.8	1.5	0.8

On a three-point scale students were asked to rate the extent of the influence of a series of 11 statements on choosing careers in construction where 1= low, 2=medium and 3=high. Table 4.22 shows that career expectations and the challenging work environment was most influential in choosing a career in construction according to more than half (45,9% and 58.2% respectively) of the respondents. Financial prospects, career expectations and educational experience was also ranked by more than half (56.9%, 54.9% and 51.65, respectively) as being influential in choosing careers in construction. Knowing successful women in construction was not rated highly by more than half (50.4%) of the respondents.

When ranking the mean scores of responses it is evident that most means were slightly above 2, suggesting that overall all the influences had a medium impact on career choice. Cultural beliefs ranked lowest (mean=1.5) suggesting that cultural beliefs were not considered to be influential when choosing careers in construction.

Table 4.23: Influence of career choices in other sectors over construction

Rank	Influence	N	1 (%)	2 (%)	3 (%)	Mean	St Dev
1	The dangerous nature of the construction work	115	11.3	42.6	46.1	2.3	0.7
2	Challenging work environment	116	14.7	36.2	49.1	2.3	0.7
3	The inability to work and have influence in a male dominated industry	117	13.7	42.7	43.6	2.3	0.7
4	Male dominance of the industry	116	18.1	38.8	43.1	2.3	0.7
5	The seemingly discriminatory environment of the construction industry	114	17.5	43.0	39.5	2.2	0.7
6	Knowledge of the construction industry	117	15.4	50.4	34.2	2.2	0.7
7	The masculine and unattractive image of the construction industry	120	26.7	45.0	28.3	2.0	0.7
8	Career expectations and financial prospects	117	25.6	43.6	30.8	2.0	0.8

The results in Table 4.23 suggest that the challenging work environment, dangerous nature of construction, the inability to work and have influence in a male dominated industry and the male dominance of the industry were rated by almost half (49.1%, 46.1%, 43.6 and 43.1%, respectively) of students as influential on women choosing careers in other sectors instead of construction.

4.3.3.1 Analysis of the findings by gender

A further comparative analysis was done by examining the impact of gender on the responses of students. Out of 141 students, 48.9% of the females were registered at CPUT and 51.1% at UJ. Further, 54.1% of the males were registered at CPUT and 45.9% at UJ.

Table 4.24: Student's sample profile by gender

Participants per institution	Female		Male		Total	
	N	%	N	%	N	%
CPUT	23	48.9	40	54.1	63	44.7
UJ	24	51.1	34	45.9	121	55.3
Total	47	100	74	100	121	100
Program						
Construction Management	16	39.0	22	34.9	38	36.5
Quantity Surveying	24	58.5	40	63.5	64	61.5
Civil Engineering	1	2.4	1	1.6	2	1.9
Total	41	100	63	100	104	100

Table 4.25: Image of industry and role of women by gender

Statement	Sample			Female			Male		
	Rank	Mean	Std Dev	Rank	Mean	Rank	Rank	Mean	St Dev
Women can build successful careers in construction	1	4.1	1.1	1	4.7	4	4	3.8	1.1
Women have a role to play in construction	2	4.0	0.9	2	4.5	3	3	3.8	1.0
The Employment Equity Act has increased the number of women in construction	3	3.9	0.9	3	4.0	2	2	3.9	1.0
Males are more suited to construction work	4	3.6	1.3	5	2.9	1	1	4.0	1.1
The masculine image of industry is a barrier to entry by women	5	3.2	1.0	4	3.1	5	5	3.2	0.9

It appears that female students agreed most strongly that women could build successful careers in construction (mean=4, 7) and that they had a role to play in construction (mean=4,5). On the other hand male students agreed most strongly that males were more suited to construction work (mean=4,0). The difference in not only the overall ranking of the mean scores but also the magnitude of the means is indicative that female students differed from male students relative to the image of the industry and the role of women. Further, what female students disagreed most with were the issues that male students strongly agreed with. For example, males ranked the notion that males were more suited to construction highest while females ranked it last.

Table 4.26: Involvement of women in construction by gender

Statement	Student Sample			Female			Male		
	Rank	Mean	Std Dev	Rank	Mean	St Dev	Rank	Mean	St Dev
Most construction studies lecturers are males	1	4.2	0.9	1	4.3	0.7	1	4.2	1.0
The majority of students in classes are male	2	4.1	1.1	5	4.2	0.9	2	4.1	1.2
Higher Education institutions need to increase the number of female academic staff in construction departments	3	3.7	1.1	3	4.3	1.0	5	3.3	1.1
More women need to make construction a career choice	4	3.7	1.2	4	4.3	1.0	3	3.4	1.1
Increasing the number of women in construction will improve the image of the industry	5	3.6	1.2	2	4.3	0.8	6	3.2	1.1
Construction departments at higher education institutions encourage the enrolment of female students	6	3.4	1.0	6	3.6	0.8	4	3.3	1.0
Most lecturers should be male because they know construction	7	2.3	1.2	8	1.9	1.1	8	2.5	1.1
The numbers of female students in classes are decreasing	8	2.2	1.1	7	2.3	0.9	7	2.7	1.1
Female lecturers do not know enough about construction	9	2.2	1.2	9	1.9	1.1	9	2.3	1.2

From Table 4.26 there was some congruence relative to the responses to statements on the involvement of women in construction. However, there were differences in a few instances in the ranking of the issues. For example, the issue of increasing the number of women in construction that would lead to improving the image of construction was ranked 2nd by female students (mean= 4,3) but 6th by male students (mean = 3,2). While the mean scores relative to the number of male students in classes were similar, the ranking of this issue differed with females ranking it 5th and male students ranking it 2nd. Further, male students tended to respond less affirmatively to issues that their female counterparts felt more positively about. Relative to issues that female students felt most negatively about their male counterparts felt more positively.

Table 4.27: Capability of women to work in construction by gender

Statement	Student Sample			Female			Male		
	Rank	Mean	Std Dev	Rank	Mean	Rank	Rank	Mean	St Dev
Older women (>40 yrs) are less suited to the physical construction process than men of the same age	1	3.4	1.1	1	3.2	1.0	2	3.7	1.1
Women are not as physically capable as men	2	3.4	1.3	3	2.7	1.1	1	3.9	0.9
The work environment of the construction site has a negative influence on the recruitment of women	3	2.9	1.0	2	2.9	0.9	3	3.5	1.0
Women are more likely to be absent from work	4	2.3	1.3	4	1.8	1.0	4	2.7	1.2

Similarly, Table 4.27 shows that there tended to be less gender-based disagreement with issues relative to the capability of women to work in construction. The few instances where there was a difference included that male students tended to agree more (mean=3,9) that women were not as physically capable as men ranking the issue highest, while their female counterparts (mean=2,7) ranked it 2nd highest. The difference in the means is significant. Further, male students also tended to agree more strongly (mean=3,5) that the work environment of the site had a negative influence on the recruitment of women than female students (mean=2,9). Again the means differ significantly with females being more negative about the issue, suggesting that males felt more strongly that women were not capable of working on construction sites.

Table 4.28: Discrimination against women reported by gender

Statement	Student Sample			Female			Male		
	Rank	Mean	Std Dev	Rank	Mean	St Dev	Rank	Mean	St Dev
Women on construction sites are not respected to the same extent as men	1	3.5	1.2	1	4.0	0.9	4	3.2	1.2
Women are likely to be sexually harassed on site	2	3.4	1.2	2	3.4	1.1	1	3.7	1.3
The fact that there are more male professionals in construction intimidates women	3	3.1	1.1	3	2.8	1.0	3	3.3	1.0
Women are more suited to administrative than production functions on site	4	2.9	1.3	5	2.1	1.1	2	3.4	1.2
Female students are intimidated by the male students in classes	5	2.2	1.2	4	2.2	1.0	5	2.2	1.2

According to Table 4.28 female students ranked highest the issue that women on construction sites were not respected to the same extent as men with a mean of 4,0. On the other hand, male students ranked the issue 4th out of 5 with a mean of 3,2 – a significant difference, There tended to be congruence relative to the issue of sexual harassment of women on site. Males tended to agree (mean=3,4) that women were more suited to administrative than productive functions on site . Their female counterparts felt more negatively about this issue with a mean of 2,1). These findings confirm that female students were more positive about their productive roles in construction and ranked them differently than their fellow male students.

Table 4.29: Career preferences by gender

Statement	Student Sample			Female			Male		
	Rank	Mean	Std Dev	Rank	Mean	St Dev	Rank	Mean	St Dev
Women prefer careers in other sectors such as commerce & IT than the construction industry	2	3.3	1.3	4	2.9	1.4	2	3.7	1.1
The work environment of the construction site discourages women to consider careers in construction	4	3.2	1.2	2	3.0	1.1	3	3.5	1.0
Being a chartered Accountant or medical doctor is more attractive and popular to women than being a construction manager	1	3.4	1.3	3	2.9	1.3	1	3.8	1.2
I would encourage other women considering careers in other sectors to rather choose a career in construction	3	3.2	1.2	1	3.3	1.2	4	3.1	1.1

Table 4.29 suggests that male students were more positive than female students that women preferred careers in other sectors than construction with means of 3,7 and 2,9 respectively. Further, male students tended to agree more albeit not so strongly (mean=3,5) that the work environment of construction sites discouraged women to consider careers in construction. Their female counterparts were neutral (mean=3,0) on the issue. Males agreed more strongly (mean=3,8) that being a chartered accountant or medical doctor was more attractive and popular to women than being a construction manager. Female students tended to disagree that this was the case (mean=2,9). These findings suggest that male students held that women should not be in construction and should choose careers in other fields.

Table 4.30: Influence of cultural beliefs and historical background by gender

Statement	Student Sample			Female			Male		
	Rank	Mean	Std Dev	Rank	Mean	St Dev	Rank	Mean	St Dev
Cultural beliefs and backgrounds play a major role in the career decisions of women	4	3.2	1.1	3	3.2	1.0	2	3.4	1.0
Women who believe in the historical traditional roles of women are less likely to choose a career in construction	2	3.4	1.1	2	3.3	1.0	1	3.6	1.0
The traditional historical roles that women & men played in society, makes it difficult for men to accept their female colleagues	3	3.3	1.1	1	3.4	1.1	3	3.3	1.0
Women who have aspirations of being a mother are more likely to be attracted to careers in other sectors than in construction because of the harsh working environment	1	3.5	1.0	4	3.0	1.1	4	3.3	1.2

It is evident from Table 4.30 that there were no gender-based differences in responses to the statements on the influence of cultural beliefs and historical backgrounds. However, male students held more strongly (mean=3,6) than female students (mean=3,3) that women who believed in the historical traditional roles of women were less likely to choose a career in construction than female students. Female students held more strongly that the historical roles that women and men played in society made it difficult for men to accept females. These findings suggest that males held more strongly than females that their historical traditional roles could have an influence on their career choices in construction.

Table 4.31: Influence of knowledge of the construction industry by gender

Statement	Student Sample			Female			Male		
	Rank	Mean	Std Dev	Rank	Mean	St Dev	Rank	Mean	St Dev
There is a need for the construction industry to provide more knowledge about the career opportunities for women within construction	1	4.0	1.1	1	4.2	1.1	1	3.8	1.1
More knowledge of the Employment Equity Act and research conducted on the participation of women in construction will improve the popularity of construction careers amongst South African women	2	3.6	1.0	2	4.0	1.0	2	3.4	0.9
Women are aware of the different career opportunities within the construction industry	3	3.4	1.1	4	3.6	1.1	3	3.2	1.0
Women expect to have successful careers within the construction industry because they have enough knowledge of the industry	4	3.3	0.9	3	3.7	0.9	4	3.1	0.9

From Table 4.31 it seems that both female and male students agreed equally with most of the issues raised. However females held more strongly (mean=4,2) than males (mean=3,8) that there was a need for the construction industry to provide more knowledge about the career opportunities for women in construction. The difference in the ranking of the various issues pertaining to awareness and expectations of success suggest that female students identified more strongly with the need for knowledge of opportunities for women in the construction industry.

Table 4.32: The impact of women on the skills shortages by gender

Statement	Student Sample			Female			Male		
	Rank	Mean	Std Dev	Rank	Mean	St Dev	Rank	Mean	St Dev
An increased number of women in construction will contribute to the improvement of skills shortage in the construction industry	1	3.5	1.1	1	3.8	0.9	1	3.3	1.1
The low employment of women in construction contributes to the skills shortage in the construction industry	2	3.2	1.2	2	3.6	1.0	2	2.9	1.2

According to Table 4.32 males and females tended to agree relative to the ranking of the issue of the impact of women on the shortage of construction skills. However, males felt less strongly so given that the mean scores of their responses were less than that of female students. Evidently, females felt more strongly about the need for their participation in construction, and particularly more strongly that an increased number of women in the industry would reduce the skills shortage in the sector.

4.3.3.2 Analysis of 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. As evidenced in Table 4.33, first year students made up 32.0% of the and fourth year students a further 58.9%.

Table 4.33: Student's sample profile by year of study

Year /level of study	Female		Male		Total	
	N	%	N	%	N	%
1 st Year	18	41.9	17	26.6	35	32.7
2 nd Year	4	9.3	3	4.7	7	6.5
3 rd Year	0	0.0	2	3.1	2	1.9
4 th Year	21	48.8	42	65.6	63	58.9
Total	43	100	64	100	107	100

Table 4.34: Image of industry and role of women by year of study

Statement	Student Sample			1 st Year			4 th Year		
	Rank	Mean	Std Dev	Rank	Mean	St Dev	Rank	Mean	St Dev
Women can build successful careers in construction	1	4.1	1.1	2	3.9	1.3	1	4.3	1.0
Women have a role to play in construction	2	4.0	0.9	1	3.9	1.1	2	4.2	0.9
The Employment Equity Act has increased the number of women in construction	3	3.9	0.9	3	3.8	0.9	3	3.9	1.0
Males are more suited to construction work	4	3.6	1.3	4	3.4	1.2	4	3.7	1.3
The masculine image of industry is a barrier to entry by women	5	3.2	1.0	5	3.2	1.0	5	3.3	1.1

According to Table 4.34 there appears to be very little difference in the ranking of responses to the issues of image of the industry and the role of women in the sector by each of the 1st and 4th year student cohorts. However, there were differences in the mean scores by year of study. It is evident from these findings that 4th year students agreed more with the statements than 1st year students. It is likely that their period in and experience of the industry impacted their views. These findings suggest that as students progress in their studies they have more realistic views and expectations of the industry.

Table 4.35: Involvement of women in construction education by year of study

Statement	Student Sample			1 st Year			4 th Year		
	Rank	Mean	Std Dev	Rank	Mean	St Dev	Rank	Mean	St Dev
Most construction studies lecturers are males	1	4.2	0.9	1	4.3	1.0	1	4.2	1.0
The majority of students in classes are male	2	4.1	1.1	2	4.3	1.0	2	4.2	1.0
Higher Education institutions need to increase the number of female academic staff in construction departments	3	3.7	1.1	3	3.7	1.0	4	3.6	1.1
More women need to make construction a career choice	4	3.7	1.2	4	3.7	1.2	3	3.8	1.1
Increasing the number of women in construction will improve the image of the industry	5	3.6	1.2	5	3.5	1.1	5	3.5	1.3
Construction departments at higher education institutions encourage the enrolment of female students	6	3.4	1.0	6	3.2	1.1	6	3.3	1.0
Most lecturers should be male because they know construction	7	2.3	1.2	8	2.9	1.1	8	2.2	1.2
The numbers of female students in classes are decreasing	8	2.2	1.1	7	2.9	1.0	7	2.3	1.1
Female lectures do not know enough about construction	9	2.2	1.2	9	2.5	1.2	9	2.1	1.2

From Table 4.35 it is evident that after ranking the means of the responses of the two student cohorts that there was not much difference in the ranking of the mean responses. However, there were differences in the levels of agreement between the senior and junior students relative to some of the issues on the involvement of women in construction education. For example, first year students held more strongly that most lecturers should be male because they perceived them to know more about construction and that the numbers of female students in classes were decreasing. This finding hints at their naivité.

Table 4.36: Capability of women to work in construction by year of study

Statement	Student Sample			1 st Year			4 th Year		
	Rank	Mean	Std Dev	Rank	Mean	St Dev	Rank	Mean	St Dev
Older women (>40 yrs) are less suited to the physical construction process than men of the same age	1	3.4	1.1	1	3.5	1.3	2	3.4	1.1
Women are not as physically capable as men	2	3.4	1.3	3	3.1	1.3	1	3.7	1.2
The work environment of the construction site has a negative influence on the recruitment of women	3	2.9	1.0	2	3.3	0.8	3	3.2	1.1
Women are more likely to be absent from work	4	2.3	1.3	4	2.3	1.3	4	2.4	1.3

According to Table 4.36 the 4th year students tended to agree more strongly (mean=3,7) than 1st year students (mean=3,1) that women were not as physically capable as men. This finding suggests that the difference in opinion could be a result of the time spent on construction sites and further knowledge gained of the construction work environment. Relative to the other statements on the capability of women to work in construction, there was little difference in both rankings and mean scores by year of study.

Table 4.37: Discrimination against women reported by year of study

Statement	Student Sample			1 st Year			4 th Year		
	Rank	Mean	Std Dev	Rank	Mean	St Dev	Rank	Mean	St Dev
Women on construction sites are not respected to the same extent as men	1	3.5	1.2	1	3.8	1.0	2	3.2	1.2
Women are likely to be sexually harassed on site	2	3.4	1.2	2	3.3	1.3	1	3.3	1.2
The fact that there are more male professionals in construction intimidates women	3	3.1	1.1	3	3.1	1.1	3	3.1	1.1
Women are more suited to administrative than production functions on site	4	2.9	1.3	4	2.9	1.3	4	2.8	1.3
Female students are intimidated by the male students in classes	5	2.2	1.2	5	2.4	1.2	5	2.1	1,1

Similarly, from Table 4.37 it is evident that both student cohorts had similar feelings about the sexual harassment of women in the construction industry.

Table 4.38: Career preferences by year of study

Statement	Student Sample			1 st Year			4 th Year		
	Rank	Mean	Std Dev	Rank	Mean	St Dev	Rank	Mean	St Dev
Being a chartered accountant or medical doctor is more attractive and popular to women than being a construction manager	1	3.4	1.3	4	3.2	1.3	1	3.6	1.3
Women prefer careers in other sectors such as commerce & IT than the construction industry	2	3.3	1.3	3	3.3	1.3	2	3.4	1.4
The work environment of the construction site discourages women to consider careers in construction	3	3.2	1.2	1	3.5	1.1	4	3.0	1.2
I would encourage other women considering careers in other sectors to rather choose a career in construction	3	3.2	1.2	2	3.4	1.2	3	3.1	1.2

The findings in Table 4.38 suggest that while junior students regarded the work environment as more of a discouragement to career choices of women (mean=3,5 and rank =1) than the senior students, senior students regarded being a chartered accountant or a medical doctor as being more attractive to women than being a construction manager (mean= 3,6 and rank=1). However, while there were some differences in the ranking of the statements by mean responses, the range of these means between the highest and lowest ranking statements was small for both cohorts. This finding suggests that there was no major difference in how both cohorts felt about the issue of career preferences.

Table 4.39: Influence of cultural beliefs and historical background by year of study

Statement	Student Sample			1 st Year			4 th Year		
	Rank	Mean	Std Dev	Rank	Mean	St Dev	Rank	Mean	St Dev
Cultural beliefs and backgrounds play a major role in the career decisions of women	4	3.2	1.1	4	3.2	1.1	3	3.4	1.1
Women who believe in the historical traditional roles of women are less likely to choose a career in construction	2	3.4	1.1	1	3.5	1.1	1	3.5	1.1
The traditional historical roles that women & men played in society, makes it difficult for men to accept their female colleagues	3	3.3	1.1	3	3.3	1.0	2	3.4	1.0
Women who have aspirations of being a mother are more likely to be attracted to careers in other sectors than in construction because of the harsh working environment	1	3.5	1.0	2	3.5	1.1	4	3.3	1.1

From Table 4.39 it seems that both 1st year and 4th year students tended to agree with the issues with the values of the means being slightly above the neutral value of 3. However, they agreed more strongly (mean=3,5) that women who endorsed the historical traditional roles of women were less likely to pursue careers in construction. The junior students felt more strongly that women who had aspirations of motherhood were more likely to be attracted to other sectors than the construction industry.

Table 4.40: Influence of knowledge of the construction industry by year of study

Statement	Student Sample			1 st Year			4 th Year		
	Rank	Mean	Std Dev	Rank	Mean	St Dev	Rank	Mean	St Dev
There is a need for the construction industry to provide more knowledge about the career opportunities for women within construction	1	4.0	1.1	1	3.8	1.2	1	3.9	1.0
More knowledge of the Employment Equity Act and research conducted on the participation of women in construction will improve the popularity of construction careers amongst South African women	2	3.6	1.0	2	3.4	1.1	2	3.7	0.9
Women are aware of the different career opportunities within the construction industry	3	3.4	1.1	4	3.2	1.0	3	3.4	1.1
Women expect to have successful careers within the construction industry because they have enough knowledge of the industry	4	3.3	0.9	3	3.2	0.9	4	3.3	1.0

It is evident from Table 4.40 that there was no significant difference in views about the influence of knowledge on career choices. They agreed that there was a need for the construction industry to provide more information about career opportunities for women within construction (mean for junior students=3,8and for senior students=3,9 respectively). This finding suggests that the issue about the need for more knowledge about career opportunities for women was regarded as very important.

Table 4.41: The impact of women on the skills shortages by year of study

Statement	Student Sample			1 st Year			4 th Year		
	Rank	Mean	Std Dev	Rank	Mean	St Dev	Rank	Mean	St Dev
An increased number of women in construction will contribute to the improvement of skills shortage in the construction industry	1	3.5	1.1	1	3.4	0.9	1	3.6	1.0
The low employment of women in construction contributes to the skills shortage in the construction industry	2	3.2	1.2	2	3.4	1.0	2	3.2	1.2

Table 4.41 shows that both 1st year and 4th year students tended to agree that women could have an impact on addressing skills shortages in construction.

4.3.3.3 Summary of construction student survey

The findings revealed that there was still a gap with regard to recruitment of women in construction and that this was related to the fact that there are very few women enrolling for construction studies. There was a difference in perceptions and understanding of the construction industry between students across the gender groups and between the junior and senior level of studies, namely 1st years and 4th years. Evidently, as the students progressed in their studies their views about the issues changed. The survey revealed that the students believed that the construction industry was discriminatory against women and that this perception impacted negatively on their choice of careers in construction. It was further found that there were not enough successful women and or knowledge of women who have made a success of a career in construction to encourage other women to choose construction as a career. The result shows that students held that careers in other sectors were more attractive to women than construction. The survey also revealed that some of the female students felt intimidated by the male students in their class. The survey results suggested that construction work environment and the male dominance of the industry was seen as a barrier to entry for women and that it had a negative impact on the choices of careers in construction by women. The findings show that there was a difference in view between the male and females students with regard to certain issues. The survey revealed that more males believed that women were not as capable as men to work on the construction sites and more females agreed that women were not respected on construction sites.

4.3.4 Professional Women Survey

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

Table 4.42: Professional role of women in construction

Rank	Statement	N	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	Mean	St Dev
1	Females have something to contribute to the industry with their education	17	0.0	0.0	5.9	17.6	76.5	4.7	0.6
2	Women can build successful careers in construction	17	0.0	0.0	0.0	35.5	64.7	4.6	0.5
3	Women have a role to play in construction	17	0.0	0.0	0.0	47.1	52.9	4.0	0.5

From Table 4.42 it is evident women currently employed in construction felt strongly that women could build successful careers in (mean=4,6) and contribute to the construction industry (mean=4,7). The ranking of these issues also suggests that women felt strongly that females had something to contribute to the industry with their education.

Table 4.43: 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	47.1	4.4	0.6
2	Women who work on construction sites are most likely to experience a higher prevalence of discrimination who work for consulting firms	17	0.0	5.9	17.6	52.9	23.5	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 on other sectors	17	0.0	11.8	23.5	35.3	17.6	3.1	1.3
7	Women working in construction do not have the same opportunities to develop as their male colleagues	17	0.0	29.4	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	17.6	2.9	1.2
9	The construction industry poses a threat for the career development of women in construction	17	0.0	41.2	17.6	11.8	29.4	2.1	0.9

From Table 4.43, almost all the women (94,2%) believed that women experienced discrimination while working in the construction industry. About three-quarters (76,4%) believed that this discrimination was more prevalent on construction sites. Furthermore, 64.7% agreed that women in construction did not enjoy the same opportunities for upward mobility as their male counterparts. More than half (52.9%) believed that pregnant women experienced discrimination which was more prevalent in construction than in other sectors. More than half (52,9%) 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. Further, 41.2% believed that the construction industry posed a threat for the career development of women in the sector. Women who worked on construction sites were most likely to experience more discrimination than those employed by consulting firms (mean=3,9).

Table 4.44: Cultural and historical background influences

Rank	Statement	N	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	Mean	St Dev
1	While growing up in my community women were encouraged to further their studies	17	0.0	11.8	17.6	35.3	35.3	3.9	1.0
2	The cultural beliefs and backgrounds of women influence their career decisions	17	0.0	5.9	35.3	41.2	17.6	3.7	0.8
3	In my experience I believe that historical roles and believes do come to play in the construction workplace	17	0.0	11.8	29.4	41.2	17.6	3.6	0.9
4	My cultural background influences my behavior as a professional in the work environment	17	5.9	23.5	11.8	41.2	17.6	3.4	1.2

Table 4.44 suggests that 70.8% of women in construction came from communities where women were encouraged to study. More than half (58.8%) agreed that their career choices had been influenced by their cultural beliefs and backgrounds and that these gender-based historical roles were evident in the construction workplace. Evidently, their cultural background influenced their behavior as professionals in the work environment.

The ranking suggests that the women felt strongly about the historical education of women and that they believed this to be most important from the issues.

Table 4.45: Cultural beliefs, expectations and career success in the construction workplace

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	29.4	3.3	1.3
3	My experience within the construction industry confirmed my expectations and beliefs of the industry being male dominated and discriminative towards women	17	0.0	35.5	23.5	35.5	5.9	3.1	0.9

From Table 4.45, 70.6% of the women strongly agreed that they would encourage women to consider careers in construction, as there was a need for more women in construction. Less than half (41.3%) believed that women's cultural beliefs and background influenced their success in the construction industry. Further, 41.4% agreed that their expectations and beliefs held about the industry were confirmed. When ranking the responses by means the women tended to agree that women's cultural beliefs and background influenced their success in the construction industry (mean=3,3) and they strongly agreed that they would encourage young women to pursue careers in construction (mean=4,7),

Table 4.46: Factors which influenced career choices in construction

Respondents statement	N	(%)
Promoting gender equality demonstrating that women are capable	17	24.0
Family members in construction	17	11.8
Appreciation of maths	17	11.8
Job Opportunities	17	5.9
Other sectors not appealing	17	5.9
Leave legacy and create contribution to South Africa	17	5.9
Offered a bursary	17	5.9
Appealing industry	17	5.9
Financial Independence	17	5.9

From Table 4.46, 24% of the women desired to promote gender equality by demonstrating that women were capable of handling construction work. Having family members working in the sector and appreciation of mathematics were influential factors (11, 8%).

Table 4.47: Community's perception on women working in construction

Respondents statement	N	(%)
Believe women are brave and talented and should be respected	17	41.2
There is still belief that construction is only for men	17	35.0
Supportive	17	11.8
It is great	17	11.8
Unknown	17	5.9
Mixed feelings	17	5.9

Table 4.47 suggests that some (35%) communities still believed that construction work was only for men. However it is also evident that there was a need for more women in construction as almost half (41.2%) encouraged women to embark in careers in construction.

Table 4.48: The impact of women's low representation of women on skills shortage

Rank	Question	N	Yes (%)	No (%)	Unsure (%)	Mean	St Dev
1	If yes to these, do you believe that the employment equity act is addressing these	17	50.0	14.3	35.7	1.9	0.9
2	If yes, do you believe that the low number of women choosing careers in construction contributes to this	17	80.0	20.0	0.0	1.2	0.4
3	The low number of women employed in the construction industry contributes to the skills shortage	17	82.4	11.8	5.9	1.2	0.6

Table 4.48 shows that most (82.4%) of the professional women held that the low number of women employed in the construction industry contributed to the skills shortage. Similarly, 80% believed that the low number of women choosing careers in construction was a contributing factor to this skills shortage. 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.

Table 4.49: Influences on decision to progress further in the construction industry

Rank	Influence	N	1 (%)	2 (%)	3 (%)	Mean	St Dev
1	Challenging work environment	17	11.9	11.8	76.5	2.6	0.7
2	Educational experience	17	5.9	41.2	52.9	2.5	0.6
3	Ability to work and have influence in a male dominated industry	17	23.5	11.8	64.7	2.4	0.9
4	Exploration of the unknown	17	23.5	23.5	52.9	2.3	0.8
5	Encouraged by the knowledge of women who have had successful careers in construction	17	35.3	17.6	47.1	2.1	0.9
6	Career expectations	17	31.2	31.2	37.5	2.0	0.9
7	Knowledge of the construction industry	17	23.5	52.9	23.5	2.0	0.7
8	Financial prospects	17	23.5	52.9	23.5	2.0	0.7
9	Convinced by your parents	17	47.1	23.5	29.4	1.8	0.9
10	Cultural Background	17	58.8	5.9	35.3	1.7	1.0

From Table 4.49, 76.5% of the women were influenced by the challenging work environment to further their careers in construction. Almost two-thirds (64.7%) were influenced by the ability to be able to work and impact a male dominated industry. Just over half (52.9%) cited the exploration of the unknown as a major influence in their decision. There were differences in responses by female students and professional women working in construction on the knowledge of existing successful women in construction. Almost half (47.1%) of the professional women reported that they were encouraged by successful women working in the industry in comparison to only a quarter (25.6%) of the students. Clearly, professional women were more exposed to other women in comparison to the students. More knowledge of the industry was a contributing factor to the increased confidence shown by female students as they progressed in their studies. When ranking the responses by means it is evident that the challenging work environment, educational experience and ability to work and have influence in a male dominated industry were all above 2 (mean=2,6; mean=2,5 and mean=2,3; respectively) suggesting that these had a high impact on career choices.

4.3.4.1 Summary of professional women survey findings

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.

4.4 Chapter summary

This chapter outlined the findings from the three surveys conducted in the construction industry. The analysis of data confirmed that factors identified and highlighted in recent research had a relationship and impact on career choices in construction.

Cultural beliefs and backgrounds were found not to be majorly influential when choosing careers in construction. There was also a general lack of knowledge of the industry itself as well as career opportunities that the industry offered. Further, women from communities where women were educated were likely to be more motivated to pursue further studies. Male students tended to respond in general less affirmatively to issues that their female counterparts felt more positively about.

The findings suggest that there was a correlation between the year of study and responses of the students. Fourth year students had more realistic views of the sector.

The findings suggest that there is a relationship between the perceptions held by the female students about their success in construction and their experience of the sector. Professional women working in the construction industry confirmed similar experiences.

CHAPTER 5 DISCUSSION OF FINDINGS

5.1 Introduction

In this chapter the major findings of the study are discussed with reference to the literature reviewed. In particular these findings are discussed within the core themes that relate to the objectives of the study.

5.2 Cultural beliefs and historical identities of women

The literature review examined the cultural and historical identities of women .In many cultures women depended very much upon the male figures in their lives from an early stage. The male figure would have been their fathers who determined everything in the woman's life which included whether or not she would go to school. History shows that women were not allowed to embark on any form of education. In the later stages of her life the husband would take over this role from the father. The gender roles that a society assigns to its children will have a determining effect on their future: their access to food and education; their labour force participation; their status in relationships; and their physical and psychological health (Pan American Health Organisation, 1994)

The findings of the study suggest that there is a relationship between the women's choice of careers in construction and their cultural beliefs as these were informed in their upbringing and determined by their historical backgrounds. This finding is supported by (Henn, 1995) who argued that the typical labour day of rural women had changed little since the pre-colonial era, except that it had become longer and, therefore, harder, and that the social constraints, which shaped the economic and domestic work of a women in the pre-colonial period still held. In similar vein White (1995) suggested that the adult primitive woman was first and foremost a wife whose life was centered in her home and family. Most students endorsed the view that women who believed in the historical traditional roles of women were less likely to choose construction-related careers. Moreover the majority of them held that women who believed that culturally women were merely wives were less likely to embark on careers in construction.

According to Albertyn (1995) and Phaahla (2000), historically women were deprived of the opportunity for an education as their primary roles were that of housewife and bearer of children. The findings showed that even though the cultural and historical identities of women and the roles played in society had evolved over the years, there was still the belief that women who believed that they were meant to be housewives would not choose careers in construction.

The study confirmed that males believed that traditional roles and cultural beliefs played a major role in the careers choices of women. Dainty *et al.*, (2004) suggested that most women perceived that they had to make a choice between a career or a family-oriented lifestyle and saw little opportunity for work-life balance. The findings of the study indicated that women who believed that they were meant to only be mothers would not be interested in careers in construction.

According to Louise (2001) of the few women entering construction a number of them leave the construction profession to have children. Professional women agreed that their career choices had been influenced by the cultural beliefs and backgrounds. They had also experienced the impact of the traditional roles that women were expected to play in society on construction workplaces. This impact influenced how they conducted themselves as professionals in their workplaces. Those who had studied further had come from communities where women were encouraged to pursue further studies.

5.3 Construction students' perceptions of their future in the construction industry

The study found that while most students reported that women could build successful careers in construction they also held that males were more suited to construction work. According to Agapiou (2002), there is a general perception among parents and young girls that the construction industry is an environment which is male dominated without prospects for women to have successful careers in construction.

Further, equal opportunities present a challenge in the construction industry, one of the most male dominated industrial sectors. Much remains to be done to promote the construction industry to girls considering their options for careers when they leave school (Agapiou, 2002). The students agreed that the male dominance and discrimination against women on construction had a negative influence on career choices by women in construction.

5.4 The image of the sector and construction work environment

The findings of the study suggested that as much as the construction organisations accept that women will be working for them, there was not much effort and financial resources to ensure that the working environment was improved to be more suitable for women working in construction. According to Greed (2000) and Fielden *et al.*, (2001), a woman's "place" was already clearly circumscribed as being in the more soft part of the construction industry. The building site was still used as the great excuse as to why women could not go into construction that women were concentrated in "specialist" positions in the "managerial and administrative category" particularly in personnel and public relations rather than in the mainstream management and that they were under-represented in the "professional and technical" categories of employment.

According to Haupt and Madikizela (2004) there was a perception that construction work was not conducive for women and that despite various OH&S legislation employers did not necessarily ensure that women felt safe and protected while at work on

construction site. The study showed that students agreed that women had 'special' personal hygiene issues and requirements that affected their employment in construction. Further, certain construction materials presented a manual material handling problem for women, who were less likely to accept inadequate welfare facilities than their male counterparts.

According to Fielden *et al.*, (1999), the construction industry image, sexist attitude, male dominated culture and the work environment are all barriers to entry by women. The study found that the masculine image of the industry was a barrier to entry for women, and that women were likely to be sexually harassed on site. More male students than female held that women were more suited to administrative work.

Additionally, the work environment of the construction site had a negative influence on the recruitment of women, that the study found that the work environment of the construction site was not appealing to women. According to Gale (1992), the image of construction one of being a male dominated industry requiring brute strength and tolerance for outdoor conditions, and bad language.

The study found that resistance to recruiting and developing women in the industry was not influenced by their inability to assert themselves, but rather by resistance from construction organisations themselves and the gender bias created by the masculine image.

5.5 The relationship between expectations of women and the knowledge they have of the industry

The findings of the study suggest that the minority of students were aware of the different career opportunities available to women in the construction sector. Similarly, most held that because of their limited knowledge of the industry women were not expected to have successful careers in construction. According Dainty *et al.*, (1999), women working in construction initially had a poor understanding of the culture of the industry and the inherent difficulties of working in a male dominated environment, resulting in younger women becoming disillusioned with the reality of career opportunities when exposed to them with many seeking alternative positions outside of construction.

The students felt that there was a need for more information about careers in construction. Additionally, most students opined that more knowledge of the Employment Equity Act and the increased participation of women in construction would improve the popularity of construction careers.

This finding is supported by Pathirage, *et al.*, (2006) who argued that the improvement of knowledge of construction work and the academic importance of acquiring such knowledge still lacked sufficient attention within the construction industry.

Dainty *et al.*, (1999) suggested that unlike men, any recent female entrants in construction would not have been advised to join the industry by friends, family or by guidance teachers, or to have been advised by same sex role models with experience of

working in the industry. The study found that most students had limited knowledge of the industry. In their study, Haupt and Smallwood, (2005) found that students had very limited knowledge and understanding of the construction industry. Furthermore, if women had an appropriate level of knowledge and insight about opportunities in construction they could be attracted to the sector in greater numbers than at present (Dainty *et al.*, 2000).

5.6 Discrimination against women in construction

The study found that even though construction organisations endorsed non-discriminatory employment practices and education programs on gender issues very few actually made special financial provision to improve the status or qualifications of women.

According to Garmanikov (1978), women have lived and survived in patriarchal societies. In these societies patriarchy is an autonomous system of social relations between men and women in which men are dominant. Furthermore, according to Gale (1991), the construction industry was perceived as being the epitome of crisis, conflict and masculinity manifesting in unsociable, confrontational behaviour that discouraged women from considering construction as a meaningful career. The study found that construction organisations appointed unqualified women in top positions only to comply with equity regulations, and that their capabilities to perform in the industry were undermined.

Fielden *et al.*, (2001) suggested that women were not enhanced by an industry that continued to foster a males-only image and remained entrenched in a culture that undermined the value of women. Attempts to address the issue of equal opportunities through legislation had been relatively ineffective, and have had no significant impact on the number of women employed in the construction industry.

The study found that women on sites were not respected to same extent as men and that they were intimidated by the fact that there were more male professionals in construction. According to Kabeer (2008) women workers were less likely to be organized than men, they were paid less on grounds of their purported secondary earner status, and they had less bargaining power because of the limitations placed on their labour-market options by their unpaid domestic responsibilities. Furthermore, even though there were more women entering the labour force they still remained confined to the lower paid, more casual segments of the informal economy. The study also found that women in construction did not enjoy the same opportunities as men.

5.7 The popularity of construction industry careers among women in comparison to other sectors

The findings of the study suggest that women preferred careers in other sectors and that being a chartered accountant or medical doctor was more attractive to women than construction. The work environment of the construction site was found to discourage women against careers in construction. The study found that very few students would actually encourage other women to consider careers in construction. The challenging

work environment, the dangerous nature of construction and the inability to work and have influence in a male dominated industry were major influences on choosing other careers instead of construction.

According to Cartwright and Gale, (1995) women experienced barriers to career advancement in construction by virtue of their biological sex type and societal attitudes and expectations of their wider familial role, and that unlike men, the majority of women had discontinuous work patterns and withdraw periodically from the labour force to raise children.

According to Fielden *et al.*, (1999), construction had an industry - wide problem with 'image', this made both men and women reluctant or uninterested in the industry. This problem was compounded by the general lack of knowledge and information about the industry, the career opportunities it could offer and what qualifications were offered. Furthermore Fielden *et al.*, (1999) suggested that parents, teachers and school children believed that jobs in construction were limited to bricklaying, joinery, painting and decorating. Construction was still viewed as highly gendered activity, which was perpetuated by the industry itself through its continuing use of gender biased technology, such as for example craftsman, chain boy or foreman.

5.8 Chapter summary

This chapter discussed the key findings of the study compared against the reviewed literature. The study found that the factors influencing the choice of careers in construction by South African women were aligned with the factors identified in the reviewed literature reviewed. The study confirmed that there was a relationship between issues of gender discrimination, the work environment of the construction and the perceptions of female students on the culture and image of the construction industry. This relationship influenced the career choices of women in construction.

CHAPTER 6 CONCLUSIONS AND RECOMENDATIONS

6.1 Introduction

The construction industry is often described as one of the slowest industries to transform and proactively embrace gender equality. Historically the construction industry has been one of the most male dominated industries in the world. Despite extensive research on the issue of gender equality and the limitations on women to have successful careers in construction the problem of the under-representation of women in the sector still exists.

This study sought to gain an understanding of the construction-related career choices of women considering their level of under-representation. The factors that influenced career choice preferences of South African women were examined. Further, the study investigated the effects of gender inequality and discrimination of women in construction on career choices with emphasis on the construction sector. The study found that gender bias in construction was a negative influence for women relative to their involvement in construction.

The objectives of this study were:

- To establish the basis for women choosing the construction industry as a career.
- To determine the extent of the popularity of careers in construction among women relative to other sectors.
- To investigate the expectations of women in relation to the knowledge they have of the industry before entering it.
- To determine the comparative levels of representivity of men and women across all levels of employment in construction and whether the dominance of one gender discourages the other from pursuing careers in it.
- To investigate the influence of the work environment of the construction site on recruitment to the industry by gender.
- To investigate the relationship between the cultural backgrounds of women and the career choice preference within the construction industry.
- To evaluate the prevalence of discrimination against women who have entered the construction industry.
- To investigate the impact, if any, of the employment of women on the skills shortage experienced by the construction industry.

This chapter provides a summary of the findings of the study, and conclusions and recommendations for future study relative to these objectives.

6.2 Summary of findings

6.2.1 Cultural and historical roles of women

The study found that male students still believed in the historical role of women of being mothers. The study also found that the perceptions of male students about women choosing careers in construction changed as they progressed in the studies.

6.2.2 Construction as a popular career choice for women

The study found that the dangerous nature of the construction work and the work environment were reasons why the construction industry was not as attractive as the other sectors. The study further found that as women progressed in their studies their confidence about their career choice in construction improved as they become more optimistic about their future in construction. The study also found that as the male students progressed in their studies their feelings about women choosing construction as a career became more negative, and that they would not encourage women to choose construction as a career.

6.2.3 Construction industry gender bias and career choice

The study found that the construction industry was still male dominated and that professional women did not have the same opportunities as men. The study further found that this domination had a negative effect on career choices by women and that women would rather choose other conventional careers such as, for example, nursing, instead of construction. The study found that male students did not believe that female students were as capable as males to work in construction, and that this view became stronger as they progressed further in their studies.

6.2.4 The impact of discrimination women's career choices in construction

The study found that women experienced discrimination in their construction workplaces. Students held that this discrimination impacted negatively on their career choices. The study also found that the expectations and perceptions of professional women of a male dominated discriminatory industry prior to entering were the same as

those held by students. The study further found that women held more strongly that the industry was discriminatory than men. These findings suggest that the construction industry continues to be male dominated and discriminatory against women.

6.2.5 The relationship between women's career choice and skills shortage

. The study found that there were low numbers of qualified women in construction which contributed to the skills shortage in the industry and that if more women chose construction as a career the shortage would improve. The study also found a relationship between the skills shortage in construction and the low employment of women in construction. Additionally, the study found that females held more strongly than the males that the construction industry was suffering from skills shortages as a result of the low representation of women.

6.2.6 The impact of knowledge of the construction industry on career choice

The study found that there was not enough promotion of the industry and knowledge of the industry was limited. Further, there was no information about successful women in construction to encourage other women to consider that a career in construction could be rewarding.

6.3 Hypothesis testing

6.3.1 H1: The construction industry is unattractive to women as a career choice.

The study found that most respondents to the various surveys held that women preferred careers in other industry sectors instead of construction. Further, most held that being a chartered accountant or medical doctor was more attractive to women than being a construction manager.

The hypothesis that the construction is unattractive to women as a career choice cannot be rejected.

6.3.2 H2: Low numbers of women are choosing to follow careers in construction.

The study found that that most of students in construction-related courses were still male. Further most of the respondents held very strongly that construction was not a popular career choice for women.

The hypotheses that low numbers of women are choosing to follows careers in construction cannot be rejected.

6.3.3 H3: Women have little knowledge of the construction industry resulting in unrealistic career expectations.

The study found that very few students rated their knowledge of the construction as high.

The hypothesis that women have little knowledge of the construction industry cannot be rejected.

6.3.4 H4: Male dominance of the construction industry is a primary negative factor that discourages women from embarking on careers in construction.

The study found that the inability to work and influence a male dominated industry influenced women negatively about careers in construction.

The hypothesis that the male dominance of the construction industry is a primary negative that discourages women from embarking on careers in construction cannot be rejected.

6.3.5 H5: The work environment of the construction industry militates against women's ability to work on a construction site.

The study found that the work environment of the construction site had a negative influence on the recruitment of women.

The hypothesis that the work environment of the construction industry militates against women's ability to work on a construction site cannot be rejected.

6.3.6 H6: The cultural upbringing of women influences their choice of careers in the construction industry.

The study found that women who believed in their historical and traditional roles as being merely wives were less likely to embark on careers in construction.

The hypothesis that the cultural upbringing of women influences their choice of careers in the construction industry cannot be rejected.

6.3.7 H7: Where women have chosen construction careers they have been discriminated against.

The study found that women were intimidated by male students in the class that women on sites were not respected to same extent as their male colleagues and that women were intimidated by the fact that there were more male professionals in construction.

The hypothesis that where women have chosen construction careers they have been discriminated against cannot be rejected.

6.3.8 H8: The lack of employing women in construction contributes to the skills shortage in the industry.

The study found that the low employment of women in construction contributed to the skills shortage in the construction industry and that an increased number of women in construction would contribute to the improvement of skills shortages in the construction industry.

The hypothesis that the lack of employing women in construction contributes to the skills shortage in the industry cannot be rejected.

6.4 Limitations

In the construction industry worldwide research has been done on gender equality, however there was not enough data available on research in South Africa and even though academia in male dominated industries was previously researched it was even more challenging to find previous research material for this specific topic. The main

challenge was finding relevant information for this topic which was almost non-existent with the exception of only related material. The other challenge was finding suitable participants particularly women as they were the subject matter, hence the smaller professional women sample in comparison to the students and organisational samples.

6.5 Recommendation for future research

The study found that students did not have enough knowledge about the construction industry and that the knowledge available did not provide encouragement about the industry and women advancement within it. It is recommended that a future study on the successful women in construction is needed to establish how they overcame some of the challenges found in this study and previous studies specific to gender inequality and discrimination. It is further recommended that this future study would have to look extensively at other sectors that women prefer careers in, which were also previously male dominated such as, for example, IT, Technology and Science, to identify what these industries did to attract more women. The study would also have to look at the industries that have always been attractive to women such as medical and social sciences to determine the success rate of women in comparison to the construction industry in order to learn and establish ways in which to improve popularity and compatibility of construction careers among South African women.

APPENDICES

APPENDIX A – STUDENT QUESTIONNAIRE



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An Analysis of the factors influencing the choice of careers in construction by South African women

A task team of researchers at the Southern African Built Environment Research Center (SABERC) at the Cape Peninsula University of Technology is undertaking a national study to evaluate gender issues in South African built environment education.

Since your participation as either a first or final year built environment student is important for the success of this investigation you are invited to complete this short questionnaire, which should take **about 10 minutes** to complete

“It can no longer come as a surprise to anyone – including the men of Africa – that gender equality is more than the goal in itself. It is a precondition for meeting the challenge of reducing poverty, promoting sustainable development and building good governance”

Kofi Anan, UN Secretary-General, 2000

Institution:

Year/Level of Study: First year/ Second year/ Third year/ Fourth year
(Circle only **ONE**)

Program: Architecture/ Construction Management/ Quantity Surveying/Civil Engineering (Circle only **ONE**)

1. To what extent do you agree with **EACH** of the following statements?

No	Statement	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
1.1	Women can build successful careers in construction					
1.2	Women have a role to play in construction					
1.3	Males are more suited to construction work					
1.4	The masculine image of the construction industry is a barrier to entry by women					
1.5	The Employment Equity Act has increased the number of women in construction					
1.6	More women need to make construction a career choice					
1.7	Higher education institutions need to increase the number of female academic staff in construction departments					
1.8	Increasing the number of women in construction will improve the image of the industry					
1.9	Construction departments at higher education institutions encourage the enrolment of female students					
1.10	The majority of students in your classes are male					
1.11	Most Construction studies lecturers are males					
1.12	Female students are intimidated by male students in classes					
1.13	The numbers of female students in classes are decreasing					
1.14	Most lecturers should be male because they know construction					
1.15	Female lecturers do not know enough about construction					
1.16	Women have 'special' personal hygiene issues requirements that affect their employment in construction					
1.17	Some construction materials present a manual materials handling problem to women					
1.18	Current welfare facilities e.g. toilets for women are inadequate					
1.19	Women are likely to be sexually harassed on site					
1.20	Mechanisation of the construction process will promote participation by women					
1.21	Women on construction sites are not respected to the same extent as men					
1.22	Women are less likely to accept inadequate welfare facilities than men					
1.23	Older (> 40 years) women are less suited to the physical construction process than men of the same age					

1.24	Women are not as physically capable as men					
1.25	Women are less likely to accept unsafe conditions than men					
1.26	Current provision for vertical movement (access) on site is inappropriate for women					
1.27	Appropriate work attire is not readily available for women					
1.28	Women are as physically capable as men					
1.29	Ultra violet radiation poses more of a threat to women					
1.30	Women are less likely to be willing to work in extreme temperatures					
1.31	Transport to and from, and between sites is inappropriate for women					
1.32	Generally personal protective equipment (PPE) is not suited to women					
1.33	Women are more suited to administrative than production functions on site					
1.34	Women are more likely to be absent from work					
1.35	Women prefer careers in other sectors such as commerce and IT than the construction industry					
1.36	Being a Chartered Accountant or Medical Doctor is more attractive and popular to women than being a Construction Manager					
1.37	Women are aware of the different career opportunities within the construction industry					
1.38	Women expect to have successful careers within the construction industry because they have enough knowledge of the industry					
1.39	There is a need for the construction industry to provide more knowledge about the career opportunities for women within the construction industry					
1.40	The fact that there are more male professionals in construction intimidates women					
1.41	The work environment of the construction site has a negative influence on the recruitment of women					
1.42	The work environment of the construction site discourages women to consider careers in construction					
1.43	1.43 Cultural beliefs and backgrounds play a major role in the career decisions of women					
1.44	Women who believe in the historical traditional roles of women are less likely to choose a career in construction					
1.45	Women who believe in the cultural role of women being merely wives are less likely to embark on careers in construction					
1.46	Women who have aspirations of being a mother are more likely to be attracted to careers in other sectors than in construction because of the harsh working environment					
1.47	The traditional historical roles that women and men played in society, makes it difficult for men to accept their female colleagues?					
1.48	The low employment of women in construction contributes to skills shortage in the construction industry?					

1.49	An increased number of women in construction will contribute to the improvement of skills shortage in the construction industry?					
1.50	More knowledge of the employment equity act and research conducted on the participation of women in construction will improve the popularity of construction careers amongst South African women?					
1.51	I would encourage other women considering careers in other sectors to rather choose a career in construction?					

2. Do you believe that cultural believes will influence the success of your career in the construction industry?

Yes	No	Unsure

3. Do you believe that the cultural difference between males and females influence their career choice?

Yes	No	Unsure

4. If yes, do you believe that this influence contributes to the low representation of women in construction?

Yes	No	Unsure

5. If yes, do you believe that this contributes to the prevalence of discrimination against women who have entered the construction industry?

Yes	No	Unsure

6. If yes, how does this situation impact the choice by women of careers in traditionally male dominated industries

7. Please answer following with regard to education of women in your community

		Yes	No	Unsure
7.1	Are the majority of women from your community educated?			
7.2	Is your mother educated?			
7.3	While growing up were women in your community encouraged to further their studies?			

7. Do you believe that women who grew up in a household where the mother was a housewife are less likely to choose careers that were traditionally not suitable for women?

Yes	No	Unsure

9. If yes, do you believe that this may have an influence in the career choice preferences of women?

Yes	No	Unsure

10. Please answer the following questions?

		Yes	No	Unsure
10.1	Do you see yourself graduating after fourth year?			
10.2	Do you believe you have something to contribute to the industry with your education?			

11. What motivates you to complete your studies?

12. What influenced your decision to study towards a career in construction?

13. What would have influenced you not to study towards a career in construction?

14. On a scale of 1 to 3 where 1= low, 2= medium, and 3=high indicate to what extent each of the following influenced your decision to further your career in the construction industry

	Influence	1	2	3
14.1	Cultural Background			
14.2	Knowledge of the construction industry			
14.3	Encouraged by the knowledge of women who have had successful careers in construction			
14.4	Convinced by your parents			
14.5	Exploration of the unknown			
14.6	Career expectations			
14.7	Financial prospects			
14.8	Challenging work environment			
14.9	Ability to work and have influence in a male dominated industry			
14.10	Educational experience			

15. Do you believe that careers in construction are less popular to women in comparison to other sectors?

Yes	No	Unsure

16. On a scale of 1- to 3 where 1= low, 2= medium, and 3=high, indicate how much the following influences the choice of other sectors over construction?

	Influence	1	2	3
16.1	The masculine and unattractive image of the construction industry			
16.2	Knowledge of the construction industry			
16.3	Male dominance of the industry			
16.4	The dangerous nature of the construction work			
16.5	The seemingly discriminatory environment of the construction industry			
16.6	Career expectations and financial prospects			
16.7	Challenging work environment			
16.8	The inability to work and have influence in a male dominated industry			

17. On a scale of 1 to 3 where 1= low, 2= medium, and 3=high , rank your knowledge of the construction industry before you chose construction as a career

		1	2	3
17.1	Knowledge of the construction industry			

18. How did you acquire this knowledge?

19. What aspects of the construction industry would you highlight as more beneficial and attractive than the other sector?

20. What is your gender?

Male	Female

Thank you for contributing to gender equity in South African construction.

APPENDIX B – PROFESSIONAL WOMEN QUESTIONNAIRE



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An Analysis of the factors influencing the choice of careers in construction by South African women.

A task team of researchers at the Southern African Built Environment Research Center (SABERC) at the Cape Peninsula University of Technology is undertaking a national study to evaluate gender issues in South African built environment education. Since your participation as a professional woman working in the Construction Industry is important for the success of this investigation you are invited to complete this short questionnaire, which should take **about 10 minutes** to complete and return it to Kolosa Madikizela or Dr. Haupt at following addresses:

kolosa.madikizela@lifehealthcare.co.za OR hauptt@cput.ac.za

“It can no longer come as a surprise to anyone – including the men of Africa – that gender equality is more than the goal in itself. It is a precondition for meeting the challenge of reducing poverty, promoting sustainable development and building good governance”

Kofi Anan, UN Secretary-General, 2000

Institution/ Organization employed by:

.....

Job Level

Discipline: Architecture/ Construction Management/ Quantity Surveying/Civil Engineering /Town Planning (*Circle only ONE*)

1. To what extent do you agree with EACH of the following statements?

	Statement	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
1.1	Women can build successful careers in construction					
1.2	Women have a role to play in construction					
1.3	Women experience discrimination on entering the construction industry					
1.4	The cultural beliefs and backgrounds of women influence their career decisions					
1.5	In my experience I believe that historical roles and beliefs do come to play in the construction workplace					
1.6	While growing up in my community women were encouraged to further their studies					
1.7	My cultural background influences my behavior as a professional in the work environment					
1.8	The cultural role I played whilst growing up does negatively influence my ability to show assertiveness as a professional in the construction industry in comparison to my male colleagues					
1.9	My contribution as a professional woman is not regarded as equally important as that of my male counterparts					
1.10	Women experience discrimination in the construction industry and do not experience upward mobility in comparison to their male colleagues					
1.11	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					
1.12	Women working in construction do not have the same opportunities to develop as their male counterparts					
1.13	My experience within the construction industry confirmed my expectations and beliefs of the industry being male dominated and discriminative towards women					
1.14	I have experienced discriminated in my workplace					

1.15	The construction work environment poses a threat for the career development of women in construction					
1.16	Women who work on construction sites are most likely to experience a higher prevalence of discrimination than women who work for consulting firms					
1.17	Women who fall pregnant while working in the construction industry experience a higher prevalence to discrimination than women in other sectors					
1.18	Males discriminate against pregnant women in construction because they believe that women should not have careers in construction					
1.19	Women's cultural beliefs and background influence their success in the construction industry?					
1.20	Females have something to contribute to the industry with their education					

2. What particular factors influenced your decision to study towards a career in construction?

3. Do you believe that this career choice was a good decision?

Yes	No	Unsure

4. What does your community/family think about women working in the construction industry?

5. The low number of women employed in the construction industry contributes to the skills shortage?

Yes	No	Unsure

6. If yes, do you believe that the low number of women choosing careers in construction contributes to this?

Yes	No	Unsure

7. If yes to these, do you believe that the employment equity act is addressing these?

Yes	No	Unsure

8. On a scale of 1 to 3 where 1= low, 2= medium, and 3=high indicate to what extent each of the following influenced your decision to further your career in the construction industry

		1	2	3
8.1	Cultural Background			
8.2	Knowledge of the construction industry			
8.3	Encouraged by the knowledge of women who have had successful careers in construction			
8.4	Convinced by your parents			
8.5	Exploration of the unknown			
8.6	Career expectations			
8.7	Financial prospects			
8.8	Challenging work environment			
8.9	Ability to work and have influence in a male dominated industry			
8.10	Educational experience			

Thank you for contributing to gender equity in South African construction.

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BIOGRAPHICAL SKETCH

Kolosa Madikizela was born on the 18th of April 1980 to the greatest family and ancestors to ever walk on this earth the Ngutyana clan.

She went to an only girl's boarding school in Queenstown in the Eastern Cape where she matriculated in 1999. She then went on to study towards a career in construction management, where she was the only female student in her fourth year of Construction Management, she obtained a Bachelor of Technology Degree Construction Management (Cum Laude) in 2003, she also received top student award and was on the Deans merit list, in the same year she was selected as South Africa's rising star by the July issue of the Oprah magazine, an accolade given to women who were top academic top performers and all rounders and were envisaged to make a great success of their careers.

She has worked for the past four years as a project manager and facilities for various companies in the industry, TFMC, Rabie Properties and Shell Energy South Africa. She believes in the abilities as women in the construction industry and though she is fairly successful she believes this is only the beginning of great things to come. She is passionate about people and the upliftment of those that cannot do it themselves. She leave testimony to her name which means "have faith in" by always believing in her abilities to succeed at all she endeavour to do.

APPENDIX C – CONSTRUCTION ORGANISATIONS QUESTIONNAIRE



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NATIONAL STUDY INTO GENDER EQUITY IN CONSTRUCTION

A Task Team of researchers at the Southern African Built Environment Research Center (SABERC) is undertaking a National multi-disciplinary study to evaluate gender equity issues in the South African construction industry.

Since your participation is important for the success of this investigation you are invited to complete this short questionnaire, which should take **about 10 minutes** to complete and return it by the end of the workshop.

“It can no longer come as a surprise to anyone – including the men of Africa – that gender equality is more than the goal in itself. It is a precondition for meeting the challenge of reducing poverty, promoting sustainable development and building good governance”

Kofi Anan, UN Secretary-General, 2000

1. Indicate your organization’s primary participation in the construction industry (Please select only **ONE**)

Architect	Private sector client	Subcontractor
Contractor	Public sector client	Supplier
Engineer (consultant)	Project Manager (consultant)	Other
Manufacturer	Quantity Surveyor (consultant)	

2. If **OTHER**, please specify below

3. In which province do you primarily conduct your business? (Please select only **ONE**)

Eastern Cape		Kwazulu-Natal		Northern Cape	
Free State		Limpopo		North West	
Gauteng		Mpumalanga		Western Cape	
More than one		In all of them			

Average annual turnover during the past 3 year < R1million		> R5 million ≤ R20 million	
≥ R1 million ≤ R5 million		> R20 million	

4. Average size of labour force

≤ 10	> 11 ≤ 50	> 50 ≤ 100	> 100 ≤ 250	>250

5. How many female workers are employed in your organization?

6. Should women in fact be employed in construction?

Yes	No	Don't know

7. Please explain your response to Q7 in the space below

8. As far as you are aware, are they paid the same rates of pay (wages and salaries) as their male counterparts?

Yes	No	Don't know

9. Give some indication of how many persons within your organization are employed in the following categories?

Category	Male	Female	Total
Management eg. Directors, managers, etc.			
Secretarial			
Supervisory eg. Foremen, leading hands, etc.			
Skilled eg. Artisans			
Semi-skilled eg. operatives			
Unskilled eg. General workers			

10. Does your firm have a written gender equity policy?

Yes	No	Don't know

11. If YES in Q11, is this policy communicated to workers in simple, clear and unambiguous terms?

Yes	No	Don't know

12. Does your firm provide educational material on gender issues?

Yes	No	Don't know

13. Are female workers entitled to the same rights, benefits and opportunities as male workers?

Yes	No	Don't know

14. Are separate facilities provided for female workers such as toilets and ablutions?

Yes	No	Don't know

15. Does the management of your firm visibly (openly) endorse non-discriminatory employment practices and education programs or information about gender issues?

Yes	No	Don't know

16. If YES, describe how this is done in the space below

17. Does your firm provide equal opportunities for female workers to advance (be promoted) within the firm?

Yes	No	Don't know

18. If YES in Q18, give examples

19. Does your firm make funding available targeted at improving the status and qualifications of its female employees?

Yes	No	Don't know

20. If **YES** in Q20, how much has been provided during the last year for this purpose?
 R _____

21. Have there been any practices, which might be regarded as discriminatory because a worker was a female?

Yes	No	Don't know

22. If **YES** in Q22, would you briefly describe the practice or incident in the space below:

23. If you wish to make any other comments please do so in the space below:

Thank you for contributing to gender equity in South African construction