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Women in Construction: Retention of Professional Female Talent within the Construction Industry in South Africa

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Submitted by:

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To:

THE SCHOOL OF CONSTRUCTION ECONOMICS AND MANAGEMENT (SCEM)

Supervised by:
Prof. Obinna Ozumba

A Doctoral Dissertation Submitted in Fulfilment of the Requirements for the Doctor of Philosophy (Ph.D.) in Construction Project Management
To the Faculty of Engineering and the Built Environment,
University of the Witwatersrand
Johannesburg, 2023

Declaration

I, Nondumiso Sangweni, 0305617r, hereby state that this proposal document represents my original work, which I have studied and checked thoroughly to ensure that there is no part of this document that could be referred to or amount to plagiarism.

Signature 

Date : 28 November 2023

Abstract

Professional women in the construction industry, still face challenges that hinder their long term stay in the industry, despite necessary knowledge, skills, competencies, training, and work experience. Most studies in this area look at identified barriers and challenges of professional females within the industry, with little or no specific suggestions for female talent retention. Recruiting and retaining workers from underrepresented groups remains a challenge for the construction industry. This research seeks to identify organizational factors that influence women's decisions to remain in the construction industry and to devise a strategy for increasing human capital in this industry. To achieve the objectives of the research, this study utilized a mixed methods approach. Interviews were conducted via Microsoft Teams with 15 leading women working within the various roles in the Built Environment & this data was analyzed via content analysis. And a total of 180 structured questionnaires were distributed to construction professionals. A total of 148 completed questionnaires were returned, representing 82% return rate. SPSS was used to analyze quantitative date data, which included tests such as frequencies, percentages, mean score, and factor analysis.

The study's findings indicate that career development variables, such as management policy and organizational policy, together with human resources considerations, play a significant role in effectively promoting the retention of female professional talent within the construction industry in South Africa. While discrimination and patriarchy in society negatively affect employee retention. This study adds to the understanding of HR professionals, line managers, and organizational leaders about retention challenges and effective retention strategies for top and middle-level managers in the construction industry. While the Female Talent Retention framework (FTRF) addresses the context of South Africa, it can be used as a theoretical foundation for future research on women's retention in the construction industry. The study also suggests policymakers in the construction industry take note of its findings and recommendations. South Africa is a developing country that requires long-term sustainable in both technology and human resources.

Keywords

Construction, Professionals, Retention, Talent, Women

Dedication

This is in remembrance of my late parents, Mr Willem Sangweni and Mrs Thobina Sangweni, who motivated me to conquer uncharted territories and greater heights by illuminating my path. To my daughter Melokuhle Lesedi, you exemplify the epitome of unconditional love, may you perpetually illuminate, amuse, and enlighten this world. I express my gratitude to my dear sisters, nephews, and nieces for their compassion, assistance, and tolerance during this journey. Moreover, I would like to extend my sincere gratitude to my other family members and friends who have significantly contributed to the accomplishment of this degree. Many thanks to every one of you.

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The duration of this journey has been extensive, marked by difficulties and enlightening experiences. It is evident that the successful completion of this endeavor would have been unattainable without the presence of God at its core.

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Another special toast to my colleagues in the CEM Post Graduate Research Center. Thank you for walking with me on this journey and may you all be prosperous in the next chapters of your lives.

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Abbreviations

BLS	Bureau of Labour Statistics
CDT	Career Development Theory
CDTs	Career Development Theories
CIDB	Construction Industry Development Board
COVID-19	Coronavirus disease of 2019
ECDP	Emerging Contractor Development Programme
ERC	Employee Retention Connection
ERCM	Employee Retention Connection Model
FTRF	Female Talent Retention Framework
FIW	Family Interfering with Work
FLFPRs	Female Labour Force Participation
GD	Great Depression
GDP	Gross Domestic Product
HCT	Human Capital Theory
HR	Human Resources
HRM	Human Resource Management
ILO	International Labour Organisation
IR	Industrial Revolution
IRS	Integrated Retention System
LTCD	Learning Theory of Career Development
NAWIC	National Association of Women in Construction
OECD	Organisation for Economic Co-operation and Development
PLFS	Periodic Labour Force Survey
SA	South Africa
SCCT	Social Cognitive Career Theory
SLT	Social Learning Theory
SSA	Sub-Saharan Africa
STATS SA	Statistics South Africa
SCTCD	Self-Concept Theory of Career Development
STEM	Science, Technology, Engineering, Mathematics
UK	United Kingdom
US	United States
WGEA	Workplace Gender Equality Agency
WIF	Work Interfering with Family
USA	United States of America
WFC	Work-Family Conflict
WWI	World War One
WWII	World War Two
ZAR	Zuid African Rand
ZM	Zinger Model

Definitions of Key Terms

Gender Stereotypes- Gender stereotypes are stereotypes about the traits and roles that females and males have that distinguish one gender from the other. It can have a positive or negative impact on someone's life, but it primarily has a negative impact on individuals (Elbalqis, 2019).

Discrimination- refers to acts, policies, or practices that place individuals at a disadvantage because of their social group membership (Rasmussen, 2019).

Work family conflict- This is defined as "a type of interrole conflict in which the role pressures from the work and family domains are in some ways mutually incompatible" (Wöhrmann, 2020:539).

Affirmative action- According to (Chowdhury, Esteve-Gonzalez & Mukherjee, 2020), affirmative action is a set of ethically driven policies aimed at providing special opportunities to a historically disadvantaged group in order to make the members of this group capable of competing with their privileged counterparts in society.

Job satisfaction- Job satisfaction can be defined as a sense of accomplishment and success among employees. It is widely assumed that it is directly related to productivity, work performance, and personal well-being (Dziuba, Ingaldi & Zhuravskaya, 2020).

Inequal pay- Pay inequity between men and women in the same position is defined as unequal pay, and it is found to varying degrees and in many different industries around the world (UN 2015).

Feminism- According to Haradhan (2022), feminism is an ideology that advocates for men and women to have equal rights in politics, decision-making, careers, and having children.

Patriarchy- Is a social formation of male-gendered power with a distinct structure that can be found with startling regularity in a wide range of social contexts, from small-scale contexts like the family, kin groups, and gangs to larger institutional contexts like the police, military, organized religion, the state, and others, UN (2015).

Glass ceiling-According to Kaur & Mittal (2022), the term "glass ceiling" was coined in 1990 to describe the inability of women and other minority groups to advance to senior positions, regardless of their qualifications and abilities. It is an invisible barrier that prevents women from advancing to top management positions and gaining access to prestige and revenue.

Organasational culture- Organizational culture is a set of shared assumptions, values, and beliefs that govern how organizations treat their employees. These common beliefs have a strong influence on the people in the company, influencing how they dress, behave, and perform their jobs (Bamide, 2022)**.**

Construction industry- The construction industry pertains to the sector of production and trade that is involved in the construction, repair, renovation, and maintenance of infrastructures. The country's technological and technical progression is influenced by a variable that plays a crucial role in regulating the expansion of its infrastructural development. This, in turn, has a significant impact on the country's progress in terms of ensuring sustainability (Hussain C. M, Paulraj M. S & Nuzhat S., 2021).

Chapter 1 Introduction

1.1 Introduction

The construction industry is vital to the economy of any nation, in so far as infrastructure and other forms of physical development are concerned. According to Kirchberger (2020), the construction industry plays a vital role in the development of both public and private infrastructure. The construction industry is one of the major industries in any nation that employs a significant number of workers (Taghinezhad, Jafari, Kermanshachi & Nipa 2021). According to Alagidede & Mensah (2016), this industry consists of activities ranging from planning to design, procurement, and execution in infrastructure projects. They further state that all activities relating to infrastructure projects' refurbishment and maintenance still fall under construction (*ibid*). In most countries globally, the construction industry has been male-dominated (Barreto et al., 2017; Caven et al., 2013; Clarke et al., 2005; Fielden et al., 2001; Hasan et al., 2021; Infante-Perea et al., 2016; Morello et al., 2018). In developed and undeveloped countries, the construction sector is described as an unwelcoming environment for women (Barreto et al., 2017).

1.2 Background of the study

The South African construction industry exhibits a significant lack of female representation. Despite the implementation of various gender equality efforts and regulations across all levels of the South African government over the past 29 years, there has been a consistent decline in the representation of women in the construction industry. In the context of South Africa, the representation of women in the construction workforce stands at little above 10%, a proportion that exhibits a similar pattern in numerous other countries globally (Neethling, 2023). According to Women in Construction (2022), in Germany, Belgium, Italy, Spain, and Portugal, approximately 9% of construction employees are female, whereas the comparable figures for Canada and the United Kingdom fall below 14%. The Workplace Gender Equality Agency (2019) reports that between 1998 and 2018, female representation in the Australian construction industry decreased from 13.8% to 12%. After agriculture (Ahuja & Kumari, 2015) report that construction is responsible for the second-largest number of new jobs in India. In January 2021, India's construction industry contributed more than 2.7 trillion rupees to India's GDP. This rebounded following the reduction in building activities caused by the coronavirus

(Covid-19) epidemic from March to June 2020 (Statistics Research Department, 2021). The construction industry in Ghana contributes 13.7% to the country's GDP, second only to agriculture (Ghana Statistical Service, 2017). The construction industry in South Africa is crucial in combating the country's extremely high young jobless rate. According to (Statistics South Africa, 2021), the sector's value-added fell 17.5% in the first quarter of 2021, year on year after falling 19.8% in the fourth quarter of 2020. The construction sector in South Africa added around R83 billion (nearly $5.4 billion) to the country's GDP in 2020 (Galal, 2021). Compared to 2019, when it was projected to add roughly R104.1 billion to the country's GDP, this showed a decrease.

Various scholars have studied the employment of female professionals over the years. One of the points of interest in the study of women professionals is that women represent an untapped reservoir of human capital in a world where the demand for highly skilled individuals is ever-increasing. In particular, the male-dominated construction industry represents a growing sector, with a constantly increasing demand for a knowledgeable and competent professional workforce (Bigelow, Bilbo, Ritter, Mathew & Elliott, 2015). Internationally, the proportion of women employed in construction is minimal, and little has changed in recent decades (French and Strachan, 2017). Recent trends are characterised by an increase in females seeking to prepare themselves for professional and managerial careers in the corporate world. In striving towards advancement in their careers, women have, over the years, adopted various individual strategies. These include enrolling in and graduating from business schools, working long hours, obtaining professional qualifications, and obtaining some work experience.

However, the number of women in construction breaking into the higher echelons of professional and managerial positions still needs to grow. Sang and Powell (2012) found that while the percentage of women working in the built environment has increased over time, only a small fraction of women makes it to management positions, suggesting that female participation in management has remained stagnant. Among the explanatory factors given in the literature is the lack of promotion. Some companies may be reluctant to promote women because they hold the view, shared by Akpinar-Sposito (2013), that men perform better than women. The second assertion is bias and discrimination against women. Tunji-Olayeni et al. (2021) state that every project participant is judged based on gender rather than ability, exacerbating discrimination against women in construction. This discrimination can come from a direct supervisor, a co-worker, or a client (Hultin, 2003). The third explanation hinges on the

lack of organisational procedures and policies, which hinders women from succeeding in professional and managerial roles (Afande, 2015). The rise of women in the formal economy over the last few centuries is a major change.

According to England (2005), jobs in the US are segregated by gender. Men dominate the highest management, distinguished professions, high paying or blue collar, certain types of manufacturing, transportation and transportation, women tend to dominate in nursing, teaching, and librarian jobs. Furthermore, England (2005) also stated that white-collar non-professional positions such as clerical, retail sales, and manufacturing jobs in fast-moving goods, domestic and childcare jobs are dominated by women. In South Africa, the economy has witnessed improvements in women's participation in recent years. Women employment improved from 39% in 1995 to 44% in 2005. Noticeable improvements were found in legislative jobs, senior official positions, and management. The improvement in these jobs is attributed to affirmative action, as women are designated as a previously disadvantaged group. Women's employment in high-skilled and professional jobs has also increased due to education gains. There has been an increase in the percentage of women who hold advanced degrees and are among the top earnings. Across the various economic sectors, private households and community services represent the highest percentage participation of women in employment at 83% and 56%, respectively.

Construction and mining represent the lowest % age contribution by women in formal employment, with 12% and 5%, respectively. This shows that despite improvements in women's participation in employment in recent years, opportunities for women remain limited. Several factors attributed to gender imbalances in SA explain the limited opportunities for females (Casale & Posel, 2005). The employment of women professionals has been a subject of study tackled by various scholars over the years (Anvekar & Manjunatha, 2015), ranging from their empowerment (Barnabas et al., 2009) to their socioeconomic inclusion in green construction (Afolabi et al., 2017).

In particular, the construction industry, which is mostly made up of men, is a growing industry that needs more skilled, knowledgeable workers (Bigelow et al., 2016). The construction industry employs the most people (Adeyemi et al., 2006; Afolabi et al., 2017); Fagbenle & Oluwunmi, 2010) but most of its employees are men. And even though the industry is a vital contributor to the economy of any country, it is still affected by negative perceptions

(Rameezdeen, 2007). Fielden et al., (2000) point out that the construction industry's male-centric culture is continuously accused of overlooking women's value by permitting a hostile environment to be cultivated through behaviour and language. Furthermore, Dainty and Lingard (2006) state that this culture hinders women's success within the construction industry. Retention of employees at any level of the organisation is a vital function of human resource management. Kossivi (2016) describes employee retention as encouraging employees to continue working for an organisation for several years, while Mita et al., (2014) argue that employee retention helps upload a productive workforce and capitalise on operational needs. Notably, obstacles deter entry, development and female retentivity in the construction sector, (Afolabi et al., 2017). According to Molimi (2014), retention starts with a clearly defined job description, orientation programmes, and effective recruitment drives and selections. Numerous factors affect women's retention after they have conquered the deterrents to entry into the construction sector; these can be classified under work environment, work-life balance or private life demands (Gilbert & Walker, 2001).

1.3 Identification of the gaps

In a study conducted by Miles (2017), a framework consisting of seven primary research gaps was proposed and subsequently renamed. These gaps include the Evidence Gap, Knowledge Gap, Practical-Knowledge Gap, Methodological Gap, Empirical Gap, Theoretical Gap, and Population Gap. There has been a wider range of studies globally looking at women participation in the construction industry. Prior studies have primarily compared the career choices of men and women (Bigelow et al., 2021; Perrenoud et al., 2020), the attraction and retention of women in trade roles (Bigelow et al.2017,2019; Oo et al., 2022), and early career experiences of women in construction (Moore & Gloeckner 2007; Bigelow et al., 2015; Oo, Lim & Feng, 2020; Kelly, Wilkinson , Eyo-Idahor & Williams, 2022, Morello, Issa & Franz 2018), explored the recruitment and retention of women in the construction industry in the US, while Baker et al., (2023) looked at a similar study in the context of Australia. A study by Perrenoud et al., (2020), investigated gender differences in attraction and retention factors with managers in the electrical engineering field in the construction industry. Ghanbaripour et al., (2023) analyzed women's experiences in the Australian construction industry, challenges and solutions. Hegarty (2020) conducted a study on the utilization of the glass scaffold as a means for women in the construction industry to navigate and adapt to prevailing workplace conditions in New Zealand. Francis (2017) investigated what influences professional women's

career advancement in construction industry, while Bombuwela, De Alwis & Chamaru (2013) looked at effects of glass ceiling on women career development in private sector organizations in Sri Lanka.

Afolabi (2019), explored balancing the female identity in the construction industry in Nigeria. In a study conducted by (Ayarkwa, Agyekum & Acheampong 2012), the focus was on examining the perceptions of Ghanaian construction professionals regarding the challenges associated with retaining female workers in the construction industry. In a study conducted by Nalitolela, Kalugila, Muganyizi, and Tesha (2020), the authors examined the factors influencing motivation and the obstacles encountered by employers when recruiting professional women in building construction firms located in Dar-es-Salaam, Tanzania.

In South Africa, Haup & Ndimande (2019) reviewed on why women-owned construction firms fail in KwaZulu-Natal Province while Malaku (2021) investigated the challenges that women employees face in the construction industry in Mpumalanga and Limpopo Provinces. However, it has been notable that research into the retention of professional female talent in the South African construction industry is still at the infant stage.

The current study is crucial since it adds to the corpus of information on this vital topic. It offers empirical evidence regarding the elements that attract and retain women in the construction industry. It provides relevant and critical insights to the industry on personalizing recruitment and retention activities to enhance appointments and reduce resignations. The study will provide a clear understanding of the issues around the effectiveness of existing strategies, individually and collectively, with a systemic perspective, understating the issues from the perspective of the beneficiaries of these strategies. It uses the lessons to derive a more effective framework for strategies that will achieve better retention of professional females in the construction industry. This opens new opportunities for new strategies and hybrid strategies.

1.4 Problem Statement

There is a lack of strategies for the retention of professional female talent, resulting in poor career development, non-retention, and the early departure of female talent from the construction industry.

1.5 Research Question

How effective are the strategies implemented to improve the retention of professional female talent in the South African construction industry?

1.6 Research aim & objectives

This research seeks to identify organizational factors that influence women's decisions to remain in the construction industry and to devise a strategy for increasing human capital in this industry.

1.7 Scope and delimitations of the study

The focus of the study is on professional females practising in the South African construction industry. The study comprises of professional women and men in the construction industry. This entails project managers, architects, quantity surveyors, civil engineers and planners/schedulers. The participants in the study have sufficient knowledge and experience to provide an accurate assessment of the status quo.

1.8 Assumptions of the study

- The participants in the study have sufficient knowledge and experience to provide an accurate assessment of the status quo.
- The participants will answer truthfully since the data collection is based on volunteer and anonymity basis.
- The organizational culture has a pivotal role in determining the feasibility of implementing retention strategies and they can be identified through analyzing the culture of an organization.

1.9 Justification of the study

According to Fisher (2007), the construction industry presented women with tremendous employment opportunities, entrepreneur programs and financial security opportunities. However, various challenges impede the retention of female talent in the construction industry. Mindful of this, the study will critically investigate the retention of professional female talent

in South Africa's construction industry. Retention of females is a predicament that yields a 'leaky pipeline', promoting fewer women at top-level positions, Lowe and Woodcroft (2014). Despite the construction industry's significant economic contribution, the industry faces various challenges, including skills shortages. Currently, the demand for construction expertise is far greater than what most clients require, and the experienced workforce is set to retire in the next few years. In order to meet prospective clients' demands and expectations, the construction industry must act now to utilise the potential talent pool. Women represent the untapped human capital pool the industry needs to fill the skills gap. While many previous studies have focused on challenges facing women professionals in construction, this study will focus on strategies for retaining women in construction.

The study will contribute to the body of knowledge by developing a new framework for retaining female professionals in the construction industry. This framework will combine human capital theories with gender feminist theories to bring a new perspective on achieving gender parity in the workplace. Within the research arena, the study will contribute to improved research design involving a multi-method approach based on a philosophical approach. It is envisaged that the study will provide policymakers with a new framework that accounts for gender parity in the workplace with proactive female talent retention as the end result. For professional bodies, the study will contribute to formulating strategies to increase the talent pool of female professionals in the construction industry. Overall, the study will add to developing an inclusive professional development policy for both governments and professional bodies.

1.10 Structure of the study

The study is divided into six chapters**.**

- *Chapter One* provides a background of the study. It presents a broad overview of women's employment in various economic sectors.
- *Chapter Two* explores literature review on the retention. This includes human capital theories in education, training, experience, and skills development. The review also includes feminist gender theory comprising discrimination, patriarchy, and traditional career models. Career development theory expands on the glass ceiling and organisational policy.

- *Chapter Three* discusses the theoretical proposition for the study on the retention of female professional talent. The proposition presents theories on human capital factors and career development. Finally, the review also includes similar empirical studies conducted in various countries**.**

- *Chapter Four* presents the methodology. The study used the mixed method. This includes an introduction which provides an overview of the research design, the philosophical approach to research, and the link between objectives and methodology. Finally, the research design is discussed in detail, followed by collection and analysis of data.

- *Chapter Five* provides the results of the analysis according to objectives; also presentation of findings and discussions synthesising the findings with extant literature, and a derivation of a framework.

- *Chapter Six* summarises the study findings and recommendations addressing the research aim, objectives, and questions. This section discusses the significant contribution of the research to the body of knowledge, policy formulation, research arena and professional bodies, and further research arising from this research.

1.11 Chapter summary

This chapter's primary objective was to present context, focus, purpose, and research methods. Background information is presented first, followed by the research problem, research question, purpose, objectives, ethical considerations, and the study's justification. The entire study focuses on the critical role that women play in the construction industry within their respective organizations, as well as the pressing need for these organizations to successfully maintain, develop, and retain their talent and skills.

Chapter 2 Literature Review

2.1 Introduction

The literature review entails reviewing previous empirical studies on factors determining female's retention in the construction sector. This is supported by a theoretical framework to present theoretical explanations of the phenomena behind the retention of professional female talent in the construction industry. The literature explicitly covers women and employment trends, and female's employment in construction in developed and developing countries, employee retention and turnover, retention strategies and the progression of female graduates in construction.

2.2 Historical perspective on women in the workforce

According to McLaughlin (2005), women's employment was concentrated in the home and farm in the predominantly agrarian culture of the early 1800s. The job was varied and consistent during this colonial period. According to Lewis (2019), as the Industrial Revolution and factory labour took hold in the US in the 1840s and 1850s, more women started to work outside the home, and by 1840, 10% of women worked outside the home. Furthermore, after 10 years, the percentage had climbed to 15% (*ibid*). According to Goldin (1986), female labour force participation in 1890 was likely to be significantly lower than earlier in the 19th century and the late 18th century. In the US and Canada, female labour force participation has steadily increased. In 1890, just 18% of women in the US worked for pay, but by 1940, that proportion had climbed to roughly 26% when the definition of employment changed (Olivetti, 2013). Cleaning, cooking, mending, making and washing garments, and childbearing were all expected from women (McLaughlin, 2005). The birth rate was high and cooking for the family consumed much of a woman's time before the 19th century (Lewis, 2019). Women have been seeking to change people's perceptions of them economically, politically, and socially since the 19th century, and they have been calling for equality and fairness in the workplace (Agherdien & Smallwood, 2008). However, Lewis (2019) argued that enslaved women, captured from Africa, or born to enslaved mothers, often performed the same tasks as men, whether at home or in the fields. During the early 19th century, Scott (1991) finds a substantial proportion of young women and girls working outside the home. They worked as domestic helpers, farm labourers, and shop assistants, often distant from home. The female non-agricultural workforce underwent a long-term transformation, with one employee for every two industrial employees in 1906 and one for every two industrial workers in 1931 (Zemer, 1987).

According to Olivetti (2013), women's participation rates in the UK in the early 1960s were the same as in the previous two decades of the nineteenth century. He further states that from 1890 to 1910, female labour force participation in Belgium hovered at 41%, then dropped significantly until the 1950s, when it began to rise again, reaching 41% by the mid-1990s. Ireland resembled the same trend during that time. In 1890 and 1970, the female participation percentage in Spain was roughly 23%. In Italy, women's involvement in the labour force was still 13 percentage points lower in 2000 than in 1900 (Olivetti, 2013). However, there are significant gaps in our knowledge of the overall structure of the nineteenth-century industrial labor market participation of women in the workplace (Gardey, 2005).

2.3 Women and work

According to Lewis (2021), as the Industrial Revolution and factory labour took hold in the US in the 1840s and 1850s, more women started to work outside their homes. He further states that by 1840, 10% of women worked outside the home; after 10 years, the percentage had climbed to 15%. By 1850, women in the US were employed in 175 different jobs (McLaughlin, 2005). Around 1851, domestic service, in all forms, was the single largest source of income for women, accounting for about 40% of all female vocations (Hudson, 2011). As the 19th century proceeded, gender-specific employment became more common, frequently adopted to improve workplace management and discipline by hiring men as supervisors (Hudson, 2011). He further states that men dominated management positions, operating the most expensive and sophisticated machinery, and monopolising the high-status and higher-paying jobs (*ibid*). More opportunities for women started opening in the 20th century (Lambert, 2021).

2.3.1 Participation of women in the labor force from 1900s to 1930s

During the beginning of the 1900s, gender roles started to change in society. According to Casacelr (2018), women's roles have historically been limited to providing domestic and childcare for their male counterparts. Between 1914 and 1918, almost a million women entered the workforce, helping to fill the void left by a generation of military men who went to fight in World War I (Dotto, 2020). According to Braybon (1989:49), during WW I, from between 37.7% and 46.7% of the working-age population in 1918, up from 23.6% in 1914, women's employment rates increased. Women continued to work after 1918; by the 1920s, their roles were changing, and the social order had shifted (Webb, 2010). However, Braybon (1989) further states that precise estimates are difficult because there was no account taken for people who worked in the domestic sphere in these figures. The war effort resulted in many women

switching careers from those in the domestic sphere to those in the workforce. By 1918, married women comprised approximately 40% of all female workers (Braybon, 1989:49). Women were unwilling to pursue the traditional responsibilities of the past after the war, with a whole male generation lost to combat (Webb, 2010). However, at the end of WW I, most women in replacement positions were pulled out of labour and back into the house or into traditionally feminine occupations (McLaughlin, 2005).

By the 1920s, according to Webb (2010), women who had graduated from college were relegated to positions deemed best suited to their gender when they joined professional professions. These were teaching, nursing, social work, and factory employment. The number of women in employment expanded dramatically, and society recognised that single women could also be productive members (McLaughlin, 2005). He further states that working single women were no longer stigmatised as morally reprehensible because they worked outside the home. Before the 1920s, women typically left the workforce at marriage; however, some in impoverished households and the better educated did not (Goldin, 2006). The 1920s were a period of optimism and economic progress, but women did not participate equally in this economic growth. For women, the 1920s were "a prologue to the 1930s", and the Great Depression from 1929 to1945 came early for them in many respects (Power, 1978). According to Webb (2010), even though many women had entered labour in the 1920s, the overall situation for them changed dramatically in 1929, when the stock market crashed, and the Depression began. The number of unemployed people rose from 3.2% in the year 1929 to 23.6% in the year 1932 during the Great Depression era in the US (Webb, 2010). In Australia, unemployment peaked at 30% in 1931-1932, primarily due to their imperial ties with Britain (Power, 1978). According to Euwals et al.,(2011), female's participation in the marketplace for workers in Netherlands began to rise in the 1970s (Devine et al., 2021).

According to Sabena (2018), during the Great Depression, institutional transformation and gender roles shifted mainly because of the severe economic recession that typified the period. Thousands of men who were once family breadwinners lost their employment during the Depression, forcing women to look for work with a newfound feeling of urgency (Rotondi, 2019). Specific industrial issues linked to the Depression, such as the rise of part-time labour, seasonal and other irregularities in employment, and numerous technical advances, significantly impacted women (Pidgeon, 1937). These years coincided with the so-called first wave of the women's movement, in which women banded together to demand change on a

variety of social issues, including enfranchisement and temperance. In the US, this culminated in the ratification of 19th Amendment, that guaranteed the right to vote for females in 1920 (Yellen, 2020).

By the 1930s, women were joining the workforce in more significant numbers, with single women's participation rates reaching almost 50% and married women's involvement rates reaching nearly 12% (Yellen, 2020). According to Goldin (2006), the rise in women' labour percentages of involvement in the armed forces from 1890 to 1930 showed a 9.5% for women from age 25 to 44 and 7.3% for married women from age 35 to 44 years old; this was attributed to inelastic labour supply functions, as shown in Figure 2.1.

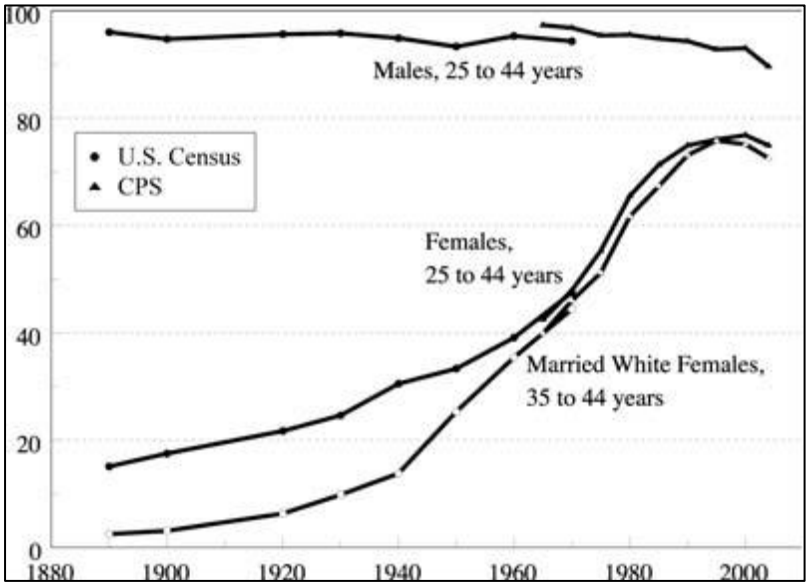

Figure 2.1 Female and male labor force participation rates by age and marital status: 1890 to 2004 (Source: Goldin, 2004)

2.3.2 Participation of women in the labor force in the 1940s

Following World War II in the US, a dramatic shift occurred, where there was a rise of women who were willing to work. A new trend emerged where a significant portion of women started getting employed in positions that had traditionally been held by men, such as building and manufacturing. According to Goldin (1990 and 1998a), between the 1940s and 1960s, the rise in married women's labor force involvement led in a change in the labor market and a rise in demand for office and other managerial jobs. During this period, women in white-collar

occupations continued to work after marriage, taking a break following the birth of their first child and returning when their children entered school (Bellou & Cardia, 2018). WW II began in 1941 and women re-entered employment, filling the vacancies left by men who had left to serve in the armed forces (Webb, 2010). In the US, about 6.5 million women entered the workforce between 1942 and 1945, according to Webb (2010). McLaughlin (2005) says they worked in defence, manufacturing, and the chemical and metals factories, as well as in jobs unrelated to the war effort. Many of those women migrated from female occupations such as domestic work, teaching, and nursing to male occupations with higher pay. Between 1940 and March 1944, manufacturing employed more than three million more women, increasing from 21 to 34 % of overall female employment (Rose, 2018).

However, women's participation in labour dropped from 36% in 1944 to only 12% in 1948 as males returned home from the war (McLaughlin, 2005). The so-called baby boom occurred in the late 1940s and early 1950s, when women gave birth to more children than in previous periods. The only women left in the workforce were those from lower socioeconomic backgrounds, as stated by Webb (2010). Rose (2018) suggests that the decreases were caused by a combination of factors, including layoffs in industries that were winding down wartime output, relocation in typically male-dominated sectors or with specific plans to rehire returning soldiers, and significant wage and job disparities between women struck off and women who worked during the conflict. Rose (2018) further argued that industries that witnessed the most significant losses in overall employment placements, like explosives, rubber, and planes manufacture, also saw the most significant decreases in female employment positions. According to Gardey (2005), significant changes happened between the two world wars, where women's economic involvement became considerably more evident as the number of salaried women (outside of agriculture) expanded dramatically.

2.3.3 Participation of women in the labor force in the 1950s

A pivotal time for women in construction and the workforce at large was during WW II, (Wicke, 2023). With the return of the male workforce from the war, which ended in 1945, gender roles in the home underwent a dramatic shift. The 1950s were seen as a period when there was an evolution of the working mother and the wife (McCarthy, 2020). This represented a significant shift from the past, when marriage typically meant a woman's permanent withdrawal from paid employment (*ibid*). According to Myrdal and Klein (1956), the

implications of evolving work patterns for women, families, and professional hierarchies were hotly debated during the 1950s, as the idea that the average married woman may be expected to do two complementary tasks gained traction. Since they could not sustain themselves or a family on their own in the 1950s, women tended to stay married because there was little work available for them. There was a financial incentive to stay married, even if unhappy (Webb, 2010). Klein researched working wives' experiences in conjunction with the Mass Observation Archive in 1957 and discovered that working women's husbands were generally supportive, albeit not without caveats. Some of these husbands believed that if a man disapproved of his wife's employment it was because he was possessive over her and scared, she would meet someone else (Klein, 1957).

2.3.4 Participation of women in the labor force in the 1960s

The 1960s saw a period of rebirth, upheaval, and the Vietnam War. It wasn't until the 1960s that there was a concerted effort to improve minority and female access to corporate and professional advancement (Hatipkarasulu & Roff 2011). Increased female workforce participation climbed steadily throughout the 1960s, 1970s, and 1980s, peaking at 60% in 1999 (Toossi & Morisi, 2017). Since 1960, women's participation in the labor force has largely increased, with most of the increase occurring among women of reproductive age (Sutanto, 2010). Women were not staying at home but instead were enrolling in higher education in more significant numbers and placed a higher importance on education during the 1960s (Webb, 2010). Furthermore, Webb (2010) says that during this time, women saw schooling as a method to return to the workforce and achieve equality with their male counterparts. In addition, the Equal Pay Act of 1963 came into effect, making it illegal to pay women and men differently in the US. However, legislation, fails to ensure that wages are equitable (Webb, 2010). According to the US Department of Labor's Women's Bureau (2002), in 1960 women were paid 59c for every $1 earned by males. Furthermore, following the passage of the 1963 Act, women were paid 77c for every dollar earned by men.

A similar law was approved in the UK in 1970. Subsequently, in 1975, new legislation in the UK discriminated against women in the workplace, and education and training were illegal (Lambert, 2022). Furthermore, Another British law, enacted in 1984, mandated that equal compensation be paid for labour of equivalent value (*ibid*). Silkin (2021) further argued that in the nearly 50 years since equal pay legislation was enacted, the number of women in Work in

the UK had risen steadily: from around 52% of women aged 16 to 64 in 1971 to 72% in 2021. According to Castro (2005), women may undertake professions with different responsibilities than males, but if both genders' jobs are similarly valuable to the company, they should be compensated equally. However, the 1963 Act did not resolve the issue of pay disparity (Webb, 2010). Individual' job fulfilment, devotion, and dedication can be increased by catering to workers' preferences, which in turn boosts retention rates. Employee perceptions of their current employees have improved due to incentives and the provision of career advancement chances in concert with the integrated retention system model (IvyPanda, 2019).

2.3.5 Participation of women in the labor force in the 1970s

From the 1930s to the mid-1970s, women's economic participation increased steadily, owing largely to an increase in the number of working married women. According to Yellen (2020), by 1970, 50% of unmarried and 40% of married women were participating in the labour force due to graduation rates rising substantially. At the same time, there was a rise in clerical work due to technological advancements, and these jobs were traditionally filled by women (*ibid*). The opportunities for women who were highly educated increased during this period. In 1961, 38% of high school graduates worked in offices; by 1971, clerical employment accounted for 27% of all female jobs (Silverstone, 1976). By the time the daughters of the women who established houses in the 1950s entered the workforce in the 1970s, they had a more comprehensive range of job opportunities (Strachan, 2010). According to Appelbaum et al. (2014), women's labour-force participation accelerated from the mid-1970s, following a steady rise throughout the 20th century. The increase was particularly pronounced among women aged 25 to 44, with their labour-force participation rate rising from 47% in 1970 to 76% in 2000, roughly where it is now in the US (Goldin et al., 2013). According to Roantree & Vira (2018), the proportion of women in work in the United Kingdom has risen steadily over the last 40 years, and the employment rate among women in their "peak working years" (25-54) moved from 57% in 1975 to a new high of 78% in 2017.

According to Eisenberg (2004:193) and Moccio (2009:62), in the US, former president Jimmy Carter issued an order in April 1978 setting initially aiming for a 3.1% female construction workforce, the goal was increased to 6.9% by 1981. The new legislation applied to construction companies and contractors with government contracts worth more than $10000. MacLean (2006) argued that while affirmative action policies improved employment opportunities for

women and people of color in the 1970s, the women's gains in building were restricted to predetermined plans where aid initiatives were financially supported. Women fell short of achieving a critical mass of 10–12%, which would have pressured the industry to reform its cultural norms and practices based on sex (Eisenberg, 2004:194).

Women's participation in job markets increased dramatically in early industrialised countries over the 20th century (Ortiz-Ospina and Tzvetkova, 2017). According to McLaughlin (2005), with the growth of industrialisation came the idea that labour might be bought and sold as a commodity. Women's participation in the workforce increased dramatically in many industrialised countries, including the US, during the 20th century (Bureau of Labor Statistics, 2000). According to Maas et al., (1999), women's involvement rates in some nations, such as Germany, stayed relatively steady during the 20th century. However, women from younger cohorts grew greater propensity to labor full time and return to the labour market between or after childbirth.

2.3.6 Participation of women in the labor force in the 1980s

Since 1980, the wage premium for highly educated agents has increased dramatically in the US labour market (Katz & Murphy, 1992, Autor, Katz, & Kearney, 2008). And, according to Congdon (1989), the percentage of women in London's overall labour force increased from 37% in 1961 to 41% in 1981. By 1985, women accounted for 43% (1,4 million out of a total labour force of 3.328 million) of the total resident labour force. Thus, the female population in 1987 was 3 487 million, compared to 3.875 million in 1981, and only the 25-34 and above-75 age groups had a rise from 1971 to 1987 (*ibid*). According to Cerina et al., (2021), women's labour markets in the US have undergone remarkable changes since 1980, suggesting that women may have played a role in employment polarisation.

2.3.7 Participation of women in the labor force in the 1990s

Looking at the trend from 1977 to 1993, married women drove the rise in female's labour force participation. Moreover, from 1993-2000, single women with children experienced an increase in participation of more than 11 percentage points, essentially catching up with childless single women, while trends for other women remained stable (Anderson et al., 2019). White & Rogers (2000) contended that the economy of the 1990s was an extension of various long-term patterns that led to positive general economic development and decreased unemployment but neglected

to eliminate and even exacerbated long-term economic disparities. The 1990s stand out as a period of technical and economic transformation, with broad patterns that left their imprint on work-family interaction in ways that are yet unknown (Perry-Jenkins et al., 2000). According to Hout et al.,(1996), during the 1990s, job growth was most prominent in the service and information and technology industries, contributing to job growth at both ends of the spectrum. Perry-Jenkins et al. (2000) argued that throughout the 1990s, women, particularly mothers, continued to increase their labour-force participation rates. According to the U.S. Bureau of Labor Statistics (1998b), in 1990, 74% of women aged 25 to 54 years were in the labour force, compared to 94% of men, and by 1998, women's rates had risen to 77%, while men's rates had fallen to 92%. According to Blau (2015), after a half-century of rapid expansion following WW II, female labour force participation rates in the US began to plateau in the mid-1990s.

According to Blau (2015), the US ranked sixth out of 22 OECD members in 1990 for its high rate of female participation in the labor force. Women's elasticity (response) to changes in their earnings and non-labor incomes (typically their spouses' income) accompanied these shifts in participation patterns, as stated by Goldin (1990) in the US. Spain and Bianchi report that while women's labor force participation rates are still lower than men's, recent years have seen both overall increases and growing convergence among women as traditional barriers to women's labor force participation, such as marital status, age, race, and motherhood, have eroded.

2.3.8 Participation of women in the labor force in the 2000s

According to Gurjao (2011), women made up 18.2% of the construction workforce in the spring of 2003, with 180,595 occupying professional/technical positions and 98,790 filling those in the manual trades in the UK. This is an increase of 4,948 from 2002, when there were 193,842 people employed in the construction industry and 178,816 in professional/technical roles and 15,026 in manual trades, (*ibid*). Briscoe (2005) state that, between 2001 and 2002, women made up only 11% of all applicants to degree programmes in construction-related fields. According to the Department of Labour (2009), in 2008, women made up 3.3% of the construction workforce but 8.2% of the managerial positions in the construction industry. Women made up about 11.5 percent of the total engineering workforce, 24.8 percent of engineering technicians, 14.9 percent of industrial engineers, and 10.4 percent of civil engineers.

According to a report by the World Bank (2011), between 1990 and 2010, as demonstrated in Figure 2.2, women accounted for 40% of the global labour force, while the female labour participation rate has remained around 50% for the past two decades. Globally, women's labour-force participation has been relatively steady in the two decades from 1990 to 2010, at around 52% (ILO, 2014). According to Chaudhary & Verick (2014), at a more regional level, women's engagement differs far more than men's across developing and emerging nations. Simply regarding a third of Middle Eastern, North African, and South Asian women of working age are actively involved in the labor market. However, in Southeast Asia and sub-Saharan Africa, that number drops to around two-thirds. Black et al., (2017) report that throughout the start of the 1960s through the end of the 1990s, female involvement steadily increased, reaching 61% in 2000 before declining by 3.5 percentage points. Significant variations in amounts and trends among areas are hidden by the average rate. The female females in the workforce participation rate (FLFPR) are anywhere from 21% in the countries of the area of the Middle East and North Africa to over 63 percent in East Asia and the Pacific region and Sub-Saharan Africa, with a rise of 13% over the past two decades in South America and the Caribbean (World Bank, 2011). South Asia's rates have been falling (*ibid*). Black et al., (2017) report that positive patterns have been slowing and even reverting since the beginning of the 2000s, with women's involvement falling from 60.7% in the year 2000 to 57.2 percent in 2016. Younger women's (ages 16-24) increasing academic achievement means that they are less dedicated to the labor market, which accounts for portion of the drop (*ibid*).

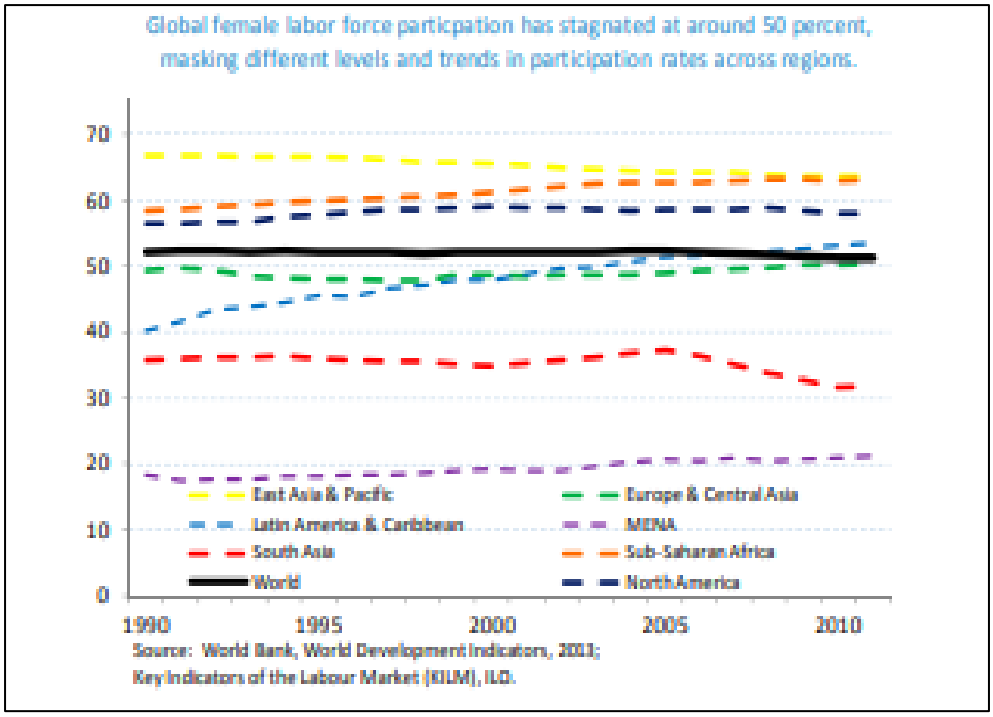

Figure 2.2 Female labour force participation as a percentage of the female population age 15+ from 1990-2011 (Source: World Bank Indicators, 2016)

2.3.9 Participation of women in the labor force in the 2010s

While it peaked in the late 1990s, the percentage of working-age women in the workforce has been declining since 2016. Western Asia, Southern Asia, and Northern Africa were expected to have the lowest percentages of female labor force involvement in 2015, with only 50% of women of working age (those over the age of 15) working, (World Bank Indicators, 2016). Despite a dramatic rise in the proportion of women holding employment outside of farmland in emerging countries, women still face greater inequality than men do (Verick, 2014). According to Winke (2023), the percentage of women employed in the construction industry has increased to its highest level in the past two decades in 2019 by 10%. This is nearly five times faster than the overall rate of employment growth in the sector.

2.3.10 Participation of women in the labor force in the 2020s

While the construction sector lost 587,000 employment opportunities in 2020 because of the Covid 19 pandemic's effect on economic activity, Zhao (2021) reports that the number of women employed in the industry raised slightly to around 1.17 million, from a low of 807,000

in 2010. According to the ILO (2021), the gender disparities in the workplace that the Covid-19 pandemic has exacerbated will persist. Globally, between 2019 and 2020, women's employment fell by 54 million positions were lost by women (4.2%) and 60 million were lost by males (-3%) in the labor market (ILO, 2021). According to Barua (2022), in most major world economies, female employment fell faster than male employment in the first half of 2020, when the pandemic's impact on the labour market was the most severe.

According to Galal (2022), SA's female labour force participation rate was around 44% in 2020. This decreased from the previous year, when nearly 48.5 % of South African women were looking for work or working. In SA, female labour force participation fell by 11 percentage points during this period, and by 7.8 percentage points in Brazil (Barua, 2022). Furthermore, during the study period, women's labour-force participation in the country increased overall, only slightly decreasing in 2018 and 2020 (Galal, 2022).

2.4 Women and work in the construction industry

According to the Australian Industry and Skills Committee (2020), construction is the third largest industry in Australia, with a predicted annual growth rate of 2.4%, making it the second sector with the highest planned employment increase (10%) by 2023. In Australia, women's participation in this crucial economic sector is still relatively low, falling from 17% in 2006 to 12.9% in 2020 (Wang et al., 2021).

According to Holdsworth et al., (2020), in Australia, female construction workers made up 17% of the total employment in 2006 (Australian Bureau of Statistics, 2006), 12% in 2016 (Australian Bureau of Statistics, 2016), and 11% in 2020 (Master Builders' Association, 2020). According to the Master Builders' Association, only 1% of construction crafts and specialist jobs were held by women in 2020. According to the most current data from the Bureau of Labor Statistics (2017), only 7.4% of the 471,800 individuals employed as construction supervisors in the United States are women. The National Association of Women in Construction reported that women now make up 9.1% of the construction industry in the United States, NAWIC (2016). Previous studies have revealed that females represent only 9–12% of the construction industry and are mainly engaged in sales and managerial roles, as reported by Briscoe (2005) and Gurjao (2011). In 2018, 8.3% of all construction workers in India were women, per data from the Periodic Labour Force Survey (Recalde-Esnoz, 2021). Women, on the other hand, are

overrepresented in relatively secure fields like caring for others, education, nursing, and within the public sphere at large, (Applebaum, 2011; Bettio et al., 2012; McKay et al., 2013; Rubery & Rafferty, 2013).

Strong opposition to notions like gender equality, affirming opportunity, and what is seen as the government's social justice goal has been seen in the building industry, which Agherdien & Smallwood (2008) call one of the last masculine bastions. “Big Brother” approach. As evidenced by study activities in this field, the gender issue in construction is a global concern (Wang et al., 2021). For instance, between 2010 and 2018, Hegarty (2020) investigated women’s experiences of joining, working in, and exiting the construction business in New Zealand. In Chile, Silva & Dominguez (2020) conducted a study on how to improve the experience of female construction engineering students throughout their careers. The factors that draw and retain women in the electrical building industry in the US were examined by Perrenoud et al.,(2021). In the UK construction business, Naoum et al., (2020) undertook a comparative study on male and female self-perception. Despite these efforts, however, women in construction industry continues to be dominated by men (WGEA, 2019). According to Shah et al. (2020), the construction industry is overwhelmingly male dominated, which poses a significant barrier to women’s equal opportunity.

In SA, there is still apparent women's marginalization in the workplace and in the realm of skills and crafts, even though post-1994 SA recorded the most positive legislative and empowerment enabling period for women (Ozumba & Ozumba, 2012; English & Le Juene, 2012). In addition, (Ozumba and Ozumba, 2012) emphasized the consistently low proportion of women employed in South Africa's construction industry at 13%. In a study by Madikizela (2022), on diversity, leadership and innovation in the construction industry, the findings suggest that the South African construction industry continues to exhibit the negative characteristics of an untransformed, inflexible, male-dominated, and slow-to-change industry.

2.4.1 Gender inequality

Despite women’s educational advancements over the previous several decades worldwide, this has not translated into equal progression in all fields of work (Fielden et al., 2000; Lu et al., 2010; Navarro-Astor et al., 2017; Stergiou-Kita et al., 2015). According to Wright (2015), construction is a traditionally male-dominated business that has not seen much gender shift in

decades. Just over one percent of those employed in physical crafts (carpenters, electricians, and plumbers) and approximately 16% of those employed in professional building occupations (such as architect, quantity surveyor, and engineer) are women (Lowe & Woodcroft, 2014). The vast majority of gender disparity study in the construction industry has focused on women in skilled and managerial roles (Galea et al., 2018; Ness, 2012; Lingard & Lin, 2004; Oo et al., 2020). Gender disparity in the construction sector, according to Afolabi et al.,(2019), is a worry for both specific women who are employed in the industry and those who are barred from the industry's stable, lucrative job opportunities. As a result, women who enter the sector are thus forced to adopt "male" values mixed with construction industry ideals to thrive, as narrated by Dainty et al., (2001: 297). While gender inequality and underrepresentation in the construction sector concern women, they also significantly impact the business (Holdsworth et al., 2020). The results of a research published in Australia, a lack of female representation in the construction industry has resulted in lower productivity, less innovation, and worsening skilled labour shortages worldwide (Galea et al., 2015). Both Afolabi et al., (2019) and Callanan & Perri, 2020) recognised the absence of women as a limiting issue for the sector, reducing productivity and preventing economic progress. Gender inequality also contributes to the construction industry's skill deficit (Oo et al., 2020; Shewring, 2009), which hinders economic progress (Afolabi et al., 2019). Significantly, gender-diverse workplaces with a broader range of opinions are more productive, adding value to businesses (*ibid*).

Increased female representation in the construction industry can help improve communication and problem-solving, as well as challenge and modify the existing macho attitude, especially regarding bullying, as stated by Holdsworth et al., (2020). Jones et al.,(2017) report that work environment attitude is the most important element in deciding whether women will pursue careers in the trades and whether male or female trade employees will enjoy good health. The best method to solve these problems, according to Jones et al., (2017), is to encourage more women to work in the field. According to Wang et al., (2021), failure to tap into the female workforce exacerbates issues with the industry's anticipated skill deficit. According to Loosemore et al.,(2003), fair treatment of all employees should be the cornerstone of employment practices in the construction sector. Aiming for gender parity in management and professional positions (Barreto et al., 2017). According to workforce Grimson & Grimson (2019), gender equality in the workplace increases diversity in skills, opinions, and experiences, promoting a socially responsible business and successfully utilising the available resources.

Henderson and Stackman (2010) discovered in an exploratory study regarding gender impact within project management and its relationship to role, setting, technological advances, and project expenses that some companies may assign women to smaller, more affordable projects, avoiding them from obtaining social resources such as opportunities for networking and information flow that project managers on larger projects have. This bias may render it difficult for a woman to break through the glass barrier as a project manager in the building business. (Perrenoud et al., 2020).

2.4.2 Gender segregation

Occupational segregation exists in all places, at all income levels, in all systems of government, and in everything devoted to faith, social, and cultural contexts. It is a persistent feature of global labor markets (Anker, 1997; Davidson & Burke, 2011). According to Blackburn et al., (2002:514), segregation can be divided into two types: vertical segregation, that gauges the degree of variance within occupations that are orthogonal to vertical segregation, and horizontal segregation, which evaluates the level of variance within occupations that are orthogonal to vertical segregation. Concerns about job segregation, as described by Anker (1997), include wage inequalities between men and women, as well as the negative effects of men's attitudes regarding women and women's attitudes toward themselves. According to French and Strachan (2015), gender segregation is a main cause of labor market stiffness and economic failure due to a loss of human resources. This gender segregation, according to Wulffe et al., (2021), is an illustration of the restrictions that prevent women from joining and thriving in specialized professions. According to Ness (2012), construction is one of the most male-dominated sectors, with the greatest degree of gender segregation. Occupational gender segregation is one of the factors contributing to women's poorer wages, resulting in a 19.7% pay difference in median hourly earnings, (Office for National Statistics, 2013). Over the last two decades, women's employment in the construction industry has ranged from 5% to 15% of the overall populace (Barreto et al., 2017; Bryce et al., 2019; Morello et al., 2018; Shrestha et al., 2020; Vijayaragunathan & Rasanthi, 2019). According to 2011 employment statistics, only 3% of senior executives, 27% of civil engineers and architects, 8% of engineers and technicians, 5% of construction workers, and 1% of craft workers were employed (Roksana, 2019). These low percentages of women in the business are not unique to Sweden; in general, the figures for women employed in the construction industry around the world are similar

(Roksana, 2019). Construction is Australia's third biggest business, according to the Australian business and Skills Committee (2020), with a projected yearly growth rate of 2.4%, making it the second area with the greatest scheduled job rise (10%) by 2023. In Australia, women's involvement in this critical economic area remains comparatively low, dropping from 17% in 2006 to 12.9% in 2020 (Wang et al., 2021). According to Holdsworth et al., (2020), in Australia, Master Builders' Association predicts that by 2020, only 11% of the building workers will be female, down from 17 percent in 2006 (Australian Bureau of Statistics, 2006) and twelve per cent in 2016 (Australian Bureau of Statistics, 2016). Moreover, they claimed that by 2020, women made up only 1% of the building sector's crafts and assistant roles (Master Builders' Association, 2020). According to Fielden et al., (2001), in the UK, a member of the OECD, 16% of women work in the industry, although two-thirds are in clerical positions (*ibid*).

2.4.3 Gender stereotypes

According to Ginige et al., (2007), gender stereotypes are preconceived notions about the attributes and behaviours people are allocated based on gender. They serve as expectations for the characteristics and conduct of individual group members (Cleveland et al., 2000). Identity is a self-perceived sense of masculinity or femininity learned through socialization and education and is collectively determined by the duties that society demands of people, based on the theory of social learning by Loosemore & Galea (2008). Organisations are not gender-agnostic (Connell, 2005). Occupations and the organisations in which they operate are gendered through various behaviours such as hiring and training methods, organisational goals, work policy implementation, and worker relationships (Acker, 1990; Reskin & Padavic, 1988). According to Wulff (2021), work is inextricably linked to gender stereotypes and societal expectations about work appropriateness. Women and men usually pick roles that are appropriate for their gender (Huppatz & Goodwin, 2013).

According to Recalde-Esnoz et al.,(2021), assigning roles is a learning process that begins in childhood and has ramifications in selecting hobbies and fields of study. A notably male-dominated workforce in the skilled trades develops and reproduces a gendered culture (Bridges et al., 2020). Whittock states (2002), evidence suggests that gender significantly impacts career choices. Recalde-Esnoz et al., (2021) argue that girls are underrepresented in the STEM fields (STEM) courses relative to males for various reasons, including a lack of female role models in these sector as well as prejudices and discrimination. In a study by Carter & Kirkup (1990),

they discovered that female students in the UK and US where masculine pupil peers do not consider them seriously because it was considered that they were studying engineering to find a husband. However, Walker (2001) discovered that female engineering students were typically uncertain about gendered explanations of their experiences or outright rejected them. Powell (2010) argues that this may be a major contributing element in both men's and women's under-representation in certain occupations. However, even within the same career or occupation, there are likely to be gender variations in motivations for choosing a particular path. These variables highlight the importance of raising industrial awareness from a young age and addressing gendered socialisation processes, as Powell et al., (2010) argues.

Gender studies have indicated that societal and cultural role expectations influence women's professional choices (Powell et al., 2010). According to Akinlolu & Haupt (2020), gender stereotyping is a significant problem in the building industry, and men dominate the industry's culture. The construction industry has been defined by male-gendered societal structures that emphasise technical abilities. At the same time, women perform conventional and administrative tasks, making it difficult for them to survive in the industry (Ahuja & Kumari, 2012). Due to gender role socialisation, women may enter the construction industry with fewer applicable skills and less tool experience than their male counterparts (Moir, Thompson & Kelleher 2011). In studying women's perspectives and behaviour in male-dominated occupational cultures like construction, the relationship between identity and gender performance is crucial (Women Consortium, 2006). As a result, it is suggested that individuals can have several subject positions and identities (Collinson, 2003), and these identities may sometimes conflict. Sinclair (2005) states that women can learn various persuasion strategies depending on the setting, whom they are working with, how much authority they have, and whether they are influencing upward or downwards. Hence, Powell (2010) argues that women may also have gender identity conflicts because of the belief that gender equality has been reached.

According to Sang & Powell (2012), women's sex can jeopardise their professional standing, in traditionally male-dominated fields such as construction. When contemplating the effect of gender in building, it ought to be remembered that construction work was traditionally a physically taxing profession that preferred males (Naoum et al., 2019). Nevertheless, societal biases and conventions keep a female workforce in place (Styhre, 2011). Powell et al., (2010)

emphasize the importance of developing initiatives that question societal standards and gendered assumptions among all workers to improve gender variety.

2.4.4 Discrimination

According to Bowen et al., (2014b), discrimination is unequal treatment or a lack of good chances. In contrast, harassment is defined as threatening verbal or physical behaviour or exclusionary behaviours based on individual characteristics (Bowen et al., 2014b). According to Walby & Olsen (2002), discrimination can be a labour market failure because it inhibits workers from being assigned to the best employment. It is a type of constraint that may limit women's potential productivity. According to Goldenhar et al., (1998), discrimination includes sexist or racial 'putdowns and unjust treatment by employers, managers, or co-workers. Galea et al., (2015) discovered that women face overt and hidden prejudice, which may occur in many unobserved forms, such as restricting networking opportunities due to gender and assuming female job applicants' potential personal interests. The construction industry is usually aggressive, conflictual, and hostile to women (French & Strachan, 2015; Gale, 1994; Ling & Poh, 2004). In the construction industry, a lack of awareness of career opportunities and the challenges of working in a male-dominated, sometimes discriminatory environment are among the most significant obstacles to women's recruitment and retention, English & Hay (2015). Men openly and secretly prejudice against women, impeding their involvement and success (Dainty et al., 2000a; Denissen & Saguy, 2014; French and Strachan, 2015). Gender prejudice in the construction industry has had far-reaching effects in recent years (Hasan et al., 2021). Sexual abuse and gender prejudice, according to Goldenhar et al., (1998), have raised psychiatric signs in female building workers. Despite recent developments, female building workers experience a less helpful organizational environment and more workplace prejudice than their male peers, as described by Bowen et al., (2014b) in research by academics including (Arditi et al., 2013 ; Dainty & Lingard 2006). According to a study by Loosemore & Chau (2002) contend that women and ethnic minorities experience prejudice in the construction industry, particularly in terms of job progression.

2.4.5 Work-family conflict

Carlson (2000) and Bruck et al., (2002) argue that the subject of work-family study is crucial in the field of organizational behavior studies today. This phenomenon has been demonstrated

to exert detrimental effects on employees' efficiency within professional settings, interpersonal dynamics within domestic environments, as well as their overall well-being and contentment. Since its beginning in the 1960s, work-family study has made substantial strides in response to the increased participation of women in the workforce, particularly moms with young children (Lewis & Cooper, 1999; Williams et al., 2015). According to (Greenhaus & Beutell, 1985), work-family conflicts can be broken down into three broad categories: time-based disagreements, strain-based conflict, and behavior-based conflict. Work-family conflict, as defined by Frone et al., (1992), is an example of inter-role conflict caused by conflicts between professional and personal obligations. Over time, social scientists have paid more attention to the topic of multiple positions and their effect on contemporary women's happiness and health (Hochschild, 1989; Arber, 1991; Macran et al., 1996; Waldron et al., 1998). Since the 1970s, when Remennick (1999) says most studies began, researchers have been interested in the dynamics between work and family life. In this area of study, the two competing viewpoints are role complementation and role tension or role conflict, which differ on the potential drawbacks and benefits of juggling multiple responsibilities at once. Wentling (1996) defines work-family conflict as an inter-role dispute in which demands from both the workplace and the home cannot be met. This is an ongoing problem for women who seek professional advancement. Work-family conflict, as defined by Greenhaus & Beutell (1985), arises when the demands of one's professional and personal lives collide. Work-family conflict, according to Turner and Scott-Young (2017), is the degree to which a person feels they have a good balance between their professional and domestic obligations. Unforgiving job schedules also play a role in disrupting the work-life equilibrium (Worrall et al., 2010).

Lingard and Francis (2004) claim that the work-family interactions of building employees have been largely neglected by the construction study community. According to Allen and Meyer (1990), there are two distinct types of work-family conflict (WFC) in the building industry: WIF (work interferes with family duties) and WFC (family responsibilities interfere with work). Meanwhile, building employees must deal with household responsibilities like childcare, partner travel, and elderly relatives. According to Johnson et al., (2019) people with such household responsibilities are less likely to be employed. Because of this rise in single-parent households, two-income households, and workers with senior care responsibilities, work and family disputes have emerged as a major issue in the building industry (Wei et al., 2016). It may be especially difficult for women in the building industry to achieve success at home and at work (Lingard & Lin, 2004; Menches & Abraham, 2007; English & Le Jeuene, 2012).

job-life friction, which can impact women's well-being and ultimately contribute to bad company performance, is frequently caused by inadequate management of parental duties and job encounters, as stated by Tunji-Olayeni et al., (2021). For many women in the building industry, the struggle to balance job and family responsibilities is more pervasive than it is for males (Amaratunga et al., 2006). Because of the competing priorities of work and family, most families continue to be headed by women (Higgins et al., 2000). Companies in the building business often fail to recognize the significance of the difficulties that arise when balancing personal and professional responsibilities (Fielden et al., 2000). Finding the right work-life balance is a major worry for most successful women in the building enterprise, according to Sunindijo & Kamardeen (2017). To keep a healthy work-life mix, some women decide against a job in upper management. Burnout and other mental health issues among female building workers may be worsened by the wish to work long hours while also juggling the responsibilities of house and family, according to Watts (2009).

Due to its effects on individuals' health and well-being, including increased risks of depressive symptomatology, physical health complaints, and a higher risk of substance abuse, work-family conflict is generally associated with decreased organizational effectiveness, such as decreased productivity and increased staff turnover (Eby et al., 2005; Voydanoff, 2005). Consequently, women in building reported weaker total job happiness, higher levels of work-life tension, and higher plans to leave their current position, suggesting they may be at a higher risk of inferior work well-being and health than males (Gardiner & Tiggemann, 1999; Sang et al., 2007). Therefore, company heads should consider the mental health of their female building workers carefully if they want to keep them on staff.

2.5 Women in construction in South Africa

Van Klaveren et al., (2009) states that, throughout the 1960s, SA became a bastion of white dominance and prosperity, with one of the world’s highest economic growth rates. According to Casale et al., (2020) historically in South Africa, access to paid jobs and economic resources was significantly restricted to a specific population group based on race and gender. In a study looking at the female presence in the South African construction sector by Ozumba & Ozumba (2012), it transpired that during apartheid, gender discrimination in the workplace was institutionalised and women were not permitted to hold official employment during that period. Van Wyk (2014) asserts that in the South African setting of the 20th century, Calvinism

acquired a contentious connotation due to the participation of certain adherents in the ideology of apartheid, particularly in light of its theological rationale. Historical evidence suggests that within the context of contrasting non-Calvinist traditions, local Calvinism emerged as a prominent force in shaping church practices and doctrines that were oppressive towards women in South Africa (Landman, 2009). Gender ideology, economic dependency on women, and societal pressure allowed fathers, husbands, and chiefs to support women's traditional roles in reproduction and household labour (Casale et al., 2020). According to Casale et al., (2020), the transition to democracy witnessed the dismantling of many institutional barriers that prevented African women and men from participating in the labour force and adopting a progressive constitution that emphasises dignity, justice and equality. According to Booysen and Nkomo (2010), a race and gendered job order was established during the apartheid rule as a consequence of the coexistence of sexism and colonization. Increased female labor force involvement is one of the most noteworthy changes in post-apartheid South Africa (Jaga et al., 2018). The Employment Equity Act of 1998 mandated equitable chance and positive action, and the freely elected government in 1994 set goals for women's rights, as reported by Jaga et al., (2018). The percentage of women in the labor force rose from 23 percent in seventies to 52.4 percent in 2016, while the proportion of men in the workforce dropped from 77 percent in 1970 to 65 percent in 2016 (Stats SA, 2016).

According to Madikizela (2008), African women are the poorest socioeconomic group in South Africa. Most economically engaged white, Indian, and coloured (mixed race) women work in the clerical, sales, supervisory, technical, and industrial sectors. In SA, the built environment professions continue to be dominated by males (Mpemba, 2018). Madikizela (2008) shares that SA's construction industry is male dominated, leaning towards white males. Many factors are behind women's lack of engagement in the construction industry, including gender, culture, government legislation, financial difficulties, job growth, and the absence of mentorship. Despite laws intended to level the playing field, male workers continue to outweigh female workers in every sector (Stats SA, 2021). The "boys' club" mentality, which is all about who you know in the workplace, is indicative of a male-dominated society and management style, as described by Le Jeune and Root (2009). Mpemba (2018) claims that this occurrence is responsible for the lower wages and lower advancement prospects for women compared to males in the construction industry. Researchers have found that some men are given promotions at work based on their gender rather than their performance (Raiden & Sempik, 2013). According to (CIDB, 2021) report, the construction industry's informal sector accounts

for 16% of total informal employment. Informal construction sector contributed to job gains in 2021, Quarter 2 (Q2). The reports further states that on a year-over-year basis, the number of employment opportunities produced increased by 41 000, or 11%, from 2020 Q2 to 2021 Q2, and the number of job opportunities created grew by 32 000, or 8%, on a quarter-over-quarter basis as shown in Figure 2.3.

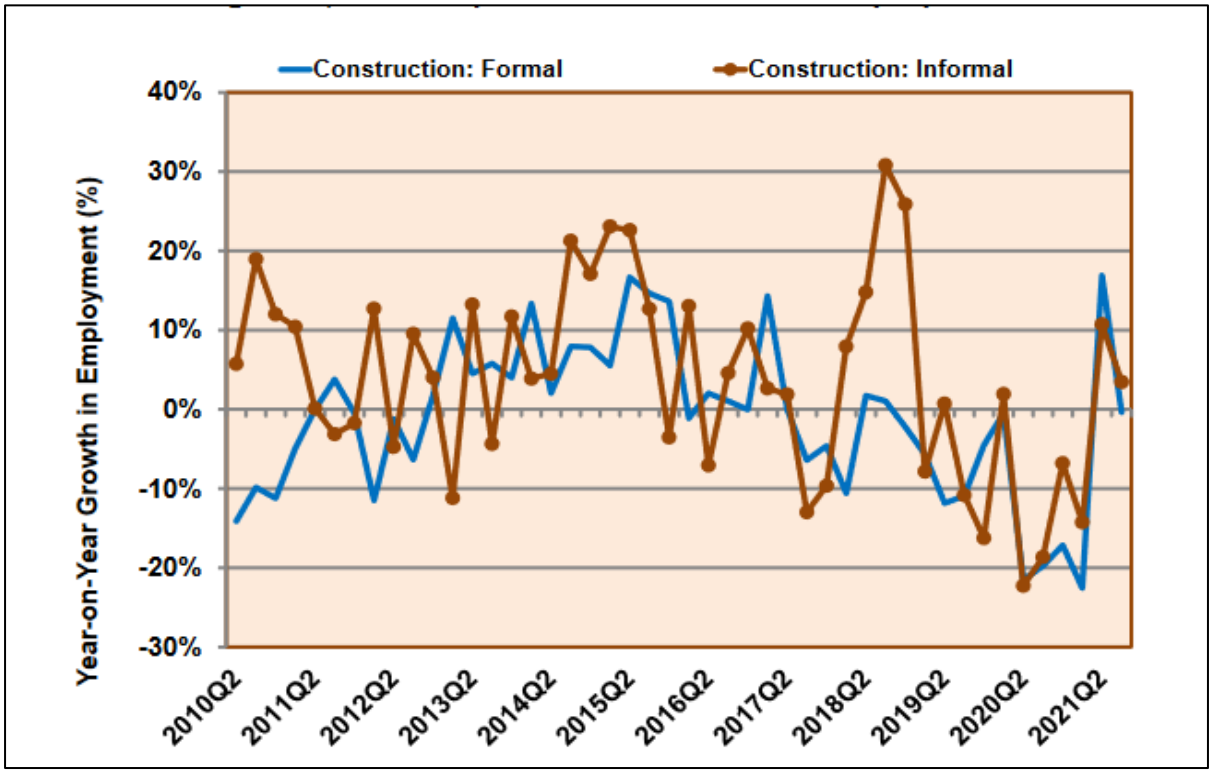

Figure 2.3 Year-on-year-Growth in Construction Employment (Source: CIDB, 2021)

Females have a greater unemployment rate of 36.8% than males at 32.4%, according to Statistics South Africa (2021). Males have a greater rate of labour absorption at 43.1% than females at 32.4%. According to CIDB (2021), the construction sector employed roughly 1 222 000 individuals at the end of 2021 Q2, with 87% men and 13% women. In contrast to other businesses, the construction industry employs the most significant number of males, as indicated in Figure 2.4

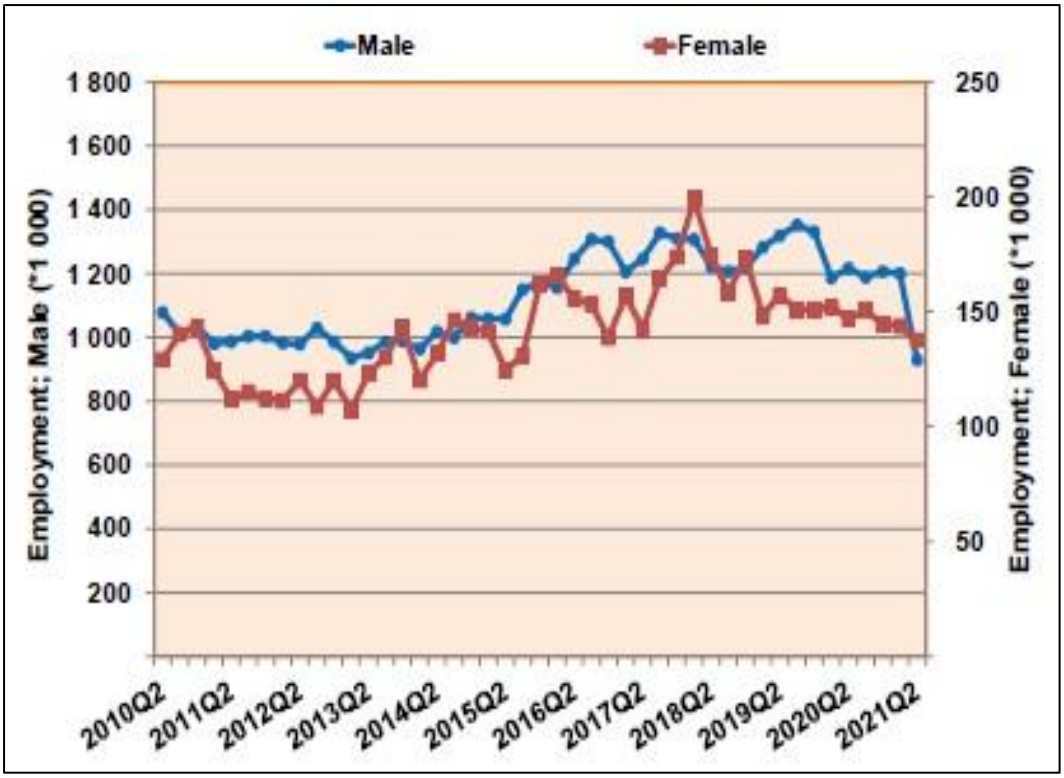

Figure 2.4 Composition of construction employment by gender (Source CIDB, 2021)

The report further states that the number of females working in the industry climbed by 22 000 over the course of the preceding year, while the number of males employed increased by 129 000. The number of females engaged in the industry climbed by 45 000 quarter over quarter, while the number of males employed increased by 99 000. Within the construction industry, male representation is high at 87% compared with the other industries at an average of 56% (CIDB, 2021). This implies that there is still a gender imbalance in SA's construction industry. According to Pandor (2005), while women comprised 41.3% of the South African workforce, only 7% of executives and 15% of senior employees overall were women. Cross & Lineham (2006) claim that notwithstanding the rise of women working in the construction industry, managerial levels have not kept pace, with women still predominately occupying intermediate and lower-level positions. International studies show that hiring practices by building companies and occupations have consistently favoured males over women, especially at the top and management levels. As a result, there is a clear underrepresentation among females in the industry worldwide (Madikizela, 2008).

2.6 Legislation, a South African context

According to Ozumba & Ozumba (2012), post-1994, the government of SA enacted several gender-related policies, including the Employment Equity Act and the National Policy Framework, to encourage gender equality and empower women. However, Jamali (2009), argues that even after apartheid ended in 1994 and legal measures to improve gender imbalances were implemented, specific sectors of the economy, such as the construction business, lag in accepting the shift that promotes the hiring and promotion of female entrepreneurship in the construction Sector. Recognizing the importance of fostering job equality, the South African senate enacted Act 55 in 1998. The Act, as stated by Booysen & Nkomo (2012), aimed to remedy past prejudice in the workplace in South Africa. It laid the groundwork for women to finally achieve parity with males in the workplace, something that had been impossible for decades. The purpose of the Employment Equity Act 55 was to level the playing field for women and other historically oppressed groups by allowing them to enter any profession and rise as far as possible in organizational hierarchies (Mathur-Helm, 2015). According to Kolosa (2008), the job Equity Act recognizes that biased policies and practices, such as segregation, have led to inequalities in the national labor market in terms of job, profession, and revenue. The Affirmative Action and Equal Opportunity Act mandates that businesses take steps to balance the job playing field for members of legally recognized minority organizations.

Attempts to use laws to remedy gender-based disparities in access to resources have largely failed, with little to no influence on the number of women working in building in SA (Mpemba, 2018). One excellent example is the South African government's strategy of enacting numerous laws that benefit women in the building industry. The Emerging Contractor Development Programme is one of these government programs that favors women business owners and supports women's freedom to compete on an equitable footing with men by targeting emerging contractors (Ndimande, 2019). Cross and Linehan (2013) contend most women in South Africa's construction industry are still stuck in intermediate and middle managerial positions, accounting for only about 10% of the total workforce, despite all the legal steps that have been taken to improve the situation. The trend of women leaving the construction industry unexpectedly early is evidence that the current strategies for retaining female professionals are ineffective, therefore retention becomes paramount in this regard. A well-defined job description, orientation programmes, and effective recruitment drives, and selection are all foundational to employee retention, as stated by Molimi (2014).

2.7 Employee retention in organisations

Employee retention is often cited as the key to a company's prosperity. It's a method of making sure workers stick around, which benefits the business and their own bottom lines (Akila, 2012). Workforce productivity and employee retention are of paramount importance in today's fast-paced, ever-changing business environment (Gani et al., 2020). Globalization has raised rivalry and the movement of highly trained workers, both of which contribute to a falling employee retention rate (Ng'ethe et al., 2012). Letchmiah and Thomas (2017) state that a major contributor to high employee attrition is the widespread belief among workers that their employers do not value them as valuable resources. In today's fast-paced world, it takes more than the development and execution of standard approaches to managing human resources and practices, claim Naim and Lenka (2018). Human resources methods (such as training and development) and management buy-in are essential for keeping good workers around (Walia & Bajaj, 2012). With a better retention rate, businesses can save money on hiring and teaching new workers, which can be redirected toward helping current workers improve their performance (Abbasi & Hollman, 2000).

2.8 Models of employee retention

Due to its expanding importance for corporate organisations, the issue of employee retention has acquired prominence among experts, researchers, and practitioners (Hussainy, 2020). Employee retention is essential to an organisation’s people management strategy for lowering turnover costs (Narayanan et al., 2019). According to Kossivi and Kalgora (2016), some of the main reasons affecting employee retention in organisations include the hyper-competitive business environment, the present generation’s job-hopping mind-set, and appealing work chances for the most outstanding talents, among others. Kaur (2017) identified three significant models of employee retention: the within model, the employee retention connection (ERC) model, and the integrated retention system (IRS) for employee retention, as illustrated in Figures 2.5, 2.6 and 2.7.

2.8.1 Zinger Model

According to the David Zinger Model of Employee Engagement (ZM), employee retention is geared toward fulfilling the organisational goals of the department, team, or individual through connection or engagement (Kaur, 2017). In some instances, connection equates to engagement.

Engagement means experiencing and contributing fully to the active parts of the working environment (Kaur, 2017). ZM was developed by the Canadian management consultant expert David Zinger. The plan offers 12 steps that managers should take to increase employee involvement and produce major outcomes for their organizations. According to Zinger (2009), zinger identifies these 12 key engagement aspects as (1) Achieving results, (2) Crafting strategies, (3) Creative roles, (4) Creative/evolving roles, (5) Excelling at work, (6) Getting connected, (7) Being authentic, (8) Live recognition (9) Identify with organisation: Employees who feel linked to their organisation stay with it long. (10) Creating a culture and tradition to serve customers. Only active personnel will be able to provide superior service to customers. (11) Personal development by skill upgradation per requirements, and (12) Happiness through contented and happy employees. The ZM covers all significant factors influencing employee involvement, engagement, and dedication (Hussainy, 2020). According to Kaur (2017), in a ZM, employee retention is engaging employees authentically that recognises connections strategy, job specifications, performance and how the organisation transforms those connections into results. In the ZM, employee retention is driven by achieving the organisation's results, which are determined by their strategy. This framework highlights how employee retention can add to successful performance management, how performance can show the level of involvement within an organization, and how all these factors can work together to improve performance (Choudhary, 2017: 27). The model emphasises a person's holistic well-being from a physical, spiritual and mental perspective.

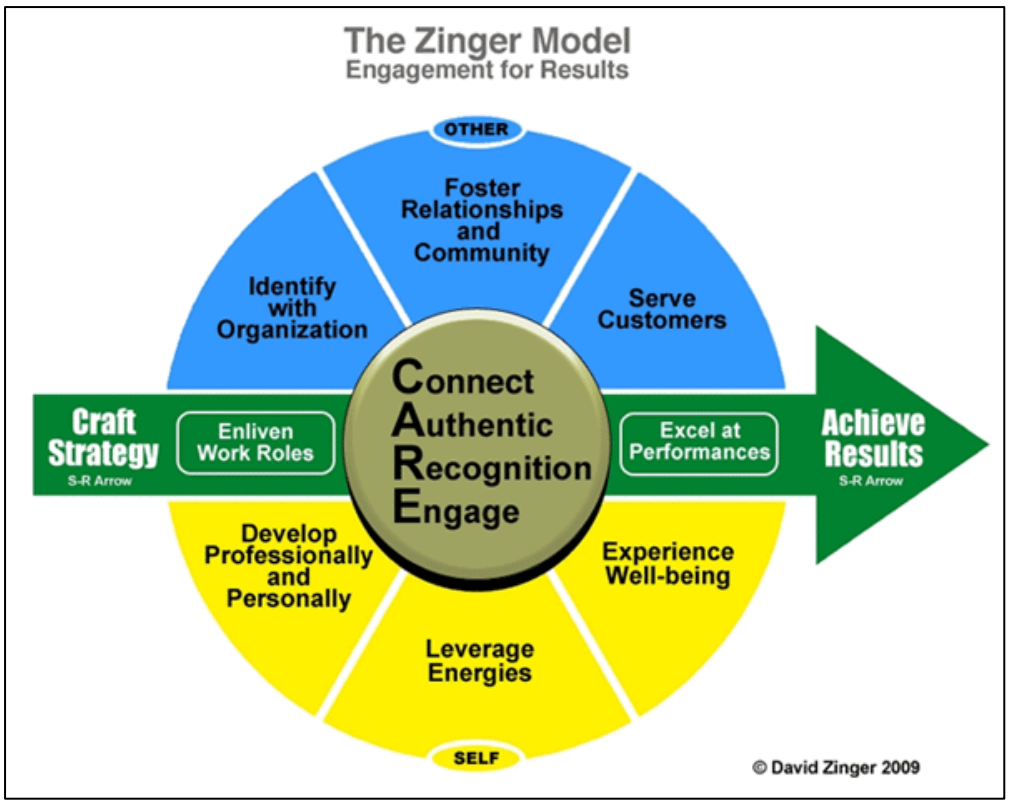

Figure 2.5 Zinger Model (Source: Sultana, Nazia & Bushra Begum, 2013)

2.8.2 Employee retention connection model

According to Kuar (2017), the ERC model focuses on real-world organisational experience and identifies three key factors influencing employee retention. Using data, Retention Connection designs a unique program of incentives as well as rewards that fits the organisation's culture, identifying behaviours, attitudes, and accomplishments that should be acknowledged and rewarded and contribute to a properly welcoming culture (Hussainy, 2020). He further states that ERC has identified three fundamental causes of employee retention based on decades of practical organisational experience, as indicated in Figure 2.6 below.



Figure 2.6 Employee Retention Connection Model (Source: Kaur, 2017)

According to IvyPanda (2019), this model has influenced retention efforts in the banking and manufacturing industries. Work that is interesting and challenging, where one's opinions matter and one's judgment is respected, where one is given the tools necessary to succeed, where one can grow professionally, where one's attempts are evaluated, where one's inputs are valued and appreciated may all be used to make work more enjoyable (Choudhary, 2016). A shared vision of the organisation's direction, a deliberate commitment to developing the entire staff, and a model code of behaviour that reflects the fundamental values, Kushal De (2020). IvyPanda (2019) echoes the same sentiments that when considering the potential and impact of experienced personnel on organisational performance, it is critical to ensure that organisational culture is aligned with employee expectations. Leaders should encourage change and welcome new ideas to increase employee retention, as stated by Kaur (2017). Leaders are responsible for instilling a common understanding of the organization's goals, expanding the skillsets of their subordinates, and exemplifying the ideals held by the group (*ibid*). Managers should celebrate their subordinates' achievements to boost self-esteem and foster teamwork, according to the objectives of technical enterprises that reaffirm the importance of rewards and contributions in keeping personnel and enhancing employer-employee relationships. The ERC model provides the ideal opportunity for employees to advance their careers while enhancing their skills and relevance in responding to organisational difficulties (IvyPanda, 2019).



Figure 2.7: Integrated retention system (Source: Hee & Rhung, 2019)

2.8.3 Integrated system for retaining employees

The ERC uses a five-phased approach to change a firm's culture and improve its competitive advantage, as indicated in Figure 2.7. Employee retention, the systemic approach to keeping workers around, is what changes companies' cultures and gives them an advantage in the market. The transformational stages involve analysing the organisational climate, creating exciting work, developing motivated leaders, developing competencies, career progression, and recognising and rewarding performance (Hee & Rhung, 2019). Kreitner and Kinicki (1998:47) state that analysing the organisational climate, backed by the Herzberg theory, is vital to the development of sustainable societal norms.

According to Kushal De (2020), employees' wants, and desires must be considered to improve employee contentment, dedication, and fidelity in one's job and ensure satisfaction, thus encouraging staff retention. Employee perceptions of their current employees have improved

due to incentives and the provision of career advancement chances in concert with the integrated retention system model (IvyPanda, 2019).

2.9 Factors that influence retention

The topic of retention variables has generated a large amount of research evidently across various employment sectors, such as in the hospitality (Frye et al., 2020), banking (Kurdi & Alshurideh, 2020) and construction industries (Ayodele et al., 2020; Chinyio, Suresh & Salisu, 2018). More specifically, relative to this study, evidence across literature remains indicative of the construction industry's labour shortfall globally (Pan & Hon, 2020) and the shortage of trained tradespeople, which is having a severe impact on its growth and efficiency (Alaghbari, Al-Sakkaf & Sultan, 2019). For this reason, this section interrogates various retention factors that employers must consider if proactive minimisation of the existing labour shortage in the construction industry occurs. Döckel (2003) discovered eight essential retention variables that employers must address to keep individuals with advanced technical abilities. Research conducted in the South African context indicated that the following topics were pertinent to this study: possibilities for training and development, supervisor behaviour support/feedback, possibilities for career advancement, job traits (including variety of skills, autonomy in the workplace, and challenge), favourable work/life policies, and compensation. What follows is a discussion of retention variables and how they relate to organizational dedication and employee incentive, both of which play a role in determining employee attrition (Halim et al., 2020).

When assessing employees' accounts of why they stay, this study tests the relative frequency with which various retention variables appear. James and Mathew (2012) found that having better, clearly defined retention strategies can significantly reduce turnover. Factors of retention should be viewed as a strategic intervention in curbing turnover within the organisation. A study by Das (2013) and Ramlall (2003) shows that employee retention is impacted by many factors. According to Park et al., (2021), these factors are described based on the findings of several studies as follows:

2.9.1 Employee income/compensation

According to Yamamato (2011) and Bakan et al., (2013), previous research has found a link between employee salary and work satisfaction. Park et al., (2021) argues that there is a strong

link between employee pay and job satisfaction. Subsequently, workers may be more satisfied with their jobs if they receive better pay for their efforts.

Several scholarly works have examined the link between pay and retention (Kossivi et al., 2016). In their studies, Milkovich & Newman (2004) found that remuneration, between other methods of compensation, is a pertinent factor in sustaining and maintaining retention. They further state that performance bonuses are viewed as retention enhancers. Pay for success has been shown to be an incentive to stay with an organization and a retention tool, as stated by Tremblay et al., (2006). It was acknowledged by Marvel, Pitts, and Fernandez (2011) that pay is a major factor in employee attrition. Compensate is "the total of monetary and non-monetary compensation provided to staff members by employers in exchange for the offering of their useful services," as described by Osibanjo (2014). According to another source, pay contracts may include not only a salary but also perks like paid time off, medical insurance, and corporate vehicles (Patnaik & Padhi, 2012).

Compensation was viewed as a motivator and an essential strategy used in worker retention (Gardner et al., 2004). Hytter (2007) reinforced that there is a relationship between retention and compensation. Teseema and Soeters (2006) cited similar view stating to the effect that voluntary attrition was significant among employees who valued higher financial rewards as part of their compensation package, indicating that remuneration plays a major role in skills retention.

2.9.2 Work environment

According to Kundu & Lata (2017), employee retention is positively related to a supportive work environment**.** Employees may have a strong sense of belonging if they believe the organisation's work environment is characterised by an appropriate work ethic (Hee & Ling, 2011), job security (Sang & Dainty, 2009), and good working relationships among co-workers (Foote et al., 2005). Employee involvement in decision-making, which increases their organisational commitment levels in the long term (Das, 2013), also increases a sense of belonging among employees. According to Mohsin et al., (2013), employee engagement refers to firms' attempts to give their employees a say in job-related choices. Hence, this policy empowers employees, which increases employee loyalty.

2.9.3 Work-life balance and flexibility

As stated by Park et al., (2021), construction industry is known for its heavy workload and long working hours. Sang et al.,(2009) identified poor work-life balance as one of the top stresses that may have a detrimental influence on construction personnel. Hence, work-life balance is regarded among firms as one of the essential employee-centred human resource strategies (Van Dyk et al., 2012). Coetzee and Stoltz (2015) examined the significance of maintaining a healthy work-life balance in predicting employee retention. According to Sang et al., (2009), those with work-life balance issues are less happy with their jobs and are more likely to leave.

Job traits that involve perception job stability and perceived work freedom, according to earlier study on job embeddedness, boost employees' desire to grow more connected to their employment and participate in extra-role behaviours such as inventive performance and novel behavior (Chen, 2017). Perceived work freedom, according to Kim (2020), improves employee performance, promotes job fit, and increases employees' propensity for job retention. The internal strategy for obtaining flexibility entails adjusting how the organisation's work is organised and how employees are adopted within organisations (García-Sánchez, García-Morales & Martín-Rojas, 2018). Such adaptability is achievable through flexible work hours, forming teams comprising multilingual employees, and expenditures in education and training (Bernstein, 2018).

2.9.4 Employment welfare & recognition

Kundu and Lata (2017) found that a high employee retention rate may be seen when workers' efforts are appreciated, and their welfare adequately addressed. Employees may feel obligated to reciprocate these beneficial rules with positive behaviours and attitudes (Farooq et al., 2017). According to Famakin and Abisuga (2016), demonstrating care for employee wellbeing demonstrates a supportive leadership style inside the organisation, which is critical in the relief of dissatisfaction and stress reduction. Yamamoto (2011) connected employee welfare and employee benefits management, resulting in family-friendly work environments.

Recognition has a significant bearing on employee retention, and it is through reward that an organisation reflects its recognition for employees that demonstrate superior performance when it comes to achieving contributions to organisational goals (Din, Shahani & Baloch, 2021). These rewards can be presented as cash, bonuses, promotion, recognition, an employee of the

month display, travel and other incentives that further encourage employees to perform at their best (Rai et al., 2018). Employees must believe that their perceptions are appreciated by the firm when they get compensation (Bos-Nehles & Veenendaal, 2019). This also helps motivate other employees to perform best in their organisational capacities (Saeed et al., 2019).

2.9.5 Training and development

According to Ocen et al.,(2017), organisational training programmes have been shown by researchers to affect employee commitment. According to Borstorff and Marker (2007), the essential retention elements are professional progression, learning and development, meaningful work, and stimulating job and challenge. In Australia, Hee and Ling (2011) proposed that suitable training plans would allow quantity surveyors to learn new abilities to improve work satisfaction**.**

Training and development is a systematic technique to strengthen personnel abilities, skills, and knowledge to increase organisational effectiveness (Fletcher, Alfes & Robinson, 2018). Many organisations believe that enhancing the capabilities of their employees' aids in enhancing their execution of duties, which translates into organisational profitability and shareholder value (Jaseel, 2019). Vodafone is an excellent example of an organisation that prioritises staff training and development by investing billions of dollars in it (Jaseel, 2019).
Incorporating career planning into a workforce development program has multiple benefits, including making workers feel valued by their employers and giving them the tools, they need to successfully juggle multiple roles and duties without a defined route to advancement (Kaur, 2017).

2.9.6 Personal characteristics

Previous research by Kyndt et al., (2009) discovered that workers possess various traits such as creativity, leadership, learning potential, and autonomy. Kyndtet et al., (2009) argue that while these attributes are beneficial in dealing with workplace flexibility and stress, they also represent the diversity of employees' personalities and influence their desire to stay with the company. According to Skaalvik & Skaalvik (2009), if employees believe they are unsuitable for the work environment and organisational culture, they may detect something is wrong, resulting in a sense of not belonging.

2.9.7 Promotion opportunities

According to Park et al., (2021), employees expect to be recognised for their contributions to their organisations. Promotion opportunities have emerged as a significant factor in increasing work satisfaction and decreasing turnover retention (Van Dyk & Coetzee, 2012), Sang et al. (2009). According to Parker and Skitmore (2005), promotion is one of the primary variables affecting organisational performance turnover. A study of civil engineers in Australia found that workers who are happy with their career prospects are less cynical about their employment, which lowers turnover (Lingard, 2003). Kyndt et al., (2009) discovered that when top workers believe they have fewer prospects for professional progress and promotion, they may search externally for new employment options.

2.9.8 Company images and development

According to Zhang & Lim (2019), companies worldwide are attempting to improve their image, increasing their performance. Corporate image influences employee attitudes (Herrbach and Mignonac, 2006). Riordan et al.,(1997) highlighted the link between employee views of business image and two factors: work satisfaction and desire to resign. Furthermore, organisations that demonstrate sustainable and continual development can acquire the trust of their employees, enhancing employee engagement (Park et al., 2021).

2.10 Retention of women in construction

According to Ayodele (2020), employee retention is critical in the construction industry. Males dominate in almost all aspects of direct and indirect employment routes in the construction sector (Barreto et al., 2017; Caven et al., 2013; Clarke et al., 2005; Fielden et al., 2001; Morello et al., 2018). Several studies have examined why female employees avoid the construction industry (Agapiou 2002; Chandra & Loosemore, 2004; Fielden et al., 2000; Moccio, 2006; Radhlinah & Jingmond, 2011; Wangle, 2009; Whittock, 2002). According to Ayarkwa et al., (2012), educating girls about potential construction occupations is the first step in drawing women into the construction industry. Wangle (2009) found that closing the divide between secondary school teachers and the building industry was necessary to increase women's participation in the field. Educational efforts to encourage more girls to study STEM fields have been effective, claim Powell et al., (2005). A significant gender disparity persists, however, between the number of women who earn degrees in engineering and building and women who work in the industry (Naoum et al., 2020).

Over a ten-year period, the percentage of female students majoring in STEM fields increased by 55 percent as opposed to 29%, as reported by Gurjao (2011), and in 2005, the Equal Opportunities Commission (EOC) reported that more women were enrolling in college. One might assume that gender variety had improved given these statistics and the prevalence of programs specifically designed to help women. Fielden et al., (2000) argue that although there are many women studying engineering, women will still be discouraged from entering the building industry due to its male-dominated and "sexist" reputation. Previous programs' failure is understandable, say Lu and Sexton (2010), because they did not take into account the obstacles faced by many women already employed in the field. The retention of women already working in building, say Menches and Abraham (2007), must be prioritized. According to Gurjao (2011), retention guarantees long-term survival by stopping the "leaky pipeline" problem see Figure 2.8. A faulty stream occurs when women leave the building business soon after joining higher education (Worral et al., 2010).

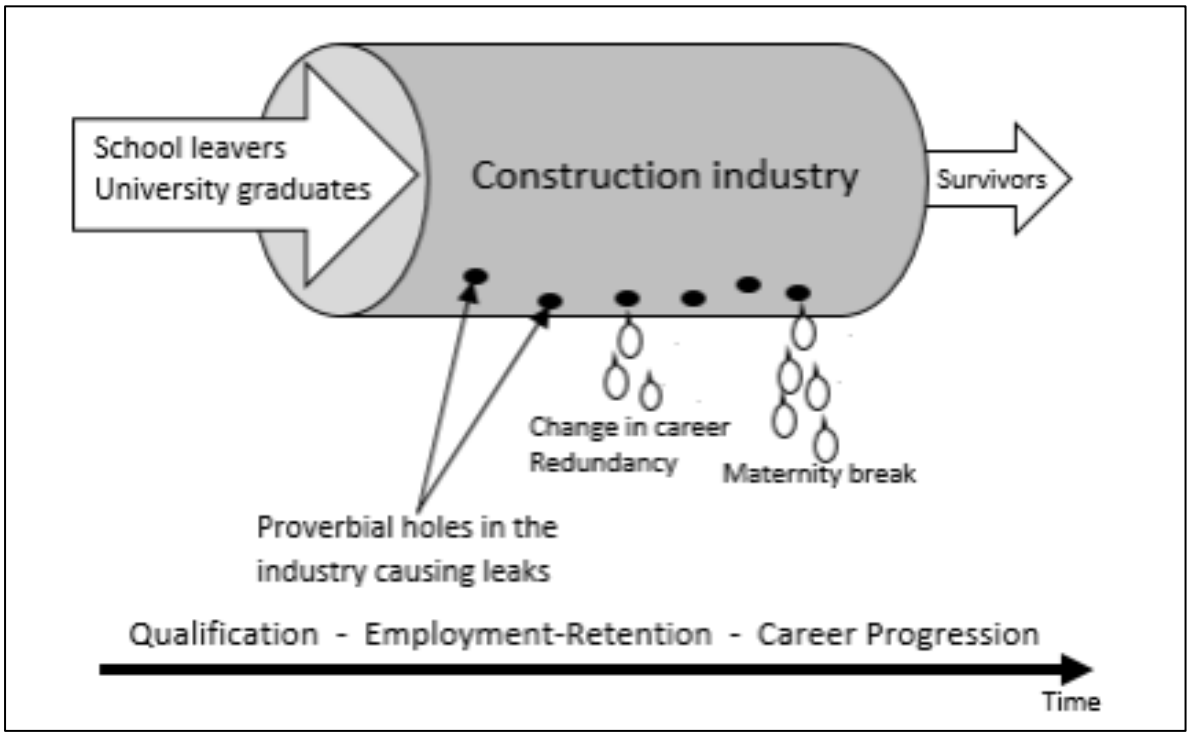

Figure 2.8 Leaky pipeline for the construction industry (Source, Gurjao, 2017)

The leaky pipe phenomenon applies when women face professional changes in their careers, where they take career breaks to raise a family or make other personal decisions that cause them to leave the industry and struggle to re-enter, Gurjao (2011). A key area for enrolment and retention was highlighted by Moore (2006) as greater collaboration and contact between secondary institutions and post-secondary building courses of study. Morello et al., (2018) discovered that women between the ages of 18 and 24 and over 65 indicated a greater desire to leave the sector than women between the ages of 25 and 54. Recent research by Hickey and Cui (2020), they found that women are underrepresented in executive leadership roles in US construction and engineering at 400 of the country's most prominent architectural, engineering, and construction firms. They point to the low proportion of women in the pool of potential candidates as a crucial contributing element. In South Africa, at 43.1%, men have a higher rate of labor absorption than women at 32.0%, CIDB (2021).

In contrast, men had a steadier upward trajectory in their job progression; women have a more tortuous career progression that can create shifting self-perception. According to the same study, 70.9% of females say there is a severe problem with gender equality, in contrast to 39.7% of men. To reduce the hurdles to retention, it is critical to understand what happens to women after they are introduced into the construction industry. Furthermore, the construction industry's organisational structure and overall climate have been proven to impede female managers' participation in decision-making, further limiting their chances of success (Dainty et al., 2000b; Seymour & Rooke, 1995).

2.11 Retention strategies and their failures/lack of effectiveness

A retention strategy refers to a strategic plan devised and implemented by firms with the objective of mitigating employee turnover, curbing attrition, enhancing retention rates, and promoting employee engagement. Retention factors refer to the elements that contribute to the ability of an organization to keep its employees. To address a deficiency of female professionals in construction, governments and organisations have devised institutional plans and policies to raise the bar on female equality, variety, and representation in the industry (Galea et al., 2015; Lu & Sexton, 2010). According to Badmapriya & Bharathi (2015), when organisations develop retention strategies to retain institutional knowledge, the strategy must be precisely detailed to achieve its objectives. Mintzberg (1990) argues that strategies should be explicit to those who created them and articulated so that others in the organisation can

understand them. A study by Dainty et al., (2001) discovered that in most of the strategies aimed at retention in the construction industry, the most efficient one is manipulating the male-oriented culture, such as promoting fair and equitable training for every employee. Dainty et al.,(2001) also suggested a workable programme of cultural transformation tactics for effective strategies within the construction sector; these suggestions are indicated in Table 2.1.

Table 2. 1 Effective strategies within the construction industry (Source: Dainty, 2001)

No.	Recommendations	Rationale behind recommendation
1	Develop bespoke career development and training plans for all employees	To promote fair and equitable training provision for every employee
2	Facilitate lateral movement between different operating divisions	To provide opportunities to broaden experience, enhance career development and address discrimination within particular divisions
3	Endeavour to match projects to individuals geographical preferences	To facilitate work/family reconciliation
4	Develop clear organisational guidelines on promotion and succession management	To ensure equality and formality in promotion procedures
5	Develop the performance appraisal system to recognise individuals' skills and attributes rather than promote behavioural conformity	To reward the diverse skills and attributes that non-traditional entrants could bring to the workplace
6	Increase formal and informal feedback on individual performance	To encourage transparent promotion and opportunities and motivate employees
7	Develop formal networking programmes amongst employees	To facilitate the communication of opportunities across the organisations
8	Develop a more prominent role for human resources dept in career management	To reduce the human resources management powers of operational and divisional management
9	Present a realistic description of working life in construction in graduate marketing literature	To avoid new entrants from entering the sector with unrealistic career expectations
10	Equal opportunities training for all senior managers	To promote good equal opportunities practice throughout the organisations
11	Explore opportunities for career breaks schemes, part-time work and job share opportunities	To facilitate work/family reconciliation
12	Develop support mechanisms for those working overseas (regular communication and opportunities for returning)	To prevent isolation and ensure parity of career opportunities for those working in international divisions
13	Join Investors in People	To ensure conformity to nationally audited standards aimed at improving training and development

Moore (2006) and Fernando, Amaratunga, and Haigh (2014) discovered that women's job success and retention in the construction industry is influenced by their capacity to cooperate with others, devotion, flexibility, leadership, and integrity/honesty. According to Rosa et al., (2017), these findings show that soft skills are critical for career success. In contrast, hard skills are required later, and one of the personality attributes that women in the construction sector rely on is confidence or self-efficacy. Their research also found that role models, mentors, or

anyone who encouraged women in their jobs, had a beneficial impact on their professional performance (Rosa et al., 2017).

According to Hopper (2021), Albert Bandura, a psychologist, is credited as the creator of the concept of self-efficacy, which can be described as the confidence an individual has in their capacity to complete a task that has been assigned to them or achieve a conclusion that they want. Betz and Hackett (1981) say academic competence, professed occupational interests, and various perceived employment alternatives are all associated with self-efficiency. Mathieu, Sowa, and Niles (1993) discovered that women working in a 'non-traditional' occupation have the most remarkable career self-efficacy. Moore (2006) corroborated this, discovering that the primary source of confidence came from themselves, followed by the impact of individuals they worked with mentors, and finally, extra knowledge to give them greater confidence in their jobs. One of the most effective ways of retaining women within the construction industry is mentorship. According to Rosa et al., (2017), individuals can learn from role models who are there and provide emotional support and verbal encouragement. They further argue that mentors, often senior company members, assist junior employees in navigating psychological and career challenges.

2.12 Chapter summary

This chapter provided the study's context. This chapter sought to shed light on the important need for this study as well as the implications for organizations and individuals alike. According to this literature study, more research and publications on women's experiences in the construction sector are needed. Existing research on the retention of women in the construction industry has concentrated mainly on the negative repercussions of the industry's inherent barriers and inequities. According to the analysis of literature, the building sector has hampered women's opportunities for equality in society and the economy. The chapter began by introducing the historical perspective on women in the workforce since the 1800s & the global prevalence of women in the labour market, and the new world of work that has emerged in the twenty-first century. The changes in the world of work have been enormous. These changes have provided advantages and disadvantages in retaining women in the workplace. This is followed by women's challenges in the construction industry, such as gender inequality, segregation, gender stereotypes, discrimination, and work-life conflict. Women face these challenges, which ultimately could lead to their decision to leave. The problem of losing female

employees is central to this study, which aims to provide recommendations to improve female employee retention in the Built Environment. The ideology that characterises gender stereotypes in terms of women's work always situates their importance within the context of household activities. This assertion then leads to a simplification of women's work. Women continue to face organisational discrimination because of human resource management policies with a glass ceiling. The need for more female representation in executive and senior positions is concerning, especially given the number of women actively involved in the construction industry. However, they are still making entries into the construction industry steadily. Women still have a long way to go in the Built Environment. However, if organisations recognise the benefits of this critical talent resource, the future may hold many opportunities for growth and a more effective retention strategy. The chapter also looked at the participation of women in construction in South Africa since the 1960s during the apartheid era. South Africa's first democratic elections in April 1994 delivered a victory for the anti-apartheid struggle and a sense of liberation. This section followed the models of employee retention & their factors. Employee retention must be a priority, and retaining competent employees necessitates recognition.

The final section of this chapter describes retention strategies and their failures/lack of effectiveness. Women have taken matters into their own hands and are now voluntarily leaving organisations. There were some reasons why women chose to leave their jobs. Although the opt-out revolution typically refers to highly qualified professional women, the significance of these findings is critical because they highlight the underlying issues of this study, which focuses on retaining women and seeing women succeed in the construction industry. Although the opt-out revolution typically refers to highly qualified professional women, the significance of these findings is critical because they highlight the underlying issues of this study, which focuses on retaining professional women within the construction industry. The next chapter explores the fundamental theories that have emerged from the study, informing the foundational knowledge that assists in explaining the retention of female talent.

Chapter 3 Theoretical Framework

3.1 Introduction

The section deals with relevant theories and the concepts of employee retention, with the focus on female professionals within the construction industry. Relevant theories such as feminism, human development, and career development are examined, leading to the study's theory and philosophical frameworks. This section explores the relationship between retention at the center stage of the study and the relevant theories such as feminism, human development, and career development. This also leads to the study's philosophical framework that underpins the study.

3.2 The importance of the theoretical framework

The theoretical framework is a “well-developed, coherent explanation for an event” (Vithal, Jansen and Jansen, 2013:17). Imenda (2014) states that the theoretical and conceptual framework give more life to the study. Adom et al., (2018) gravitates towards the same sentiments as Imenda (2014), that with a theoretical and conceptual framework it is easier for a reader to ascertain the research’s underlying factors, including its hypothesis. Therefore, proving unclear contributions to the body of knowledge. Based on assertions by Sinclair (2007), (Fulton and Krainovich-Miller, 2010), a theoretical framework is synonymous with a travel plan that assists the researcher from deviating from the accepted theories. It is that compass that guides the study. Yamauchi et al., (2017) argue that researchers who use no theory to inform their study risk failing to examine theoretically grounded questions, and they might generate narrow and limited findings.

The theoretical framework, according to Adom et al.,(2018), seeks to make research results more relevant and agreeable to theoretical frameworks in the research field. It is critical to differentiate between theory and conceptual frames because most scholars use them equally. Authors such as Robson and McCartan (2016) and Merriam and Tisdell (2016) regard the words as interchangeable. "In the case of theoretical frameworks, the 'parts' referenced to in the preceding sentence are concepts, and the element that has been sustained is the connections

contained in the conceptual framework," Ravitch and Riggan (2017:11) stated. More precisely, we contend that the components are formally defined hypotheses that arise out of and are being investigated through empirical study." They go on to say that the theory structure must be founded on publicly available, recognizable ideas. According to Heale and Noble (2019), the researcher's philosophical and epistemic perspectives are often reflected in the theoretical paradigm chosen. The addition to study knowledge, like any theory paradigm, must be proven (Crawford, 2020). It demonstrates how a scholar explains or describes his or her study in the following areas: theory, reasoning, technique, and analysis (Grant & Osanloo, 2014). Ravitch and Carl (2016) agree that a theoretical framework is important because it aids in the incorporation of established ideas into researchers' studies as a guiding mechanism. The theory structure must emphasize the significance and main goal of the study (Grant & Osanloo, 2014).

3.3 Relevant theories to the study

Feminist theory, human capital theory and Holman's Theory of career development contain the foundational knowledge to assist in explaining the retention of female talent in construction. These theories are interrelated in the construction industry's retention subject regarding professional female talent. With feminist theory, the study uses all three frameworks identified by (Tisdell, 1998), namely psychological, structural, and post-structural. The feminist theory looks at equal opportunities for women in the workplace and society. One may ask why feminism is relevant to retaining women working as professionals in the building trade. According to Brisolara (2003) the feminist concept is grounded in a rich body of knowledge in which the emerging elements of the theory are practised. The author further asserts that feminism offers a distinct perspective on the issue of workplace equity. The feminist theory calls for the demise of the patriarchal order, beckoning for a system where equality exists among males and females (Turner & Maschi, 2015). For the retention of qualified female construction professionals to be successful, issues related to gender and equity must be examined with a clear lens. Subnsequently, feminism can be utilised to analyse the status quo, probe the reasons and therefore enhance retention in the place of work and women.

Preparation of female employees for the construction industry should begin from the grass-roots level of their development before admission into tertiary education. This is where career development preparation is the most critical. Career Development Theories are necessary for understanding the complexities in the development of a person's career. The importance and

relevance of career guidance to this study lies in career development processes related to the retention of female talents within construction (Jena & Nayak, 2020). Career Development Theories can provide valuable understanding of how career guidance is implemented to retain female talent and assess the mental readiness of female talent for the construction industry. This can be achieved by applying Holman's (1973) six categories of personal traits, which give rise to distinct working conditions or environments. Hence, it is crucial to ascertain if the attributes of women who opt for a career in the construction sector are suitable for the specific responsibilities, challenges, and duties that are typical in the construction environment.

Human capital theory heavily relies on training and education (Mooney and Brinkerhoff, 2008). According to Zigon (2002), training can change an individual's behaviour and modify it into a predefined pattern. The core assumption of human resource theory is that education and training increase individuals' productivity and economic self-interest within a competitive market (Fitzsimons, 2015). Thus, the motive behind individual investments in education is that they believe and expect to earn a higher income in the future (Tan, 2014). However, according to King (2016), investing in employee development and training can increase employee turnover since they are likely to leave the training organisation and apply their acquired skills in another organisation.

3.3.1 Feminist theory

Feminist theory is vital in attempting to understand the concept of the effective strategies adopted in retaining professional female talent within the construction industry (Morello, Issa & Franz, 2018). The study looked at key concepts like gender-based prejudice and other political and social factors affecting women's position in society, patriarchy, and inequality between men and women. The feminist theory seeks to understand the nature of gender inequality concerning female and male societal roles, interests, and experiences. The theory believes that men and women should be socially, politically, and economically equal. According to (Bell & O'rourke, 2010) and Hekman (2015), feminism is focused on autonomy, which alludes to permitting individuals of their gender, social or economic class, racial profile, religious views, and sexual preference, to reach full self-actualisation and create a socially cohesive community, living together and discovering dreams, particularly those relating to justice and freedom. All of this demonstrates that all humans were created equal. One of fundamental hindrances, as well as exciting qualities of feminism, according to Agostinone-

Wilson (2020), is that it can reflect a wide range of thoughts, identities, beliefs, and interests. Figure 3.1 illustrates the concept map for the feminist theory that was adopted for the study from theorists such as De Beauvoir (1949), Friedan (1963), and Lorde (1976).

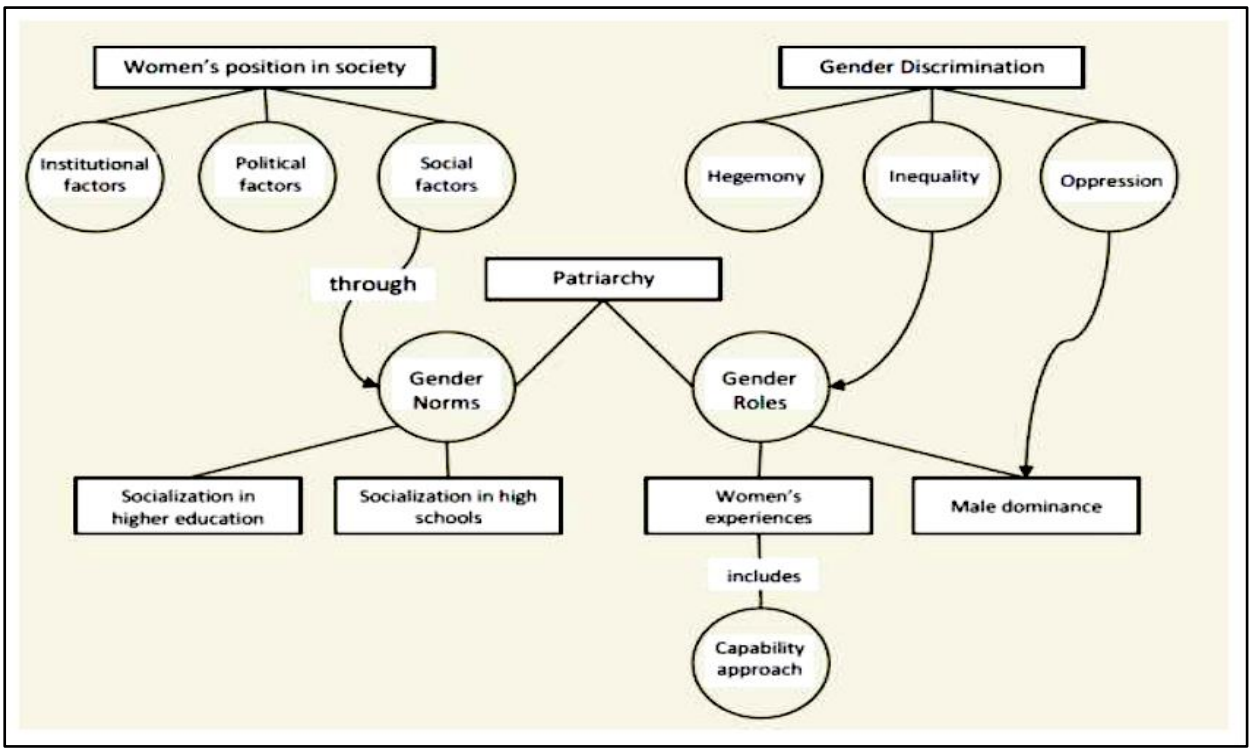

Figure 3.1 Concept Map Feminist Theory (Source: De Beauvoir (1949), Friedan (1963), Lorde (1976), Power (2004), Grant & Osanloo, 2014)

According to Rice (2020), scholars have gone past viewing gender merely as a component in the workplace, and instead acknowledge that workplaces are gendered in their organization, principles, and methods of interaction. According to Sharma (2019), feminism encompasses a wide range of ideas and movements, from the struggle for women's vote (first-wave feminism) to second-wave feminism's focus on job equity and reproductive rights. Third-wave feminism seeks to address the exclusion of women of color and transgender people from earlier feminist movements (*ibid*).

3.3.1.1 First wave of feminism

The first phase, as defined by Flouli (2017), focused on issues such as women's suffrage, equal pay in the workplace, and equal access to schooling for girls and young women in the late 19th and early 20th centuries. This initial influx began sometime in the 1950s. According to Johnson

(2017), they adopted civil rights crusader Elizabeth Cady Stanton's views. At the Seneca Falls Convention in New York in 1848, Stanton expanded on the declaration's focus on women's inherent equity and its outlining of a political strategy of equitable access and chance (Stanton (2004), Johnson, (2017). According to Harris (2020), the Seneca Falls convention of 1848 was concerned with issues of legal equality, such as suffrage and property rights, and also challenged the "cult of domesticity," the belief that the house was traditionally seen as a woman's domain and hearth, and that any interest outside of that was "unladylike" and therefore inappropriate for a female to have. It is shocking to learn that women in Europe were not always allowed to vote (suffrage), possess real estate and funding, borrow capital, pass on their wealth, maintain money earned, get divorced, keep custody of their children, attend college, grow a licensed physician, argue cases in court, or serve on a jury, as noted by Lorber (2010). Women's rights advocates Lilian Ngoyi, Sophia Williams DeBruyn, Rahima Moosa, and Helen Joseph organized a march in 1956 to oppose South Africa's restrictive pass regulations. Between 1903 and 1929, Nigerian women in cities like Aba, Warri, Calaber, and Eket staged protests inequality. These actions can be categorized as part of the earliest stages of feminism (Effiong & Inyang, 2020).

3.3.1.2 Second wave of feminism

The 1960s and early 1970s saw the emergence of a new era of feminism. According to Matthaei, the Marxist/socialist faction of the second-wave feminism movement expanded upon and criticized the Marxist Theory of the capitalist system and revolution (Matthaei, 2018). She went on to say that the Marxist paradigm looked at women's subjugation in the workplace by businessmen but not by males at home or in the workplace. Flouli (2017) describes this movement as being concerned with "cultural inequality and the role of women in society. At the period, problems included the belief that women's outward looks were more important than their actual achievements. In addition, he emphasized the importance of the second wave addressing issues like legalizing abortion and birth control, empowering women in the workplace, and promoting the sexual freedom of women. Since the 1960s, when the second phase of feminism first appeared, the movement has expanded in scope and depth, as Matthaei (2018) argues.

3.3.1.3 Third wave of feminism

Because of the second wave's apparent shortcomings, a third generation of feminism emerged between the years 1990 and the early 2000s (Johnson, 2017). According to Johnson (2017), the second wave stalled in part because it was led by affluent white women and excluded women of color and other marginalized groups from decision-making. Most women in emerging nations, according to the author's account, were also unhappy with the western brand of the second generation of feminism (Disch & Hawkesworth, 2015). Feminism's second phase ignored the needs of women of color, homosexuals, refugees, and members of religious communities (Olson, 2021). The dissolution of heteronormativity defines the third phase (Harris, 2020). Black feminism, international feminism, and global feminism emerged during the third phase of feminism, as stated by (Hirudayaraj & Shields, 2019).

According to the third wave's narrative, it is more scholarly than action-oriented and has shown its goal and attitude toward how women "could" or "should" implement feminism (Blevins, 2018). According to Flouli (2017), third-wave feminism addresses critical issues like interdependence, recognizes the diversity of "women," and places a strong emphasis on issues like race, ethnicity, nation, social order, sexual orientation, altering stereotypes, representations in the media, word used to describe women, and more. During this period, numerous authors popularized the term "choice-feminism." According to Benjamin and Schwab (2021), feminism should always be about diversity, self-determination, and non-judgmentalism, and choice-feminist feminism should work to offer women options without passing judgment on those decisions. In addition, they claimed that according to choose feminism, a woman can be all of the following simultaneously: a stay-at-home mom, a pornstar, or childless and career focused. As Johnson (2017) describes it, this movement is the most inclusive of the three waves of feminism, because it encourages people to simply be themselves and take responsibility for their own lives.

Feminist ideas can shed light on the dynamics of power in the workplace, which can then be applied to the circumstances of women in the construction industry. Feminist theory challenges inequality because of a person's gender and places a central focus on modern women and their experiences in society (Hirudayaraj & Shields, 2019). Recommendations are formulated by considering the influence of gender disparities within a given context, with a focus on placing gender differences as a central aspect of investigation. Table 3.1 displays some of the critical

theories and methods that Sharma (2019) recommends for gaining insight into feminism's intricacies.

Table 3. 1 Various critical theories in feminism (Source: Sharma, 2019)

Domain	**Fundamental principles**	**Critiques**
Liberal feminism	Women and men are fundamentally equal; social conditions result in disparity; political action is required. Recruitment policies to increase the number of women in leadership positions.	Can ignore the role of other factors in oppression, such as race and class.
Cultural feminism	Women and men are inherently different; female nature is relational and empathetic.	It can be reductionist; the notion of inherently male or female values is controversial.
Queer feminism	Gender and sex are socially constructed.	Focus on discourse alone might prevent the analysis of material or social conditions.
Anti-racist feminism	The role of race in oppression is highlighted, as often ignored by liberal feminist thought.	It might exclude other conditions of oppression; intersectionality is often posited as a solution.
Radical feminism	Focuses on patriarchy as a fundamental method of oppression and gender as primary oppression; revolutionary change (rather than reform) required.	Some consider a revolutionary change to be unrealistic.

Socialist feminism	It focuses on economic oppression; female oppression is part of structural inequality based on social factors.	Ignores other axes of oppression (race, sexual orientation).
Postmodern feminism	Focuses on identity and how social discourse and language create our understanding of women.	Focus on language alone could shift energy away from action around tangible and political change.
Indigenous feminism	An intersectional form of feminism focused on decolonisation and indigenous sovereignty, both a theory and activist movement.	Often focused on North American communities only.
Marxist feminism	Capitalism is the primary cause of oppression in modern society, economic dependence, and female labour valuation.	It does not account for the effect of other axes of oppression, such as race or sexual orientation.
Postcolonial feminism	In response to colonialism and the Euro-American feminist tendency to universalise white female experience and values.	Critics note that the prefix 'post' is premature in light of modern economic and cultural imperial practices.
Intersectional feminism	Focuses on the intersection of various parts of identity (race, class, gender, sexual orientation) in oppression; social and individual change required.	Application in medical education often ignores roots and ongoing scholarship in Black feminist thought.

This research draws on perspectives from liberal, socialist and Marxist feminism. This aims to explore how feminist theories, as they are, have been applied to the retention of professional female talent within the construction industry.

3.3.1.4 Liberal feminism

Liberal feminism, also known as equitable or mainstream feminism, is rooted in liberal political philosophy and works to secure women's rights through the rule of law, as stated by (Hirudayaraj & Shields, 2019). Renzetti (2018) argues that liberal feminists see barriers to opportunity as the root cause of gender disparity. Their advocacy has focused primarily on ending prejudice against women in all spheres of society, including but not limited to the workplace, classroom, and government. Individual liberties like the right to exist, speak, and worship freely are the focus here (Wijayati, 2020; Hariharasudan, 2020). People of all races, religions, and sexual orientations should have access to the same resources. According to Diana et al.,(2018), the independence and parity of reason are the bedrock of this theory. Liberal feminists argue that our culture lacks the structural changes necessary to give women full political and social equality and economic independence (Effiong, 2020). Liberal feminism, according to Priyadharshini et al., (2021), has the ideal risk of ensuring that everyone has a fair shot at personal growth. By advocating for women's equitable rights, chances, salary, standing, and regard in both private and public relations, liberal feminism helps to further integrate women into society, as recounted by Rani et al., (2019).

3.3.1.5 Socialist feminism

Socialist feminism, according to Halim (2017), is a movement that calls for socialist economic reform to end capitalism. In conclusion, socialist feminists argue that capitalism reinforces and maintains the discriminatory status quo since males presently occupy positions of power and money. Economics and politics are at the centre of socialist feminism. Armstrong (2020) claims that socialist feminists wanted to combine feminist critiques of gender inequity, social reproduction, and economic reproduction. They established a more comprehensive understanding of women’s economic, social, and reproductive roles, as well as gender oppression, as intertwined contributors to women’s oppression. As narrated by (Nowak & Prashad, 2016, p. 12), socialist feminism enables us to address the various inconsistencies present in people’s common-sense development of their view of the world, transforming common sense into “the good sense of our times”. Socialist feminism adds an economic

component to liberal feminist themes like sexual harassment, frequently presented under patriarchy. Rape is not about sex; it is about power, O'Hagen (2019) states, explaining how sexual attack occurs is generally linked to authority and sexism. Moreover, according to Agostinone-Wilson (2020), there is typically little consideration of what systemic societal elements contribute to women's vulnerability to violence. These elements include how their overrepresentation in low-wage, non-unionised jobs are further linked to bosses dominating numerous parts of their lives.

3.3.1.6 Marxist feminism

As defined by Armstrong (2020), Marxist feminism explores how heteronormative ideas of womanhood and masculinity drive capitalist production. According to Agostinone-Wilson (2020), one of the most common critiques of Marxism is that it is at odds with intersectionality, a term developed by the postmodernists that originates in a socialist feminist perspective of women of color that can be traced back to abolitionist and feminist Sojourner Truth and philosopher Anna Julia Cooper. Mary Inman, an American communist, questioned the Marxist feminist focus on women as workers in the late 1930s, according to Armstrong (2020). She advocated that middle-class women's reproductive labour should be regarded as productive work (Inman, 1940). Even though her research did not affect the Communist Party's stance on women, she continued to write about the value of women's reproductive labour in a waged job far into the 1960s (Weigand, 2001). Inman's idea of recognising reproductive labour as productive work resonated with socialist feminists in the Caribbean, Italy, the UK, France, and Germany (Benston, 1969; Mies, Bennholdt-Thomsen and von Werlhof 1988). They, like Inman, directly attacked traditional Marxist feminism's separation of production and reproduction.

3.3.2 Human Capital Theory

Human capital, as described by Schultz in 1961, consists of an individual's information, skills, and abilities. Schultz (1961) argues that expertise and education are forms of wealth. Human capital is a type of cerebral capital that is the outcome of an individual's knowledge, abilities, dispositions, and connections, as described by scholars like Yusoff et al., (2004). Essential elements of human capital have been studied from a variety of angles by a number of academics. For instance, Schultz (1961), for instance, argued that an individual's human capital was shaped by their education and that this education was created by their knowledge and the

skills of their employees. Job experience is the primary means by which one acquires such abilities, as pointed out by Mincer (1962). According to Becker (1993), human capital spending should prioritize learning and preparation for the workplace. Human capital consists of intangible factors like aptitude, skills, abilities, and concepts, as mentioned by Stewart (1998). The most important aspects of the job, according to Stewart (1998), are the emotional, cognitive, creative, and relational components. Skills, education, experience, ingenuity, and invention are all components of human capital, as outlined by Edvinsson and Malone (1997).

Human capital is "everything a company has that a person can bring to work with them," as described by Davenport (1999:37). Dees and Pickens (1999) established a detailed model that includes motor abilities, gathering data (their view skills), processing data (cognitive skills), communication skills, experience, and expertise. What an employee contributes to the table in terms of skills, enthusiasm, positivity, dependability, and dedication is considered human capital, as defined by Fitz-Enz (2000). Human capital was defined by Lengnick-Hall and Lengnick-Hall (2003) as the sum of an organization's intangible assets, such as its employees' education, experience, and other skills. Nafukho et al., (2004) argue that schools and universities should be seen as strategic assets in the future of a nation's workforce and in the personal output of its citizens. According to Potocky-Tripodi (2004), an individual's schooling, abilities, and job experience are all examples of human capital that contribute to that person's economic success.

The capacity of people to improve their own output and profits, as well as the productivity and prosperity of the communities in which they reside, is the primary emphasis of human capital, as stated by Paprock (2006). Training and development, according to Swanson and Holton (2009), is the process of enhancing success by enhancing human knowledge. Jobs for a youthful and better educated workforce are a positive indicator of the value of human capital (Hoyman & Faricy, 2009).

The premise of the human capital strategy is that people choose to invest in themselves by furthering their education, training, and credentials in the hopes of reaping greater financial benefits in the future (McKee-Ryan & Harvey, 2011). Understanding education's value in terms of acquiring useful skills and abilities to accomplish tasks is simplified by this idea. To a comparable extent, Mutamba (2016) argues that companies will pay more attention to and hire people with higher levels of education. Human capital is presented as an employee expenditure

in Campbell et al., (2012), with the underlying assumption being that employees with higher levels of human capital contribute to greater overall business worth. Human capital, as proposed by Tan (2014), indicates that schooling is an expenditure that raises both output and income. Sospeter (2014), however, asserts that women's career chances drop in companies that spend inadequately in their education, skills development, and training.

Wright (2014) suggests splitting human capital into two types, as shown in Figure 3.2, firstly, the depth of analysis, and secondly, the malleability of specific personality traits. In Lokosov et al., (2015), 63 measures of human capital evaluation are selected and organized by seven combined categories based on economic activity, demographic processes, physical health, culture, social health, education, and community attitude toward the natural environment. Some experts in the field of human capital contend that traditional forms of education such as four-year colleges are outdated and no longer meet the needs of the modern workforce (Bouchard, 2006; McCracken et al., 2015). Therefore, some young adults may finish their university education without acquiring the abilities that employers value most. Becker (2009, p. 20) and McCracken et al.,(2015), for instance, report that many recent college grads need to start thinking about finding work immediately. According to Hossein & Roy (2016), human capital is more critical than ever in attaining competitive advantage because it is critical to the organisation's wealth, success, and competitive edge.

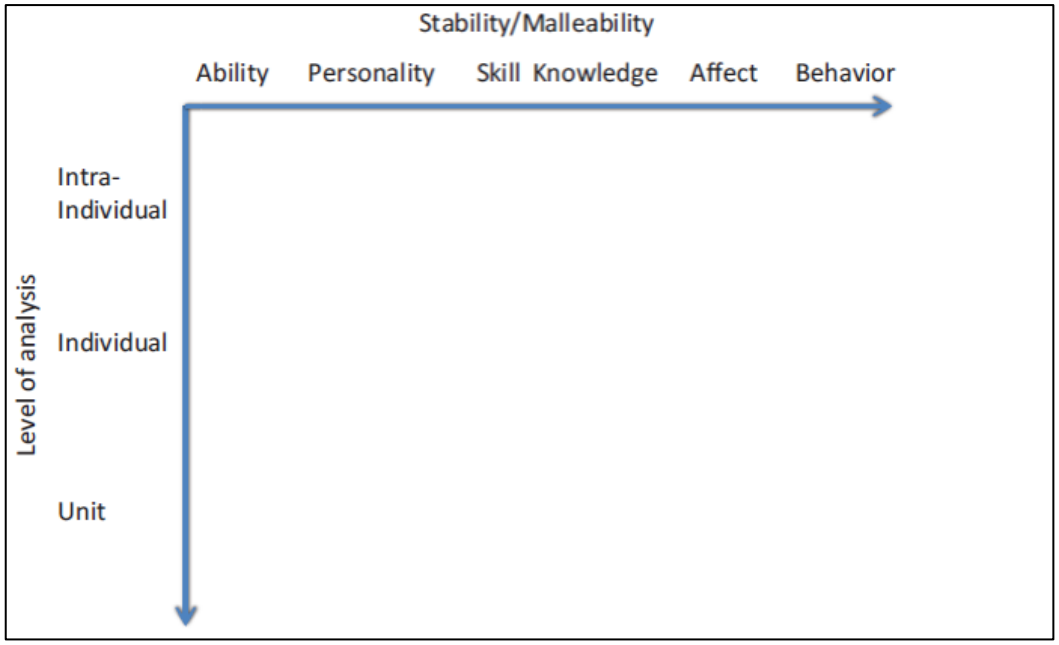

Figure 3.2 Dimensions of human capital characteristics (Source: Wright 2014)

Different results are highlighted by various academics in their conceptions of human capital. For instance (Dixit et al., 2017) examined the connection between training and performance, and (Ali et al., 2018) emphasized the role that human capital plays in influencing economic development by improving people's abilities. The success of the farm sector, for instance, is tied to the extent to which workers' professional and non-professional skills were nurtured. Human capital is defined as an individual's accumulated skill set, including both their specialized and generalized areas of expertise (Tarman, 2018; Mikhailushkin et al., 2018a; Krasyuk et al., 2018; Lisin et al., 2018; Chitsaz et al., 2019; Pritvorova et al., 2018; Yigit, 2018). According to Aliu and Aigbavboa (2019), the term human capital encompasses not only a person's academic credentials, professional expertise, and psychological test scores. The importance of human capital as a measure of economic and societal progress is another crucial discovery (Kotsantonis & Serafeim, 2020).

Stock et al., (2018) and Piwowar-Sulej (2021) provide examples of more modern meanings of human capital; they view economic growth as the actualization of bettering human potential. Economic growth is the outcome of investing in people, according to Hassan et al., (2019), who echo previous researchers (Stock et al., 2018; Piwowar-Sulej, 2021). This holds true whether or not there is an increase in living standards. These meanings highlight the importance of thinking about people's motivations and aspirations when calculating human capital.

In his 1964 book Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education, Becker laid the groundwork for the human capital theory. Since healthcare, schooling, and moral values all contribute to increased benefits and revenue and better health, their respective expenses should be viewed as assets in human capital, as argued by Becker (1964). In addition, he contends that workers' future income is increased through increased lifelong wages because education and training raises workers' output by passing on important knowledge and skills. Human capital growth, including experience and schooling, is essential to providing companies with the tools they need to compete (Sospeter et al., 2014). To test this hypothesis, we'll look at how skilled women in the building industry's retention rates compare to those of men with similar levels of schooling and experience. Economists have shown that human capital is a reliable indicator of per individual revenue in recent years.

Companies need help to retain qualified and experienced individuals due to the changing nature of the workplace from a technological, organisational and competitive edge perspective, Vance (2006). This is explained by the realisation that physical capital growth has made little contribution to explaining income growth in most organisations where it has been realised that human capital is the crucial economic contributor. For this reason, human capital needs to be appropriately leveraged to optimise its optimal value for organisations.

To achieve this, companies need to invest in human capital planning. This entails identifying the relevant pathways and sources of employee recruitment, determining competency models, continuously upskilling staff, ensuring that all job descriptions are detailed accurately, and laying out organisational training practices that inspire the employees to adopt lifelong learning. Training is an essential component of human capital development as it improves the productivity of employees as well as increases their personal earning power (Khasawneh, 2011).

The main channels through which human capital development occurs are education and training. In this regard, training refers to planning processes to modify attitudes, competence, or behavioural skill by using learning experience to improve productivity in various activities. Training is aimed at developing the abilities of personnel to satisfy an organisation's current or future human capital requirements. Education refers to activities that develop broader skills, knowledge, understanding, and moral values needed in all aspects of life beyond an individual's limited field of activity (Wan, 2007).

The theory behind knowledge management and human capital is that people hold skills, experience, and knowledge, making them economically valuable to organisations. Experience and knowledge are part of the capital, considering that they enhance performance. The human capital theory states that labour is more effective when resources are dedicated to skills development and training in the same manner as an investment into physical assets would bring about productivity. Concerning retention, the human capital theory states that, like other business investments, longer periods in accruing returns from investment in skills correlate to increased chances of profitability.

3.3.3 Career development theory

Career development theories offer views on assisting employees with individual needs, hierarchy fit within the organisation, and some career counselling. According to Patton & McMahon (2001), career development is tackling life, work and self-development over the lifespan. The development theory explored the retention of professional female talent in greater detail.

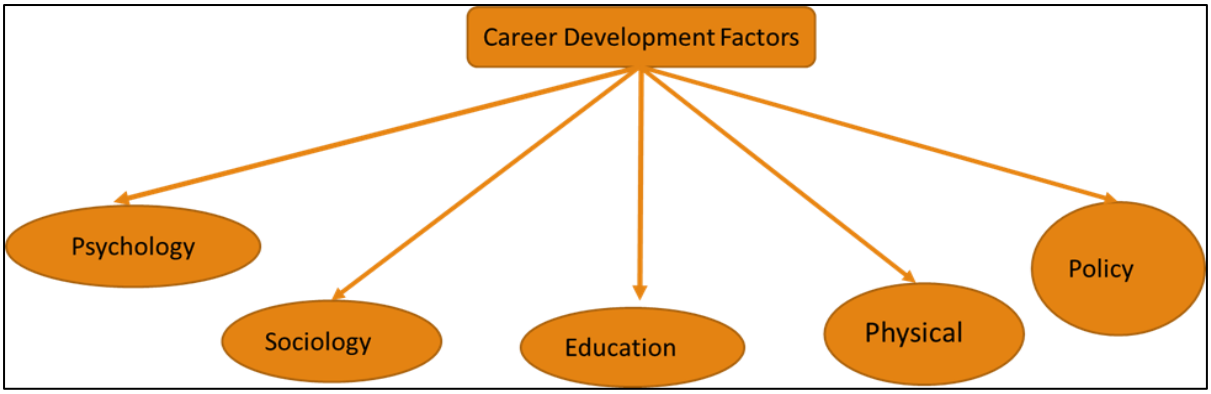

Figure 3.3 Career Development Theory

As demonstrated in Figure 3.3, career development theory incorporates psychology, sociology, education, physical well-being, and policies in the workplace. Broadbridge and Fielden (2015) state that early-gender role orientation, employment inequalities, and family responsibilities are three of the main reasons why women's careers progress more slowly than men. Coogan & Chen (2007) report that these barriers confound and limit career choices for women and delay their progression. As women reach certain life stages, they start having children, which affects their career development. It can be built on psychological structure, where the personality should correspond with the work environment like Holland theory; it can be built on decision-situational factors (like social cognitive career theory); and it can be built on self-concept (like trait and factor theory by Frank Parson), Jena & Nayak (2020).

3.3.3.1 Trait-factor theories

According to Agunzi & Mallum (2020), the field of occupational guidance can trace its roots back to a man named Frank Parsons (1854-1908), who is often referred to as "the father of

vocational guidance." Parsons's method of pairing skills with jobs eventually evolved into what is now known as the Trait and Factor Theory of Occupational Choice. Personality characteristics such as extroversion, introversion, openness to experience, optimism, and pessimism can all be found in varying degrees from one individual to the next, and this variation is quantified using trait theory (Kanodia & Sacher, 2016). Agunzi & Mallum (2020) emphasised that the trait and factor theory is based on the idea that individual skills and the traits required for specific vocations can be measured.

3.3.3.2 Criticism of trait-factor theories

Many people today use Parsons' work for job advice, but he still faces some critique. However, the dynamic nature of the labor market means that individuals must be flexible and open to new opportunities in order to succeed (Agunzi & Mallum, 2020). Critics of the theory say it fails to account for variations between the sexes and the ways in which people and their environments evolve over time. Furthermore, this theory's Western-centric premise that one's job decision is founded on personal preferences is challenged by the consideration of societal effects and sexual orientation (Giobb, 2018).

3.4.4 Holland's theory of vocational personalities

According to Pearce & Johnson (2017), Realistic, Investigative, Artistic, Social, Enterprising, and Conventional personality types (RIASEC) can characterise both individuals and vocations. American sociologist and psychologist John Holland's thesis is regarded as one of the most valuable and well-researched career theories (Milsom & Coughlin, 2017). Holland developed a hexagonal model that shows the connection between personality types and environments. According to Staunton (2015), Holland's theory tries to classify people according to their preferred employment and then classify professions using the identical approach to assess their correspondence. Holland's central concept is that people should utilise their dominant type and seek a career in that field. Such as, the investigative variety (I) means that person is analytical and a critical thinker who enjoys working independently; hence that person is best suited to being an actuary or data analyst.

Each of the six occupational kinds reflects unique interests, abilities, and personality traits. However, the six types can coexist and overlap (Sheldon et al., 2020), as illustrated in Figure 3.4**.**

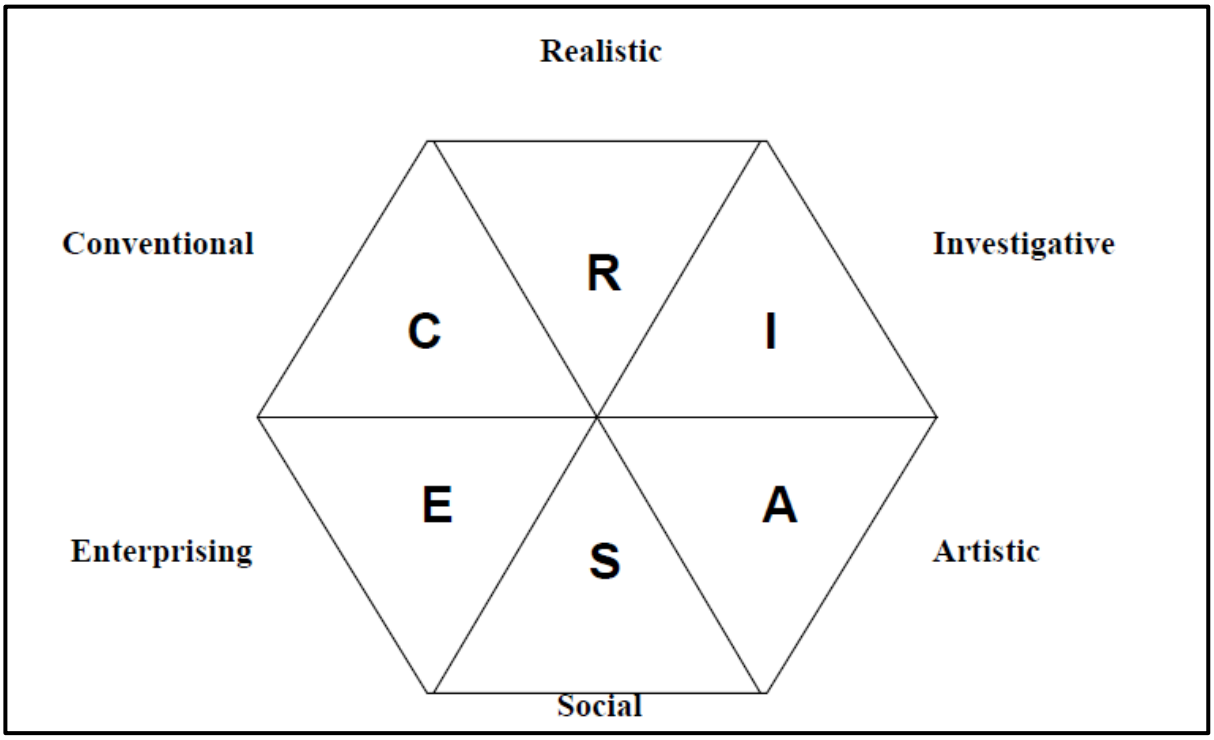

Figure 3. 4 Holland's Hexagon (Source: Holland 1985)

- Realistic (R): people with mechanical and athletic abilities who enjoy working outdoors and with tools and machines. The R type prefers to working with things.
- Investigative (I): people who use mathematical and scientific abilities, enjoy working alone and like to solve problems. The I type favours working with data.
- Artistic (A): people who enjoy creating original work and have a good imagination. The A type enjoys working with ideas and things.
- Social (S): people who are interested in human relationships and like to help others. The S type likes to work with people.
- Enterprising (E): people who have leadership and speaking abilities and like to be influential. The E type likes to work with people and data.
- Conventional (C): people who have organisational skills and arithmetic abilities. The C type enjoys working with data.

According to Arnold (2004), human resources in career development use Holland's theory of vocational choice to orientate clients to work, offering means for job exploration and career planning. He further argues that clients find this theory relatively easy to grasp.

3.4.4.1 Criticism of Holland's Theory

According to Staunton (2015), it is not easy to classify people or jobs under Holland's system; nowadays, jobs are more complex. Arnold (2004) further emphasises that Holland's theory does not acknowledge some social phenomena that may affect careers, such as ethnicity, gender, class, and social capital, as these may affect our beliefs and limit opportunities.

3.4.4.2 Social-cognitive career theory

The SCCT was developed by Bandura in 1986 on the basis of his social cognitive theory. It consists of 4 interrelated result examples (Interest Development, Choice, Performance, and Work Satisfaction models) that aid in understanding processes like the cultivation of vocational interests, the selection of appropriate careers, and the pursuit of desired outcomes (Lent & Brown, 2006). Adebusuyi et al., (2021) state that the theory can be separated into two components: the proximal and peripheral segments. Objectives, outcomes one anticipates, and one's own sense of competence make up the peripheral parts. Self-efficacy is defined as the confidence in one's own ability to initiate and complete the steps that will bring about the intended outcomes and levels of performance (Bandura, 1986). The farthest parts of the diagram are made up of personal inputs (such as ethnicity/race and gender), environmental affordances (such as financial position), and learning events (such as personal competence and feeling). Goals, expected outcomes, and self-efficacy behaviors are depicted in Figure 3.5 to represent the foundation of Lent's (1994) SCCT paradigm.

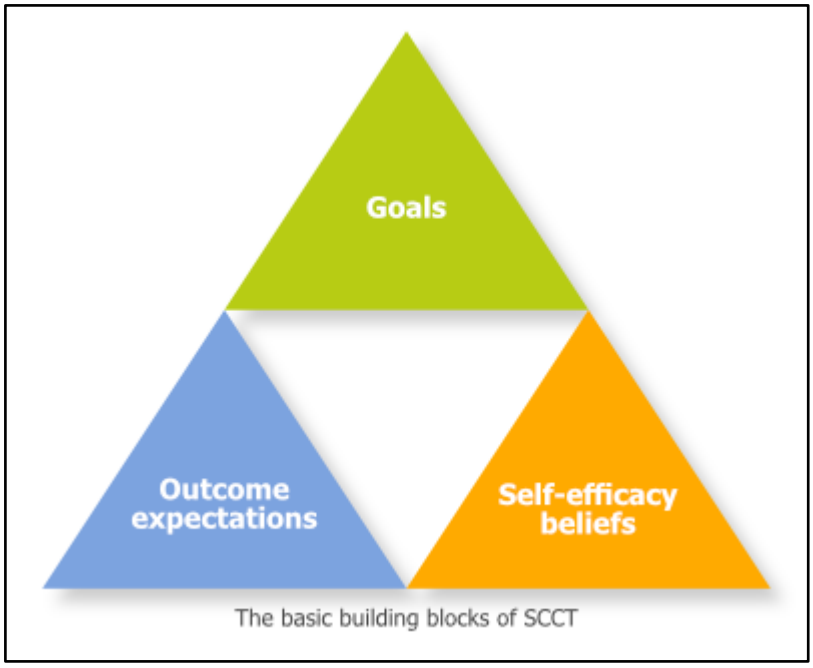

Figure 3.5 Building Blocks of the Social Cognitive Career Theory (Source: Lent et al., 2019)

SCCT is based on the constructionist idea that people can shape their growth and surroundings (Bandura, 1986). It compliments person-environment or trait and factor theories and development theories (Lent, 2013, pp. 116-117). SCCT (Lent et al, 2002:2005) proposed a three-part career development model that defines vocational interest, career possibilities, and career success and stability. According to Lent (2005), personal objectives are defined as "deliberate involvement in certain activities or the expectation of a certain outcome". Self-efficacy is defined by Lent (2005:104) as "a dynamic set of beliefs connected to certain performance domains and activities". SCCT is a motivational theory based on self-efficacy, outcome expectations, and goal-directed behaviour, as argued by Kassean et al., (2015). Outcome expectations, as described by Lent et al., (2002:262), are "personal views about the repercussions or outcomes of doing a certain behaviour". According to Akinlolu & Haupt (2021), from the perspective of women's career decisions, the model attempts to link contextual factors like barriers such as work-life conflict, sexual harassment, the glass ceiling, and the gender pay gap opportunity structures, support structures, socialization process, gender role stereotypes, and gender and socioeconomic status.

Person-environment, Trait-Factor, and Developmental Models all benefit from this (Lent, 2013, pp. 116-117). "The Society for Counseling and Development's (SCCT) three-part

professional development paradigm identifies three distinct components'' (Lent et al., 2002:2005). Pursuing one's own goals can be described as "actively engaging in some set of activities with the anticipation of some result" (Lent, 2005:104). "A changing collection of ideas associated with expected accomplishment categories and behaviors," as described by Lent (2005:104). Self-Efficacy, Outcome Expectations, and Goal-Directed Behavior (SCCT) is an incentive theory proposed by Kassean et al., (2015). As Brown & Lent (2019) stated, all the models previously mentioned above developed to varied degrees from Bandura's (1986, 1997) general communal cognition theory and rely on a set of the most fundamental concepts: confidence in one's own abilities to achieve set objectives. According to Tan (2020), SCCT is mainly used to explain decision-making behaviour related to occupational issues. Krumboltz's Learning Theory of Career Development is closely tied to SCCT, it includes Bandura's triadic reciprocal causality paradigm (Lent, 2013). The foundation of SCCT model is a causal relationship between the basic social cognitive categories of self-efficacy, result projections, interests, and academic and professional aspirations (Casas & Blanco-Blanco, 2016), as indicated in Figure 3.6.

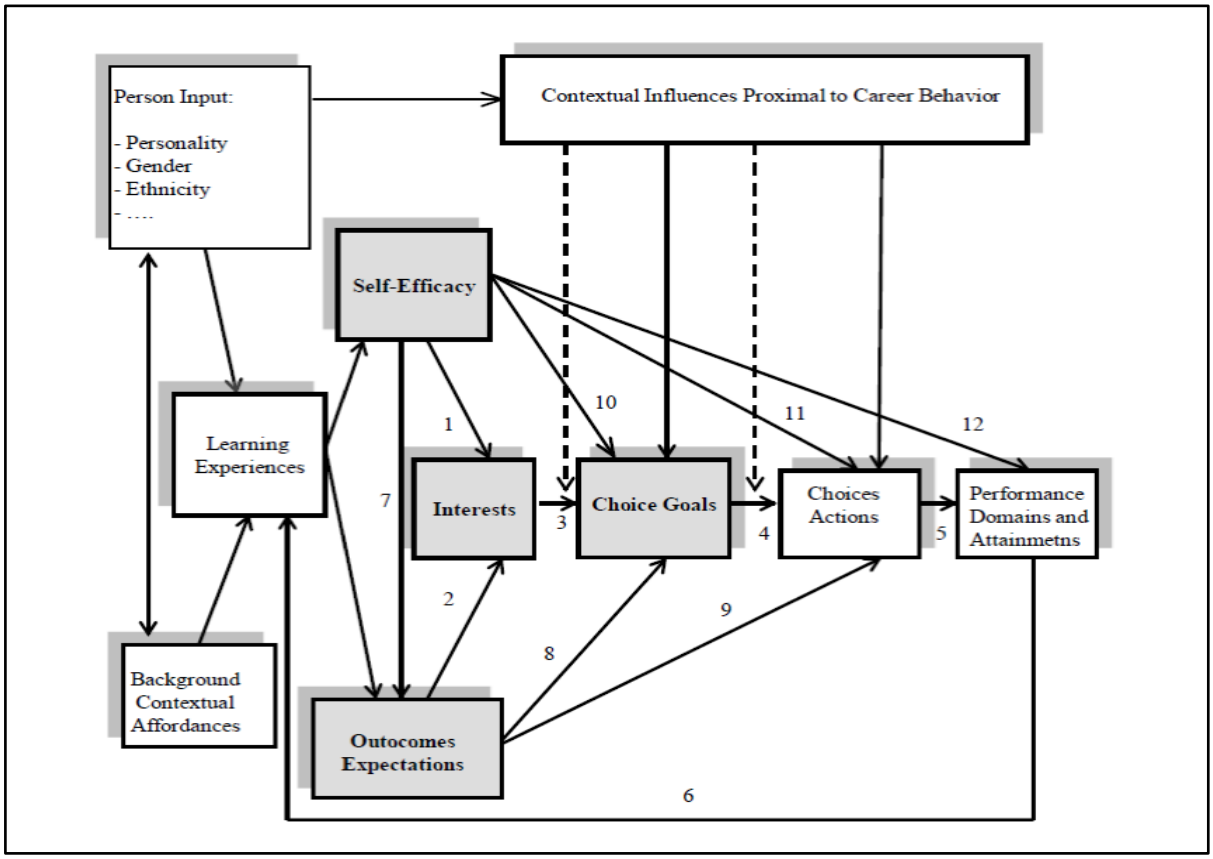

Figure 3.6 Social cognitive career theory choice model (Source: Lent, Brown and Hackett, 1994)

As demonstrated by Figure 3.6, links 1 & 2, in SCCT, people develop an interest in a particular activity when they see themselves as skilled and competent to carry that task. They know that their involvement will lead to valuable results. In combination with self-efficacy and outcome expectancies, emerging interests lead to setting objectives or the intention to participate in activities, as indicated in link 3. On the other hand, such objectives and goals boost the chance of effective participation in the activity, as shown in link 4, from which specific outcomes or accomplishments might be inferred in link 5. In link 6, performance achievements such as scores and self-satisfaction provide critical information for the consolidation or evaluation of self-efficacy and result from expectations. Link 7 deals with how self-efficacy determines outcomes on how a person carries on with tasks when expecting a positive outcome from that subject. It is also suggested that participants set objectives and pick activities based on their interests and the expected outcomes, as shown in links 8 and 9. Self-efficacy perceptions directly impact goal setting, as indicated in link 10, activity selection in link 11, and activity performance demonstrated in link 12. Figure 3.7 depicts how personal and environmental characteristics influence the basic social cognitive mechanisms established in the model, all of which influence academic and professional results.

3.4.4.2 Criticism of the Social Cognitive Career Theory

According to Meisslerm (2012), despite Bandura's ground-breaking discoveries, the new versions still need a comprehensive grasp of human behaviour, personality, characteristics, and biological variances. Flamand (2017) argues that SCCT is so broad and complex that it needs more than one unifying principle. He also states that SCCT proponents believe behaviour is learned primarily through observation and expectation. However, it overlooks that as people progress through life, their behavioural patterns might shift dramatically despite the minimal change in their surroundings.

3.5.5 Self-concept theory of career development

Donald Super created the self-concept theory of occupational growth in the 1960s and 1970s. The formation of one's sense of self is the result of a wide variety of variables, including biological and psychological maturation, social and cultural influences, and individual experience. Growth, discovery, settling in, upkeep, and withdrawal are the five stages of existence suggested by Super (1990). Career development describes how far one can go in their

chosen field at any given point in their lives. Due to contradictory findings, several studies have suggested replacing occupational development with flexibility (Herr, 1997; Savickas, 1997, 2002, 2005). Keeping track of your career's development over time is essential. Robison (2016) argues that an individual's self-concept is the driving force behind the development and evolution of their job goals over the course of their lifespan. In comparison to other theories' maxi cycles, the vocational stages are like short cycles that represent professional transitions. Super's theory has been the subject of substantial worldwide research (Patton & Lokan, 2001; Patton et al., 2002) conducted a study, which discovered that students with a higher level of professional maturity went on to full-time study, achieved more, and were in better psychological balance than other students. Career development interventions were also explored by Creed and Patton (2003) and Repetto (2001), with outcomes consistent with the developmental assumptions provided by career maturity. According to Watanabe-Muraoka et al.,(2001), the Super theory has received much interest in Japan's academic and corporate circles. Self-efficacy is vital in social cognitive theory (Abdinoor & Ibrahim, 2019)**.** Super's five life and professional development stages illustrate how people change throughout their lifetimes, people go through distinct phases called growth, exploration, establishing, maintenance, and decline Robison (2016).

3.6 Linking theories with the study

The selected theoretical framework is grounded in the works of researchers such as (Bombuwela & Chamaru, 2013; Afande, 2015; Helms et al., 2016; Francis, 2017). This framework offers a more comprehensive comprehension of the concepts explored in the present study. The section explains the relationship between retention at the centre stage of the study, with human resources and gender theories, as well as women and work, career progression, construction industry and women in construction. Borrowing from the field of human resources and sociology, human capital theory, career development theory and feminist theory justifies the need for the study being conducted as a research issue. Moreover, feminist theory, human capital theory and Holland's theory of career development contain the foundational knowledge that can help explain the retention of female talent in construction. These theories are deemed interrelated in the phenomena of retention concerning professional female talent within the construction industry. With feminist theory, the study uses all three frameworks identified by (Tisdell, 1998), namely psychological, structural, and post-structural. The feminist theory looks at equal opportunities for women in the workplace and society. One may ask why

feminism is for retaining professional women within the construction industry. The answer lies in what (Brisolara, 2003) argued, the feminist concept is grounded in a rich body of knowledge in which the emerging elements of the theory are practised. He further states that feminism provides a clear, crystal viewpoint regarding equity in the workplace.

The feminist theory calls for the demise of the patriarchal order, beckoning for a system where equality exists among males and females (Turner & Maschi, 2015). The purpose of this study is to encourage the retention of qualified female professionals in construction to be successful, issues related to gender and equity must be examined with a clear lens. Thus, feminism can be utilised to enhance retention in the place of work and women. Preparation of women for the construction industry should begin from the grass-roots level of their development before admission into tertiary education (Jonas, 2015). This is where career development preparation is the most critical. Career development theories have been necessary for understanding the complexities in a person's career development. The significance and applicability of job counselling to this research can be found in the reality that career development processes are related to the retention of female talents within construction, Morello et al., (2018).

Career development theories can help shed light on how career guidance is undertaken in retaining female talent and whether female talent is mentally prepared for the construction industry based on Holland's (1973) six categories of personal traits, which create specific working conditions or environments. Thus, it is essential to determine whether the characteristics of females that chose to study in hopes of establishing a successful profession in the building sector are befitting for the roles, problems and tasks characteristic of the construction environment.

Human capital theory heavily relies on training and education, Mooney & Brinkerhoff (2008). According to Zigon (2002), training can change an individual's behaviour and modify it into a predefined pattern. The core assumption of human resource theory is that education and training increase individuals' productivity and economic self-interest within a competitive market (Fitzsimons, 2015). Consequently, the motive behind individual investments in education is that they believe they will and expect to earn a higher income in the future (Tan, 2014). According to King (2016), investing in employee development and training can induce turnover of employees since employees are likely to leave the training organisation and apply their acquired skills in another organisation.

3.7 Theoretical framework for this study

The theoretical framework underpinning this study is adapted from psychological theories, organisational theories, social theories and economic theories from (Francis, 2017; Jafaar et al., 2016 ; Afande, 2015; Bombuwela & Chamaru 2013; Ganiron Jr ,2013; Helms, et al. 2013; Kaewsria & Tongthong, 2013). Dainty & Lingard (2006) was used to define the concepts around retention of professional women in construction. These theories were used because of their importance in understanding the benefits of retaining quality employees and recruiting prospects. Furthermore, investing in human capital helps to improve employee satisfaction, organisational culture, and productivity. Figure 3.7 below indicates the theoretical framework that was adopted for this study.

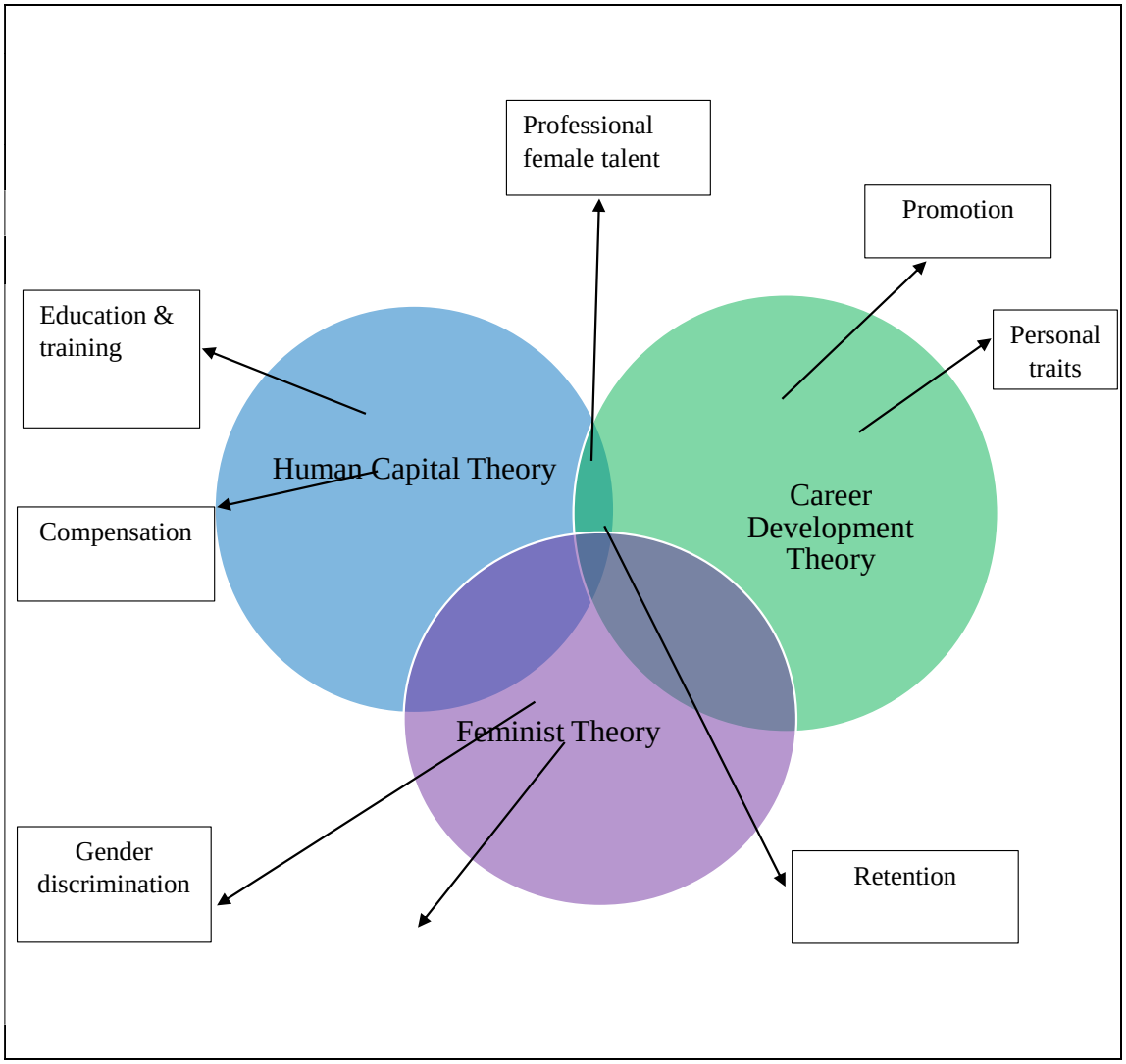

Figure 3.7 Theoretical Framework developed based on an adaptation by (Bombuwela & Chamaru (2013); Afande (2015); Helms, et al. (2016); Francis (2017)

The fundamental theories encompassed in this study comprise human capital theory, non-economic theories, feminist and gender theories, traditional career models, evolving family arrangements, and life course perspectives on women's careers. The variables under investigation in this study encompass human capital factors such as education and training, work experience, and professional growth. Feminist variables encompass a broad range of factors that delve into the realms of gender discrimination, the inequitable treatment of women, and the influence of patriarchal systems. This chapter examines a nascent theoretical

framework that might be employed to comprehend the growing presence of women in the construction sector, specifically in relation to recruitment and retention efforts.

3.8 Summary of the theoretical framework

The study's theoretical framework was extracted from psychological, organisational, and economic theories. The following theories were deemed more suitable for the current study: human capital theory, feminist theory and career development theory. These theories were selected because they are tightly aligned and interwoven with the study's problem statement, significance, and research questions.

The existing theoretical framework will function as the basis for the study, and it will direct both the choice of methodology and the approach taken to the examination of the data. Feminist theory is relevant to the study because it deeply analyses the differences between genders. The feminist theory states that inequality and women are treated unequally in the workplace. is unethical and may contribute to a hostile workplace, thus leading to women leaving the world of work altogether. Whereas, with human capital theory, organisations invest less in female education and training, which disadvantages career advancement (Dreher, 2003). This theory is vital because it provides insights into how far women can go in corporations once they are given support in their education and some training, thus strengthening their retention within the sectors of the economy. Career development looks at how one can grow in an organisation. The retention of female professionals within the construction industry should be better understood through the theoretical lenses of the above theories.

3.9 Conceptual framework

The use of a conceptual framework facilitated the delineation of the variables employed in the investigation and the intricate relationships existing among them. The conceptual framework is informed by the literature where retention factors were identified i.e employee income/compensation, work environment, work-life balance and flexibility, employment welfare & recognition, training and development, personal characteristics, promotion opportunities, company image and development. When retention factors are met inevitable, they reduce employee turnover. The study's theoretical framework was extracted from psychological, organisational, and economic theories. The following theories were deemed more suitable for the current study: human capital theory, feminist theory and career

development theory. These theories were selected because they are tightly aligned and interwoven with the study's problem statement, significance, and research questions, as indicated in Figure 3.8.

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3.10 The conceptual framework used in the study

This section discusses the significance of employing a conceptual framework for directing research on the retention of professional women in building industry. The research framework is presented in a graphic form below, followed by the descriptions. Researchers like Miles & Huberman (1994) state that this framework can be demonstrated in a graphical and narrative form. They also believe that mapping out these concepts assists the researchers in clarifying their thoughts, which lead to a better contribution to the body of knowledge.

This conceptual framework focuses primarily on how retention influences the career development strategies of women in construction. Retention will be viewed as an independent variable, while career development strategies are dependent variables. Retaining professional female talent depends on several independent variables, i.e., human capital factors, gender factors and career development factors (Martín-Peña, Cachón-García, & De Oliva, 2023). As demonstrated in Figure 3.8, human capital factors comprise education and training, and gender/feminist factors include discrimination, patriarchy, and women's position in society. In

contrast, career development factors comprise of personal traits, organisational policy, and management policy.

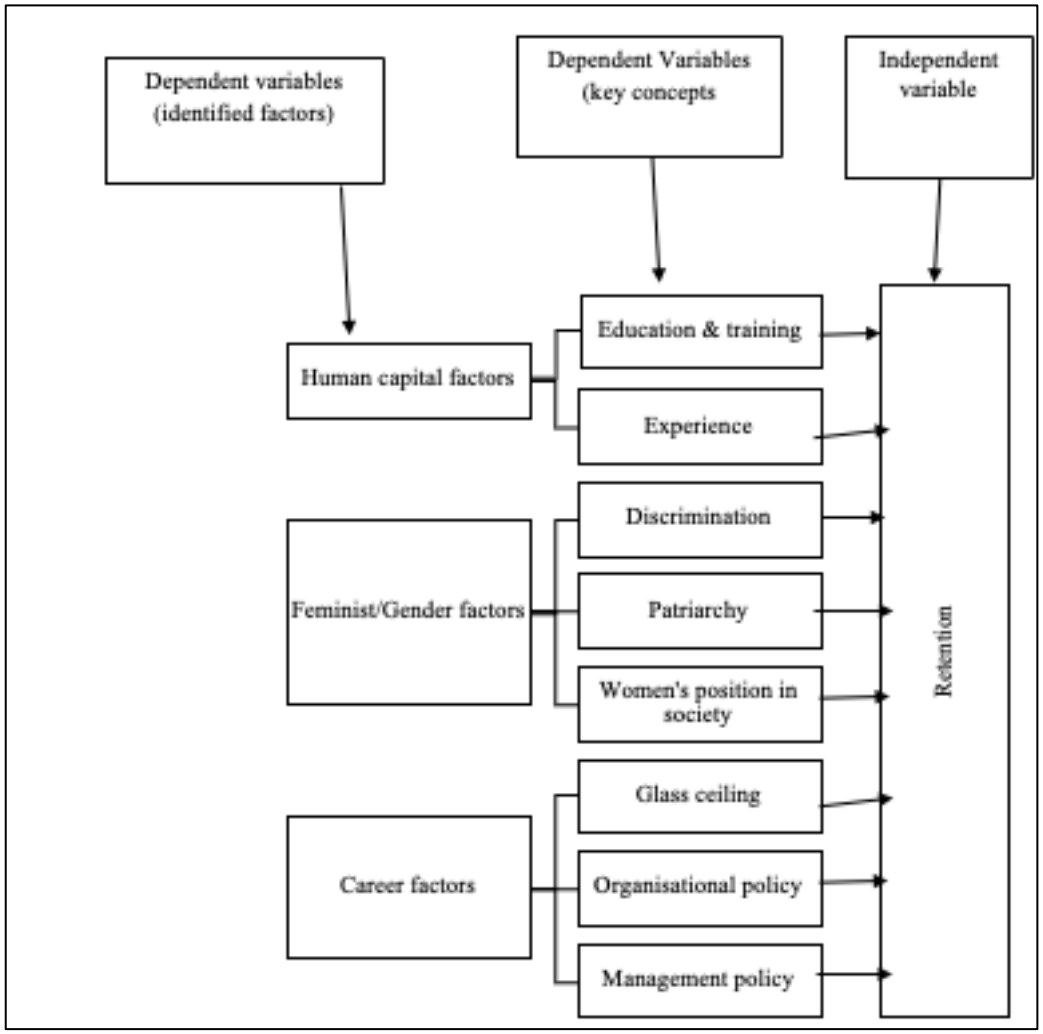


Figure 3.8 Conceptual Framework

Figure 3.8 shows a conceptual framework for the study wherein retention is the central dependent variable. The figure is created to clearly define the variables and their relationship, as shown by using arrows. Independent variables are human capital factors, gender/feminist factors and career development factors.

In the case of project-contracted employment, retention is an undertaking by to motivate employees to continue working for the organization for some time or until the end of that project. It reflects the commitment by the organisation to provide a working environment that supports and inspires employees to remain working for the organisation. A group of factors

account for the retention of employees in an organisation. These factors determining employees' decisions to stay in an organisation are categorised as individual elements: employee inspiration and motivation, work or job comfort, and organisational beliefs and culture (Ahuja & Choudhary, 2014). From an organisational perspective, employee retentivity relates to set policies and cultures companies use to keep valuable workers. This entails targeted efforts by organisations through measures to encourage workers to serve more prolonged periods.

Table 3.2: Retention factors (Source: Borstorff & Marker, 2007)

	Retention Factors	**Category**
1	Health benefits	Individual
2	Base pay	Individual
3	Equal pay	Organisational
4	Job satisfaction	Individual
5	Work-life balance	Individual
6	Flexible working hours	Individual
7	Work environment	Organisational
8	Supervisor quality	Organisational
9	Job fit	Individual
10	Opportunity for advancement	Organisational
11	Recognition	Individual
12	Challenging work	Individual
13	Organisational culture	Organisational
14	Equal opportunities	Organisational
15	Training and development opportunities	Organisational

There are costs associated with staff turnover, which most organisations underestimate. Among the expenses arising from staff turnover are reference verification, security checking, temporary worker expenses, relocation costs, skills training and induction (Hong, Hao, Kumar, Ramendran & Kadiresan 2012). From Table 3.2, factors that influence employee decisions to stay within an organisation are grouped into human capital factors, gender/feminist factors and career development factors. Human capital factors include education and training as well as experience (Francis, 2017). The concept of human capital theory includes the service period as a proxy for job-relevant competency. The knowledge and ability individuals possess influence their wages, promotional opportunities, and the type of job they are assigned. This, in turn, influences their decision to remain in their organisation's employ. Therefore, the length of service is a crucial parameter to consider when studying retention factors (Borstorff & Marker, 2007). The marriage between an organisation and an employee is crucial and plays a role in employee retention. People get attracted to organisations and can leave on discovery that they are unfit for the company culture. A relationship exists between work satisfaction, people-organisational match, job fulfilment and employees' intentions to remain a company. The differentiating factor determining an employee's decision to stay at their employer's organisation, given pay and benefits as expected, is an organisation's culture (Borstorff & Marker, 2007).

3.11 Chapter summary

The literature was consulted to provide the theoretical foundation for the study. The previously mentioned figures summarise the key features of the theoretical framework for the study. The proposed conceptual framework for the study shows the significant variables that will be used to explain the phenomenon of female employee retention and to address retention strategies employed by organisations in the construction industry. The study explores the effectiveness of strategies adopted to retain professional female talent within the construction industry. In this regard, the retention of female talent will be the independent variable. The various strategies that enhance the retention of female talent will be the dependent variables that will be investigated.

Chapter 4 Research design and methods

4.1 Introduction

The section investigates the research process that was employed. It also discusses the specific methodological choices and research design used to carry out this study, which delves into the issue of retention of professional female talent within the construction industry. In this chapter, there is a presentation of a justification for the appropriateness of the quantitative method. The Chapter 1 describes objectives, as well as the conceptual framework presented in Chapter 3, serve as guiding principles for the research method that was ultimately chosen. The chapter explores research philosophy, research instruments, data collection, and data analysis, followed by a discussion on ethics, validity, and reliability.

4.2 Relevant methodologies identified in the literature review

A study by Galea & Loosemore (2008) examines whether men and women in the building sector communicate in different ways during conflict and whether or not this is a cause of interpersonal conflict. This project utilised a rapid ethnographic methodology to reveal the gendered rules in use and their impact on employee well-being. In contrast to classic ethnography's broad interactions and observations, the data collection process in this study used more targeted interviews and observations with sampled participants. In research by Bombuwela , De Alwis & Chamaru (2013) investigating the barriers that prevent women from advancing their careers in Sri Lanka's commercial industry, the survey instrument was created as a self-administered questionnaire. A quantitative method was adopted. Le Jeune (2009) analysed entry and career hindrances faced by South African female students in the built environment. A multifaceted questionnaire served as the data collection tool for a Le Jeune (2009) study and the analysis was done by utilising SPSS, frequency tables and cross tabulations. Correlations were generated for descriptive data analysis.

Kaewsri and Tongthong (2013) explored advancement of women engineer in Thailand's building sector. A qualitative approach was adopted, where in-depth interviews were conducted among female civil engineers. Oo et al., (2021) investigated early career-women in construction: career choice and barriers. The study adopted survey research design that allowed for the timely collection of data from a large population. The data was collected using an online structured survey questionnaire. Ozumba & Ozumba (2012) investigated the feminine footprint

of the South African construction industry, and the analysis of trends was performed using time series analysis. The study utilised the ex post facto design to investigate the overall impact of a specific independent variable on dependent variables in the South African construction industry.

Muoniovaara & Turunen (2015) investigated female's career enhancement in banking in Sweden. The study employed semi-structured questionnaires for primary data collection and qualitative analysis. Ganiron Jr (2013) investigated the extent to which civil engineers' participation in a professional development plan in the Philippines is correlated with their level of social influence. Survey questionnaires and unstructured interviews were used in the study. Analysis of the data included a count and proportion of occurrences, a mean that was weighted, an association coefficient, and numerous regressions.

Helms, et al., (2016) performed research to investigate and investigate the importance of mentoring and sponsorship in women's career development in the US. Data collection was through focus group discussions involving 16 prominent women leaders in the State of Tennessee. The study employed a qualitative analysis method involving hand coding rather than a content analysis software programme. Six key themes emerged from the study. Nesbit & Seeger (2007) conducted a study to review the actions of 30 Australian organisations within the finance and insurance, construction and engineering, and health and community sectors to create conducive work environments that support and enhance the advancement of women into management roles. The study employed mixed method.

In light of the identified knowledge deficit, theories and ideas about retention were generated. Feminist theory and career development theory were found to be the most relevant and useful for this study, and it assisted in shaping the literature review and theoretical framework chapters. The research design considered and provided commentary on the scientific methods, philosophies, and approaches utilised in earlier investigations into this topic. The study adopted a qualitative method. The data analysis was based on a structured questionnaire distributed to construction professionals in different construction fields.

4.3 Conceptual framework in relation to the study methodology

The study investigated influences that contribute to retention of female talent in the construction industry in South Africa. The identification of these factors was followed by a survey to investigate their effectiveness. These factors served as proxies for strategies that are implemented to promote the retention of female professional talent in the construction industry. The study employed one dependent variable and three main independent variables. Retention of women in construction was the sole dependent variable that was investigated to determine the effectiveness of various strategies employed by organisations, as indicated in Figure 4.1.

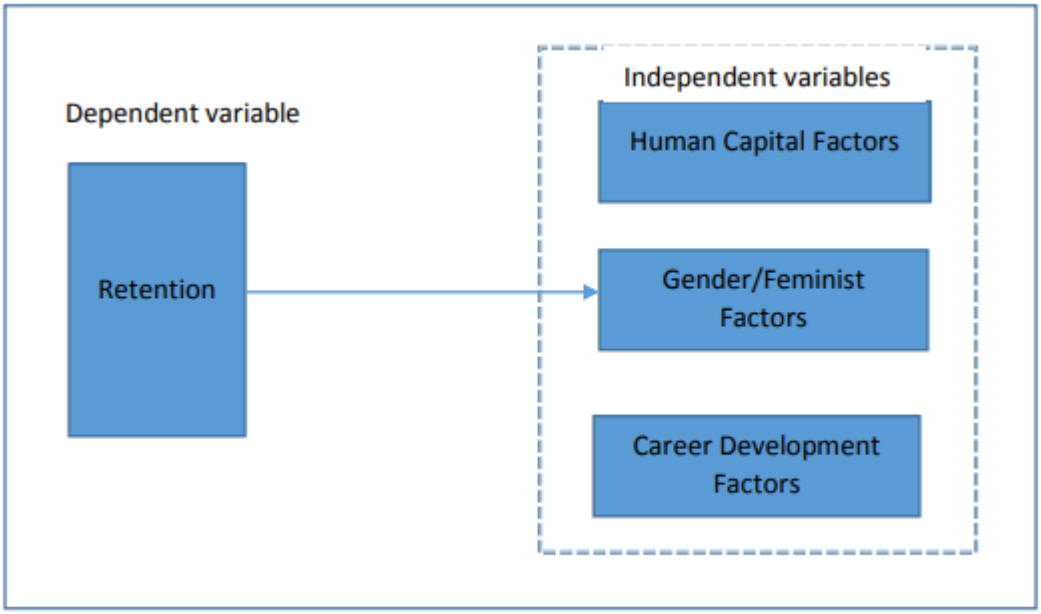


Figure 4.1 Conceptual framework linked to the methodology

In-depth interviews and survey questionnaires were adopted to gather information on reasons why people stay with the same company. Workplace tactics were influenced by the discovery of important variables. After collecting data, it will be analysed to establish how different construction firms fare with their plans.

4.4 Research objectives and methodology

There are four objectives which the study intends to achieve as demonstrated in Table 4.2 These objectives will be collectively answered by the main research question, which seeks to establish the effectiveness of strategies that are implemented in enhancing the retention of

female professional talent within the construction industry. The individual objectives of the research will be achieved by breaking down the main research question into sub-questions.

Table 4.1 Methodological approach for the study

Research objectives	**Achieving the objectives**
1. To identify factors contributing to female professional talent retention in the construction industry.	Literature review Interviews Structured questionnaires
2. To determine the possible practices in organisations that support the retention of female professional talent in the construction industry.	Literature review Interviews Structured questionnaires
3. To evaluate the effectiveness of currently used strategies to retain female professional talent in the construction industry	Interviews Structured questionnaires
4. To develop a framework for retaining female professionals in the construction industry.	Interviews Structured questionnaires

The objectives of the study necessitate identifying the various retention strategy characteristics of women in the construction industry. The retention strategies in the study allude to these characteristics. A literature review was carried out to clarify the characteristics that promote the retention of professional talent in the construction industry. As illustrated in Table 4.1, it is indicated how the sources of information in this study, secondary (literature review) and primary data collection (closed-ended questionnaires) and interviews are going to be employed to deal with the four objectives of this study's investigation. The first objective (RO1), identifying factors contributing to retention of female professional talent in the construction industry, will be answered partly in the literature review chapter and aided by data from

interviews and closed-ended questionnaires). The second research objective (RO2) is to determine the possible practices in organisations that support the retention of female professional talent in the construction industry (this objective is going to be partly fulfilled in the literature review chapter, interviews, and closed-ended questionnaires). The third research objective (RO3) is to evaluate the effectiveness of currently used strategies to retain female professional talent in the construction industry (this objective will be answered via interviews and closed-ended questionnaires). The fourth research objective (RO4) is to establish a framework for retaining female professionals in the construction industry (this will be answered via interviews and closed-ended questionnaires).

4.5 Research philosophy

Saunders (2015) describes research theory as a set of ideas and principles underlying the pursuit of new information. It is about a researcher embarking on a journey to develop knowledge in a specific field. Ryan (2018) states that research philosophy outlines beliefs and values that guide the research's design, data collection and analysis. These assumptions are about (epistemological assumptions-knowledge), (ontological assumptions-realities) and (axiological assumptions-own values). Figure 4.2 demonstrates how a researcher should examine beliefs and assumptions concerning philosophies and research design. The sub-sections that follow explain the philosophical assumption, research ontology, research epistemology, and research paradigms, as well as the researcher's positions.

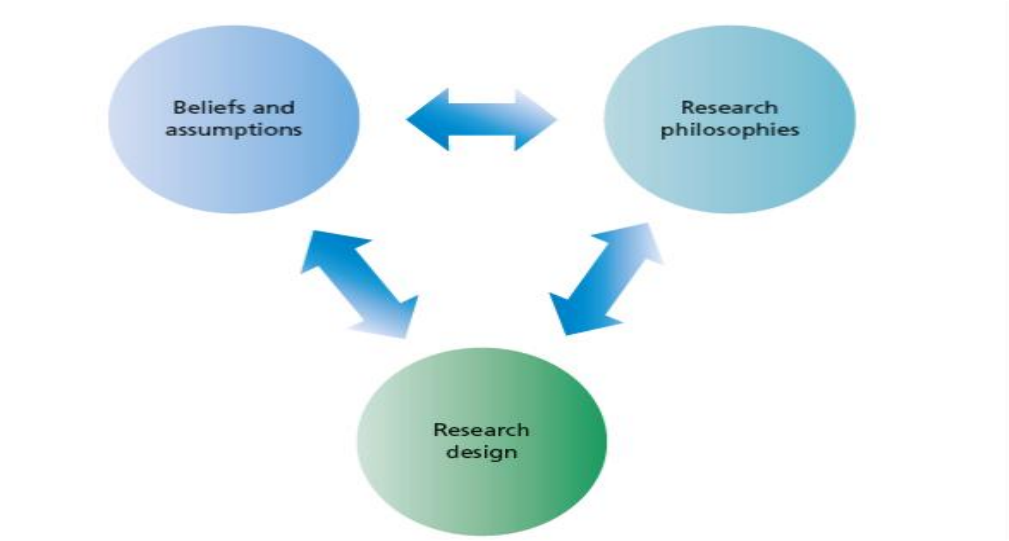


Figure 4.2 Research philosophy (Source: Bristow and Saunders, 2015)

4.5.1 Research assumptions

The first layer, according to the research Onion Model, is the research philosophy. The research philosophy directs how the research question will be addressed and establishes the research strategy, method, time horizons, techniques, and procedures (Saunders et al., 2016). Epistemology, ontology, and axiology are the three broad categories of research philosophy.

4.5.2 Research ontology

The innermost ring, ontology, defines what reality is and the basic elements that constitute reality in research. Ontology, according to Crotty (1998: 10), is "the study of being" related to questions such as "what does it mean to exist, or what does existence really mean?". Ontology is defined further as presumptions about the nature of the world (Chatterjee, 2011) and it also deals with how we as human beings determine whether things exist and how we classify existence of a thing/ things that are under study. Ontology is further grouped into realism, relativism and normalism. Realism assumes a single truth and the existence of facts that can be revealed. On the other hand, relativism assumes that the laws of science do not only exist to be uncovered but are contrived by people. Finally, normalism assumes that there is no single truth and all facts are human creations (Wembe, 2015). Scotland (2012) advises that researchers undertaking research need to take a position when it comes to their apprehension of how matters are perceived and how they work. The innermost ring of the research design was used to comprehend the various characteristics that affect the retention of women as well as the various strategies employed by organisations towards the retention of females in construction. Considering the objectives and theoretical framework for the subject, this was achieved by investigating the influence of human capital factors, gender/feminist factors and career development factors on retention of females in construction. Based on the above, the ontological assumption of the study is that the outcomes were dependent on the viewpoint of the participants and the observer. For this reason, the ontology of the study was relativism.

4.5.3 Research epistemology

According to Nayak & Singh (2015), epistemology is that part of philosophy that considers what we know about reality and how we can know it; it is about how we consume knowledge (O'Gorman & MacIntosh, 2015). The theory of knowledge involves two main questions: 1) what is knowledge? and 2) what can we know? Greco & Sosa (2017) state that the two

questions posed by epistemology beckon for a third question, which determines to find out ,how do we know what we know?. It is these questions that give rise to the need for critical examination to test the context and scope of the validity of research. It is argued that research in natural and social sciences assumes a contrasting position on the nature of research philosophy (Baškarada & Koronios, 2018). Researchers from both natural and social sciences rely on different ontological and epistemological assumptions when formulating strategies for doing research (Wembe, 2015; Greco, 2017; Roots, 2007; Scotland, 2012). Positivism is the concept that there is an external existence of a social world that should be evaluated by objective techniques instead of sensation, reflection or intuition. According to positivists, reality is a universal meaning that it is the same for everyone and thus it can be identified and seen by everyone through the application of science (Roots, 2007).

In contrast, social constructivism is based on the premise that the construction of reality is attributed to human agency rather than being determined by external and objective attributes (Wembe, 2015). This reality differs from person to person and is based on various factors and social norms that contribute to shaping individuals' realities or reality over time within a given space. These factors or social norms are political, historical, cultural and social. It is this that gives each individual their personal distinct comprehension of the world and their encounters (Roots, 2007).

This is the second innermost ring of the research design which informed the various assumptions about inquiring into the retention of women in construction, and it also informs the context and validity of the scope of the research. The proposed epistemology of the study will involve elements of positivism and social constructivism. In pursuance of presenting alternative perspectives to the research problem that was investigated, the study employed a combination of philosophical approaches that combined positivism and social constructivism. This is because the application of several perspectives simultaneously closely matches reality in practice, which creates more realistic situations for researchers (Joslin & Muller, 2016).

4.5.4 Research paradigms

According to Saunders et al., (2015), a paradigm is defined as a method of investigating social phenomena from which specific understandings of these phenomena can be obtained, and explanations attempted. The study adopts a pragmatist paradigm as it has the potential to unlock

organisational action and change processes (Cordeiro & Kelly, 2019). The research focuses on tangible processes and retention measurements. The study is orientated towards determining the possible practices in organisations that support the retention of female professional talent and gauging the effectiveness of these practices. The rationale for selecting a mixed-method approach was to reach a comprehensive sample coverage consisting of professionals within the construction industry. The task of applying pragmatism in this project was facilitated by the researcher focusing on the set of principles.

The two principles include pragmatism's emphasis on the following:

- **Useful knowledge:** This enabled the researcher to engage with multiple experiences of the same phenomena (retention) while at the same time channelling the inquiry towards practical problem-solving. This plays a pivotal role in utilising the research findings and focusing on valuable knowledge for human resources executives in organisations when facilitating research findings.
- **Inquiry as a decision-making process:** This principle highlights the everyday pragmatism applied to problem-solving and reaching solutions.
- **The interconnectedness of experience** serves to explore the interconnectedness of experience, knowing and participating in the process within the respondent organisation by seeking a better understanding and documenting the experiences of the construction industry's female professionals.

4.6 Research approaches

According to Saunders et al., (2015), in theoretical research, three approaches tell us how we treat data and theories. They are characterised as deduction, induction, and abduction, and they are also known as modes of argumentation in theoretical research, as seen in Table 4.2.

Table 4.2 Main differences between the qualitative and quantitative method (Source: Nayak & Singh, 2015)

	Deduction	Induction	Abduction
Logic	When premises true, the conclusion must also be true	Known premises used to generate untested conclusions	Known premises used to generate testable conclusions
Generalisability	From general to specific	From specific to general	From interactions between the specific and general
Use of data	To evaluate propositions or hypothesis	To explore phenomenon, identify themes and patterns then create conceptual framework	To explore phenomenon, identify themes and patterns then create conceptual framework and test through subsequent data collection
Theory	Theory Falsification or Verification	Theory Generation and Building	Theory Generation or Modification

4.6.1 Deductive approach

According to Saunders et al., (2015), the deductive approach entails a developing a theory, which is then rigorously tested through a series of propositions. The positivist philosophy underpins the deductive approach, and its foundation is similar to natural science and scientific research (Saunders et al., 2012). The deductive research approach consists of four stages (Streefkerk, 2019).

- Starting with an existing theory and creating a problem statement
- Formulating a falsifiable hypothesis based on existing theory
- Collecting data to test the hypothesis
- Analyse and test the data.

Deduction involves progressing from the broad to the narrow, as when starting with a theory, drawing out theories from it, putting those hypotheses to the test, and ultimately changing the theory based on the results (Locke, 2007; Nola & Sankey, 2007). Psychologists and cognitive scientists, as cited by Ormerod (2009), have come to the conclusion that logical reasoning does not accurately reflect how people think. It has been found by computer engineers that human responses to their surroundings can only be understood through the use of logical reasoning.

4.6.2 Inductive approach

According to Harriman (2010), Aristotle, the very first philosopher of sciences, who believed in the primacy of induction over inference in the scientific method, argued that the former was

necessary for the construction of sound hypotheses. Creating ideas and hypotheses based on actual data is another example of how inductive reasoning is used to shed light on intriguing phenomena (Locke, 2007). To rephrase, prior to certain philosophical and scientific advances, inductive and logical reasoning were considered to complement one another (Woiceshyn & Daellenbach, 2018). Streefkerk (2019) argues that because there is no theory to test when there is little to no existing literature on a topic, it is common to conduct inductive research. The inductive approach is divided into three stages (*ibid*):

- Observation
- Seeking patterns
- Developing a theory or general (preliminary) conclusion

Developing true ideas requires meticulous observational observation or testing over extended periods of time, making inductive research a central method for expanding knowledge in psychology and organizational behaviour (Locke, 2007). The empirical inquiry in this investigation did not begin with a preconceived notion that needed to be verified. However, it did start with unanswered questions about the need for more retention of female talent in the construction industry.

4.6.3 Abductive approach

According to the American philosopher CS Peirce's (Haig, 2005) description of abductive thinking, the researcher's previous experience is an inevitable and important part of the analytical relationship interplay between the researcher, the topic of study, and the theory (Thomas, 2010). Abduction, to put it simply, combines elements that include reasoning and induction. (Saunders et al., 2015). The study's foundational theoretical paradigm is based on human capital theory, feminism theory, and job development theory. Abduction differs from deduction in that it does not begin with the choice of an idea to be tested via the development and evaluation of theories (Haig, 2005). Abduction differs from induction in that it doesn't have to do with providing a justification for an idea by using "safe" views" of isolated occurrences (Haig, 2005, pp. 372-373). According to Conaty (2021), abduction is not a replacement for induction or deduction; each may be more appropriate for achieving specific research goals. For example, deduction is used to test theories while induction is used to develop theories based on data, and abduction is used to generate hypotheses from the inference that suggest the development of new or existing theories.

4.7 Research methods

Primary research techniques can be either quantitative or qualitative or a hybrid of the two. (Creswell, 2014). Research methods involve data collection methods, analysis, and interpretation (*ibid*).

4.7.1 Quantitative method

The quantitative approach to science is based on the collection and study of numerical data to better understand and explain observed events (Creswell, 2002). According to Mishra and Alok (2017), the quantitative approach is best for answering issues that seem to lend themselves to being addressed with quantifiable data. Queiros et al., (2017) agree that quantitative research focuses on objectivity. It is well suited when there is a greater chance of collecting quantifiable variables and interpretations from population samples. The source of quantitative research is positivism paradigm answers (Lee, as cited in Slevitch, 2011). This method simply analyses variables using statistical techniques to get results. As retention strategies are visible, the quantitative pragmatist approach was adopted. The research objectives required distinguishing retention strategy characteristics of women in the construction industry. These retention strategies in the study allude to these characteristics. Kumar (2014) states that quantitative research is outlined as an assembled approach to research that investigates relationships, confirms or validates theories and quantifies or gauges problems.

4.7.2 Qualitative method

In contrast to quantitative research, qualitative research is concerned with the quality of phenomena rather than the statistical examination of meanings, processes, and entities. According to Flick (2009), qualitative research is an interpretive in nature empirical method that primarily relies on the stories of study subjects to gain insight into an event. It has to do with how individuals make sense of the universe and their everyday encounters. In an epistemological context, qualitative research uses participant observation or case studies that result in a narrative, descriptive account of practice (Nayak & Singh, 2015). Denzin and Lincoln (1994) state that qualitative scholars examine phenomena based on the significance that people ascribe to them in their native habitats. They look at the world from a series of presentations documented by interviews, photographs, and recordings. Denzin & Lincoln (2011) argue that qualitative research is associated with specific data involving words or images rather than numbers. Over the years, many origins and critical traditions have

demonstrated qualitative research approaches. Cresswell (2013) is the researcher who came up with a comprehensive wide range, as shown in Table 4.3.

Table 4.3 Traditions and approaches in qualitative research (Source: Cresswell, 2013)

Traditions and approaches in qualitative research

Research tradition	Disciplinary origins	Aims
Ethnography	Sociology, anthropology	Understanding the social world of people being studied through immersion in their community to produce detailed descriptions of their culture and beliefs.
Phenomenology/ ethnomethodology	Philosophy/ sociology	Understanding the 'constructs', concepts or ideas people use in everyday life to make sense of their world. Uncovering meanings contained within conversation or text.
Leading to **Conversation analysis**	Sociology/ linguistics	Analysing the way in which talk is structurally organised, focusing on sequencing and turn-taking which demonstrate the way people give meaning to situations.
Discourse analysis	Sociology	Examining the way knowledge is produced within different discourses and the performances, linguistic styles and rhetorical devices used in particular accounts.
Protocol analysis	Psychology	Examining and drawing inference about the cognitive processes that underlie the performance of tasks.
Interpretive phenomenological analysis (IPA)	Psychology	Exploring the meaning and significance of a relevant experience to given participant – what it is like for them – in order to gain insights into psychosocial processes.
Symbolic interactionism	Sociology/ social psychology	Exploring behaviour and social roles to understand how people interpret and react to their environment.
Leading to **Grounded theory**	Sociology	Developing 'emergent' theories of social action through the identification of analytical categories from the data and the relationships between them.
Ethogenics	Social psychology	Exploring the underlying structure of behavioural acts by investigating the meaning people attach to them.
Hermeneutics	Theology/ philosophy/ literary criticism, linguistics	Exploring the conditions under which a human product (e.g. a text) was produced or act took place in order to interpret its meanings.
Narrative analysis	Sociology, social history, literary criticism	Analysing what a narrative reveals about the person and their world. Studying the way people tell stories and the structure of narratives.
Constructionism	Sociology	Displaying 'constructed realities' of people in a particular setting, exploring their meanings and explanations.

Ritchie et al., (2013) state that qualitative research is associated with the interpretivism paradigm, which stresses that reality is a social construct and explains the dynamic nature of societal relations (Queiros et al., 2017). However, there is also an epistemological debate about the merits and roles of induction and deduction, where induction looks at patterns from the observations of the world, and deduction generates hypotheses in theory through a logically derived process (Ritchie et al., 2013). Both deduction and induction paradigms are involved somehow at different stages of the qualitative method. Harding & Whitehead (2016) state that qualitative data analysis's key feature is the application of inductive reasoning, which generates ideas from the collected data.

4.7.3 Mixed methods

Mixed method research in which the investigator collects and analyzes information, incorporates the results and derives judgments via both quantitative and qualitative strategies or methods in a single study" is how (Tashakkori & Creswell, 2007:4) describe mixed methodology. The conceptual principles that underpin mixed-methods research are what enable it possible to combine qualitative and quantitative methods at various points in the investigation (Hanson et al., 2005; Schoonenboom & Johnson, 2017). To get a fuller picture of an issue, researchers conducting mixed-methods studies use the most appropriate quantitative and qualitative techniques for that study (Onwuegbuzie & Johnson, 2006; Johnson & Christensen, 2017, Almeidai, 2020). When it comes to improving hospice care, blended techniques have been widely recognized as a viable strategy, as Fetters (2020) notes. Structured conversations, semi-structured interviews, focus groups, and field observation are frequently used methods in qualitative research (Queirós et al., 2017). Toomela (2008), Ponterotto et al., (2013), and McKim (2017) all agree that scholars are better able to delve into and get to the bottom of their subject matter when they employ a mixed-methods strategy. In addition, participant views on the intervention's character can be better understood thanks to the use of blended methodologies, as stated by (Bamberger, 2012). By using mixed methods, one research method's strengths compensate for another's weaknesses (Plastow, 2016). (Creswell et al.,

2003) The classical approach to categorising mixed methods is to do it in two major categories: sequential and concurrent.

4.8 Research design for this study

A research design makes it possible to navigate various research procedures, allowing the research to be conducted professionally to obtain as much pertinent information as possible in a time- and cost-efficient manner (Akhtar, 2016). Creswell (2009) and (Birks & Mills, 2011) define research design as the set of procedures from the underlying philosophical position to the specific research methods. According to Kumar (2019), the inquiry of research can be exploratory, predictive, explanatory, historical, or evaluative; it is a strategy or plan that specifies the optimal of respondents, data gathering, and analysis techniques based on an underlying philosophical paradigm. The study adopted the mixed methods. The central idea behind this study's methodology is that combining qualitative and quantitative approaches will produce a more thorough understanding of the topic at hand. This research strategy is predicated on the idea that combining qualitative and quantitative approaches provides a more complete picture of a research issue than one approach alone. This study has the characteristics of a descriptive and exploratory study because the researcher was interested in the opinions and opinions of the participants. The exploratory study seeks to discover and gain understanding on the exact hindrances on why professional female talent is leaving the construction industry earlier than expected, without being retained for longer periods. The sequential mixed method was divided into two phases: a quantitative phase and a supplementary qualitative phase. The first phase involved sending out 180 survey questionnaires to construction professionals. This phase provided information for four objectives. The second phase was qualitative, with in-depth interviews with key female professionals in the industry. This was sufficient to answer all the sub-questions.

This study applied the deductive approach to the theory. It included concepts such as retention, turnover and gender-based prejudice. According to Creswell (2014), mixed-methods research may employ a deductive approach in quantitative theory testing and validation. The relevant theories were used in a deductive manner for the purpose of verification.

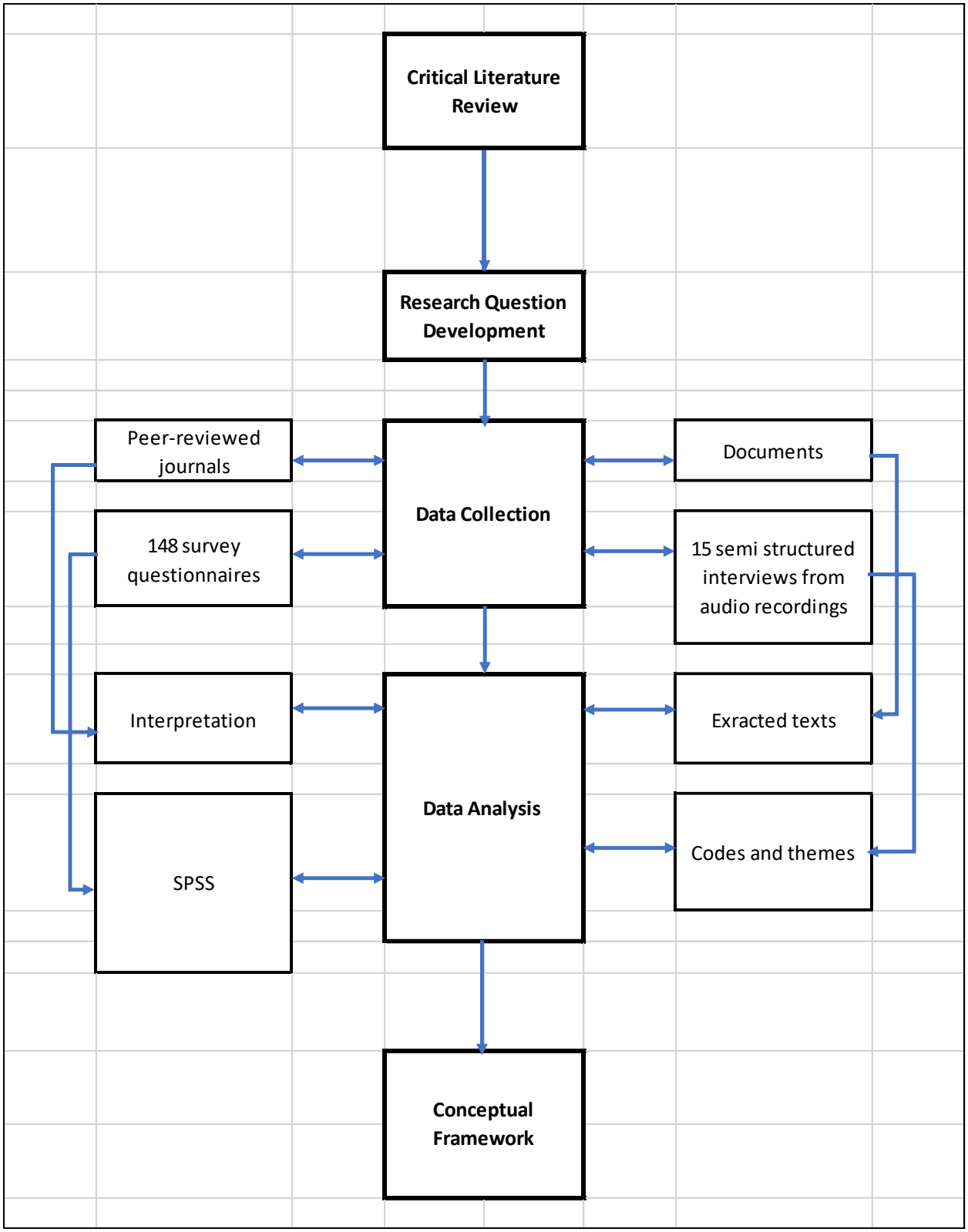


Figure 4.3: Outline of the research design

4.9 Population and sampling technique

Ghauari and Gronhaug (2005) reported that the study population relates to the overall units from which the sample is adopted. Due to the characteristics of the sample, respondents were selected using a method called purposive sampling. This study's identified, and targeted population comprise professional women and men in the construction industry. The men were included in the study because professional females are not the only participants in the construction industry, they work hand in hand with their male counterpart. Male experiences working alongside with women were imperative. Gender diversity is equally important for both genders in the workplace. Organizations that actively embrace gender diversity have the potential to cultivate a work atmosphere that is characterized by enhanced innovation and productivity. Additionally, such organizations are more likely to successfully attract and retain highly skilled individuals from a wide range of backgrounds. This entailed project managers, architects, lecturers, quantity surveyors, engineers, and planners/schedulers, as demonstrated in Table 4.4. These professionals were recruited from the private and public sectors.

Table 4.4: Research participants

Participant entity category	**Role of individual participants in each category**
Construction firms	Project managers, site engineers, quantity surveyors, civil engineers
Consulting firms	Engineers, architects, project managers, quantity surveyors, civil engineers
Professional bodies	Managers
Academia	Researchers, lecturers

According to Babbie (2016), from a practical point of view, the sampling begins with identifying an acceptable sampling frame. The study adopted a purposive sampling technique. The sample's profile was outlined under the following demographics: age or date of birth,

gender, racial profile, civil status, family responsibilities, work experience, level of education, seniority level and home or work province. The decision to include the above categories arises from the need to explore variables that likely aid the researcher in deeply comprehending the components of retaining female professionals in the construction industry, as highlighted in the literature review.

4.10 Data collection

The first step of collecting data was via an extensive literature review that dealt with women and work through the lens of legislation and their retention in the construction industry. The research also aimed to determine the efficacy of retaining tactics aimed at keeping women in the building business by conducting a comprehensive literature analysis. The study audit record of networks and search keywords is made clear in a comprehensive literature review. According to Parahoo (2006), a systematic examination should explain the criteria used to pick the relevant literature, as well as the procedures followed to assess and synthesize the studies' results. It is crucial that the method be "replicable, scientific, and transparent," as emphasized by Moustaghfir (2008), and that a "audit trail of reviewers' decisions, procedures, and conclusions" be made available. Based on the work of Tranfield et al., (2003), the author elaborates on the steps involved in conducting a comprehensive review:

-Create a procedure for the evaluation using feedback from a group of experts.

-Find relevant terms and form them into query phrases.

-Pick datasets.

-Apply the approved inclusion/exclusion criteria to the titles of the articles that have been found.

Insert relevant articles into a citation manager, Procite was used. To determine the quality of these papers, a panel of experts in the field conducts a peer review, looking for things like a thorough explanation of the theory, well-defined goals, an accurate description of the study's setting, a representative sample, a sound approach to data analysis, a well-explained interpretation of the results, and a connection between the data and the theory.

Web of Science, Emerald, ARCOM, JSTOR, Taylor & Francis, and Google Scholar were used for the initial stage of this process, which was the discovery of pertinent literature through Boolean queries. The following terms and keywords were used to conduct the search:

"retention," "engineers," "career development," "feminism," "glass ceiling," "construction industry," "gender," "talent," and "women." The searches were limited to studies conducted between 2008 and 2022 in order to obtain the most up-to-date information and establish a holistic picture of the retention of professional female professionals in the construction industry in the 21st century. Approximately 800 articles, books, dissertations, conference papers, and government records were found during the early search. These works included observational, theory, and philosophical studies. After eliminating duplicates and publications that were not relevant to the research, only 400 summaries were kept for further evaluation. Descriptive and theme analysis were used to examine these articles. There were six steps to the inductive analysis: getting to know the material, classifying it, coming up with themes, going over the themes, giving them names, and finally writing it all up. To guarantee that unique subjects were recognized, a themed grid was created. The next step was to send out surveys to experts in the field. After that, in-depth conversations were held with working women in the industry.

4.11 Development of the research instruments

To collect data for the mixed-use method, various methods are adopted, interviews and questionnaires. The research questions were formulated based on the literature review conducted, as well as the guidance from the research objectives. The interview questions are centered around the objectives of discovering, explaining, elucidating, and understanding phenomena of retention in relation to professional female talent. The relationship between the quantitative and qualitative data, analyses was dealt with in research design section. To integrate the qualitative and quantitative data in this mixed methods research, included adopting sequential exploratory design. This entailed accumulating and analyzing qualitative data first, followed by quantitative data to test or validate the qualitative findings.

4.11.1 Interviews

The interview planning process included selecting interview participants and arranging for their participation. The interviews were planned to be semi-structured. The interviews were audio-recorded and transcribed word for word so that the full discussion could be obtained. After the research committee granted ethics approval to collect data, the participant information sheet and consent forms were emailed to participants. If they wanted to participate, participants had to sign consent forms prior to the interviews. Based on the availability of the participants, the

interviews were conducted online via Microsoft Teams. All participants were encouraged to freely express their opinions about their experiences working in the construction industry.

4.11.2 Survey questionnaires

According to Maul (2017), surveys allow for information from research respondents using logically arranged questions. He further argues that it is the most used technique in research because it aids in gathering information about a specific phenomenon by formulating questions. This instrument development considered the identification of constructs from the literature review, entailing wording, sequencing and structuring of questionnaires (Malhorta & Dash, 2011). The questionnaires used in the study allow participants to reflect on their opinions, perceptions, and behaviours regarding retention within the construction industry. The surveys were electronic questionnaires created on Google Forms and distributed to different organisations. The retention factors scale by Dockel (2006) was used to measure the participants' level of satisfaction concerning retention factors. The scale measured satisfaction levels with retention factors that were identified in the literature review, namely: compensation, health benefits, training, social support, conducive environment. Section 1 contains demographic questions such as a number of children, including their ages. Section 2 requested information about career decisions, like the periods the respondents take within particular construction occupations in a firm. In Section 3, the responders rated the importance of retention factors obtained from the literature review in making career decisions. In Section 4, respondents needed to rate their satisfaction levels in their current jobs. Closed questions followed this in the second set of questionnaires, where participants were asked to rank the various characteristics that affected their career development and retention in the workplace.

The 5-point Likert scale was used because it is easily comprehensible and user-friendly for both survey administrators and responders. It also fits screens on mobile devices better than scales with more points. Participants were prompted to rank each factor on the five-point Likert scale of answers (1-5). It comprises of 5-point rating scale extending from one extreme to the other, with a neutral point in the middle, where 1= strongly disagree, 2 = disagree, 3 =neutral, 4=agree, 5= strongly agree. The Likert scale generates useful, quantitative data that is simple to understand and evaluate the effectiveness of currently used strategies to retain female professional talent in the construction industry identified as one of the objectives. The selection of data sources for the survey was based on purposive and convenience sampling methods. In

this regard, the target sample population was predetermined based on the proposed participants being female construction industry professionals in selected organisations.

4.12 Data analysis

NVivo software 12 will be used to organize, analyze, and discover insights in qualitative data in order to generate relevant study findings. Through the utilization of in-depth interviews, a comprehensive examination is conducted, resulting in the creation of a mind map that encompasses preliminary concepts. This mind map is designed to illustrate anticipated patterns, which are derived from the findings of the literature research. Subsequently, the interviews will be organized and stored within designated folders to facilitate convenient retrieval. Subsequently, a preliminary node structure will be established in accordance with the findings of the literature review. A frequency analysis method will be utilized to identify the prevalent themes. Subsequently, go into the emerging themes and articulate several views.

The quantitative data analysis will be conducted utilizing the Statistical Package for Social Sciences (SPSS) software, namely version 1.0. The process of quantitative data analysis involves loading the raw data into SPSS using an excel file. After the data has been imported, the SPSS software will proceed to analyze it in a manner consistent with its intended functionality. Commands will be issued in accordance with the requirements of the SPSS software. Subsequently, the outcomes will be efficiently and precisely retrieved in the form of graphical representations and charts. Subsequently, conclusions will be derived from the analysis, ensuring minimal statistical deviation. The results from the quantitative analysis determines the effectiveness of the various independent variables investigated.

4.13 Validity and reliability

Although the words validity and dependability are closely linked, they characterize distinct elements of the gauging tool, according to Sürücü and Maslakç (2020). Generally, a measuring instrument can be reliable without being valid, but it is also likely to be reliable if it is valid. As a result, researchers must test the measuring instrument's validity and reliability.

4.13.1 Reliability

According to Saunders et al., (2015), the reliability of data collection techniques and analytical procedures is a measure of whether they would produce similar results if repeated on a different occasion or by a different researcher. The methods for testing reliability and validity differ

between qualitative and quantitative findings. Internal consistency (homogeneity) was scale reliability, as shown in the following chapter, can be item-to-total correlation, split-half reliability, Kuder-Richardson coefficient, and Cronbach's alpha. To determine the consistency, a scale dependability test will be performed. Heale and Twycross (2015) state that high levels of correlation imply high dependability, while low levels of correlation suggest that the tool may be unreliable.

4.13.2 Validity

According to (Babbie, 2016:133), "validity refers to the extent to which an empirical measure adequately reflects the real meaning of the concept under consideration". The research instrument's validity measures the extent to which it fulfils its intended purpose. Mohajan (2017) argues that validity is concerned with the truthfulness of research findings, whereas reliability is concerned with the stability of research findings. Validity is also concerned with the quality of the instrument used in the data collection process and the achievement of measuring what the researcher intended (Zohrabi, 2013). This research used exploratory factor analysis to assess the construct validity of the items under each of the three constructs for which primary survey data was collected, as indicated in the next chapter.

4.14 Ethical consideration

Louw & Delport (2006) and De Vos et al., (2011) look at ethics as a moral guide that indicates how well researchers met their professional, legal, and societal responsibilities to the study's subjects.

4.14.1 Informed consent

According to Williams et al., (2017), consent must be sought and obtained within a reasonable time frame. Informed consent is the cornerstone of ethical research (Denzin & Lincoln, 2011). Before beginning data collection, it is critical to obtain informed permission. Voluntary participation was addressed by administering consent forms and ensuring that participants comprehended that they could rightfully disengage from the process at any stage with no legal implications. According to Parveen & Showkat (2017), participants have the right to consent to participate in the research, choose to withdraw, or not participate. They further state that participants have the right to stop identifiable data from being published. Consent forms also addressed the voluntary nature of the process by explaining that there was no participation

payment and that the survey results were for academic purposes only. The consent forms Appendix D and participation information sheet in Appendix E

According to Fleming & Zegwaard (2018), existing relationships or prior activities of the researcher may create a conflict of interest. This should be transparently reported in an ethics approval application so that the committee can guide how to manage this conflict of interest. A possible area of conflict that was identified involved sending questionnaires to staff members in an institution where the candidate was employed. Despite being employed in the same institution as some respondents, the candidate was not involved in running the projects for which those staff members were responsible. Furthermore, the respondents were not subordinates to the candidate. The candidate was not in a position of authority, which did not influence any judgements and responses. Therefore, there was no bias in the staff members' responses as they were independent of the candidate. Finally, the ethical clearance application by the candidate was approved by Wits University Ethics Committee. Data collection only commenced once the approval was received from the Departmental Ethics Screening Committee. It is furthermore important that the information sheet and consent form are robust, clear, and well-written.

4.14.2 Confidentiality and anonymity

According to Fleming & Zegwaard (2018), participants' identities must be kept secret or private, and guarantees extend beyond keeping people's identities hidden to avoid using self-identifying statements and information. The research participants' information was securely stored and not shared to maintain confidentiality (Williams et al., 2017). The information gathered from the respondents was kept safe on a password-protected external hard drive. The names of the specific individuals were not disclosed in this study when reporting the information derived from raw data. In the Appendices section, the personal information of the respondents on the consent letters has been blotted out to keep respondents anonymous.

4.15 Chapter summary

This study's research process included defining the research problem, reviewing concepts and theories, and establishing research findings from existing literature. These processes aided in

defining principles and concepts related to retaining professional female talent within the construction industry. The nature of the research problem was most pertinent to pragmatist philosophy, which serves as the philosophical foundation for this study. The pragmatist research paradigm is relevant and valuable because it accepts that single or multiple realities can be investigated empirically. The research adopted a mixed-method approach. The research aim, objectives, and questions all impact the research methodology and design. The significance of reliability and validity in research was discussed.

Chapter 5 Data Analysis and Findings

5 Data Analysis and Findings (Quantitative)

5.1 Introduction to analysis, findings, and discussions

The data collected throughout the research will be reported and discussed in this section, as well as to integrate the research findings with information derived from the literature review. In this chapter, the study continues with the following steps:

(a) Reporting and interpreting findings
(b) Integrating research findings

The statistical findings are presented in an exploratory factor analysis and descriptive and correlational statistics. The chapter presents the results of certain factors' effectiveness on the retention of professional female talent in the construction industry.

5.2 Presentation of respondents' demographics

Table 5.1 shows that from the total of, (n = 147) participants surveyed, the most significant proportion of 57% (n = 84) were males, while the remaining 43% (n = 63) were females, as indicated. The distribution of respondents by age group indicates that the bulk, 45% (n = 66), were aged 30-39, then 40-49, then 28% (n = 41) aged 40-49, suggesting that the composition of professionals in the South African construction industry is dominated by males relative to female counterparts, see Table 5.1. Composition of construction employment by gender as illustrated by the CIDB (2021).

Table 5.1Table Summary of participants' background information

	Number (n)	**Proportion (%)**
A1. Gender		
Female	63	43%
Male	84	57%
A2. Age group (years)		
20 – 29	16	11%
30 – 39	66	45%
40 – 49	41	28%
50 – 59	15	10%
60 – 69	9	6%
A3. Highest level of educational qualification		
Below matric	2	1%
Matric/Grade 12	25	17%
National Diploma	39	27%
Bachelor's degree	26	18%
Honours degree	18	12%
Master's degree	34	23%
PhD	3	2%
A4. Job position		
Quantity Surveyor	1	1%
Engineer	9	6%
Project Manager	8	5%
Programme Manager	30	20%
Architect	10	7%
Other	89	61%

Regarding age, the largest share, equal to 45% (n = 66), were aged 30-39, then 28% (n = 41) aged 40-49. Participants aged 20-29 and 50-59 accounted for 11% (n = 16) and 10% (n = 15), respectively, and those aged 60-69 accounted for the least share, equal to 6% (n = 9) of all respondents. There were visible variations in the distribution of the highest educational qualifications attained by respondents. The bulk, 27% (n = 39), had a National Diploma/post-matric certificate, then 23% (n = 34) had a Master's degree, 18% (n = 26) with a Bachelor's degree and 17% (n = 25) with Matric/Grade 12 certificate. Regarding job positions, the majority 61% (n = 89) were in other positions, while 20% (n = 30) were programme managers, 7% (n = 10) architects, 6% (n = 9) engineers and 5% (n = 8) project managers. The participants job descriptions were taken as follows: Quantity Surveyor- also referred to as cost consultants, play a crucial role in monitoring and controlling the financial aspects of construction projects to guarantee adherence to budgetary constraints. The professionals in question offer estimations of costs and materials, create anticipated budgets, and collaborate with a group, documenting any alterations in design and their impact on expenses. Engineer- An individual whose occupation entails the application of scientific principles to the design or construction of machinery, engines, electrical equipment, as well as infrastructure such as roads, railways, or bridges. Project Manager- is an individual with expertise in managing and supervising construction projects. They collaborate with Engineers and Architects to formulate a comprehensive plan, establish a project schedule, allocate resources, and guarantee the project is completed within the designated timeframe. The responsibilities encompassed under their role encompass the tasks of strategizing, recruiting, terminating, and overseeing personnel.

Programme Manager - oversees multiple construction projects for an organization. Their primary duties include setting programme goals, tasks and timelines, reviewing progress and adjusting as necessary. Architect- typically operate within the realm of the construction sector. The primary duties encompassed by individuals in this role involve the conceptualization and creation of novel architectural structures, the preservation and safeguarding of historical edifices, and the exploration of innovative approaches to maximize the utilization of preexisting buildings.

5.3 Presentation of data and the analysis results, according to research objectives

This section presents the data analysis and results for each of this study's research objectives: 1, 2, 3 and 4. Research objective 1 has already been addressed in the literature review chapter, where the factors of female talent retention were identified from human capital theory, feminist theory, and career development theories. Research objective 2 was then addressed in the qualitative analysis, where the interviewed respondents gave their experiential knowledge on female talent retention initiatives in their respective organisations. This quantitative analysis section is therefore dedicated to tackling research objectives 3 and 4.

5.3.1 Research objective 3

Research objective 3 evaluates the level of effectiveness of currently used strategies to retain female professional talent in the construction industry. Descriptive statistics of these sub-constructs were obtained using SPSS. The descriptive statistics are presented in Table 5.2, 5.3 and 5.5.

5.3.1.1 Management policy

Table 5.2. Descriptive statistics: Management Policy

	N	Level of agreement	Mean	Std dev
CF.MP1 Leadership training for women	147	Very high	**4.11**	1.129
CF.MP2 Leadership development programmes	147	Very high	**4.24**	1.011
CF.MP3 Review of salaries to decrease gender gaps	147	High	**3.97**	1.271
CF.MP4 Female candidate representation on the shortlist for leadership positions	147	High	**3.90**	1.218
CF.MP5. Women recruitment events	147	High	**3.71**	1.222
CF.MP6. Management support	147	Very high	**4.19**	1.094

Responses to questions were based on a five-point Likert scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. Table 5.2 shows the mean responses which indicate that respondents generally agreed (mean ≈ 4) with all questions describing the perceived effectiveness of the management policy in retaining female professional talent in the construction industry. Based on the computed sizes of arithmetic means in descending order, the top half of management policy practices that effectively retain female professional talent include *leadership development programmes* (mean = 4.24), *management support* (mean = 4.19) and *leadership training for women* (mean = 4.11). The remaining bottom half of management policy practices in which the respondents agreed that they effectively retain female professional talent include the review of salaries to decrease gender gaps (mean = 3.90), female candidate representation on the shortlist for leadership posts (mean = 3.90) and women recruitment events (mean = 3.71). The standard deviations ranging between 1.011 and 1.271 across items indicate that discrete responses to the question items did not vary greatly from their average or arithmetic mean responses.

5.3.1.2. Organisational policy

Table 5.3. Descriptive statistics – Organisational policy

	N	**Level of agreement**	**Mean**	**Std dev**
CF.OP1. Diversity training	147	High	**3.92**	1.150
CF.OP2. Paid maternity leave	147	Very high	**4.00**	1.255
CF.OP3. Career development programmes	147	Very high	**4.33**	1.081
CF.OP4. Part-time work	147	High	**3.04**	1.134
CF.OP5. Part-time managerial roles	147	High	**3.27**	1.236
CF.OP6. Networking opportunities	147	Very high	**4.05**	1.119
CF.OP7. Mentoring	147	Very high	**4.30**	1.088
CF.OP8. Women business forums	147	High	**3.82**	1.296
CF.OP9. Child-care facilities	147	High	**3.58**	1.319

CF.OP10. Interviewing women regarding their needs	147	High	**3.80**	1.238
CF.OP11. Keeping in touch with women on maternity leave	147	High	**3.55**	1.294
CF.OP12. Base pay	147	High	**3.71**	1.188
CF.OP13. Working hours	147	High	**3.85**	1.207
CF.OP14. Health benefits	147	High	**3.94**	1.212
CF.OP15. Work environment	147	Very high	**4.24**	1.083
CF.OP16. Organisational culture	147	Very high	**4.21**	1.099

Responses to questions were based on a five-point Likert scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. Table 5.3 mean responses for the total 16 items show that participants generally agreed (mean ≈ 4) with all questions describing the perceived effectiveness of organisational policy in retaining female professional talent in the construction industry. From the total 16 organisational policy practices, the top six items which effectively retain female professional talent include *career development programmes* (mean = 4.33), *mentoring* (mean = 4.30), *work environment* (mean = 4.24), *organisational culture* (mean = 4.21), *networking opportunities* (mean = 4.05) and *paid maternity leave* (mean = 4.00). Health benefits (mean = 3.94), diversity training (mean = 3.92), working hours (mean = 3.85), women business forums (mean = 3.82) and interviewing women regarding their needs (mean = 3.80) come second in effectively retaining female professional talent in the construction industry. Standard deviations between 1.081 and 1.296 across items show that discrete responses to the question items did not vary significantly from their average or arithmetic mean responses.

5.3.1.3 Feminist/gender factors

Table 5.4. Descriptive statistics: Discrimination, patriarchy, and women's position in society

	N	**Level of agreement**	**Mean**	**Std dev**
FGF.D1. Gender discrimination	147	High	**3.18**	1.557
FGF.P1. Cultural affiliation	147	High	**3.25**	1.292
FGF.P2. Patriarchy	147	High	**3.20**	1.298
FGF.WPS1. Women's position in society	147	High	**3.67**	1.201

Responses to questions were based on a five-point Likert scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. Table 5.4 mean responses for the total four items indicate that respondents were generally neutral (mean ≈ 3), except for one item, regarding the effectiveness of discrimination, patriarchy, and women's position in society in retaining female professional talent in the industry. While participants agreed that women's position in society (mean = 3.67) effectively retains female professional talent, they remained neutral regarding whether cultural affiliation (mean = 3.25), patriarchy (mean = 3.20) and gender discrimination (mean = 3.18) affect retention of female professional talent in the construction industry. The standard deviation for the item "gender discrimination" (SD = 1.557) shows significant variation in the responses. In contrast, standard deviations between 1.201 and 1.298 for the other three items show that responses to questions did not vary significantly from their average responses.

5.3.1.4 Human capital factors

Table 5.5. Descriptive statistics: Education and training, and experience

	N	Level of agreement	Mean	Std dev
HCF.ET1. Education and training opportunities	147	Very high	**4.18**	1.073
HCF.ET2. Support of external training (e.g., academic studies)	147	High	**3.99**	1.170
HCF.ET3. Career development programmes	147	Very high	**4.01**	1.194
HCF.E1. Experience	147	Very high	**4.10**	1.133
HCF.E2. Leadership training for women	147	High	**3.82**	1.266

Responses to questions were based on a five-point Likert scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. Mean response statistics for the total 16 items show that participants generally agreed (mean ≈ 4) with all questions describing the perceived effectiveness of human capital in retaining female professional talent. From the total five items measuring human capital, the top three items which effectively retain female professional talent include *education and training opportunities* (mean = 4.18), *experience* (mean = 4.10), and *career development programmes* (mean = 4.01). Standard deviations between 1.073 and 1.266 show that responses to questions did not vary markedly from their mean responses.

5.4 Sampling adequacy statistics

Adequacy of survey item selection was assessed using the Keiser-Meyer-Olkin (KMO) measure of sampling adequacy criteria by subjecting all the retained items to alpha, factoring with the Keiser normalisation procedure following Kaiser (1974). Statistical results on the sampling adequacy of survey items are presented in Table 5.6. The computed overall KMO-MSA value of 0.904 is above the minimum acceptable 0.600 (Chan & Idris, 2017), confirming

the sampling adequacy of items used to describe constructs that effectively retain female professional talent in the construction industry. KMO-MSA scores of the constructs "management policy" (0.833), "organisational policy" (0.917), "gender/feminist factors" (0.773), and "human capital" (0.898) confirm the sampling adequacy of items. The overall Bartlett's test of sphericity chi-square statistic (3765.3, p = 0.00) statistically significant at 1 percent level rejects the null hypothesis that the items' correlation matrix is equal to an identity matrix, indicating that the data diverges markedly from an identity matrix; consequently exploratory factor analysis was indeed appropriate to be conducted.

Table 5.6. KMO-MSA and Bartlett's test of sphericity statistics

Construct	**Description of observed items/variables**	**No of items**	**KMO-MSA**	**Bartlett's test**	
				χ^2	**Sig**
Career development factors – management policy	CF.MP1. Leadership training for women	6	**0.833**	550.06	0.000
	CF.MP2. Leadership development programmes				
	CF.MP3. Review of salaries to decrease gender gaps				
	CF.MP4. Female candidate representation on the shortlist for leadership positions				
	CF.MP5. Women recruitment events				
	CF.MP6. Management support				
Career development factors – Organisational policy	CF.OP1. Diversity training	16	**0.917**	1728.7	0.000
	CF.OP2. Paid maternity leave				
	CF.OP3. Career development programmes				
	CF.OP4. Part-time work				
	CF.OP5. Part-time managerial roles				
	CF.OP6. Networking opportunities				

	CF.OP7. Mentoring				
	CF.OP8. Women business forums				
	CF.OP9. Child-care facilities				
	CF.OP10. Interviewing women regarding their needs				
	CF.OP11. Keeping in touch with women on maternity leave				
	CF.OP12. Base pay				
	CF.OP13. Working hours				
	CF.OP14. Health benefits				
	CF.OP15. Work environment				
	CF.OP16. Organisational culture				
Feminist/ gender factors	FGF.D1. Gender discrimination	4	**0.773**	215.14	0.000
	FGF.P1. Cultural affiliation				
	FGF.P2. Patriarchy				
	FGF.WPS1. Women's position in society				
Human capital factors	HCF.ET1. Education and training opportunities	5	**0.898**	538.85	0.000
	HCF.ET2. Support of external training (e.g. studies)				
	HCF.ET3. Career development programmes				
	HCF.E1. Experience				
	HCF.E2. Leadership training for women				
Total items		31	**0.904**	3765.3	0.000

5.5 Total variances explained

Subsequent to measuring sampling adequacy, the alpha factoring extraction explained an analysis of total variances. The Varimax rotation procedure measured the basic patterns of

observed question items used in this research study. The total variances explained were extracted to assess smaller sets of unobserved (latent) variables or constructs underlying particular variables actually observed or measured to inform validity assessment, thus understanding relations between variables by understanding the constructs underlying them. The alpha factoring extraction criterion was used to maximise the alpha reliability of factors. Results of total variances explained of the constructs are presented in Figure 5.7 to 5.10.

5.5.1 Career development factors – total variances explained

Table 5.7 Total variance explained – management policy (career development factors)

Factor	**Initial Eigenvalues**			**Extraction sums of squared loadings**		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	**4.024**	67.063	67.063	3.637	60.616	**60.616**
2	.712	11.874	78.936			
3	.498	8.295	87.232			
4	.321	5.352	92.584			
5	.274	4.572	97.156			
6	.171	2.844	100.000			
Extraction method: Alpha Factoring.						

Table 5.7 presents the results of the total variances explained by all items measuring the construct "**management policy**". Based on **extracted sums of squared loadings**, the cumulative **60.6%** total variance in the data was accounted for by one factor. Given that merely one factor was extracted in the solution of the final extraction iteration, there was no basis to

perform the detection of a complex structure in the pattern of the dataset's factor loadings. Therefore, all items loaded on the extracted single factor were retained for further analysis.

Table 5.8. Total variance explained: organisational policy (career development factors)

Factor	Initial Eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	**8.972**	56.075	56.075	8.569	53.559	53.559	7.266	**45.415**	45.415
2	**1.257**	7.854	63.929	.838	5.240	58.799	2.141	**13.384**	**58.799**
3	.877	5.483	69.412						
4	.814	5.088	74.500						
5	.634	3.965	78.464						
6	.509	3.180	81.644						
7	.483	3.018	84.662						
8	.448	2.800	87.462						
9	.417	2.606	90.068						
10	.360	2.253	92.321						
11	.282	1.761	94.082						
12	.256	1.602	95.684						
13	.221	1.382	97.066						
14	.204	1.277	98.343						
15	.178	1.113	99.456						
16	.087	.544	100.00						

Extraction method: Alpha Factoring.

Figure 5.8 results from the final extraction iteration indicate the existence of two initial eigenvalues exceeding a unit. As a result, observed items measuring the construct of "organisational policy" were categorised into two factors. The rotation sums of squared

loadings show that about **58.8%** of the total variance in data for the respective construct was explained by two factors. The first factor accounted for 45.4% of the total variance, while the second factor accounted for 13.4%. Since more than one factor was extracted, the structure of items grouped under two factors was assessed for a complex structure based on the pattern of factor loadings.

5.5.2 Feminist/gender factors – total variances explained

Table 5.9. Total variance explained: discrimination, patriarchy, and women's societal position (feminist or gender factors)

Factor	Initial Eigenvalues			Extraction sums of squared loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	**2.615**	65.383	65.383	2.202	55.046	**55.046**
2	.667	16.677	82.061			
3	.376	9.403	91.463			
4	.341	8.537	100.000			
Extraction method: Alpha Factoring.						

Table 5.9 presents the results of the total variances explained by items that measured the construct "**discrimination, patriarchy, and women's position in society**". Based on **extracted sums of squared loadings**, about **55.0%** total variance in the data was accounted for by one factor. Since merely one factor was extracted in the final extraction, there was no empirical logic to conduct the detection of a complex structure in the pattern of the dataset's factor loadings. Subsequently, all items loaded on the extracted single factor were retained for further analysis.

5.5.3 Human capital factors – total variances explained

Table 5.10. Total variance explained: education, training, and experience (human capital factors)

	Initial Eigenvalues			**Extraction sums of squared loadings**		
Factor	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	**3.856**	77.127	77.127	3.575	71.504	**71.504**
2	.388	7.755	84.882			
3	.284	5.680	90.562			
4	.260	5.198	95.760			
5	.212	4.240	100.000			
Extraction method: Alpha Factoring.						

Figure 5.10 above presents the results of the total variances explained by all items measuring the construct "**management policy**". Based on **extracted sums of squared loadings**, the cumulative **71.5%** total variance in the data was accounted for by one factor. Given that merely one factor was extracted in the solution of the final extraction iteration, there was no basis to perform the detection of a complex structure in the pattern of the dataset's factor loadings. Therefore, all items loaded on the extracted single factor were retained for further analysis.

5.6 Factor loading

The factor loadings of observed items under each of the three constructs are presented in figures 5.11 to 5.14. The loadings show correlations between observed items and their analogous factors. Subsequently, a factor loading is statistically a correlation coefficient that indicates the amount of variance explained by an observed item on its relevant factor. Following Awang (2012), factor loadings for newly developed items should exceed 0.5 for each item, while factor loadings for established items should exceed 0.6 for each item under each formulated construct.

Given that this research study used newly developed items, a factor loading threshold of at least 0.5 was therefore used accordingly, and items with loadings less than 0.5 were eliminated from the analysis. Similarly, items which demonstrated a complex structure (items with a score of at least 0.5, which loaded on more than one factor) were eliminated from the analysis. Factor loadings results for the items under each construct are presented in Tables 5.11 to 5.14.

5.6.1 Career development factors – factor loadings

Table 5.11. Factor loadings: management policy (career development factors)

Factor matrix[a]	
	Factor
	1
CF.MP1. Leadership training for women	.750
CF.MP2. Leadership development programmes	**.808**
CF.MP3. Review of salaries to decrease gender gaps	.713
CF.MP4. Female candidate representation on shortlist for leadership positions	**.823**
CF.MP5. Women recruitment events	.743
CF.MP6. Management support	**.826**
Extraction method: Alpha Factoring.	
a. 6 factors extracted. 5 iterations required	

Figure 5.11 factor matrix loadings of items measuring the construct “management policy” all loaded in one factor, showing convergent validity. From the total six items, the top three indicators that had the highest levels of association with their construct are *management support* (loading = 0.826), *female candidate representation on the shortlist for leadership positions* (loading = 0.823), and *leadership development programmes* (loading = 0.808). Leadership training for women (loading = 0.750), women recruitment events (loading = 0.743) and the review of salaries to decrease gender gaps (loading = 0.713) also had high associations with management policy.

Table 5.12 Factor loadings: organisational policy (career development factors)

Rotated factor matrix[a]		
	Factor	
	1	2
CF.OP1. Diversity training	.683	.257
CF.OP2. Paid maternity leave	.627	.234
CF.OP3. Career development programmes	**.790**	.188
CF.OP4. Part-time work	.136	**.713**
CF.OP5. Part-time managerial roles	.269	**.744**
CF.OP6. Networking opportunities	**.812**	.202
CF.OP7. Mentoring	**.774**	.132
CF.OP8. Women business forums	**.727**	.194
CF.OP9. Child-care facilities	.579	.382
CF.OP10. Interviewing women regarding their needs	.672	.345
CF.OP11. Keeping in touch with women on maternity leave	.608	.391
CF.OP12. Base pay	.636	.340
CF.OP13. Working hours	.687	.310
CF.OP14. Health benefits	**.781**	.304
CF.OP15. Work environment	**.831**	.222
CF.OP16. Organisational culture	**.756**	.238
Extraction method: Alpha Factoring. Rotation method: Varimax with Kaiser Normalization.		
a. Rotation converged in 3 iterations.		

Figure 5.12 factor loadings results on items describing organisational policy show that out of the 16 observed indicators, 14 loaded on the first factor, while merely two variables loaded on the second factor. Out of the 14 items that loaded in factor 1, the top six that had the highest association with the construct "organisational policy" include *work environment* (loading = 0.831), *networking opportunities* (loading = 0.812), *career development programs* (loading = 0.790), *health benefits* (loading = 0.781), *organisational culture* (loading = 0.756) and *women business forums* (loading = 0.727). In factor 2, variables highly associated with organisational policy include part-time managerial roles (loading = 0.744) and part-time work (loading = 0.713). The remaining also had significant but relatively low associations.

5.6.2. Feminist/gender factors – factor loadings

Table 5.13 Factor Matrix loadings: discrimination, patriarchy, and women's societal position

Factor matrix[a]	
	Factor
	1
FGF.D1. Gender discrimination	**.714**
FGF.P1. Cultural affiliation	**.843**
FGF.P2. Patriarchy	**.812**
FGF.WPS1. Women's position in society	.567
Extraction method: Alpha Factoring.	
a. 1 factors extracted. 8 iterations required.	

Figure 5.13 factor matrix loadings of items measuring the construct "discrimination, patriarchy, and women's position in society" all loaded in one factor, indicating convergent validity. From the total four items, top three variables that had highest levels of association with their construct include *cultural affiliation* (loading = 0.843), *patriarchy* (loading = 0.812), and *leadership*

gender discrimination (loading = 0.808). Women's societal position had a high but relatively low association (loading = 0.567) or meaningfulness in explaining the respective construct.

5.6.3 Human capital factors – factor loadings

Table 5.14 Factor loadings: education and training, and experience (human capital factors)

Factor matrix[a]	
	Factor
	1
HCF.ET1. Education and training opportunities	**.901**
HCF.ET2. Support of external training (e.g., academic studies)	.820
HCF.ET3. Career development programmes	**.853**
HCF.E1. Experience	**.851**
HCF.E2. Leadership training for women	.800
Extraction method: Alpha Factoring.	
a. 1 factors extracted. 5 iterations required.	

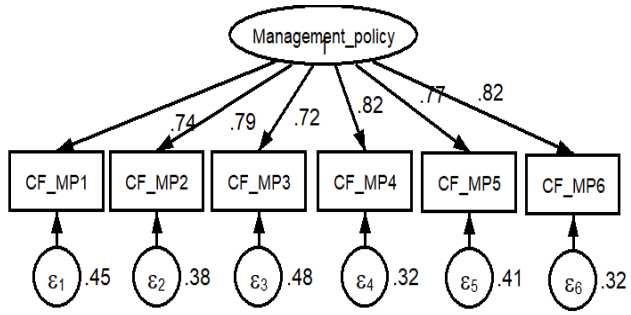
Figure 5.14 factor matrix loadings of items measuring the construct "human capital" all loaded in one factor, showing convergent validity. From the total five items, the top three items that had the highest associations with their construct include *education and training opportunities* (loading = 0.901), *career development programmes* (loading = 0.853), and *experience* (loading = 0.851). Leadership training for women (loading = 0.750) also had a high but relatively the lowest association level with human capital; hence it had low meaningfulness in explaining human capital. The next section discusses confirmatory factor analysis of the observed measurement indicators.

5.7 Confirmatory factor analysis

This section presents estimates of the confirmatory factor analysis (CFA) of the observed items with their relevant associated latent factors on which data were collected from respondents who participated in the survey. The results reported are standardised estimates calculated using the

maximum likelihood (ML) estimation method at 5% significance level. Standardised coefficient estimates for the constructs are presented in Tables 5.15 to 5.18, while the goodness of fit (GOF) statistics results of estimated CFA models for the constructs are presented in Figure 5.1.

5.7 .1 Career development factors: confirmatory factor analysis



Observed measurement indicators:

CF.MP1. Leadership training for women

CF.MP2. Leadership development programmes

CF.MP3. Review of salaries to decrease gender gaps

CF.MP4. Female candidate representation on the shortlist for leadership positions

CF.MP5. Women recruitment events

CF.MP6. Management support

Figure 5.1 Management policy (latent variable) CFA model

Table 5.15 Management policy (career development factors) – CFA estimates

Estimation method		**= ml**			**Obs**	**= 147**
Log likelihood		= -1100.925				
	Coeff.	OIM Std. Err.	z-stat	P > | z |	[95% Conf. Interval]	
Measurement						
CF.MP1 ←						
Management policy	0.683	0.051	13.30	0.000	0.582	0.783
CF.MP2 ←						
Management policy	**0.748**	0.044	**16.90**	0.000	0.661	0.835
CF.MP3 ←						
Management policy	0.732	0.045	15.99	0.000	0.642	0.822
CF.MP4 ←						
Management policy	**0.803**	0.038	**21.05**	0.000	0.728	0.877
CF.MP5 ←						
Management policy	0.737	0.046	15.86	0.000	0.646	0.828
CF.MP6 ←						
Management policy	**0.851**	0.033	**25.73**	0.000	0.787	0.916
var (e.CF.MP1)	0.533	0.070			0.412	0.690
var (e.CF.MP2)	0.439	0.066			0.327	0.591
var (e.CF.MP3)	0.463	0.067			0.349	0.615
var (e.CF.MP4)	0.354	0.061			0.253	0.497
var (e.CF.MP5)	0.456	0.068			0.340	0.612
var (e.CF.MP6)	274	0.056			0.183	0.410
cov(e.CF.MP1, e.CF.MP2)	0.555	0.064	8.57	0.000	0.428	0.682
cov(e.CF.MP4, e.CF.MP5)	0.380	0.087	4.33	0.000	0.208	0.553
LR test of model vs. saturated: chi2 (7) = 16.85, Prob > chi2 = 0.0184						

Table 5.15 presents results indicating that all indicators had significant positive coefficients at 5% significance level; hence they measured what they were intended to measure regarding the latent construct of "**management policy**". Out of all the total six observed measurement items

with statistically significant meaningfulness in measuring management policy, the top three items that had relatively highest associations with management policy include *management support* (coefficient = 0.851; z-statistic = 25.73; $p < 0.01$), *female candidates' representation on shortlists for leadership positions* (coefficient = 0.803; z-statistic = 21.05; $p < 0.01$), and *leadership development programmes* (coefficient = 0.748; z-statistic = 16.90; $p < 0.01$).

These findings confirm that management support, female candidate representation on shortlists for leadership positions, and leadership development programmes are elements of management policy which have the highest positive impacts in ensuring the retention of female professional talent in the construction industry. Despite having relatively low significant associations, *the review of salaries to reduce gender gaps* (coefficient = 0.732; z-statistic = 15.99; $p < 0.01$), *women recruitment events* (coefficient = 0.737; z-statistic = 15.86; $p < 0.01$), and *leadership training for women* (coefficient = 0.732; z-statistic = 13.30; $p < 0.01$) likewise considerably contribute positively to the retention of female profession talent in the construction industry in South Africa.

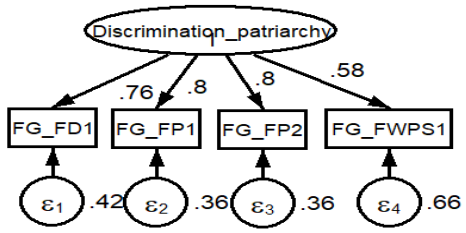
Table 5.16 Organisational policy (career development factors) – CFA estimates

Estimation method		**= ml**			**No. of obs**	**= 147**
Log likelihood		= -2911.32				
	Coeff.	Std. Err.	z-stat	P >|z|	[95% Conf. Interval]	
Measurement						
CF.OP1 ←						
Organisational policy	0.733	0.041	17.86	0.000	0.652	0.813
CF.OP2 ←						
Organisational policy	0.666	0.048	13.67	0.000	0.570	0.761
CF.OP3 ←						
Organisational policy	**0.799**	0.033	**24.18**	0.000	0.735	0.864
CF.OP4 ←						
Organisational policy	0.368	0.073	4.98	0.000	0.223	0.513
CF.OP5 ←						
Organisational policy	0.510	0.063	8.01	0.000	0.385	0.634
CF.OP6 ←						
Organisational policy	**0.839**	0.027	**30.18**	0.000	0.784	0.893
CF.OP7 ←						
Organisational policy	**0.769**	0.036	**20.88**	0.000	0.697	0.842
CF.OP8 ←						
Organisational policy	**0.767**	0.037	**20.70**	0.000	0.694	0.839
CF.OP9 ←						
Organisational policy	0.684	0.046	14.65	0.000	0.592	0.775
CF.OP10 ←						
Organisational policy	0.742	0.040	18.52	0.000	0.663	0.820
CF.OP11 ←						
Organisational policy	0.691	0.046	14.99	0.000	0.601	0.782
CF.OP12 ←						
Organisational policy	0.709	0.044	16.11	0.000	0.622	0.795
CF.OP13 ←						
Organisational policy	0.736	0.040	18.02	0.000	0.656	0.817
CF.OP14 ←						
Organisational policy	**0.816**	0.030	**27.04**	0.000	0.756	0.875
CF.OP15 ←						
Organisational policy	**0.825**	0.028	**28.58**	0.000	0.769	0.882
CF.OP16 ←						
Organisational policy	**0.775**	0.035	**21.58**	0.000	0.704	0.845
var (e.C3.1)	0.373	0.078	4.78	0.000	0.220	0.526
var (e.C3.2)	0.524	0.060	8.68	0.000	0.406	0.643
var (e.C3.3)	0.383	0.074	5.15	0.000	0.237	0.530
var (e.C3.4)	0.374	0.073	5.07	0.000	0.230	0.519
var (e.C3.5)	0.241	0.060	3.98	0.000	0.122	0.359
var (e.C3.6)	0.622	0.051	12.03	0.000	0.520	0.723
LR test of model vs. saturated: chi2 (98) = 183.64, Prob > chi2 = 0.000						

Figure 5.17 results show that all indicators had significant positive coefficients at 5% significance level, and hence all observed items measured what they were intended to measure regarding the construct "**organisational policy**". Seven of these total sixteen items that had significant meaningfulness in measuring organisational policy, the top seven items that had relatively highest associations with organisational policy are *networking opportunities* (coefficient = 0.839; z-statistic = 30.18; $p < 0.01$), *working environment* (coefficient = 0.825; z-statistic = 28.58; $p < 0.01$), *health benefits* (coefficient = 0.816; z-statistic = 27.04; $p < 0.01$), *career development programmes* (coefficient = 0.799; z-statistic = 24.18; $p < 0.01$), *organisational culture* (coefficient = 0.775; z-statistic = 21.58; $p < 0.01$), *mentoring* (coefficient = 0.769; z-statistic = 20.88; $p < 0.01$), and *women business forums* (coefficient = 0.767; z-statistic = 20.70; $p < 0.01$).

Findings confirm that *networking opportunities, working environment, health benefits, career development programmes, organisational culture, mentoring* and *women's business forums* are the elements of organisational policy which have the highest positive impacts in ensuring the retention of female professional talent in the construction industry. Despite having relatively low significant associations with their respective construct, additional elements of organisational policy, which include *interviewing women regarding their needs* (coefficient = 0.742; z-statistic = 18.52; $p < 0.01$), *working hours* (coefficient = 0.736; z-statistic = 18.02; $p < 0.01$), *diversity training* (coefficient = 0.733; z-statistic = 18.17.86; $p < 0.01$) and *base pay* (coefficient = 0.709; z-statistic = 16.11; $p < 0.01$) also significantly contribute positively towards the retention of female profession talent in the construction industry in South Africa.

5.7.2 Feminist/gender factors – confirmatory factor analysis



Observed measurement indicators:

FGF.D1. Gender discrimination

FGF.P1. Cultural affiliation

FGF.P2. Patriarchy

FGF.WPS1. Women's position in society

Figure 5.2 Discrimination, patriarchy and women's position in society (latent variable) CFA model.

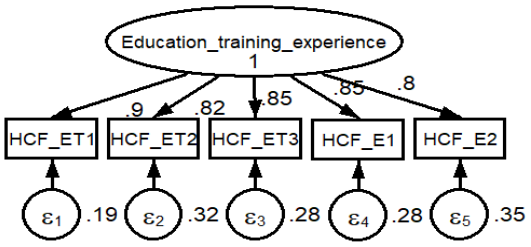
Table 5. 17 Discrimination, patriarchy and women's position in society – CFA model

Estimation method		= ml			Obs	= 147
Log likelihood		= -894.082				
	Coeff.	OIM Std. Err.	z-stat	P > | z |	[95% Conf. Interval]	
Measurement						
FG.FD1 ←						
Discrimination patriarchy	**0.758**	0.046	**16.32**	0.000	0.667	0.849
FG.FP1 ←						
Discrimination patriarchy	**0.797**	0.045	**17.64**	0.000	0.708	0.885
FG.FP2←						
Discrimination patriarchy	**0.801**	0.044	**18.14**	0.000	0.714	0.888
FG.FWPS1 ←						
Discrimination patriarchy	0.578	0.064	9.03	0.000	0.453	0.704
var (e.FG.FDI)	0.424	0.070			0.306	0.588
var (e.FG.FP1)	0.364	0.072			0.247	0.536
var (e.FG.FP2)	0.357	0.070			0.242	0.527
var (e.FG.FWPS1)	0.664	0.074			0.534	0.827
LR test of model vs. saturated: chi2 (2) = 7.35, Prob > chi2 = 0.0253						

Table 5.17 presents results which show that all the observed measurement items had significant and positive coefficients. Subsequently, they measured what they were envisioned to measure with regards to the latent construct "**discrimination, patriarchy and women's position in**

society" relating to feminist or gender issues. Out of all the total four observed measurement items, the top three indicators with the highest associations include *patriarchy* (coefficient = 0.801; z-statistic = 18.14; $p < 0.01$), *cultural affiliation* (coefficient = 0.797; z-statistic = 17.64; $p < 0.01$), and *gender discrimination* (coefficient = 0.758; z-statistic = 16.32; $p < 0.01$). These findings confirm and suggest that reducing and eliminating patriarchy, cultural affiliation, and gender discrimination significantly and positively contributes towards the retention of female professional talent in the construction industry in South Africa.

5.7.3 Human capital factors – confirmatory factor analysis



Observed measurement indicators:

HCF.ET1. Education and training opportunities

HCF.ET2. Support of external training (e.g. academic studies)

HCF.ET3. Career development programmes

HCF.E1. Experience

HCF.E2. Leadership training for women

Figure 5.3 Human capital factors (latent variable) CFA model

Table 5.18 Human capital factors – CFA model

Estimation method	= ml			Obs	= 147	
Log-likelihood	= -894.082					
	Coeff.	OIM Std. Err.	z-stat	P > | z |	[95% Conf. Interval]	
Measurement						
HCF.ET1 ←						
Education, training, and experience	**0.899**	0.020	**43.15**	0.000	0.859	0.940
HCF.ET2 ←						
Education, training, and experience	0.824	0.030	27.06	0.000	0.764	0.883
HCF.ET3 ←						
Education, training, and experience	**0.848**	0.027	**30.89**	0.000	0.794	0.901
HCF.E1 ←						
Education, training, and experience	**0.849**	0.027	**31.33**	0.000	0.796	0.902
HCF.E2 ←						
Education, training, and experience	0.803	0.032	24.37	0.000	0.738	0.868
var (e.HCF.ET1)	0.190	0.037			0.129	0.279
var (e.HCF.ET2)	0.320	0.050			0.236	0.436
var (e.HCF.ET3)	0.280	0.046			0.202	0.388
var (e.HCF.E1)	0.278	0.046			0.201	0.358
var (e.HCF.E2)	0.354	0.053			0.264	0.474
LR test of model vs. saturated: chi2 (5) = 5.22, Prob > chi2 = 0.3897						

Table 5.18 results show that all the indicators had significant positive coefficients, subsequently they measured what they were supposed to measure regarding the construct "**human capital**". Based on the sizes of their coefficients, the top three items that had the highest meaningfulness in measuring human capital include *education and training opportunities* (coefficient = 0.899; z-statistic = 43.15; $p < 0.01$), *experience* (coefficient = 0.849; z-statistic = 31.33; $p < 0.01$), and *career development programmes* (coefficient = 0.848; z-statistic = 30.89; $p < 0.01$). Results show that education and training opportunities, experience, career development programmes, support of external training and leadership

training for women human capital elements all have positive impacts in ensuring retention of female professional talent in the construction industry.

5.8 Goodness of fit statistics

Table 5.19 Goodness of fit statistics

Fit statistic	Description	Construct			
		Management policy	Organisational policy	Discrimination, patriarchy, and women's status in society	Human capital
Likelihood ratio					
chi2_ms (5)	model vs. saturation	16.850	183.641	7.354	5.219
p > chi2		0.018	0.000	0.025	0.390
chi2_bs (10)	baseline vs. saturation	564.793	1817.367	219.885	551.993
p > chi2		0.000	0.000	0.000	0.000
Population error					
RMSEA	Root mean squared error of approximation	0.098	0.077	0.135	0.017
90% CI, LB	Lower bound	0.038	0.060	0.014	0.000
UB	Upper bound	0.159	0.094	0.245	0.117
pclose	Prob RMSEA < = 0.05	0.085	0.007	0.064	0.586
Information criteria					
AIC	Akaike's info criterion	2229.852	5898.646	1804.166	1779.087
BIC	Bayesian info criterion	2271.718	6012.283	1828.089	1808.991
Baseline comparison					
CFI	Comparative fit index	**0.982**	**0.950**	**0.975**	**1.000**
TLI	Tucker-Lewis index	**0.962**	**0.938**	**0.925**	**0.999**
Size of residuals					
SRMR	Standardised root mean squared residual	0.026	0.045	0.034	0.015
CD	Coeff of determination	0.881	0.942	0.844	0.930

Table 5.19 presents results on the goodness of fit statistics of the estimated confirmatory factor analysis model for each latent construct. The chi-square test statistic was significant at level 5 for three constructs, namely management policy, organisational policy and discrimination, patriarchy, and women's status in society. This respective statistic should be insignificant for a good fit, as in the case of the human capital construct. However, Kline (2005) and (Hooper, Coughlan & Mullen, 2008) state that the chi-square statistic is not widely used as a reliable index since it is influenced by several factors which include sample size, omitted variables, data multivariate normality and deviations from normality. In that regard, other absolute and relative fit indexes are reliable measures and were used to assess model goodness of fit of the estimated CFA models for constructs (Hooper, Coughlan & Mullen, 2008).

The RMSEA fit statistics of constructs, reported within the upper and lower bounds of the 90% confidence interval, show the extent to which models optimally chose parameter estimates that fit the covariance populations' matrix (Steiger, 1990). RMSEA estimates for all constructs' models ranging between 0.017 and 0.135 show that models had good fits. Lower bound values of constructs generally lower than 0.05 show that the hypothesis that the models are not fit was rejected, consequently, models had good fits (Kline, 2005). Similarly, the upper bound estimated values correspondingly show the model had good fits (Kline, 2005).

The AIC, Akaike (1974) and BIC (Barret, 2007) statistics are not used to judge model fit in absolute terms, but instead compare the fits of different models, where smaller values show better fits (Hooper, Coughlan & Mullen, 2008). For the CFI and TLI, values equal to and above 0.90 or close to unit show good fit (Hooper, Coughlan & Mullen, 2008). Therefore, CFI and TLI values of all constructs above 0.90 minimum cut-off threshold conclusively confirm good fits of models with the samples observed data (Steiger, 2007). The estimated confirmatory analysis models for the four constructs are therefore fit to conclusively explain the overall model for professional female talent retention in the construction industry in South Africa, as presented by the model in Figure 5.5.

5.9 Scale reliability

The internal consistency or scale reliability of the questionnaire's items was assessed based on the Cronbach's alpha criterion (Cronbach, 1951). Scale reliability test was conducted to assess the degree to which comparable responses could be obtained, should the same questions be probed numerous times under related settings to the same group of participants. Results of the scale reliability of items of the three constructs and sub-constructs measuring the effectiveness of professional female talent retention in the construction industry are presented in Figure 5.23.

Table 5. 20 KMO-MSA and Bartlett's test of sphericity statistics

Construct	**Description of observed items/variables**	**Corrected item-total correlation**	**No of items**	**Alpha value**
Career development factors – management policy	CF.MP1. Leadership training for women	0.699	6	**0.899**
	CF.MP2. Leadership development programmes	0.753		
	CF.MP3. Review of salaries to decrease gender gaps	0.673		
	CF.MP4. Female candidate representation on shortlist for leadership positions	0.773		
	CF.MP5. Women recruitment events	0.707		
	CF.MP6. Management support	0.775		
Career development factors – organisational policy	CF.OP1. Diversity training	0.707	16	**0.945**
	CF.OP2. Paid maternity leave	0.646		
	CF.OP3. Career development programmes	0.767		
	CF.OP4. Part-time work	0.405		
	CF.OP5. Part-time managerial roles	0.537		
	CF.OP6. Networking opportunities	0.793		
	CF.OP7. Mentoring	0.727		
	CF.OP8. Women business forums	0.715		

	CF.OP9. Child-care facilities	0.672		
	CF.OP10. Interviewing women regarding their needs	0.735		
	CF.OP11. Keeping in touch with women on maternity leave	0.698		
	CF.OP12. Base pay	0.702		
	CF.OP13. Working hours	0.733		
	CF.OP14. Health benefits	0.808		
	CF.OP15. Work environment	0.817		
	CF.OP16. Organisational culture	0.761		
Career development	Total number of observed items		22	**0.962**
Feminist/gender factors	FGF.D1. Gender discrimination	.649	4	**0.819**
	FGF.P1. Cultural affiliation	.717		
	FGF.P2. Patriarchy	.708		
	FGF.WPS1. Women's position in society	.514		
Human capital factors	HCF.ET1. Education and training opportunities	.854	5	**0.924**
	HCF.ET2. Support of external training (eg. studies)	.783		
	HCF.ET3. Career development programmes	.811		
	HCF.E1. Experience	.810		
	HCF.E2. Leadership training for women	.765		
Total items			31	**0.943**

Table 5.20 results showing the Cronbach's alpha coefficient ($\alpha = 0.943$) for total thirty-one items which measured the three constructs was above the minimum acceptable ($\alpha = 0.700$) threshold (Cronbach, 1951:311). This result indicates that all items measured the broad

unidimensional construct (retention of professional talent in the construction industry) that was sought to be evaluated in this research study. In the same manner, the Cronbach's alpha coefficients for each of the three constructs (career development factors = 0.962; feminist/gender factors = 0. 819; and human capital = 0.924) indicate reliability of all items which measured these constructs.

5.10 Pearson correlations

This section presents results on Pearson correlation coefficients between factors measuring the effectiveness of professional female talent retention in the South African construction industry. A Pearson correlation coefficient measures the strength of associations between a given pair of variables (Schober, Boer & Schwarte, 2018). In extreme cases, the correlation coefficient lies between ±1. The size (closeness to 0 or 1) of the correlation coefficient indicates the degree, while the nature (positive or negative) shows the direction of association between two variables (Nikolic, Muresan, Feng & Singer, 2012). Regardless of the size and direction of the association, it is essential to note that the presence of association between variables does not imply either causation or relationship between variables in a causal sense. According to Schober, Boer & Schwarte (2018), a traditional approach used in making interpretation of correlation coefficients is as follows: 0.00-0.10 (negligible correlation), 0.10-0.39 (weak correlation), 0.40-0.69 (moderate correlation), 0.70-0.89 (strong correlation), and 0.90-1.00 (very strong correlation).

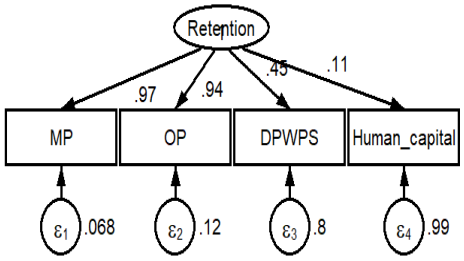
Table 5.21 Pearson Correlations

Correlations					
		Management policy	Organisational policy	Discrimination, patriarchy, and women's position	Human capital
Management policy	Pearson Correlation	1	**.905****	**.431****	.128
	Sig. (2-tailed)		.000	.000	.121
	N	147	147	147	147
Organisational policy	Pearson Correlation	**.905****	1	**.431****	.061
	Sig. (2-tailed)	.000		.000	.462
	N	147	147	147	147
Discrimination, patriarchy, and women's position	Pearson Correlation	**.431****	**.431****	1	.043
	Sig. (2-tailed)	.000	.000		.604
	N	147	147	147	147
Human capital	Pearson Correlation	.128	.061	.043	1
	Sig. (2-tailed)	.121	.462	.604	
	N	147	147	147	147
**. Correlation is significant at the 0.01 level (2-tailed).					

Table 5.21 correlation coefficient results indicate that discrimination, patriarchy, and women's position in society had equal moderate correlations (r = 0.431) individually with management policy and organisational policy at 5% significance level. The significant correlation between management policy and organisational policy (r = 0.905) was considerably high, thus showing the strongest correlation between the respective constructs.

5.11 Professional female talent retention model development (Research Objective 4)

This section presents the analysis procedure used to arrive at the female talent retention model (FTRM) illustrated in Figure 5.4



Observed measurement indicators:

MP: Management policy

OP: Organisational policy

DPWPS: Discrimination, patriarchy, and women's position in society

HC: Human capital

Figure 5.4 Professional female talent retention model – CFA

Table 5.22. Female professional talent retention model

Estimation method	= ml			Obs	= 147	
Log-likelihood	= -667.908					
	Coeff.	OIM Std. Err.	z-stat	P > | z |	[95% Conf. Interval]	
Measurement						
Management policy ←						
Female talent retention	**0.965**	0.037	**25.45**	0.000	0.891	1.039
Organisational policy ←						
Female talent retention	**0.937**	0.037	**24.82**	0.000	0.863	1.011
Discrimination, patriarchy ←						
Female talent retention	**0.450**	0.068	**6.58**	0.000	0.316	0.584
Human capital ←						
Female talent retention	0.109	0.087	1.26	0.000	-0.061	0.279
var (e.MP)	0.067	0.073			0.008	0.566
var (e.OP)	0.121	0.070			0.038	0.381
var (e.DPWPS)	0.796	0.061			0.684	0.927
var (e.HC)	0.988	0.019			0.951	1.026
LR test of model vs. saturated: chi2 (2) = 3.45, Prob > chi2 = 0.1779						

Table 5.22 results on the female professional talent retention model indicate that management policy and organisational policy had statistically significant positive effects on retention of female talent in the construction industry in South Africa. These three constructs therefore measured what they were intended to measure with regards to the "**retention of female professional talent in the construction industry**". Based on sizes of estimated coefficients, *management policy* (coefficient = 0.965; z-statistic = 25.45; $p < 0.01$) had a highest statistically significant and positive effect, followed by *organisational policy* (coefficient = 0.937; z-statistic = 24.82; $p < 0.01$), and *discrimination, patriarchy, and women's position in society* (coefficient = 0.450; z-statistic = 6.58; $p < 0.01$). These findings subsequently confirm that career development, measured by management policy and organisational policy, and reduction or elimination of discrimination and patriarchy in society significantly and positively ensure retention of female professional talent takes place; consequently, these measures are effective in enhancing female professional talent retention in the construction industry.

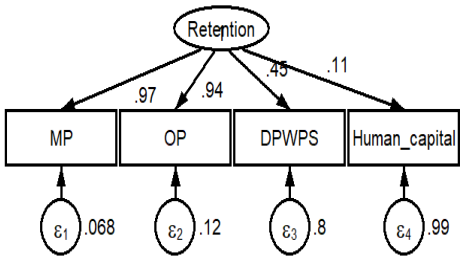
Table 5.23 Female professional talent retention model: goodness of fit statistics

Fit statistic	Value	Description
LR		
chi2_ms (0)	3.453	Model vs. saturated
p > chi2	0.178	
chi2_bs (3)	288.535	Baseline vs. saturated
p > chi2	0.000	
Population error		
RMSEA	0.070	Root mean squared error of approximation
90% CI, lower bound	0.000	
upper bound	0.192	
pclose	0.287	Probability RMSEA < = 0.05
Information criteria		
AIC	1371.816	Akaike's information criterion
BIC	1395.740	Bayesian information criterion
Baseline comparison		
CFI	0.995	Comparative fit index
TLI	0.985	Tucker-Lewis index
Size of residuals		
SRMR	0.015	Standardised root mean squared residual
CD	0.955	Coefficient of determination

According to the findings presented in Table 5.23, the chi-square statistic ($\chi^2 = 3.453$; $p = 0.178$) does not exhibit statistical significance at the 5% level. Additionally, the table indicates that the model successfully aligns with the sample data, thereby confirming that the theoretical specification and empirical model's data were appropriately compatible. RMSEA assesses the

extent to which a model fits the population and not just the sample used for estimation. Browne & Cudeck (1993) state that a lower bound RMSEA value less than 0.05 shows a good fit, while a higher value indicates a poor fit. Hu & Bentler (1999) relax the principle by stating that a RMSEA value less than 0.06 shows a good fit, and a value less than 0.05 is accepted for the model to be considered as a good fit. RMSEA values of 0.01, 0.05 and 0.08 show excellent, moderate and mediocre fit, respectively. Consequently, the RMSEA value of 0.07 shows that the model for the retention model fairly had a good fit. The associated 'p' of close fit (pclose) greater than 0.05 indicates that the model fit is close or good (Kenny, 2014:11). Therefore, a pclose value of 0.287 shows a good model fit for the female professional talent retention model. The CFI value (= 0.995) and TLI value (= 0.985) confirm a good fit of the female professional talent retention model latent construct and observed data used in the model (Steiger, 2007).

5.11.1 Professional female talent retention model development



Observed measurement indicators:

MP: Management policy

OP: Organisational policy

DPWPS: Discrimination, patriarchy, and women's position in society

HC: Human capital

Figure 5.5 Professional female talent retention model – CFA

Table 5.24 Female professional talent retention model

Estimation method	= ml				Obs	= 147
Log-likelihood	= -667.908					
	Coeff.	OIM Std. Err.	z-stat	P > | z |	[95% Conf. Interval]	
Measurement						
Management policy ←						
Female talent retention	**0.965**	0.037	**25.45**	0.000	0.891	1.039
Organisational policy ←						
Female talent retention	**0.937**	0.037	**24.82**	0.000	0.863	1.011
Discrimination, patriarchy ←						
Female talent retention	**0.450**	0.068	**6.58**	0.000	0.316	0.584
Human capital ←						
Female talent retention	0.109	0.087	1.26	0.000	-0.061	0.279
var (e.MP)	0.067	0.073			0.008	0.566
var (e.OP)	0.121	0.070			0.038	0.381
var (e.DPWPS)	0.796	0.061			0.684	0.927
var (e.HC)	0.988	0.019			0.951	1.026
LR test of model vs. saturated: chi2 (2) = 3.45, Prob > chi2 = 0.1779						

Figure 5.29 results on the female professional talent retention model indicate that management policy, organisational policy, and discrimination, patriarchy and women's position in society had statistically significant positive effects on retention of female talent in the construction industry in South Africa. These three constructs therefore measured what they were intended to measure with regards to the "retention of female professional talent in the construction industry". Based on sizes of estimated coefficients, *management policy* (coefficient = 0.965; z-statistic = 25.45; $p < 0.01$) had a highest statistically significant and positive effect, followed by *organisational policy* (coefficient = 0.937; z-statistic = 24.82; $p < 0.01$), and *discrimination, patriarchy, and women's position in society* (coefficient = 0.450; z-statistic = 6.58; $p < 0.01$). These findings hence confirm that career development which is measured by management policy and organisational policy and reduction or elimination of discrimination and patriarchy

in society significantly and positively ensure retention of female professional talent, consequently these measures are effective in enhancing female professional talent retention in the construction industry.

Table 5.25 Female professional talent retention model: goodness of fit statistics

Fit statistic	**Value**	**Description**
LR		
chi2_ms (0)	3.453	Model vs. saturated
p > chi2	0.178	
chi2_bs (3)	288.535	Baseline vs. saturated
p > chi2	0.000	
Population error		
RMSEA	0.070	Root mean squared error of approximation
90% CI, lower bound	0.000	
upper bound	0.192	
pclose	0.287	Probability RMSEA < = 0.05
Information criteria		
AIC	1371.816	Akaike's information criterion
BIC	1395.740	Bayesian information criterion
Baseline comparison		
CFI	0.995	Comparative fit index
TLI	0.985	Tucker-Lewis index
Size of residuals		
SRMR	0.015	Standardised root mean squared residual
CD	0.955	Coefficient of determination

Table 5.25 results showing the chi-square statistic ($\chi^2 = 3.453$; $p = 0.178$) not significant at 5% level shows that they did model fit the sample data sufficiently and confirms that the theoretical specification and data used in the empirical model had a perfect fit. RMSEA assesses the extent to which a model fits the population and not just the sample used for estimation. Browne & Cudeck (1993) state that a lower bound RMSEA value less than 0.05 shows a good fit, while a higher value indicates a poor fit. Hu & Bentler (1999) relaxes the principle by stating that a RMSEA value less than 0.06 shows a good fit, and a value less than 0.05 is accepted for the model to be considered as a good fit. RMSEA values of 0.01, 0.05 and 0.08 show excellent, moderate and mediocre fit, respectively. The RMSEA score of 0.07 indicates that the retention model exhibits a reasonably satisfactory fit. The associated 'p' of close fit (pclose) greater than 0.05 indicates that the model fit is close or good (Kenny, 2014:11). Therefore, a close value of 0.287 shows a good model fit for the female professional talent retention model. The CFI value (= 0.995) and TLI value (= 0.985) confirm a good fit of the female professional talent retention model latent construct and observed data used in the model (Steiger, 2007).

The retention model was developed using findings from both qualitative & qualitative findings. The themes that emerged in qualitative data analysis formed part of the framework that falls under establishment where mentorship and networking are the two most important variables in retaining outstanding professional talent in the construction industry. The findings also suggests that the hiring of additional women in mentorship and leadership roles is supported as a necessary remedy for the prevailing male culture in the construction industry. The findings identified these strategies as the most successful means of promoting inclusiveness and facilitating professional advancement. The facilitation of mentorship by female role models as agents of change would contribute to the advancement of women's careers and foster their retention in the construction industry. Another theme that emerged from qualitative findings that is incorporated in the framework is work life balance where flexitime is retention factor that contribute to female talent staying in the industry. Additionally, qualitative findings revealed that the absence of work-life balance policies, characterized primarily by role ambiguity, inflexible and extended working hours, and task overload, led to heightened work-life conflict and had adverse effects on female retention talent within the construction industry.

The qualitative analysis revealed that institutionalized work practices, including inflexible and extensive work hours, were identified as the primary obstacle hindering women's retention in the industry and a significant factor in contributing to their early departure from the industry. Participants with flexitime in their jobs expressed a higher degree of satisfaction and retention because flexible work hours allowed them to balance their work-life better. The qualitative findings also revealed that efforts and policies addressing gender disparity and discrimination in the construction industry must be robust and flexible which falls under equality and diversity theme. The qualitative findings align with the existing literature review, suggesting that gendered norms and behaviours, such as extended work hours, should be given priority when formulating a policy aimed at achieving gender equality. This was also incorporated in forming the retention framework.

In quantitative findings, results on the female professional talent retention model indicate that management policy, organisational policy, and discrimination, patriarchy and women's position in society had statistically significant positive effects on retention of female talent in the construction industry in South Africa. This formed part of retention model in form of the establishment which starts at the graduation level when the female talent enters the industry where organisational and management policy must come to effect in ensuring they are retained from the beginning. These three constructs therefore measured what they were intended to measure with regards to the "retention of female professional talent in the construction industry". Based on sizes of estimated coefficients, management policy (coefficient = 0.965; z-statistic = 25.45; $p < 0.01$) had a highest statistically significant and positive effect, followed by organisational policy (coefficient = 0.937; z-statistic = 24.82; $p < 0.01$), and discrimination, patriarchy, and women's position in society (coefficient = 0.450; z-statistic = 6.58; $p < 0.01$). These findings subsequently confirm that career development and reduction or elimination of discrimination and patriarchy in society significantly and positively ensure retention of female professional talent take place, consequently these measures are effective in enhancing female professional talent retention in the construction industry. The framework places importance on early and deliberate efforts to ensure successful female recruitment to the construction industry from a young age, after high school, during tertiary studies. The central importance however is on the retention stages after females have been successfully recruited.

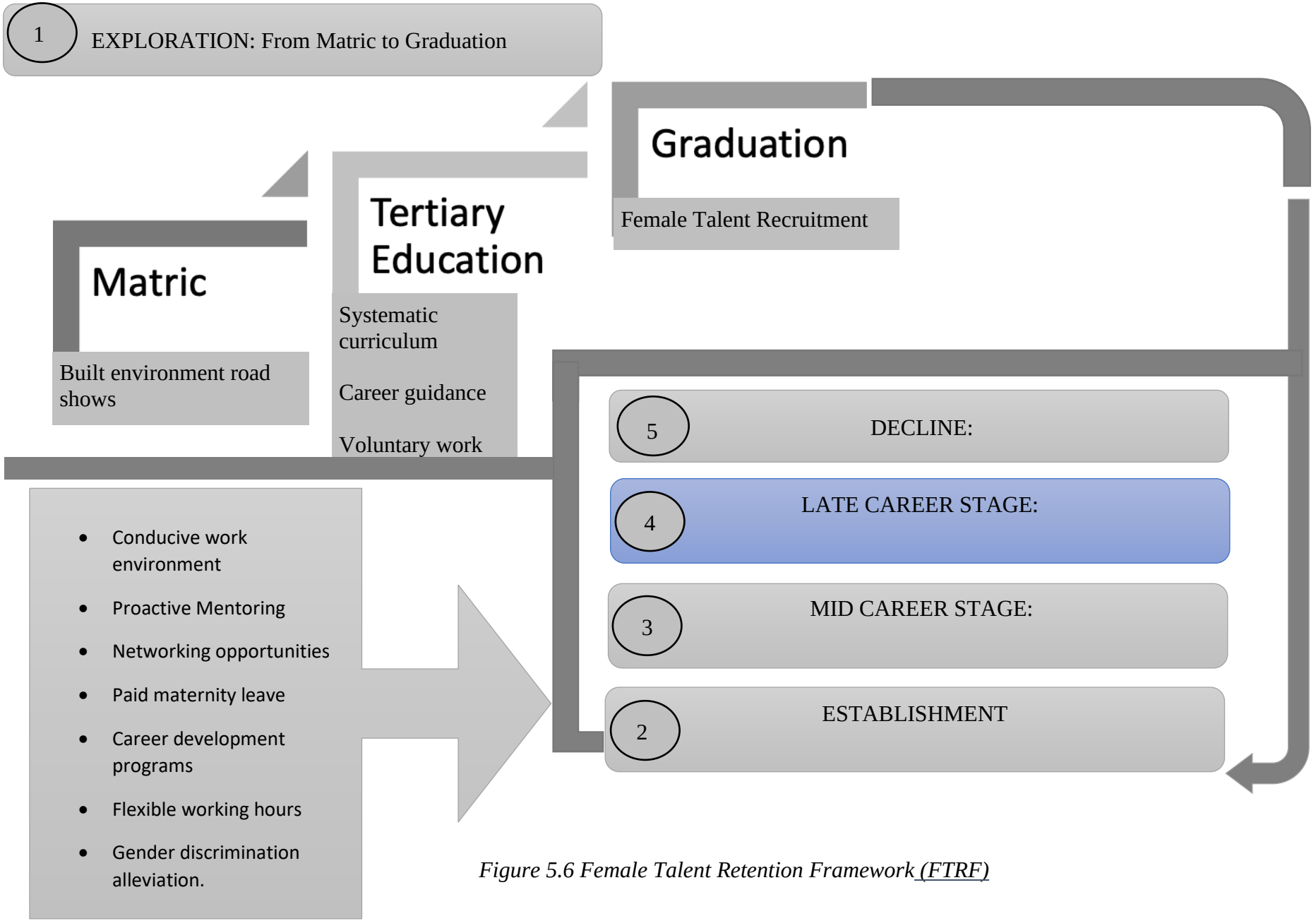


Figure 5.6 Female Talent Retention Framework (FTRF)

5.12 Findings and discussion

Regarding demographics, participants of the survey were predominantly male (57) with female demographic composition at 43%. The majority of respondents either held a B-Tech or National Diploma and Master's degrees. Although this is a positive indication of preparation for recruitment, further steps must be taken by professionals to attain the highest qualification possible. The construction sector presents obstacles for women seeking entry into the field, and those who successfully navigate these barriers have hurdles in achieving equitable treatment, equal opportunity, and career advancement comparable to their male counterparts (Rosa et al., (2017). Within the construction industry, there exists a notable disparity between the representation of women and men, with women predominantly occupying lower to medium positions rather than top roles (Morello, 2018). This discrepancy suggests an inherent gender-based inequality within the industry. According to Amaratunga et al., (2020) the construction industry is also characterized by a prevailing masculine culture, wherein male values are prominently displayed through extended working hours, frequent travel, geographical instability, and a highly competitive environment. These factors collectively contribute to the industry's lack of appeal to women, subsequently resulting to low numbers of retention of female professionals within the construction industry.

From the data analysis leadership development programmes, management support and leadership training for women emerged as the most significant factors to consider in enhancing the retention of female talent professionals in the construction industry. Each of these factors contributes to the development of females in the aspect of leadership. The role of leadership development programmes and leadership training for females is to prepare them for career progression. According to Kolosa (2022), executives within the South African construction industry possess a substantial responsibility in promoting, overseeing, and enhancing diversity within the sector. The study additionally suggests that the implementation of leadership management and the integration of diversity through workforce diversity management have a positive impact on creativity within construction organizations.

However, the purpose of leadership training and development programmes can only benefit female talent retention if these skills, once taught, are operationalised in higher management positions. It is therefore important to ensure that female talent have access to higher management positions. Also, the leadership development programme and leadership training

are complemented by management support, which should exist as a support structure for female career development and retention. Policies in organisations should focus primarily on firstly creating a conducive working environment for female talent. Secondly, career development programmes should also exist as previously discussed. The aspect of career development programmes is broad and thus covers leadership training and development programmes for women, which have already been discussed. Mentoring is another critical must-have for enhancing female talent retention. Mentors must be adequately trained and experienced to pass on new knowledge. Mentoring is essential for giving women the self-confidence and skills they need to achieve job progress and promotions. Mentoring is an important tool for professional development; yet, finding female mentors can be challenging for women construction sector role models or mentors.

5.13 Meaning of the results in relation to research objectives

Identifying the various career development factors necessary for female talent retention uncovered the various factors that organisations should consider. Since the factors were identified from existing studies and from human capital theory, feminist theory, and career development theories, a comprehensive coverage of identification of factors was achieved. The meaning of the results obtained in evaluating the level of effectiveness of currently used strategies for female professional talent retention in the construction industry gives an idea of the various aspects that organisations should focus on to ensure that female talent retention is effective. Management support, female candidate presence on leadership shortlists, and leadership development programmes are management policy aspects that have the greatest beneficial influence on guaranteeing the retention of female professional talent in the construction sector. Furthermore, the findings confirm that networking opportunities, working environment, health benefits, career development programmes, organisational culture, mentoring, and women's business forums are the organisational policy elements that have the greatest positive impact on retaining female professional talent in the construction industry. Reducing and eliminating feminist/gender-related factors such as patriarchy, cultural affiliation, and gender discrimination significantly and positively contributes to the retention of female professional talent in ensuring the implementation of the previously mentioned management and organisational policies. The findings obtained from this study confirms some of the findings from existing studies covered in the literature review chapter.

5.14 Comparison of results and meaning with findings from extant literature

The demographics of the respondents having reflected the current state of female talent involvement in the construction industry, as mentioned earlier in section 2.12**,** mirrors the statistics provided by StatsSA (2021) and CIDB (2021), which record a significantly higher percentage of labour absorption of men (43.1%) as compared to females (32.4%). As stated in literature, the CIDB (2021) recorded that the construction sector employed roughly 1 222 000 individuals at the end of 2021 Quarter 2, with 87% of men and 13% of women (employment rates). Consequently, more effort is required from built-environment related organisations to ensure that female talent retention occurs to bridge the recruitment and retention rates between men and women construction professionals.

The identified factors achieved by research objective 1 prove that employee satisfaction lies in ensuring employee satisfaction and the career growth of females in the construction sector. The perceptions of the respondents are indicative of this since they provided their perspective as to the factors organisations should focus on if they want to achieve female talent retention. The factors that were identified and analysed relate closely with the findings of Döckel (2003), who discovered eight essential retention variables that employers must address to keep individuals with advanced technical abilities. Because of the skills shortage in the construction industry, retaining qualified staff is vital. Another strategy for addressing the construction sector's skills deficit is to provide training and development opportunities, as well as supervisor behaviour support/feedback in the form of mentoring and career prospects. These qualities must be provided in a work environment that is favourable to female talent retention and provides females with the tools they need to prosper in built environment-related careers. Da Kundu (2017) argues that employee retention is positively related to a supportive work environment. Yet, it is critical that the work environment be defined by non-discriminatory policies, primarily with the removal of the glass ceiling, because it would be pointless to give leadership training and development for females only to prohibit them from obtaining leadership roles.

Female talent retention as per the findings of this study points to the importance of give-and-take relationship between female employees and their organisations. Employee satisfaction is therefore a prerequisite to employee talent retention, which is why a conducive working environment is necessary. This study therefore advances that the occurrence of the leaky pipeline phenomenon, which occurs between the times of female graduation to recruitment and employment. Men tend to have an upward career projection without the career breaks or periodical hindrances that females go through during their career progression. As indicated in

literature by Gurjao, (2011) progression of female talent remains hindered by family commitments.

Data Analysis and Findings (Qualitative)

5.15 Introduction to analysis, findings, and discussions (qualitative)

This chapter presents the qualitative and quantitative data analysis, findings, and discussions for this study. It describes the tools and procedures used to analyse the data from interviews via thematic analysis.

5.16 Description of analytical procedure followed in the research and steps

The purpose of the interviews was to gather information about the experiences of women working in the construction industry in terms of the effectiveness of retention strategies. Part of the study interviews were conducted with female professionals within the construction sector. The participants were from both the private and public sector, lectures, quantity surveyors, engineers, programme managers, project managers, project directors and social facilitators. Semi-structured interviews offer researchers a significant degree of adaptability and facilitate the acquisition of relevant data (Pathak & Intratat, 2012). Based on the works of Gray (2014) and Eriksson & Kovalainen (2016), it is observed that in a semi-structured interview, the researcher has the ability to provide guidance to the respondent while also allowing them the liberty to elaborate on subjects that they deem significant to the study. Due to the interviewer's ability to keep some degree of uniformity across questions, this strategy was considered suitable for this study. Additionally, it gave the professional women who play key roles the freedom to share their insights and experiences from working in the building sector, including the opportunity to raise problems that the scholar may not have noticed. Probing is a technique that was adopted for in-depth interviews to assist in gathering raw data from interviewees. According to Gray (2014), probing questions are those that help the interviewer understand what the interviewee is saying; for example, in this study, clarification of effectiveness and retention is important. Probing was essential for establishing trust and reducing misunderstandings among the women, who shared their experiences working in the construction sector. A purposive sampling was adopted for the study. This sample was chosen because its purpose was to reach a specific group as they possess knowledge that cannot be obtained anywhere else. The following criteria were used to select participants for this study. Participants should be: 1) Currently serving as a top executive in the construction industry; 2) have more than five years of industry experience; and 3) possess a formal Built Environment

related qualification. The participants were selected via an advertisement from SACPCMP (South African Council for the Project and Construction Management Professions). A total of fifteen women were interviewed online via Microsoft Teams due to the Covid-19 pandemic & lockdown at that time (2021-2022). The data collection process took place between December 2021 and May 2022. An ethics clearance approval was obtained from the University Ethics Committee prior to any data collection. The procedure was explained to the participants, and an interview guide was emailed to them. Interview appointments were scheduled and communicated to participants in advance so that they would know what to expect and when they would need to participate. Permission was requested from the participants to record the session. To ensure interviewee anonymity, representative descriptors such as P1, P2, P3 were used.

The data was analysed using thematic analysis. NVivo software 12 was used to organize, analyze, and discover insights in qualitative data in order to generate relevant study findings Thematic analysis is "a technique for detecting, analyzing, and reporting patterns (themes) in data" (Braun and Clarke 2006:79). According to MacQueen & Namey (2014) The researcher's role in the thematic analysis is to read and review the material or data with the goal of finding specific phrases, recurrent patterns, and themes that are considered important to solving the research query. The study adopted an analytical process from the work of Braun and Clarke (2006).

The participants were asked to provide their voluntary consent to participate in the interview and have it recorded after obtaining Ethics clearance from the university. The participants' identities were kept anonymous, and no personal information was shared with any external entities. The participants were also informed that they had the freedom to discontinue their participation in the interview at any time, should they want to do so. According to Daniel (2017), having an interview recorded and transcribed can help you remember what was said without having to rely on the respondent's imperfect memory. By listening to and transcribing each interview recording, the researcher became acquainted with the information gathered. The researcher used active listening before transcribing to better understand the key topics covered in each interview. Recordings and written notes were analysed using thematic analysis. The constructivist research paradigm works well with thematic analysis because meaning-making plays such a pivotal part in shaping the next and interpretation of codes and themes, Byrne (2021). The process involved establishes common themes and codes. As part of phase 1, to

gain a better understanding of what the interviewees were saying, raw data was transcribed (repeated listening and re-taking notes). Step two of the study involved categorising the converted of familiar text to codes that reflected recurring ideas and trends. The third phase involved codes from phase 2 being grouped into common themes. In phase 4, the themes were assessed if they met the standard of answering to research objectives. Phase 5 refined the themes the researcher developed as a result of their perceptions of frequent patterns found in the first codes. To make sense of the data and draw meaningful conclusions, especially for professional women in the construction industry, the researchers decided to use thematic analysis because the interviewees in this study shared personal stories about their own experiences. The philosophical stance and theoretical framework of this study were informed by feminism theory.

5.17 Presentation of respondents' demographics

Table 5.26 Demographics of interviews

Participants	**Age**	**Sector**	**Family status**	**Qualifications**
Participant 1	30 – 39	Private sector (PM)	Single,no children	National Diploma: Civil Engineering
Participant 2	40 – 49	Private sector (PM)	Divorced, 2 children	BSc: Civil Engineering
Participant 3	40 – 49	Private sector (Academia)	Single,no children	PhD: Construction Project Management
Participant 4	30 – 39	Private sector (Director)	Married, 2 children	BSc: Construction Management
Participant 5	40 – 49	Private sector (Director)	Married, 1 child	BSc: Civil Engineering
Participant 6	40 – 49	Private sector (Academia)	Single,no children	MSc: Construction Project Management
Participant 7	30 – 39	Private sector (Engineer)	Single,1 child	National Diploma: Civil Engineering
Participant 8	30 – 39	Private sector (PM)	Single,no children	BSc: Quantity Surveying
Participant 9	30 – 39	Public sector (Director)	Single, 2 children	MSc: Construction Project Management
Participant 10	30 – 39	Public sector (QS)	Divorced, 1 child	MSc: Property Development
Participant 11	30 – 39	Public sector (SF)	Single, 1 child	MSc: Development Studies
Participant 12	40 – 49	Public sector (PM)	Widow,4 children	National Diploma: Quantity Surveying
Participant 13	40 – 49	Public sector (QS)	Married, 2 children	BSc: Quantity Surveying
Participant 14	40 – 49	Public sector (QS)	Married, 2 children	National Diploma: Quantity Surveying
Participant 15	40 – 49	Public sector (PM)	Single, no children	MSc: Construction Project Management

This study' identified and targeted population comprised professional women working senior roles in the construction industry, as demonstrated above in Table 5.26 This entailed project managers, programme managers, social facilitators, lecturers, quantity surveyors and engineers. The qualifications of participants ranged from National Diploma to PhD level. The

participants worked within the private and public sector. Four of the participants were civil engineers, five were quantity surveyors, three were project managers, one being a social facilitator, one being a lecture, and the last one being a programme manager. Regardless of their qualifications, some participants were working as project managers, for instance most quantity surveyors were working as directors or project managers. All participants had more than five years' experience working within the construction industry. This meant that respondents exhibited a high level of familiarity with the study's topic during interviews. All the respondents held vital roles in their organisations, ranging from operations to senior management, allowing the study to capture an accurate vision of construction industry. The family status was also part of the demographics because if women are juggling work and family, it affects their work life. Married women, single women, and single mothers made up the research sample. The participants' age group ranged from 31 to 48 years old.

5.18 Presentation of data and the analysis of the results, according to the research objectives

Table 5.27 Research objectives

Research objectives	**Research question**	**Purpose of information**
1.To identify factors contributing to female professional talent retention in the construction industry.	1. What factors contribute to the retention of professional female talent in South Africa?	1.Establish factors that contribute to women staying for longer in their positions
2.To determine the possible practices in organisations that support the retention of female professional talent in the construction industry.	2. What strategies do organisations implement to retain professional female talent in the construction industry in South Africa?	2. Acquiring knowledge regarding the existence of policies or programmes aimed at retention of women in organisations.
3.To evaluate the effectiveness of currently used strategies to retain female professional talent in the construction industry.	3. How effective are the strategies employed by organisations to retain female professional talent in the construction industry in South Africa?	3.Obtaining experiences of female professionals on how impactful the retention strategies have been in contributing to their career development. To determine if these strategies exist in other organisations.
4.To develop a framework for retaining female professionals in the construction industry.	4.Combination of questions 1, 2, 3	4. Compiling of recommendations for retention of professional female talent in the construction industry to curb the leaky-pipe phenomenon.

The interview design strategy is shown in Table 5.27. It categorises the study's interview process, which is divided into three major areas. The first column in Table 5.27 represents the area under investigation, which includes the study's four research objectives. The second column is the means of obtaining information through research questions that were broken down in the semi-structured interview questions. The final column, Purpose of information, communicates the anticipated outcomes of the questions asked of the interviewees during the interview.

5.19 Main interview themes

The literature review and theoretical framework chapters shaped the themes of this study, emphasising the importance of retention and its benefits if achieved. The emergent themes were extrapolated from analysing individual interviews. The thematic analysis approach followed a 6-process approach which entailed, 1) familiarization; 2) coding; 3) generating themes; 4) reviewing themes; 5) defining and naming themes; and 6) reporting. This approach was adopted from, Braun & Clarke (2008). Furthermore, the significance of retention is also emphasised in the way it is implemented. As a result, the nature of retention necessitates elements such as:

Networking and mentorship
Training
Work-life balance
Elimination of discrimination
Equality and diversity
Performance and transparency

Table 5.28 Themes identified

Themes description	Participants' views
1. Mentorship and networking	According to the survey's respondents, the construction industry is aware of the negative effects that a lack of mentorship has on the careers of women in the field, but it doesn't see a pressing need to do anything about it, even though there are many qualified women who are stuck in lower-level management positions. When it comes to keeping talented women in the construction industry, mentorship and networking rate highest ranked factors in retention.
2. Equality and diversity	Respondents indicated that organisations should adopt an equal treatment approach, where women and men are treated the same in terms of being paid the same salaries and access to opportunities.
3. Performance and transparency	A key performance indicator for all individuals, combined with a transparent feedback system, provides a structured mechanism for strong relationships within an organisation and is a solid foundation for employee retention and development.
4. Work-life balance	Participants with flexitime in their jobs expressed a higher degree of satisfaction and retention because flexible work hours allowed them to balance their work-life better. Some respondents claimed that the inability to arrange their job schedule around caring for their children slowed down their careers.
5. Elimination of discrimination	Due to stereotypical beliefs about women's roles and inability to succeed in construction, participants were frequently made to feel unwelcome or different. Most participants felt that effective policies that address gender discrimination within the Built Environment industry would assist with their retention and longevity in their chosen careers.
6. Training	Participants perceived continuous training and development as the top factor that is effective in deciding to stay within the organisation. Training and development of employees is the instrument that not only enhances the competencies required to perform a job, but also helps individuals feel more satisfied with the results of their performance. Enhanced competencies result in increased productivity and retention.

5.20 Identifying factors contributing to female professional talent retention in the construction industry

The retention of employees is influenced by various elements, commonly referred to as employee retention factors (ER factors). These factors encompass compensation, training and development, promotion chances, work-life balance, and managerial support. They are crucial in the effort to keep employees and deter them from pursuing alternative job prospects. Retention tactics encompass concrete strategies implemented in practice to keep employees, such as performance bonuses, childcare subsidies, and maternity benefits.

This question was created to answer the first research question, which is related to the first research objective. In this section, the participants were required to provide strategies/factors they deem to have the highest influence when it comes to retaining professional females within the construction industry. They were required to answer under three topics, namely: career development factors, feminist/gender factors, and human capital factors.

5.20.1 Career development factors

Career development factors offer a view on how to assists employees with individual needs, hierarchy fit within the organisation and some career counselling in the process. According to Patton & McMahon (2001) career development is the process of tackling life, work and self-development over one's lifespan. In this section, the participants were required to provide strategies that are implemented by their organisation to retain female professionals and/or factors that they perceived to influence the retention of female professionals in their organisation. Their views were recorded and paraphrased as follows:

P6, P15, P8: *Based on my extensive professional tenure spanning two decades within the construction sector, it has come to my attention that a significant number of organizations lack comprehensive policies aimed at retaining female employees. This deficiency is a critical area of concern. There is potential for further enhancement in the realm of career development support methods, specifically with regard to the implementation of job assistance, mentorship, coaching, and job shadowing initiatives tailored towards senior positions. It is evident that the support in my organization is lacking. It is evident that they possess the potential for greater achievements. Several organizations have initiated this practice, primarily as a reactive measure to fulfil the requirements of black economic empowerment (BEE) and just to meet compliance criteria. The extent of initiatives undertaken by organizations to retain female*

experts in the construction industry is significantly restricted. It is imperative for organizations to implement targeted attention, training initiatives, and policies that particularly address the underrepresentation of females within the industry.

P4, P9, P7: *My current organization lacks any retention initiatives, such as training and mentoring programs. Throughout my decade-long tenure in the sector, I have not received any form of coaching or mentorship from any of my employers. Historically, gender has not been correlated with any form of professional progression. Nevertheless, while considering the determinants that contribute to job security, I would advocate for the implementation of training and mentoring programs.*

P6, P9, P10, P13: *"Mentorship/sponsorship can definitely be identified as what can retain me within an organisation long term."*

P2, P3: *My current organization lacks any retention initiatives, such as training and mentoring programs. Throughout my decade-long tenure in the sector, I have not received any form of coaching or mentorship from any of my employers. Historically, gender has not been correlated with any form of professional progression. Nevertheless, while considering the determinants that contribute to job security, I would advocate for the implementation of training and mentoring programs.*

P4, P14: *"My current employer has a share bonus scheme that you can cash out at five-year intervals; they are designed to keep you on board. This encourages you to stay for a longer period. This, however, is intended for all employees. Mentorship toward a leadership role in the future will undoubtedly be a factor in keeping me in the organisation long term."*

P8, P12: *The executive and middle management positions I have held over the course of the past 16 years have been significantly dependent on the implementation of Broad-Based Black Economic Empowerment (BEE) policies inside the several organizations. BEE regulations are the policy that guides their retention of female employees. The majority of these strategies only focus on the recruitment of black female employees, while neglecting to address the issue of employee retention. The BEE scorecard focuses on the recruitment of a specific quota of female executives, while neglecting the aspect of employee retention.*

P14, P1, P11, P12: *"There is a diversity and inclusion policy. It is not limited to women. It examines differences in religion, culture, sexual orientation, etc. I am uncertain as to whether this is part of the retention strategy for the organisation."*

P1: *"When I joined the organisation, a mentor was assigned to me because I had expressed interest in obtaining professional registration as an engineer. This request was made during*

my initial interview. And this has made such a difference in my career advancement. However, the organisation did not have a formal retention strategy."

P5: *"I've been asked to complete a training sheet in which I list courses that contribute to my professional development. This is a clear indication to me that the organisation values employee retention."*

All of the 15 of the participants indicated that there were no strategies in place within their organisations specifically aimed at their retention. However, they did mention that the existence of BEE as a form of legislation had assisted the organisation in facilitating their advancement. There were also mixed feelings about BEE; for instance, P6, P15, and P8 felt that BEE is a 'tick box' exercise for most organisations, and it does not bear any fruits for professional women in junior and middle management. They also indicated that some dishonest employers in SA are using unqualified black women as a front to earn BEE points but are failing to promote and assign management and leadership positions to them.

Findings revealed that 11 out of 15 professional women working in construction perceived the provision of a mentor within their organisation to be one of the biggest influences in terms of retention. These participants did elaborate further on how mentorship has provided them with in-depth knowledge about the construction industry. P 1 mentioned how great it feels to have someone share ideas and give advice, especially when they have been through a similar experience to your own. Three out 15 mentioned how the share scheme bonuses based on performance had been one factor that kept them in their positions for longer. Training was ranked as the main factor that contributes to retention. P5, P4, P9, and P7 (four out of 15 participants) mentioned how training has enhanced their skills and given them confidence in their positions. They indicated that this is the highest-ranking factor that influences their retention. Six out of 15 participants did elaborate on how networking had played a major role in providing access to opportunities they had never thought of before.

5.20.2 Feminist factors

'Feminist factors' refers to the attempt to comprehend the nature of gender inequality in terms of female and male roles in society, as well as their interests and experiences. According to Bell (2010) and Hekman (2015), feminism is concerned with autonomy, which refers to allowing individuals regardless of their gender, social or economic class, racial profile, religious beliefs, or sexual orientation to achieve full self-actualisation and create a cherished

community, living together, and discovering dreams, particularly those relating to justice and freedom. The participants shared their views as follows:

P6: "*When it comes to deployment to specific construction projects, some females will not be deployed. The reason will be the high technicality of those projects. As a result, you will encounter a lot of passive resistance, where females are overlooked. In some cases, there will be direct discrimination, in which females are discriminated against because of their gender. They may be told that they cannot participate in a mining project."*

P8, P9, P13, P14: *Gender prejudice has historically been observed in the allocation of projects to female individuals. Another aspect of concern in management roles pertains to the advancement of women into leadership positions. Women surpass men in these leadership roles. This observation pertains to the issue of women's underrepresentation in promotion opportunities. They are often disregarded due to their potential for pregnancy, which necessitates taking maternity leave.*

P15, P2, P13: *"There is gender bias in the projects assigned to women. The rationale is that women require fewer complex projects due to their gender and the perception that they cannot handle the complexities associated with delivering large infrastructure projects. And racial discrimination is always passive because it is invisible. There will be snide remarks about the commitment of black women to careers in marketing or fashion. Working for an organisation that does not tolerate passive or active discrimination will be an effective retention strategy for retaining women."*

P1: *"Elimination of patriarchy and discrimination will play a larger role in women's retention in the construction industry."*

P2, P5, P7: *"When compared to men, your long hours and hard work go unnoticed; to me that is clear gender discrimination."*

Fifteen of the 15 participants told their stories about how they had experienced discrimination based on their gender or race while working within the construction industry. P15, P2, and P13 narrated instances where they had lost opportunities to work on exciting projects because they were simply told that women do not handle complex projects very well, or the risks associated with certain mining projects. P8, P9, P13, and P14 agreed that the levelling of the field was not the same for males and females. In principle, the recruiting process is set up to look fair, as mentioned by one participant., but in practice in terms of career progression, men are still ascending to senior positions a lot faster than women. Elimination of discrimination towards women therefore plays a major role in their retention and career growth prospects.

5.20.3 Human capital factors

People have skills, experience, and knowledge, which make them economically valuable to organisations, according to the theory behind knowledge management and human capital. Experience and knowledge are considered 'capital' because they improve performance. According to the human capital theory, labour is more effective when resources are dedicated to skill development and training in the same way that an investment in physical assets would result in productivity. The participants shared their experiences as follows:

P6*: Indeed, I have been assigned an allocation of shares. In my previous professional engagement, I took measures to address the gender disparity in share allocation among technical directors within my department by ensuring that additional shares were granted to female employees. This action was prompted by the observation that women were consistently assigned a lower proportion of shares in comparison to their male counterparts. However, the decision to make these changes was not driven by a desire to improve employee retention, but rather to rectify the issue of female employees being disproportionately assigned to junior roles.*

P4: *"A clear career path would go a long way in terms of retaining me as female talent because I will know for sure if I want to join that organisation or not during the interview phase."*

P7, P8, P10, P12: *"In the construction industry, mentors for female professionals who could serve as means for encouragement or role models are nearly non-existent, especially in positions of leadership. Increasing the industry's support for women while offering clear goals and intentions for their career advancement can encourage more women to remain and create long-lasting careers."*

P13, P9, P11: *"Training and leadership development roles will go a long way in contributing to retention strategies of female talent in the construction industry."*

There were mixed findings from the participants when it came to the human capital factors that contribute the most to their retention. P13, P9, and P11 cited training as the most important factor when it comes to retention as they believe it propels them to greater height in terms of improving performance in their roles. P6 believed that financial rewards, such as shares after being with an organisation for a certain period, are key factors in keeping them retained. P7, P8, P10, P12 perceived mentorship as the first priority that will keep then within the organisation for longer. P4 indicated that a clear career path is one of the key measures she looks for before joining any organisation.

5.21 Determining the possible practices in organisations that support the retention of female professional talent in the construction industry

5.21.1 Career development factors

P5: *"There are retention shares that mature after four years, as well as a rotating programme through various departments aimed at enhancing your career development."*

P7, P10, P15, P14: *One crucial determinant for the retention and advancement of female talent inside an organization is the presence of mentorship or sponsorship initiatives, coupled with the implementation of a share-scheme program.*

P3, P4, P8, P9: *"Being able to have an option of working from home four times a work has made such a huge difference in supporting my career development in the construction industry as I am able to spend more time with my small children."*

P13, P12: *"A mentor assigned to me when I started at the organisation has contributed greatly to supporting my career development and it has influenced my decision to stay longer."*

Participants P3, P4, P8 and P9 indicated that their families influenced their decisions and actions at work, and that work-life balance was crucial when deciding whether to remain within an organisation. Progressive work-life balance strategies, such as flexitime, play a significant role in providing a thriving environment that promotes career success, retention and a supportive environment. Participants P7, P10, P15, P14, P13 and P12 indicated that mentorship programmes can be identified as a practice that is supportive of the retention of female professionals within the construction industry. P5 identified shares to the organisation as a practice that makes a difference, as well as rotating programmes to other departments as part of diversifying one's skills.

5.21.2 Feminist factors

P4**,** P14, P7, P6, P7: *I have not had the experience of being employed by an organization that actively pursued measures to address the gender pay disparity. Instead, the issue was readily apparent, conspicuous, and just persisted without any concerted efforts to rectify it. During my academic tenure, I have collaborated with male colleagues who were fellow students at the same university and shared the pursuit of an identical degree. Nevertheless, they received more compensation. In light of this matter, to ensure my continued engagement, I would have favored the implementation of a policy that promotes fair compensation for all individuals within a nurturing work environment.*

P8, P3, P8, P9: *"My former employer offered a generous six-month paid maternity leave policy. Because I had two young children, this was very helpful. This undoubtedly contributed greatly to my retention, as I remained at the company for a full seven years. However, employee performance reviews are typically tied to fiscal years; I felt unfairly treated after returning from a lengthy maternity leave. Those few months cost me dearly in terms of career development."*

P5: *"There was no support for gender equality. I was always assigned small refurbishment projects (stormwater, drainage systems) while my male counterparts worked on new construction projects such as new roads, silos, and so on."*

P1*: "I have encountered micro-aggressions in which I was required to demonstrate my competence; after passing the test, I was given additional responsibilities."*

P15, P13, P12: *"I have never worked in a construction organisation where there was no unequal gender pay gap. Companies should work to close the gender gap in order to support and retain female talent in the construction industry."*

P4: *There is uncertainty on whether organizations actively strive to offer equitable opportunity for all individuals. I have encountered instances were individuals of Caucasian descent, both male and female, have been regarded as possessing greater competence and aptitude compared to myself, an individual of African descent and female gender. The efficacy of their diversity and inclusion policy has been lacking.*

P11: "*As a black female, I have benefited from BEE. I was hired solely based on my race and gender. As a result, when I first started there, people questioned my abilities, and I was discriminated against."*

P8, P3, P8, and P9 participants indicated that paid maternity had been a supportive practice in their retention with the construction industry. However, P8 and P9 indicated how they went through career regression on returning to work after six months of maternity leave. P9 indicated that she came back to reduced responsibilities in her job. P8 was penalised during her performance review because she missed the first six months of the year. P4 narrated how organisations can support female professionals better if their diversity and inclusion policies are put into effect in practice. P1 indicated that organisations need to eliminate discrimination towards women in any form; through the years in the construction industry, she has endured micro-aggressions from her male counterparts.

5.21.3 Human capital factors

P3, P4, P7, P8*: The present organization I am employed at implements a policy that promotes the attainment of work-life balance by offering flexible working hours. As an illustration, in the event that a picnic is organized by your child's educational institution, it is permissible to attend the event without requiring a leave of absence, provided that prior notification is given to one's immediate supervisor. An additional illustration is to situations where a parent's child falls unwell, necessitating their attendance for care. In such instances, the parent is granted the prerogative to cancel a scheduled meeting of significance and prioritize the well-being of their ailing child. This clause represents an existing policy. Furthermore, it is also implemented in theoretical frameworks. This has facilitated the achievement of a harmonious equilibrium between my professional and personal life. Nevertheless, I made the decision to depart from my prior company due to the absence of any form of flexibility that persisted for a duration exceeding a decade. It is noteworthy to add that during my employment at a mining firm, there was a notable gender imbalance, with a predominantly male workforce. Consequently, the prevailing system seemed to overlook the consideration of the effects of labor on women. This method has proven to be highly beneficial, as it has enabled me to maintain my affiliation with the organization for a decade.*

P5, P10, P12, P15, P14: *"At my previous employer, the gender pay gap was undeniably present, and I had no idea how to address it. HR and unions made this information public. Because there is no union at my current employer, I would not know. To retain female talent, organisations must close the gender pay gap."*

P1: "*A management policy that encourages ascension to a leadership role will undoubtedly contribute to my retention in the organisation."*

P3, P4, P7, and P8 indicated how recognition of work-life balance that supports them as mothers has contributed immensely to their retention with their current organisations. All four of them have stayed more than eight years with their current employer due to this policy. P5, P10, P12, P15, andP14 indicated how the gender pay gap has contributed to their leaving organisations, when they discovered they were paid less than their male counterparts in the same position. P1 said a management policy that is designed to identify talent for senior roles is crucial for retention.

5.22 Evaluating the effectiveness of currently used strategies to retain female professional talent in the construction industry

5.22.1 Career development factors

P4: *"Paid maternity leave was one retention strategy that I thought worked well. However, when I returned, I was made redundant in my role due to the six months I spent raising my newborn baby. As a result, it is ineffective."*

P3, P5, P10, P12, P13, and P15: *"Provision of mentorship and training via leadership courses has been effective in retaining me at the organisation."*

P8: *"Because I was fortunate enough to study engineering in India, gender-specific strategies such as training, education, and experience were extremely effective. As a graduate trainee, I was assigned a senior engineer to mentor me, which encouraged me to stay with the organisation for a longer period. However, when I moved to Dubai, I discovered that there were no strategies in place to begin with for female retention in the construction industry. Their thoughts on engineering were always focused on men."*

P13: *"In my organisation, shares come as a top strategy that is effective in retaining me. However, that was for all employees, not only females. Training comes second as part of the effective retention strategy."*

P3, P5, P10, P12, P13 and P15 participants indicated that mentorship and training had been the most effective strategies when it came to retention of professional females within the construction industry. P4 ranked paid maternity as an effective strategy that plays a major role for her retention in any organisation. P13 recognised that share schemes are crucial in retaining top talent within the construction sector.

5.22.2 Feminist factors

P4: *'They speak to you as a female business owner in a way that they do not speak to my male business partners. I have faced discrimination because of my gender. The policy on gender inequality was ineffective in the organisations that I have worked for in the past.*"

P3: "*Transparent performance reviews will go a long way toward retaining women in organisations. White males were perceived to be superior at my previous employer. As a result, they will receive higher performance ratings, resulting in larger bonuses, which will be unfair to everyone else. However, at my current employer, performance reviews are transparent, and even the bonus formula is known to all. This is the main reason I am still with this organisation."*

P8: "When I moved to SA, in one of the interviews I was asked how I will cope as a female structural engineer in a male-dominated industry. I was puzzled because I did not see myself through the lens of gender classification. That was first experience of insidious gender discrimination."

P13: *"Sexism was one of the reasons I left certain organisations. They don't consider women; we must adapt to a patriarchal society. My previous employer did not provide paid maternity leave. Because of the no-work, no-pay policy, my co-workers will be required to return within two months of giving birth. This has not been effective in retaining top female talent."*

P14: *Within my present professional setting, I perceive a disparity in the allocation of challenging assignments, where opportunities for such projects are less frequently extended to female employees. Additionally, it appears that projects requiring regional mobility are consistently awarded to male counterparts. This phenomenon occurs largely without my active consent, as I am not typically given the opportunity to express my desire to participate. Women are often denied equal opportunities to receive international assignments, as these opportunities are predominantly offered to men. This phenomenon can be attributed to the historical influence of patriarchal norms, which have perpetuated the notion that women's visibility should be prioritized over their voices. There exists a prevailing stigma within the construction industry that portrays women as lacking assertiveness. In terms of retention, gender discrimination seems to be counterproductive.*

Fifteen out of the 15 participants narrated their experiences on how discrimination in any form a hindrance towards women's career advancement was. They all agreed that elimination of discrimination is an effective tool in ensuring that women stay within the construction industry.

5.22.3 Human capital factors

P1**:** *"As a civil engineering graduate in South Africa, I never felt like I had a clear career path. For example, in the UK, you take an actual bar exam, whereas in South Africa, a committee decides your fate based on your report and interview. In my case, I've been torn between pursuing SA or UK registration. With the UK one, I know I have power because I must write an exam. I believe that the SA process should be completely overhauled, but I cannot comment further because this is a separate topic. A clear career path will entice me to stay in any organisation for a longer period."*

P3: *"Share-scheme policies aimed at female retention will really go a long way in terms of making sure that I stay with them."*

P4*: "My career path and progression steps were clearly communicated when I joined the organisation, this was effective in ensuring that I am retained long term."*

P4: *"Since I am site based, fringe benefits like petrol cards, paid accommodation, [and] flexibility would be an effective strategy in my retention."*

P10: "*A career plan is part of the induction process for every professional female joining the organisation before they begin."*

P11: *"I was drawn to my current position because of the mentorship I would receive if I joined the organisation; it has kept me here for the past eight years and it has assisted in providing a supportive environment."*

P10**:** *"In a situation in which a subordinate was scheduled to join my team, it was discovered that I was being paid less than the individual, so my salary was adjusted to be slightly higher. This played a significant role in my continued employment after the gender pay gap was eliminated."*

P13: "*The BEE policy has undoubtedly aided in the recruitment of more female executives, particularly in the engineering and construction sectors. That is how I advanced to senior management."*

P15: *"In my experience, most companies want to keep you as a female so they can be BEE complaint. In some cases, they will use your qualifications to tender for a job, but you will not be actively involved if they get the job. Even if you are a member, you simply attend meetings and say nothing. It's just for show, so the client can see you."*

P1 and P4 indicated how a clear career path in the Built Environment can benefit female professionals in their career growth and retention in whatever speciality they choose for themselves. P13 acknowledged how BEE has been pivotal in getting more black females executives to the top. P10 and narrated how the closing of the gender pay gap with her previous organisation contributed towards her retention. She further stated that had made her stay for eight years, until she became a technical director because she benefitted from equal opportunities.

5.23 Findings and discussions

The interviews have identified some factors that contribute to professional female retention within the construction industry. Those factors fall under career development, and they can be identified as mentorship, networking, training, share schemes/bonuses, work-life balance, performance, transparency, and elimination of discrimination. Mentorship and networking are

the most prominent factor that contributes to retention of professional female talent in the construction industry. These findings align with previous research conducted by Afolabi et al, (2017) and Francis (2017), which also indicated that mentorship support significantly impacts the retention of women professionals in the construction industry. They can form part of the management policy/organisational policy. Among feminist/gender factors, elimination of discrimination was seen as contributing to ensuring gender equality is achieved. In addition, retention can be enhanced in that way. The findings presented in this study serve to confirm the previous research conducted in this field by Dada (2017) that female professionals employed in the construction industry experience gender-based and sexual harassment, which is closely linked to diminished levels of job satisfaction, adverse psychological and physiological health manifestations, as well as increased occurrences of workplace injuries. The complete eradication or discouragement of gender discrimination within any system is vital for retention. In human capital factors, share schemes, training, mentorship and a clear career path came out as the top factors that influence professional females to stay longer with organisations. In determining the possible practices that support the retention of female talent, under human capital factors, paid maternity was ranked as the highest. However, some women indicated experiencing career regression after being absent from work for six months. Another finding was how organisations can support female professionals better if their diversity and inclusion policies are put into effect in practice. In evaluating how effective these strategies are, mentorship and training ranked as the most effective strategies when it comes to retention of professional females within the construction industry. Share schemes were ranked second in retaining professional talent within the construction sector.

5.24 Comparison of results and meaning with findings from extant literature

This section presents the key findings from the qualitative data collection and their relationship to the literature review conducted in chapter 2. These findings have been grouped in accordance with the retention factors enumerated and discussed in the literature review. The following objectives were met in the study, which were identified as follows:

1. Identifying factors contributing to female professional talent retention in the construction industry?

The literature review identified factors that contribute to retention such as employee income/compensation, work environment, work-life balance and flexibility, employment welfare & recognition, training and development, personal characteristics, promotion opportunities, company image and development. In the literature review, Helms et al (2016) found that mentoring brings organiational benefits by inspiring commitment, retention of women in the workplace and the improvement in productivity. The findings from interviews following a thematic analysis, identified retention factors as networking and mentorship, training, work-life balance, elimination of discrimination, equality and diversity, performance and transparency. The findings indicated that when it comes to keeping talented women in the construction industry, mentorship and networking rate highest ranked factors in retention. The findings also revealed that participants with flextime in their employment reported a higher level of job satisfaction and job retention because they were able to better balance their work and personal lives. The findings also indicated that majority of participants believed that effective policies addressing gender discrimination in the construction industry would aid in their career retention and advancement, which was similar sentiments that were uncovered in the literature review.

2. Determining the possible practices in organisations that support the retention of female professional talent in the construction industry.

Employee retention (ER) factors (such as compensation, training and development, promotion opportunities, work–life balance, and managerial support) play a crucial role in retaining employees and preventing them from seeking employment elsewhere as discovered in the literature review. And practices are tangible strategies that are adopted in reality in retaining employees i.e performance bonuses, childcare subsidies, maternity benefits. The findings from the study indicated that progressive work-life balance strategies, such as flextime, play a significant role in fostering an environment that fosters career success, employee retention, and a supportive culture. In addition, findings also indicated that paid maternity benefits had been a motivating practice in their decision to remain in the construction industry longer than anticipated. This finding tied in with the same sentiments that were identified in literature review where employment welfare is critical in retaining talent.

3. Evaluating the effectiveness of currently used strategies to retain female professional talent in the construction industry.

Over the course of time, the South African government has formulated and executed numerous initiatives and legislation aimed at addressing gender inequality in the workplace, including the construction industry. However, the literature review conducted suggests that these efforts have yielded only marginal advancements. The findings from the study indicated that in evaluating how effective these strategies are, mentorship and training ranked as the most effective strategies when it comes to retention of professional females within the construction industry. Share schemes were ranked second in retaining professional talent within the industry.

5.25 Chapter summary

This chapter discussed factor analysis as well as descriptive, correlational, and inferential statistics pertinent to the study to integrate the findings of the literature review with the findings of the research study that was conducted. This chapter presented and analysed results on factors measuring the effectiveness of strategies for the retention of professional female talent in the construction industry in South Africa. Overall results of the female professional talent retention model show that management policy, organisational policy, and discrimination, patriarchy and women's position in the society had statistically significant positive effects on the retention of female talent in the construction industry. According to the study's findings, employee retention is influenced by employee empowerment, training and career development, employee compensation, performance appraisal, and employee commitment.

Chapter 6 Conclusion

6.1 Introduction

The present chapter presents the conclusions and recommendations derived from the comprehensive literature review and the primary and secondary data gathered through semi-structured interviews and survey questionnaires. This study investigated the efficacy of methods implemented within the construction industry to retain female professionals. The research objective arose from a gap in the existing body of literature, which lacks sufficient examination into efficient techniques for retaining professional women to meet the increasing need for skilled experts amidst a declining number of experienced professionals in the construction industry. This chapter presents a comprehensive overview of the research conducted, including the research aim, research objectives, and relevant research questions. The comprehensive perspective gives rise to the suggestions for academia, policy, and practice.

There have been notable advancements in the recruitment and retention of female talent within this sector. Nevertheless, the recruitment of women is impeded by the unfavorable conditions prevalent in the construction industry, which sometimes exhibit a chauvinistic work culture. In the context of South Africa, it is evident that despite the enactment of legislation such as the Employment Equity Act No 55 of 1998, which aims to advance gender equality, organizations operating within the construction sector demonstrate a dearth of proactive measures designed to effectively retain female professionals.

6.2 Overview of the thesis

On a global scale, the construction industry is currently facing the challenge of retaining female talent, particularly considering the retirement of highly qualified and experienced professionals and the growing skills deficit. In contemporary society, characterized by an ever-increasing demand for individuals possessing advanced qualifications, women continue to represent an underutilized reservoir of human capital. The construction industry, which is predominantly male dominated, is an industry that is experiencing growth and has a rising need for skilled and knowledgeable professionals. The issue at hand pertains to the fact that while women possess the ability to make valuable contributions to the pool of competent professionals, the matter of

retaining them inside these positions remains a subject of significant controversy. The dispute arises from the predominance of males in the industry, which is accompanied by a work climate characterized by sexist attitudes and a gender wage disparity. Additionally, the presence of a glass ceiling discourages women from pursuing long-term employment in this field. The primary focus of this study revolves around the concept of retention. The retention of employees at all levels within an organization is a crucial aspect of human resource management.

The utilization of a theoretical framework and conceptual framework facilitated the analysis and understanding of the phenomena pertaining to the retention of female talent. The retention of female talent in the construction industry can be better understood through the lens of various theoretical frameworks, including feminist theory, human capital theory, and Holman's Theory of career development. These theories provided valuable insights into the factors that contribute to the retention of women in this field. Furthermore, the ZM and ERC models have made significant contributions to the identification and delineation of the key criteria that necessitate consideration in the endeavor to retain female workers within the construction industry. Factors to be considered in these models encompass the necessity of establishing a stimulating work environment, delivering effective organizational leadership, and ensuring that employees are duly rewarded and recognized for their commendable work. In addition, it is crucial to emphasize the significance of a healthy working environment and the promotion of a favorable organizational culture in advocating for gender equality in the workplace, as these factors play a vital role in retaining female talent. The data collected through dispersed surveys among professionals in the built environment sector has yielded insights into the retention of female talent within the South African construction industry. The participants said that professional advancement necessitated the inclusion of leadership development programs, managerial assistance, and leadership training specifically tailored for women. Furthermore, the key components of an organizational policy that necessitate enhancement encompass career development initiatives, mentorship programs, the work atmosphere, organizational culture, networking prospects, and remunerated maternity leave.

6.3 Achieving the research objectives

This section restates this study’s research objectives and discusses in what ways did each study's four research objectives was achieved.

6.3.1 Research objective 1

The study's first objective was *to identify factors that contribute to the retention of female professional talent in the construction industry*. This research objective was fulfilled using existing literature and primary data from the semi-structured interviews. Literature review predominantly focused on identifying the factors determining women's retention in the construction industry. The various sub-sections in the literature review provide answers for what is required or what must be dealt with to improve female talent retention. These include alleviating gender inequality, gender stereotyping and discrimination, and providing an environment conducive to healthy work-family balance. Moreover, sections in the literature review provide additional factors to consider for improving female talent retention in built-environment-related sectors. Factors for consideration include a healthy working environment. In South Africa's case, paid maternity remains an area that requires stringent attention if organisations are to retain female talent.

6.3.2 Research objective 2

Research objective 2 sought to *determine the possible practices in organisations that support the retention of female professional talent in the construction industry.* This research objective was fulfilled using existing literature and primary data from the survey interviews. The literature analysis reveals that many aspects related to employee retention, including salary, training and development, promotion prospects, work-life balance, and managerial support, are significant in retaining employees and deterring them from pursuing alternative job alternatives. Practices refer to concrete tactics that are implemented in practice to enhance employee retention, such as performance bonuses, childcare subsidies, and maternity benefits. The study's results suggest that the implementation of progressive work-life balance measures, such as flextime, has a substantial impact on cultivating an atmosphere conducive to career advancement, employee retention, and the development of a supportive organizational culture.

6.3.3 Research objective 3

Research objective 3 *evaluates the level of effectiveness of currently used strategies to retain female professional talent in the construction industry.* The research objective was accomplished by analyzing the data collected from the survey questionnaires. The passage elucidates that the successful retention of female talent in South Africa encompasses various

factors such as access to educational and training initiatives, participation in experiential learning, and engagement in career development programs. Moreover, the retention model employed confirmatory factor analysis to identify the key factors that contribute to the retention of female professional talent in the construction industry of South Africa. The analysis revealed that management support, representation of female candidates on shortlists for leadership positions, and participation in leadership development programs have the most significant positive effects on ensuring the retention of female professionals in this industry.

6.3.4 Research objective 4

The primary objective of the fourth study inquiry was to provide a comprehensive framework aimed at enhancing the retention of female professionals within the construction sector. The framework integrates the essential elements needed to proactively improve the recruitment of female talent in areas related to the built environment. The framework integrates components derived from the theoretical and conceptual framework identified in the literature review. Moreover, the entirety of the framework that was established was grounded in the specific situation of South Africa. The significance of this framework is in its imperative to enhance the retention of female talent within the built environment sector, given that women now constitute a mere 13% of registered individuals in this field as of 2021.

6.4 Addressing the research aim

The objective of this study was to investigate the organizational strategies that contribute to the retention of women in the construction industry. The study attempted to provide a framework that can enhance the human capital in sectors related to the built environment. The findings of the study indicate that several factors, such as management policy, organisational policy, discrimination, patriarchy, and women's societal standing, have a statistically significant positive impact on the retention of female talent within the construction industry. The study's results indicate that employee retention is impacted by several factors, including employee empowerment, training and career development, employee compensation, performance appraisal, and employee.

Based on the research outcomes, it has been shown that factors such as prospects for professional development, clearly articulated goals and objectives, and comprehensive job descriptions collectively influence the ability of organizations to retain their employees. The

three constructs examined in this study effectively assessed the targeted aspects related to the retention of female professionals in the construction industry. In this context, the findings substantiate that the advancement of careers (as assessed through management policy and organizational policy) and the eradication of discrimination and patriarchal norms within society significantly contribute to the successful retention of female professionals in the construction industry in South Africa.

6.5 Addressing the research questions

The study research aimed to explore strategies that influence women to remain within the construction industry from an organisational point of view, thus, creating a framework for boosting human capital in built-environment-related sectors. Research methodology provides a table illustrating how the four research questions are resolved. Overall results of the female professional talent retention model show that management policy, organisational policy, and discrimination, patriarchy and women's position in the society had statistically significant positive effects on the retention of female talent in the construction industry. According to the study's findings, employee retention is influenced by employee empowerment, training and career development, employee compensation, performance appraisal, and employee commitment. According to the findings, opportunities for professional growth, well-defined goals and objectives, and job descriptions all contribute to employee retention in the construction industry. The respective three constructs thus measured what they were intended to assess with regards to retention of female professional talent in the construction industry. In that regard, results confirm that career development and elimination of discrimination and patriarchy in society effectively enhance female professional talent retention in the construction industry in South Africa.

- *What factors contribute to the retention of female professional talent in the construction industry?*

  The factors discussed in the current body of literature encompass the intentional initiatives undertaken by organizations to retain female talent through the implementation of proactive measures that are either established or ingrained within the organizational culture. These efforts are reinforced by the Employment Equity Act No 55 of 1998, which advocates for gender equality, as well as the South African Constitution, which aims to guarantee equality for all individuals. The organizational

culture ought to exhibit a zero-tolerance stance towards discrimination and patriarchal practices. To foster the development of female talent, it is imperative to ensure the provision of human capital aspects such as schooling, training, job growth, and work experience. Additionally, it is imperative for an organization's policy to incorporate comprehensive measures such as leadership training specifically tailored for female employees, leadership development programs, managerial assistance, initiatives to enhance female recruiting, and regular salary reviews in order to address and rectify the existing gender pay disparity.

- *What factors contribute to the retention of female professional talent in the construction industry?*

The factors in existing literature include deliberate efforts by an organisation to ensure that female talent is retained using proactive measures instituted or embedded in organisational culture, further backed up by the already existing Employment Equity Act No 55 of 1998, which promotes gender equality, and the South African Constitution, which seeks to ensure equality for all. The organisational culture should have no tolerance for discrimination and patriarchy. Human capital elements like schooling, training, job growth, and work experience should be provided for female talent development. Also, an organisational policy must embed leadership training for females, leadership development programmes, management support, female recruitment and review of salaries to bridge the gender pay gap.

- *Which possible practices in organisations support the retention of female professional talent in the construction industry?*

The practices supporting the retention of female professional talent are lacking. The issue of paid maternity leave, for example, is something that must be mandated. This is because three months of paid maternity leave exists in South Africa, but it is not compulsory for the organisation to pay out. Organisational culture defined by the patriarchy or male dominance that may hinder females from a conducive work environment free of gender discrimination is addressed by the stringent measures taken by the state regarding sexual harassment.

- *How effective are currently used strategies to retain female professional talent in the construction industry?*

In South Africa, as already mentioned, there are few strategies to retain female talent in the construction industry. Organisations are, however, governed by the Employment Equity Act, which does not specifically address retention but rather resolves recruitment issues, which is not the main focus of this study. Retention strategies in the form of career development factors, human capital factors and management and organisational policy, must be considered in built environment sectors in South Africa.

6.6 Implications of the research

The findings of this study will help professionals in the industry better comprehend their own retention strategies concerning professional female talent in the construction industry. Those in the construction industry, those who run the industry, members of underrepresented groups, business owners, and the broader study community may all benefit from considering the following practical consequences.

6.7 Recommendations for research

The underrepresentation of women in the construction industry and the contributions they provide are compelling arguments for further study of women's response processes. As this research is limited to retention, it is suggested that researchers also examine the progression of women to senior leadership positions and executive levels.

6.8 Recommendations for policy

With the underrepresentation of professional females in construction, governments and organisations have devised institutional plans and policies to increase gender diversity, equity, and equality in the industry.

- In South Africa’s case, the lack of in-house female retention strategies in built environment-related organisations may be a result of the provisions made by the Employment Equity Act. However, the act does not mandate accommodating women as per their specific needs at some levels of their career development, such as when it comes to paid maternity leave and job promotions to positions beyond the glass ceiling.

In this study, the researcher recommends that policies mandate female talent retention strategies across built environment organisations, given the unequal employment percentage

between men and women in SA's construction sector. A policy could perhaps make it mandatory for organisations to ensure provisions for incentives such as fully paid maternity leave and day-care facilities for the children of employees. Also, campaigns to promote female talent retention in-built environment-related professions remain vital.

6.9 Recommendation for practice

The following recommendations should be considered when developing organisational strategies to retain female professional talent:

- Supervisors' leadership styles should be scrutinised. Findings from the research indicate, supervisors should adopt a affiliation-oriented leadership style to retain female employees so as to build meaningful relationships with their subordinates. Female employees place a high value on the supervisor's role in their job retention. Supervisors should be sent to training to improve their interpersonal and communication abilities. Supervisors should also demonstrate integrity in decision-making and be involved in their employees' work.
- Women who are qualified and experienced must be given leadership opportunities. Organisations that want to retain their female talent must provide them with opportunities to develop, prosper, and grow within the organisation.
- Qualified and experienced women must be given leadership opportunities. If organisations want to retain their female talent, they must provide them with opportunities to develop, prosper, and grow.
- Women believe they are capable and deserving of leadership positions. However, they face challenges, such as balancing work and life roles and gaining acceptance from their male counterparts. Organisations must address and reduce these barriers by providing the necessary support and resources to help women advance and lead.
- Women's needs must be addressed specifically by organisations. It is obvious that women's needs differ significantly from those of men, so a one-size-fits-all approach to retention will not be effective.
- According to the findings, construction companies should implement formalised career management processes that are applied consistently to all employees.

- The organisation's primary role in retaining female employees is to provide adequate resources such as separate breast pumping rooms for new moms, proper transportation, and childcare centres, among other things.
- Consistently communicating that equality and inclusion are company priorities helps build an organisational culture and ensures the success of any accompanying initiatives.
- Affirmative action policies could be considered a means of redressing the gender imbalance in construction organisations and at senior management levels. Such policies, however, should be implemented in tandem with a concerted effort to educate all employees on the importance of developing a diverse workforce.
- Males in senior positions should be proactively involved in promoting female talent retention.
- Incidents of sexism towards women in a predominantly masculinised built-environment culture must not be tolerated.

6.10 Contribution of the study

This section demonstrates how the study contributed to research in human resource management in the Built Environment. This study made the following contributions:

- The thesis developed a customised methodology, which adapted methods from existing studies for the purpose of addressing the stated research objectives. The bespoke research design is presented in the research methodology of this thesis.
- The thesis built an understanding of the collection and combination of policies that pr omote female talent retention in the construction industry of South Africa, the nature of their co-existence.
- The thesis identified the nature and occurrence of the factors which facilitate female retention and address the specific needs of women.
- This study built an understanding of the collection and combination of policies that promote female talent retention in the construction industry. Uncovered the retention factors that consider the specific needs of women.
- This thesis established theoretical linkages between feminist theories and female talent retention.

- The established relationship between career development theories and female talent retention in the construction industry.
- This thesis built an understanding of a holistic approach to retaining female talents in the construction industry by developing a sound conceptual framework for female rete ntion, titled: The Female Talent Retention Framework (FTRF), which can be adapted to other related sectors.

This study also made the following additional general contributions:
The literature review provided insights into concepts and theories relating to female talent retention and career development.

- The findings of the empirical study provided a unique contribution in terms of crucial factors to consider in achieving female talent retention in SA's built environment-related organisations.
- The culmination of the literature review findings and the empirical study is that they effectively retain female employees.

6.11 Research limitations

This exploratory research on ideal strategies for female talent retention in the construction sector was limited to the current literature on related constructs. Additional empirical studies on formalised female talent retention strategies in built-environment organisations, especially in developing countries, remain vital for female talent retention, especially in South Africa, where organisations remain without it. There are a few academic limitations. The first one was time constraints. Collecting data took longer than anticipated because the participants had busy schedules.

Also, the secondary data collected came from both females and males, of which the dominant proportion who participated were males. Including male participants in the study allowed the researcher to unearth various perspectives on the existence, or a lack thereof, of female talent retention strategies across the various built environment organisations from females and males. While helping to eliminate some bias, including males also leaves the study prone to other types of bias in that the responses may not comprehensively capture the perspectives which may influence the outcome. Female respondents are more likely to be more aware of the presence and nature of female retention strategies in their various organisations since the presence or lack thereof affects them directly as females. The study was conducted among built

environment professionals precisely, consequently eliminating the applicability of its identified female retention strategies to other sectors outside the construction industry. This solicits comparisons between females in the construction industry.

6.12 Suggestions for future research

One potential avenue for future study entails conducting studies with a broader scope, encompassing a bigger sample size. It is advisable to include a more diverse representation of women, spanning various age groups, levels of seniority, and a more extensive cohort of female professionals.

- Since the foundation of career progression begins in high school, further studies could interrogate the relevance of introducing roadshows explaining to prospective built environment university students the opportunities to pursue a career in the built environment and its impact on prospective female talent retention.
- Secondly, like their counterparts within the law and commerce disciplines across universities, future studies could interrogate the uniformity of the built environment curriculum across SA universities. This recommended study may further compare the current curriculum's success with the career progression of female professionals in the construction industry.
- Rather than focusing solely on the retention of female careers in the construction industry, future research could investigate the cultural and practice changes women would like to see to improve their career prospects.
- More research into the timing and nature of women's career decisions is advised at the various levels of their career. The timing indicates the different stages that female professionals undergo in pursuing a successful career path in the built environment industry.
- Given that the construction industry has a culture that has been well documented as being male-dominated, it would be interesting to see how men perceive the challenges women face and the changes organisations have made to attract and retain more women.
- Future studies could also measure the conduciveness of the working environment for female professional talent retention. This study could interrogate this in public and/or the private sectors. Cross-case comparisons between best-case scenarios from a developed country such as Germany, where female retention continues to thrive, versus

a developing country like South Africa, where female talent retention requires additional work.

6.13 Chapter summary

Female talent retention continues to remain a global problem due to the nature of built environment-related sectors, women's position in society and the patriarchy. The construction sector remains male-dominated and, as a result, proves unwelcoming for female professionals, especially in developing countries. Creating a healthy work environment and organisational culture remains imperative in both developed and developing countries. One of the emphases made in the theoretical framework is the importance of a working environment conducive to females' professional development and career development factors.

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Appendices

Appendix A - Ethical Clearance Certificate

UNIVERSITY OF THE WITWATERSRAND JOHANNESBURG

Research Office

HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)
R14/49 Sangweni

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER: H20/04/21**
PROJECT TITLE	The Need to Investigate the Effectiveness of Strategies for Retaining Professional Female Talent in the Construction Industry
INVESTIGATOR(S)	Ms N Sangweni
SCHOOL/DEPARTMENT	Construction Economics and Management/
DATE CONSIDERED	24 April 2020
DECISION OF THE COMMITTEE	Approved Risk Level: Minimal
EXPIRY DATE	13 December 2023

DATE 14 December 2020 **CHAIRPERSON** J-Wright
(Professor J Knight)

cc: Supervisor : Professor O Ozumba

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10004, 10th Floor, Senate House, University. Unreported changes to the application may invalidate the clearance given by the HREC (Non-Medical)

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to completion of a yearly progress report.**

NZ Sangweni
Signature

17 / 12 / 2020
Date

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES

Appendix B - Data collection Instrument Sample (Questionnaire)

UNIVERSITY OF THE WITWATERSRAND

Research Topic: "The Need to Investigate the Effectiveness of Strategies for Retaining Professional Female Talent in the Construction Industry"

Background

Issues related to women in construction exist globally. Such issues have been analyzed from the socioeconomic perspective of women inclusion in green construction, to social capital, success of civil engineers and designing career paths While most studies look at barriers and challenges of professional females in the construction industry, very few identify or propose solutions.

Some relevant literature in the context of South Africa, have looked at women entrepreneurs, career development experiences of women in senior leadership within the industry. However, there is an apparent lack of emphasis on the effectiveness of strategies for retaining professional women. The study investigates the existence of the identified gap in order to fully substantiate it, determine what is known, their adoption and effectiveness in the retention of professional female talent within the industry, and ultimately to derive a theoretical framework for in-depth studies.

Definitions of Key Terms

Effectiveness-"refers to the intervention's ability to do more good than harm for the target population in a real-world setting" (Schillinger, 2010:15). It can be further elaborated as the concept of achieving a certain desired outcome.

Employee retention- "a systematic effort to create and foster an environment that encourages employees to remain employed by having policies and practices in place that address their diverse needs whereas", Workfoce Planning for Wisconsin State Government (2015:1). Also known as "a process in which the employees are encouraged to remain with the organization for the maximum period of time or until the completion of the project", Bidisha (2013)

Construction industry-Fernando et al (2014) describes the industry as the sector that constructs buildings and infrastructure and other related development activities. The industry comprises of clients, contractors and consulting personnel.

Patriarchy- According to Sultana (2012) patriarchy, in its wider definition, means the manifestation and institutionalization of male dominance over women and children in the family and the extension of male dominance over women in society in general.

Gender discrimination-is a bias treatment to anyone based on their sex, race etc. It is seen as the form of discrimination on women as far as equality is concerned.

SECTION A: BACKGROUND INFORMATION

A1. Please indicate your gender (√)

Male	
Female	

A2. Please indicate the age (years) group (√)

20 – 29 years	
30 – 39 years	
40 – 49 years	
50- 59 years	
60 years and above	

A3. Please indicate your highest level of educational qualification (√)

Below matric	
Matric/ Grade 12	
National Diploma/Post Matric Certificate	
Bachelor's Degree	
Honours Degree	
Masters or PhD	

A4. Please indicate the level of your job position for the job function you discharge (√)

Quantity Surveyor	Engineer	Project Manager	Programme Manager	Architect	Other (specify

A5. Please indicate the period range (years) of industry experience you have (√)

0-5 years	6-10 years	11-15 years	16-20 years	Over 20 years

A6. Please indicate the role of your employer in the industry (√)

Client	Consultant	Contractor	Project owner

A7. Please indicate the number of years with your current employer (√)

Less than 1 year	0 – 2 years	2 – 5 years	5 – 10 years	More than 10 years

A8. Please indicate the number of years with your previous employer (√)

Less than 1 year	0 – 2 years	2 – 5 years	5 – 10 years	More than 10 years

SECTION B: CAREER DEVELOPMENT FACTORS

Career development factors offer views on how to assists employees with individual needs, hierarchy fit within the organization and some career counselling in the process. According to Patton & McMahon (2001) career development is the process of tackling life, work and self-development over the lifespan

In this section, you are required to provide strategies that are implemented by your organisation to retain female professionals and/or factors that you consider to influence the retention of female professional in your organisation. Please write in the spaces provided.

Provided below in this section are various career development factors that influence the retention of female professional talent in the construction industry. Please express your opinion on the extent to which you agree or disagree regarding the effectiveness of each of the given factors in retaining professional talent in the construction industry based on the 5-point Likert scale: 1 = strongly disagree; 2 = disagree; 3= neutral (neither agree nor disagree); = agree; 5 = strongly agree.

B	**The effectiveness of organisational factors** Indicate the extent do you consider/perceive that the following influence the retention of female professional talent in your organization	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
B1	Leadership training for women	1	2	3	4	5
B2	Diversity training	1	2	3	4	5
B3	Leadership development programmes	1	2	3	4	5
B4	Paid maternity leave	1	2	3	4	5
B5	Career development programmes	1	2	3	4	5
B6	Part time work	1	2	3	4	5
B7	Part-Time Managerial Roles	1	2	3	4	5
B8	Review of Salaries to decrease gender gaps	1	2	3	4	5
B9	Networking opportunities	1	2	3	4	5
B10	Mentoring	1	2	3	4	5
B11	Women business forums	1	2	3	4	5
B12	Child care facilities	1	2	3	4	5
B13	Female candidate representation on shortlist for leadership positions	1	2	3	4	5
B14	Women recruitment events	1	2	3	4	5
B15	Interviewing women regarding their needs	1	2	3	4	5
B16	Keeping in touch with women on maternity leave	1	2	3	4	5
B17	Management support	1	2	3	4	5
B18	Supervisor quality/management/leadership	1	2	3	4	5
B19	Base pay	1	2	3	4	5
B20	Working hours	1	2	3	4	5
B21	Health benefits	1	2	3	4	5
B22	Work environment	1	2	3	4	5
B23	Organisational culture	1	2	3	4	5
B24	Equal opportunities	1	2	3	4	5

SECTION C: FEMINIST/GENDER FACTORS

The feminist factors seeks to understand the nature of gender inequality in relation to female and male roles in society, their interests and experiences. According to Bell (2010) & Hekman (2015) feminism concerns itself with autonomy, which refers to permitting individuals of their gender, social or economic class, racial profile, religious views and sexual preference, to reach full self-actualisation and create a cherished community, living together, discovering dreams, particularly those relating to justice and freedom.

Provided below in this section are gender/feminist factors perceived to influence the retention of female professionals in the construction industry. Please express your opinion on the extent to which you agree or disagree that each of the following factors stated contribute retention of female professionals in your organisation based on the 5-point Likert scale: 1 = strongly disagree; 2 = disagree; 3= neutral (neither agree nor disagree); 4 = agree; 5 = strongly agree.

C	**The influence of gender/feminist factors on retention** Indicate the extent do you consider/perceive that the following factors contribute to retention of female professionals in your organization	Strongly	Disagree	Neutral	Agree	Strongly agree
C1	Gender discrimination	1	2	3	4	5
C2	Cultural affiliation	1	2	3	4	5
C3	Patriarchy	1	2	3	4	5
C4	Women's position in society	1	2	3	4	5

Section D: Human Capital Factors

The theory behind knowledge management and human capital is that people hold skills, experience and knowledge, making them have economically valuable to organizations. The experience and knowledge are a form a part of capital considering that they enhance performance. The human capital theory states that labour is more effective when resources are dedicated to skills development and training in the same manner as an investment into physical assets would bring about productivity. With regard to retention, the human capital theory states that similarly to other business investments, longer periods in accruing returns from investment in skills correlate to increased chances of profitability.

D	**Definition of infrastructure project failure** Indicate the extent do you consider/perceive that the following factors contribute to retention of female professionals in your organization	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
D1	Education and training opportunities	1	2	3	4	5
D2	Experience	1	2	3	4	5
D3	Leadership training for women	1	2	3	4	5
D4	Support of external training (e.g. academic studies)	1	2	3	4	5
C5	Career development programmes	1	2	3	4	5
D6	Leadership development programmes	1	2	3	4	5
D7	Diversity training	1	2	3	4	5

Thank you for your participation

Appendix C - Data collection Instrument Sample (Interviews)

Interview Questions

Research Topic: "The Need to Investigate the Effectiveness of Strategies for Retaining Professional Female Talent in the Construction Industry"

Definitions of Key Terms

Effectiveness-"refers to the intervention's ability to do more good than harm for the target population in a real-world setting" (Schillinger, 2010:15). It can be further elaborated as the concept of achieving a certain desired outcome.

Employee retention- "a systematic effort to create and foster an environment that encourages employees to remain employed by having policies and practices in place that address their diverse needs whereas", Workfoce Planning for Wisconsin State Government (2015:1). Also known as "a process in which the employees are encouraged to remain with the organization for the maximum period of time or until the completion of the project", Bidisha (2013)

Construction industry-Fernando et al (2014) describes the industry as the sector that constructs buildings and infrastructure and other related development activities. The industry comprises of clients, contractors and consulting personnel.

SECTION A: BACKGROUND INFORMATION

A1. Please indicate your gender (√)

Male	
Female	

A2. Please indicate the age (years) group in which you fall under (√)

20 – 29 years	
30 – 39 years	
40 – 49 years	
50- 59 years	
60 years and above	

A3. Please indicate your highest level of educational qualification (√)

Below matric	
Matric/ Grade 12	
National Diploma/ Post Matric-Certificate	
Bachelor's Degree	
Honours Degree	
Masters or PhD	

A4. Please indicate the level of your job position for the job function you discharge (√)

Quantity Surveyor	Engineer	Project Manager	Programme Manager	Architect	Other (specify

A5. Please indicate the period range (years) of industry experience you have (√)

0-5 years	6-10 years	11-15 years	16-20 years	Over 20 years

A6. Please indicate the role of your employer in the industry (√)

Client	Consultant	Contractor	Project owner

A7. Please indicate the number of years with your current employer (√)

Less than 1 year	0 – 2 years	2 – 5 years	5 – 10 years	More than 10 years

A8. Please indicate the number of years with your previous employer (√)

Less than 1 year	0 – 2 years	2 – 5 years	5 – 10 years	More than 10 years

SECTION B: CAREER DEVELOPMENT FACTORS

Career development factors offer views on how to assists employees with individual needs, hierarchy fit within the organization and some career counselling in the process. According to Patton & McMahon (2001) career development is the process of tackling life, work and self-development over the lifespan

In this section, you are required to provide strategies that are implemented by your organisation to retain female professionals and/or factors that you consider to influence the retention of female professional in your organisation. Please write in the spaces provided.

B1	**What practices/strategies or programmes does your organization implement to support the retention of female professional talent?**
B1.1	
B1.2	
B1.3	
B1.4	
B1.5	
B1.6	
B1.7	
B1.8	
B1.9	
B1.10	

B2	What management policies or programmes does your organization implement to support the retention of female professional talent?
B2.1	
B2.2	
B2.3	
B2.4	
B2.5	
B2.6	
B2.7	
B2.8	
B2.9	
B2.10	

SECTION C: FEMINIST/GENDER FACTORS

The feminist factors seeks to understand the nature of gender inequality in relation to female and male roles in society, their interests and experiences. According to Bell (2010) & Hekman (2015) feminism concerns itself with autonomy, which refers to permitting individuals of their gender, social or economic class, racial profile, religious views and sexual preference, to reach full self-actualisation and create a cherished community, living together, discovering dreams, particularly those relating to justice and freedom.

In this section, you are required to provide gender/feminist factors which are relevant for retention of female professionals in your organisation. Please write in the spaces provided

C	**Please provide a list of gender/feminist factors which are relevant for the retention of female professionals in your organisation**
C1	
C2	
C3	
C4	
C5	
C6	
C7	
C8	
C9	
C10	

Section D: Human Capital Factors

The theory behind knowledge management and human capital is that people hold skills, experience and knowledge, making them have economically valuable to organizations. The experience and knowledge are a form a part of capital considering that they enhance performance. The human capital theory states that labour is more effective when resources are dedicated to skills development and training in the same manner as an investment into physical assets would bring about productivity. With regard to retention, the human capital theory states that similarly to other business investments, longer periods in accruing returns from investment in skills correlate to increased chances of profitability.

In this section, you are required to provide human capital development factors which are relevant for retention of female professionals in your organisation.

D	Please provide a human capital factors which are relevant for the retention of female professionals in your organisation
D1	
D2	
D3	
D4	
D5	
D6	
D7	
D8	
D9	
D10	

Thank you for your participation

Appendix D - Consent Form

Consent Form

Investigating the Effectiveness of Strategies for Retaining Professional Female Talent in the Construction Industry

Name of researcher: Nondumiso Sangweni

I, ……., agree to participate in this research project. The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that the researcher may use anonymous quotes in her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that the information I provide may be used anonymously after this project has ended, for academic purposes by other researchers, subject to their own ethics clearance being obtained.	YES	NO

…… (Signature of participant)
…… (Name of participant)
…… (Date)

Participant Information Sheet (Interviews)

Dear Sir / Madam,

My name is Nondumiso Sangweni, and I am a PhD student in the school of Construction Economic and Management (CEM) at the University of the Witwatersrand, Johannesburg. As part of my studies I have to undertake a research project, and I am investigating **The Effectiveness of Strategies fo Retaining Professional Female Talent in the Construction Industry** under the supervision of Pro Ozumba. This research project aims to explore the nature and occurrences of strategies adopted i the retention of professional female talent in the construction industry.

As part of this project, I would like to invite you to take part in a one-on-one interview vi Microsoft Teams or Zoom. This activity will involve answering a set of work-related questions an will take approximately 20 minutes. With your permission, I would also like to record the intervie using a voice recorder. There will be no personal costs to you should you participate in this projec You will not receive any direct benefits from participating. There are also no disadvantages or penaltie if you do not choose to participate or if you withdraw from the study. You may withdraw at any tim or not answer any question if you do not want to. The interview is entirely confidential and anonymous I will not be asking for your name or any identifying information. Your information will be hel securely in a password-protected computer and will not be disclosed to anyone else. Pseudonyms wi also be used to represent your participation in my final research report. If you experience any distres or discomfort at any point in this process, we will stop the interview or resume another time.

This study will be written up as a research report which will be made available online through th university library website. I will be happy to send you a summary of the final research report if yo wish to obtain a copy. If you have any questions about this research, please feel free to contact me Nondumiso, from the details listed below. Moreover, if you have any concerns or complaints regardin the ethical procedures of this study, you are welcome to contact the University Human Research Ethic Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za

Yours sincerely,

Nondumiso

Contact Details

Researcher: Nondumiso Zamangwane; email: 0305617R@students.wits.ac.za; Cell: 0767490961

Supervisor: Professor Prof. Obinna Ozumba; email: Obinna.Ozumba@wits.ac.za; Tel: 0117177654

Participant Information Sheet (Questionnaire)
Completing this questionnaire and submitting it, will mean consent

Dear Sir / Madam,

My name is Nondumiso Sangweni, and I am a PhD student in the school of Construction Economics and Management (CEM) at the University of the Witwatersrand, Johannesburg. As part of my studies, I have to undertake a research project, and I am investigating **The Effectiveness of Strategies for Retaining Professional Female Talent in the Construction Industry** under the supervision of Prof. Obinna Ozumba. This research project aims to explore the nature and occurrences of strategies adopted in the retention of professional female talent in the construction industry.

As part of this project, I would like to invite you to take part in an online questionnaire. This activity will involve answering a set of questions that should take approximately 15 minutes. There will be no personal costs to you should you participate in this project. You will not receive any direct benefits from participating. There are also no disadvantages or penalties if you do not choose to participate or if you decide to withdraw from participation. You may withdraw at any time or not answer any question if you do not want to. The questionnaire is entirely confidential and anonymous. I will not be asking for your name or any identifying information. Responses will be held securely in a password-protected computer and will not be disclosed to anyone else. Completing the survey and submitting it, this will mean consent

This study will be written up as a research report which will be made available online through the university library website. I will be happy to send you a summary of the final research report if you wish to obtain a copy. If you have any questions about this research, please feel free to contact me, Nondumiso, from the details listed below. Moreover, if you have any concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za

Yours sincerely,

Nondumiso

Contact Details

Researcher: Nondumiso Zamangwane; email: 0305617R@students.wits.ac.za; Cell: 0767490961

Supervisor: Professor Prof. Obinna Ozumba; email: Obinna.Ozumba@wits.ac.za; Tel:

Appendix E – Data Analysis Procedure

Appendix F1: Frequencies

F1. Demographic profiles

A1. Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	84	57.1	57.1	57.1
	Female	63	42.9	42.9	100.0
	Total	147	100.0	100.0	

A2. Age group (years)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-29 years	16	10.9	10.9	10.9
	30-39 years	66	44.9	44.9	55.8
	40-49 year	41	27.9	27.9	83.7
	50-59 years	15	10.2	10.2	93.9
	60 years and above	9	6.1	6.1	100.0
	Total	147	100.0	100.0	

A3. Highest level of educational qualification					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below Matric	2	1.4	1.4	1.4
	Matric/Grade 12	25	17.0	17.0	18.4
	National Diploma/Post Matric Certificate	39	26.5	26.5	44.9

	Bachelor's degree	26	17.7	17.7	62.6
	Honours degree	18	12.2	12.2	74.8
	Master's	34	23.1	23.1	98.0
	PhD	3	2.0	2.0	100.0
	Total	147	100.0	100.0	

A4. Job position

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Quantity Surveyor	1	.7	.7	.7
	Engineer	9	6.1	6.1	6.8
	Project Manager	8	5.4	5.4	12.2
	Programme Manager	30	20.4	20.4	32.7
	Architect	10	6.8	6.8	39.5
	Other	89	60.5	60.5	100.0
	Total	147	100.0	100.0	

F2. Career factors

CF.MP1. Leadership training for women

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	7	4.8	4.8	4.8
	Disagree	8	5.4	5.4	10.2
	Neutral	20	13.6	13.6	23.8
	Agree	39	26.5	26.5	50.3
	Strongly agree	73	49.7	49.7	100.0
	Total	147	100.0	100.0	

CF.MP2. Leadership development programmes					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	5	3.4	3.4	3.4
	Disagree	5	3.4	3.4	6.8
	Neutral	16	10.9	10.9	17.7
	Agree	44	29.9	29.9	47.6
	Strongly agree	77	52.4	52.4	100.0
	Total	147	100.0	100.0	

CF.MP3. Review of salaries to decrease gender gaps					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	13	8.8	8.8	8.8
	Disagree	5	3.4	3.4	12.2
	Neutral	27	18.4	18.4	30.6
	Agree	30	20.4	20.4	51.0
	Strongly agree	72	49.0	49.0	100.0
	Total	147	100.0	100.0	

CF.MP4. Female candidate representation on shortlist for leadership positions					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	12	8.2	8.2	8.2
	Disagree	5	3.4	3.4	11.6
	Neutral	29	19.7	19.7	31.3
	Agree	40	27.2	27.2	58.5

	Strongly agree	61	41.5	41.5	100.0
	Total	147	100.0	100.0	

CF.MP5. Women recruitment events					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	15	10.2	10.2	10.2
	Disagree	2	1.4	1.4	11.6
	Neutral	40	27.2	27.2	38.8
	Agree	43	29.3	29.3	68.0
	Strongly agree	47	32.0	32.0	100.0
	Total	147	100.0	100.0	

CF.MP6. Management support					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	7	4.8	4.8	4.8
	Disagree	7	4.8	4.8	9.5
	Neutral	13	8.8	8.8	18.4
	Agree	44	29.9	29.9	48.3
	Strongly agree	76	51.7	51.7	100.0
	Total	147	100.0	100.0	

CF.MP7. Leadership development programmes					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	9	6.1	6.1	6.1
	Disagree	6	4.1	4.1	10.2

	Neutral	29	19.7	19.7	29.9
	Agree	39	26.5	26.5	56.5
	Strongly agree	64	43.5	43.5	100.0
	Total	147	100.0	100.0	

CF.OP1. Diversity training					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	10	6.8	6.8	6.8
	Disagree	6	4.1	4.1	10.9
	Neutral	25	17.0	17.0	27.9
	Agree	51	34.7	34.7	62.6
	Strongly agree	55	37.4	37.4	100.0
	Total	147	100.0	100.0	

CF.OP2. Paid maternity leave					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	12	8.2	8.2	8.2
	Disagree	7	4.8	4.8	12.9
	Neutral	22	15.0	15.0	27.9
	Agree	34	23.1	23.1	51.0
	Strongly agree	72	49.0	49.0	100.0
	Total	147	100.0	100.0	

CF.OP3. Career development programmes				
Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Strongly disagree	6	4.1	4.1	4.1
	Disagree	8	5.4	5.4	9.5
	Neutral	9	6.1	6.1	15.6
	Agree	32	21.8	21.8	37.4
	Strongly agree	92	62.6	62.6	100.0
	Total	147	100.0	100.0	

CF.OP4. Part time work					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	15	10.2	10.2	10.2
	Disagree	26	17.7	17.7	27.9
	Neutral	64	43.5	43.5	71.4
	Agree	22	15.0	15.0	86.4
	Strongly agree	20	13.6	13.6	100.0
	Total	147	100.0	100.0	

CF.OP5. Part-time managerial roles					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	14	9.5	9.5	9.5
	Disagree	25	17.0	17.0	26.5
	Neutral	45	30.6	30.6	57.1
	Agree	33	22.4	22.4	79.6
	Strongly agree	30	20.4	20.4	100.0
	Total	147	100.0	100.0	

CF.OP6. Networking opportunities					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	6	4.1	4.1	4.1
	Disagree	10	6.8	6.8	10.9
	Neutral	22	15.0	15.0	25.9
	Agree	42	28.6	28.6	54.4
	Strongly agree	67	45.6	45.6	100.0
	Total	147	100.0	100.0	

CF.OP7. Mentoring					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	6	4.1	4.1	4.1
	Disagree	6	4.1	4.1	8.2
	Neutral	17	11.6	11.6	19.7
	Agree	27	18.4	18.4	38.1
	Strongly agree	91	61.9	61.9	100.0
	Total	147	100.0	100.0	

CF.OP8. Women business forums					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	12	8.2	8.2	8.2
	Disagree	12	8.2	8.2	16.3
	Neutral	30	20.4	20.4	36.7
	Agree	29	19.7	19.7	56.5
	Strongly agree	64	43.5	43.5	100.0

	Total	147	100.0	100.0	

CF.OP9. Child care facilities					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	16	10.9	10.9	10.9
	Disagree	13	8.8	8.8	19.7
	Neutral	36	24.5	24.5	44.2
	Agree	34	23.1	23.1	67.3
	Strongly agree	48	32.7	32.7	100.0
	Total	147	100.0	100.0	

CF.OP10. Interviewing women regarding their needs					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	12	8.2	8.2	8.2
	Disagree	11	7.5	7.5	15.6
	Neutral	25	17.0	17.0	32.7
	Agree	46	31.3	31.3	63.9
	Strongly agree	53	36.1	36.1	100.0
	Total	147	100.0	100.0	

CF.OP11. Keeping in touch with women on maternity leave					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	18	12.2	12.2	12.2
	Disagree	9	6.1	6.1	18.4

	Neutral	35	23.8	23.8	42.2
	Agree	44	29.9	29.9	72.1
	Strongly agree	41	27.9	27.9	100.0
	Total	147	100.0	100.0	

CF.OP12. Base pay					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	11	7.5	7.5	7.5
	Disagree	7	4.8	4.8	12.2
	Neutral	43	29.3	29.3	41.5
	Agree	38	25.9	25.9	67.3
	Strongly agree	48	32.7	32.7	100.0
	Total	147	100.0	100.0	

CF.OP13. Working hours					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	9	6.1	6.1	6.1
	Disagree	13	8.8	8.8	15.0
	Neutral	26	17.7	17.7	32.7
	Agree	42	28.6	28.6	61.2
	Strongly agree	57	38.8	38.8	100.0
	Total	147	100.0	100.0	

CF.OP14. Health benefits				
Frequency	Percent	Valid Percent	Cumulative Percent	

Valid	Strongly disagree	10	6.8	6.8	6.8
	Disagree	6	4.1	4.1	10.9
	Neutral	34	23.1	23.1	34.0
	Agree	30	20.4	20.4	54.4
	Strongly agree	67	45.6	45.6	100.0
	Total	147	100.0	100.0	

CF.OP15. Work environment					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	5	3.4	3.4	3.4
	Disagree	8	5.4	5.4	8.8
	Neutral	18	12.2	12.2	21.1
	Agree	31	21.1	21.1	42.2
	Strongly agree	85	57.8	57.8	100.0
	Total	147	100.0	100.0	

CF.OP16. Organisational culture					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	7	4.8	4.8	4.8
	Disagree	4	2.7	2.7	7.5
	Neutral	22	15.0	15.0	22.4
	Agree	32	21.8	21.8	44.2
	Strongly agree	82	55.8	55.8	100.0
	Total	147	100.0	100.0	

CF.OP17. Diversity training					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	7	4.8	4.8	4.8
	Disagree	5	3.4	3.4	8.2
	Neutral	39	26.5	26.5	34.7
	Agree	47	32.0	32.0	66.7
	Strongly agree	49	33.3	33.3	100.0
	Total	147	100.0	100.0	

CF.GC1. Supervisor quality/management/leadership					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	8	5.4	5.4	5.4
	Disagree	6	4.1	4.1	9.5
	Neutral	15	10.2	10.2	19.7
	Agree	32	21.8	21.8	41.5
	Strongly agree	86	58.5	58.5	100.0
	Total	147	100.0	100.0	

CF.GC2. Equal opportunities					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	10	6.8	6.8	6.8
	Disagree	3	2.0	2.0	8.8
	Neutral	16	10.9	10.9	19.7
	Agree	23	15.6	15.6	35.4
	Strongly agree	95	64.6	64.6	100.0

	Total	147	100.0	100.0	

F2. Feminist/gender factors

FGF.D1. Gender discrimination					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	32	21.8	21.8	21.8
	Disagree	24	16.3	16.3	38.1
	Neutral	22	15.0	15.0	53.1
	Agree	23	15.6	15.6	68.7
	Strongly agree	46	31.3	31.3	100.0
	Total	147	100.0	100.0	

FGF.P1. Cultural affiliation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	20	13.6	13.6	13.6
	Disagree	19	12.9	12.9	26.5
	Neutral	41	27.9	27.9	54.4
	Agree	38	25.9	25.9	80.3
	Strongly agree	29	19.7	19.7	100.0
	Total	147	100.0	100.0	

FGF.P2. Patriarchy					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	20	13.6	13.6	13.6

	Disagree	19	12.9	12.9	26.5
	Neutral	51	34.7	34.7	61.2
	Agree	25	17.0	17.0	78.2
	Strongly agree	32	21.8	21.8	100.0
	Total	147	100.0	100.0	

FGF.WPS1. Women's position in society					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	11	7.5	7.5	7.5
	Disagree	10	6.8	6.8	14.3
	Neutral	42	28.6	28.6	42.9
	Agree	38	25.9	25.9	68.7
	Strongly agree	46	31.3	31.3	100.0
	Total	147	100.0	100.0	

F3. Human capital factors

HCF.ET1. Education and training opportunities					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	7	4.8	4.8	4.8
	Disagree	4	2.7	2.7	7.5
	Neutral	19	12.9	12.9	20.4
	Agree	42	28.6	28.6	49.0
	Strongly agree	75	51.0	51.0	100.0
	Total	147	100.0	100.0	

HCF.ET2. Support of external training (e.g. academic studies)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	10	6.8	6.8	6.8
	Disagree	5	3.4	3.4	10.2
	Neutral	26	17.7	17.7	27.9
	Agree	42	28.6	28.6	56.5
	Strongly agree	64	43.5	43.5	100.0
	Total	147	100.0	100.0	

HCF.ET3. Career development programmes					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	11	7.5	7.5	7.5
	Disagree	4	2.7	2.7	10.2
	Neutral	25	17.0	17.0	27.2
	Agree	39	26.5	26.5	53.7

	Strongly agree	68	46.3	46.3	100.0
	Total	147	100.0	100.0	

HCF.E1. Experience					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	9	6.1	6.1	6.1
	Disagree	3	2.0	2.0	8.2
	Neutral	24	16.3	16.3	24.5
	Agree	39	26.5	26.5	51.0
	Strongly agree	72	49.0	49.0	100.0
	Total	147	100.0	100.0	

HCF.E2. Leadership training for women					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	13	8.8	8.8	8.8
	Disagree	8	5.4	5.4	14.3
	Neutral	31	21.1	21.1	35.4
	Agree	36	24.5	24.5	59.9
	Strongly agree	59	40.1	40.1	100.0
	Total	147	100.0	100.0	

Appendix F: Exploratory factor analysis

G1. Career factors

Correlation Matrix[a]
a. Determinant = 6.558E-011

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.939
Bartlett's Test of Sphericity	Approx. Chi-Square	3216.459
	df	276
	Sig.	.000

- **Management policy - 1st iteration**

Correlation Matrix[a]
a. Determinant = .021

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.831
Bartlett's Test of Sphericity	Approx. Chi-Square	550.135
	df	21
	Sig.	.000

Communalities		
	Initial	Extraction
CF.MP1. Leadership training for women	.642	.630
CF.MP2. Leadership development programmes	.695	.628
CF.MP3. Review of salaries to decrease gender gaps	.481	.559
CF.MP4. Female candidate representation on shortlist for leadership positions	.669	.670
CF.MP5. Women recruitment events	.631	.914
CF.MP6. Management support	.615	.671
CF.MP7. Leadership development programmes	.009	.008
Extraction Method: Alpha Factoring.		

Total Variance Explained									
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.025	57.507	57.507	3.649	52.132	52.132	3.358	47.977	47.977
2	1.004	14.337	71.843	.432	6.167	58.298	.722	10.321	58.298
3	.710	10.136	81.979						
4	.497	7.096	89.075						
5	.321	4.584	93.659						
6	.274	3.919	97.578						

7	.170	2.422	100.000						
Extraction Method: Alpha Factoring.									

Factor Matrix[a]

	Factor	
	1	2
CF.MP1. Leadership training for women	.781	-.144
CF.MP2. Leadership development programmes	.792	.020
CF.MP3. Review of salaries to decrease gender gaps	.739	-.113
CF.MP4. Female candidate representation on shortlist for leadership positions	.797	.187
CF.MP5. Women recruitment events	.747	.597
CF.MP6. Management support	.819	.029
CF.MP7. Leadership development programmes	.047	-.077
Extraction Method: Alpha Factoring.		
a. Attempted to extract 2 factors. More than 25 iterations required. (Convergence=.002). Extraction was terminated.		

Rotated Factor Matrix[a]

	Factor	
	1	2
CF.MP1. Leadership training for women	.635	.476
CF.MP2. Leadership development programmes	.718	.335

CF.MP3. Review of salaries to decrease gender gaps	.612	.430
CF.MP4. Female candidate representation on shortlist for leadership positions	.797	.188
CF.MP5. Women recruitment events	.934	-.202
CF.MP6. Management support	.746	.338
CF.MP7. Leadership development programmes	.008	.090

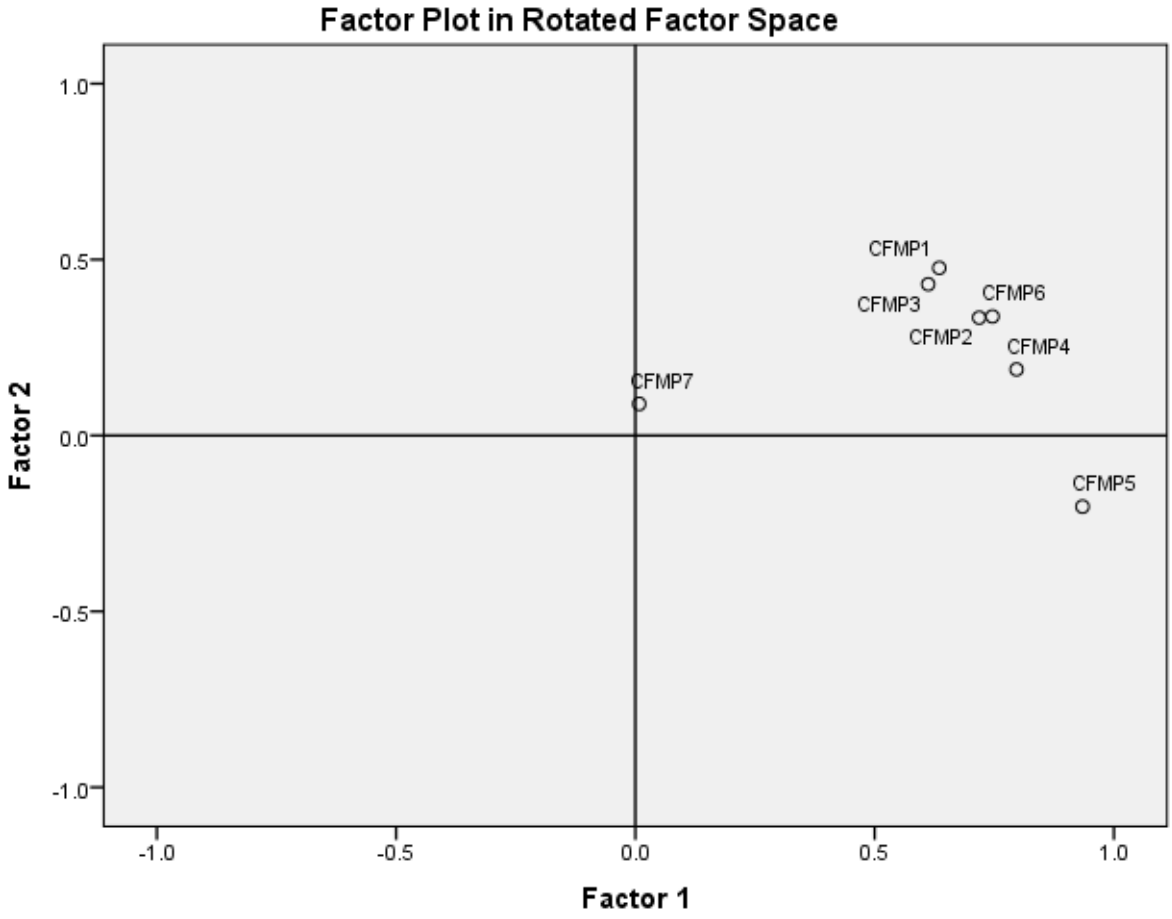
Extraction Method: Alpha Factoring.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Factor Transformation Matrix

Factor	1	2
1	.895	.445
2	.445	-.895

Extraction Method: Alpha Factoring.
Rotation Method: Varimax with Kaiser Normalization.



- **Management policy – 2nd iteration**

Warnings
Only one factor was extracted. Factor plots cannot be produced.

Correlation Matrix[a]
a. Determinant = .021

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.833
Bartlett's Test of Sphericity	Approx. Chi-Square	550.064
	df	15

	Sig.	.000

Communalities		
	Initial	Extraction
CF.MP1. Leadership training for women	.641	.563
CF.MP2. Leadership development programmes	.694	.653
CF.MP3. Review of salaries to decrease gender gaps	.481	.509
CF.MP4. Female candidate representation on shortlist for leadership positions	.668	.678
CF.MP5. Women recruitment events	.629	.552
CF.MP6. Management support	.615	.682
Extraction Method: Alpha Factoring.		

- **Organisational policy – 1st iteration**

Correlation Matrix[a]
a. Determinant = 3.693E-006

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.914
Bartlett's Test of Sphericity	Approx. Chi-Square	1745.007
	df	136
	Sig.	.000

Communalities		
	Initial	Extraction

CF.OP1. Diversity training	.595	.552
CF.OP2. Paid maternity leave	.510	.507
CF.OP3. Career development programmes	.727	.660
CF.OP4. Part time work	.470	.525
CF.OP5. Part-time managerial roles	.521	.646
CF.OP6. Networking opportunities	.721	.715
CF.OP7. Mentoring	.677	.615
CF.OP8. Women business forums	.632	.646
CF.OP9. Child care facilities	.517	.501
CF.OP10. Interviewing women regarding their needs	.655	.646
CF.OP11. Keeping in touch with women on maternity leave	.638	.525
CF.OP12. Base pay	.590	.557
CF.OP13. Working hours	.659	.591
CF.OP14. Health benefits	.779	.768
CF.OP15. Work environment	.852	.762
CF.OP16. Organisational culture	.787	.630
CF.OP17. Diversity training	.136	.175

Extraction Method: Alpha Factoring.

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.972	52.777	52.777	8.598	50.576	50.576	7.405	43.560	43.560
2	1.274	7.493	60.270	.644	3.787	54.363	2.008	11.814	55.374
3	1.160	6.825	67.095	.781	4.591	58.954	.609	3.580	58.954
4	.855	5.031	72.126						
5	.720	4.234	76.360						
6	.614	3.610	79.970						
7	.497	2.923	82.893						
8	.483	2.839	85.732						
9	.446	2.622	88.354						
10	.411	2.417	90.771						
11	.360	2.120	92.891						
12	.274	1.610	94.502						

13	.248	1.458	95.960						
14	.219	1.290	97.249						
15	.204	1.202	98.451						
16	.177	1.039	99.489						
17	.087	.511	100.000						
Extraction Method: Alpha Factoring.									

Factor Matrix[a]			
	Factor		
	1	2	3
CF.OP1. Diversity training	.728	.146	.009
CF.OP2. Paid maternity leave	.671	-.182	-.155
CF.OP3. Career development programmes	.795	.019	-.166
CF.OP4. Part time work	.425	-.321	.491
CF.OP5. Part-time managerial roles	.560	-.224	.532
CF.OP6. Networking opportunities	.822	.185	-.080

CF.OP7. Mentoring	.757	.126	-.161
CF.OP8. Women business forums	.747	.296	-.007
CF.OP9. Child care facilities	.687	.074	.157
CF.OP10. Interviewing women regarding their needs	.760	.220	.141
CF.OP11. Keeping in touch with women on maternity leave	.714	.030	.123
CF.OP12. Base pay	.722	-.181	-.050
CF.OP13. Working hours	.754	-.124	-.086
CF.OP14. Health benefits	.839	-.195	-.165
CF.OP15. Work environment	.847	-.055	-.203
CF.OP16. Organisational culture	.785	.004	-.118
CF.OP17. Diversity training	.014	.393	.141
Extraction Method: Alpha Factoring.			
a. 3 factors extracted. 13 iterations required.			

Rotated Factor Matrix[a]	
	Factor

	1	2	3
CF.OP1. Diversity training	.676	.244	.187
CF.OP2. Paid maternity leave	.656	.208	-.183
CF.OP3. Career development programmes	.794	.172	.006
CF.OP4. Part time work	.164	.701	-.079
CF.OP5. Part-time managerial roles	.280	.753	.035
CF.OP6. Networking opportunities	.800	.193	.194
CF.OP7. Mentoring	.768	.121	.104
CF.OP8. Women business forums	.715	.182	.319
CF.OP9. Child care facilities	.573	.378	.173
CF.OP10. Interviewing women regarding their needs	.661	.339	.307
CF.OP11. Keeping in touch with women on maternity leave	.607	.377	.122
CF.OP12. Base pay	.662	.316	-.138
CF.OP13. Working hours	.710	.277	-.097
CF.OP14. Health benefits	.812	.271	-.187
CF.OP15. Work environment	.849	.191	-.072
CF.OP16. Organisational culture	.764	.214	.011

CF.OP17. Diversity training	-.004	-.024	.417

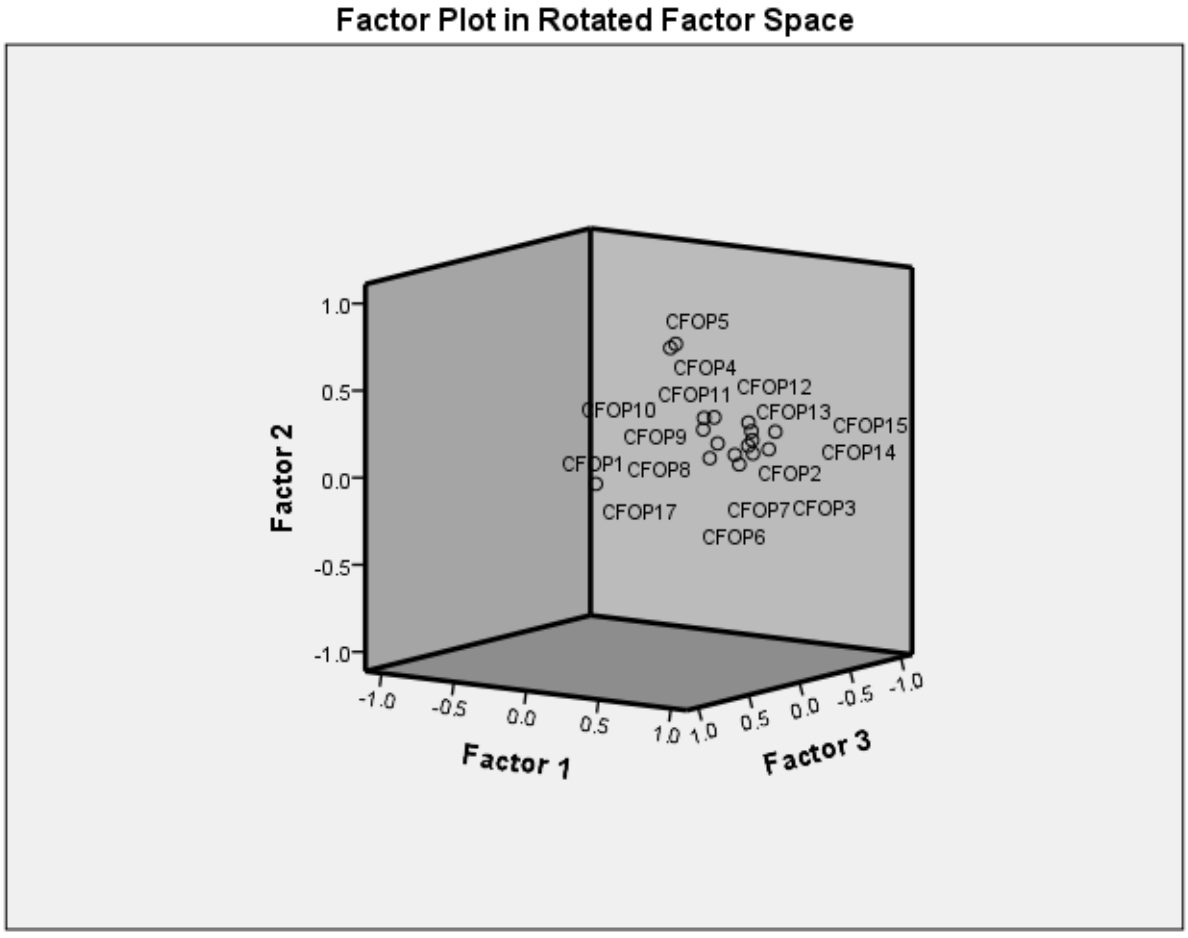
Extraction Method: Alpha Factoring.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 4 iterations.

Factor Transformation Matrix

Factor	1	2	3
1	.914	.400	.066
2	.098	-.376	.921
3	-.394	.836	.383

Extraction Method: Alpha Factoring.
Rotation Method: Varimax with Kaiser Normalization.



- **Organisational policy – 2nd iteration**

Correlation Matrix[a]
a. Determinant = 4.274E-006

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.917
Bartlett's Test of Sphericity	Approx. Chi-Square	1728.765
	df	120
	Sig.	.000

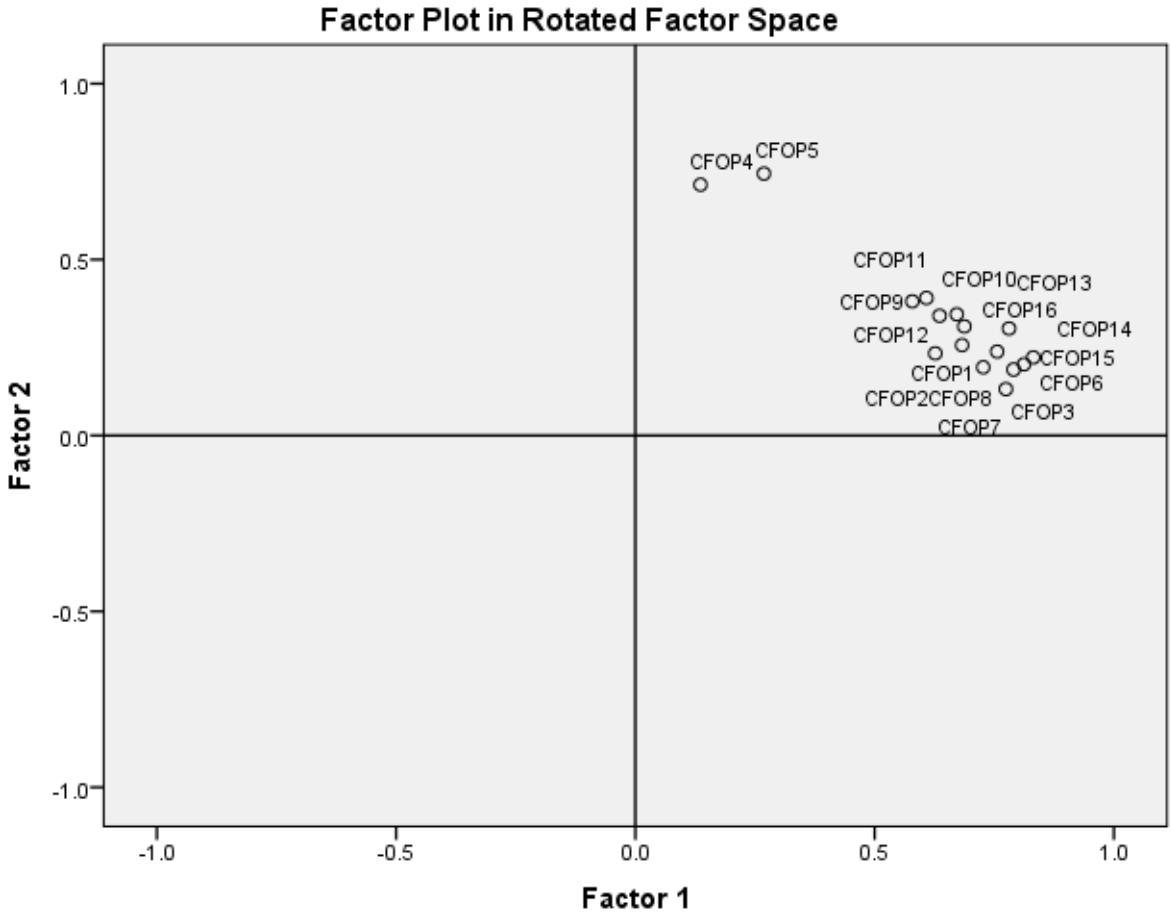
Communalities		
	Initial	Extraction
CF.OP1. Diversity training	.588	.532
CF.OP2. Paid maternity leave	.504	.447
CF.OP3. Career development programmes	.726	.660
CF.OP4. Part time work	.470	.527
CF.OP5. Part-time managerial roles	.519	.626
CF.OP6. Networking opportunities	.721	.700
CF.OP7. Mentoring	.677	.617
CF.OP8. Women business forums	.629	.566
CF.OP9. Child care facilities	.517	.480
CF.OP10. Interviewing women regarding their needs	.646	.570
CF.OP11. Keeping in touch with women on maternity leave	.638	.523
CF.OP12. Base pay	.587	.520
CF.OP13. Working hours	.655	.569
CF.OP14. Health benefits	.772	.702

CF.OP15. Work environment	.852	.741
CF.OP16. Organisational culture	.787	.629
Extraction Method: Alpha Factoring.		

Factor Matrix[a]		
	Factor	
	1	2
CF.OP1. Diversity training	.727	-.056
CF.OP2. Paid maternity leave	.667	-.053
CF.OP3. Career development programmes	.796	-.164
CF.OP4. Part time work	.424	.589
CF.OP5. Part-time managerial roles	.558	.561
CF.OP6. Networking opportunities	.821	-.160
CF.OP7. Mentoring	.757	-.208
CF.OP8. Women business forums	.741	-.132
CF.OP9. Child care facilities	.686	.101
CF.OP10. Interviewing women regarding their needs	.754	.029
CF.OP11. Keeping in touch with women on maternity leave	.716	.097
CF.OP12. Base pay	.720	.040

CF.OP13. Working hours	.754	-.009
CF.OP14. Health benefits	.836	-.054
CF.OP15. Work environment	.847	-.150
CF.OP16. Organisational culture	.786	-.103
Extraction Method: Alpha Factoring.		
a. 2 factors extracted. 8 iterations required.		

Factor Transformation Matrix		
Factor	1	2
1	.906	.423
2	-.423	.906
Extraction Method: Alpha Factoring. Rotation Method: Varimax with Kaiser Normalization.		



- **Glass ceiling**

Correlation Matrix[a]
a. Determinant = .391

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.500
Bartlett's Test of Sphericity	Approx. Chi-Square	135.728
	df	1
	Sig.	.000

Communalities

	Initial	Extraction
CF.GC1. Supervisor quality/management/leadership	.609	.780
CF.GC2. Equal opportunities	.609	.780
Extraction Method: Alpha Factoring.		

G2. Feminist/gender factors

- **Discrimination, patriarchy, and women's position in society**

Correlation Matrix[a]
a. Determinant = .224

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.773
Bartlett's Test of Sphericity	Approx. Chi-Square	215.148
	df	6
	Sig.	.000

Communalities		
	Initial	Extraction
FGF.D1. Gender discrimination	.480	.510
FGF.P1. Cultural affiliation	.514	.711
FGF.P2. Patriarchy	.510	.659
FGF.WPS1. Women’s position in society	.308	.322
Extraction Method: Alpha Factoring.		

G3. Human capital factors

- **Education and training, and experience**

Correlation Matrix[a]
a. Determinant = .023

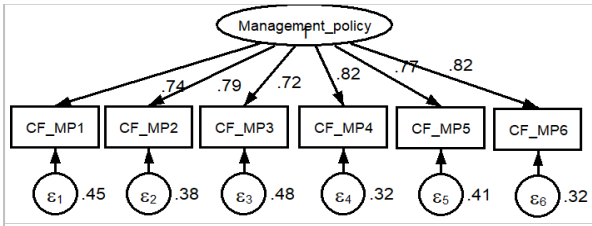
KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.898
Bartlett's Test of Sphericity	Approx. Chi-Square	538.851
	df	10
	Sig.	.000

Communalities		
	Initial	Extraction
HCF.ET1. Education and training opportunities	.731	.812
HCF.ET2. Support of external training (e.g. academic studies)	.635	.673
HCF.ET3. Career development programmes	.666	.727
HCF.E1. Experience	.664	.723
HCF.E2. Leadership training for women	.601	.640
Extraction Method: Alpha Factoring.		

Appendix G – Confirmatory factor analysis

H1. Career factors

- **Management policy**




```
Structural equation model                       Number of obs     =        147
Estimation method  = ml
Log likelihood     = -1100.9258

 ( 1)  [CF_MP1]Management_policy = 1
```

Standardized	Coef.	OIM Std. Err.	z	P>|z|	[95% Conf.	Interval]
Measurement						
CF_MP1 <-						
Management_policy	.6830573	.0513717	13.30	0.000	.5823707	.7837439
CF_MP2 <-						
Management_policy	.7483944	.044294	16.90	0.000	.6615798	.835209
CF_MP3 <-						
Management_policy	.7324387	.0458134	15.99	0.000	.6426461	.8222312
CF_MP4 <-						
Management_policy	.8031553	.0381514	21.05	0.000	.72838	.8779305
CF_MP5 <-						
Management_policy	.7371798	.0464855	15.86	0.000	.6460699	.8282897
CF_MP6 <-						
Management_policy	.8519923	.033119	25.73	0.000	.7870801	.9169044
var(e.CF_MP1)	.5334327	.0701796			.4121864	.690344
var(e.CF_MP2)	.4399058	.0662987			.3273966	.5910787
var(e.CF_MP3)	.4635336	.067111			.3490143	.6156293
var(e.CF_MP4)	.3549416	.0612829			.2530414	.4978773
var(e.CF_MP5)	.4565659	.0685363			.3401946	.6127448
var(e.CF_MP6)	.2741092	.0564343			.1830947	.4103659
var(Management_policy)	1	.			.	.
cov(e.CF_MP1,e.CF_MP2)	.5556524	.0648036	8.57	0.000	.4286396	.6826651
cov(e.CF_MP4,e.CF_MP5)	.3808934	.0878915	4.33	0.000	.2086293	.5531575

```
LR test of model vs. saturated: chi2(7)    =     16.85, Prob > chi2 = 0.0184
```

Fit statistic	Value	Description
Likelihood ratio		
chi2_ms(7)	16.850	model vs. saturated
p > chi2	0.018	
chi2_bs(15)	564.793	baseline vs. saturated
p > chi2	0.000	
Population error		
RMSEA	0.098	Root mean squared error of approximation
90% CI, lower bound	0.038	
upper bound	0.159	
pclose	0.085	Probability RMSEA <= 0.05
Information criteria		
AIC	2229.852	Akaike's information criterion
BIC	2271.718	Bayesian information criterion
Baseline comparison		
CFI	0.982	Comparative fit index
TLI	0.962	Tucker-Lewis index
Size of residuals		
SRMR	0.026	Standardized root mean squared residual
CD	0.881	Coefficient of determination

- **Organisational policy**

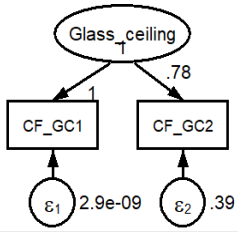
```
Structural equation model                       Number of obs     =        147
Estimation method  = ml
Log likelihood     = -2911.3231

 ( 1)  [CF_OP1]Organisational_policy = 1
```

Standardized	Coef.	OIM Std. Err.	z	P>|z|	[95% Conf.	Interval]
Measurement						
CF_OP1 <- Organisational_policy	.7334913	.0410722	17.86	0.000	.6529913	.8139914
CF_OP2 <- Organisational_policy	.666351	.0487345	13.67	0.000	.5708332	.7618688
CF_OP3 <- Organisational_policy	.7998668	.0330764	24.18	0.000	.7350383	.8646953
CF_OP4 <- Organisational_policy	.3686145	.073978	4.98	0.000	.2236202	.5136088
CF_OP5 <- Organisational_policy	.5101325	.0636758	8.01	0.000	.3853303	.6349346
CF_OP6 <- Organisational_policy	.8391983	.0278063	30.18	0.000	.784699	.8936976
CF_OP7 <- Organisational_policy	.7699414	.0368666	20.88	0.000	.6976842	.8421985
CF_OP8 <- Organisational_policy	.7671091	.0370527	20.70	0.000	.6944872	.839731
CF_OP9 <- Organisational_policy	.6843098	.0467021	14.65	0.000	.5927754	.7758442
CF_OP10 <- Organisational_policy	.7420851	.0400683	18.52	0.000	.6635526	.8206176
CF_OP11 <- Organisational_policy	.6916973	.0461518	14.99	0.000	.6012415	.7821532
CF_OP12 <- Organisational_policy	.7092146	.0440154	16.11	0.000	.6229461	.7954832
CF_OP13 <- Organisational_policy	.7369293	.0408982	18.02	0.000	.6567704	.8170883
CF_OP14 <- Organisational_policy	.8160134	.0301801	27.04	0.000	.7568615	.8751653
CF_OP15 <- Organisational_policy	.8259309	.0289035	28.58	0.000	.769281	.8825808
CF_OP16 <- Organisational_policy	.7751162	.0359265	21.58	0.000	.7047016	.8455309
var(e.CF_OP1)	.4619905	.0602522			.3577835	.5965484
var(e.CF_OP2)	.5559764	.0649485			.4422012	.699025
var(e.CF_OP3)	.3602131	.0529134			.2700987	.4803929
var(e.CF_OP4)	.8641233	.0545388			.7635764	.9779101
var(e.CF_OP5)	.7397649	.0649661			.6227894	.8787113
var(e.CF_OP6)	.2957462	.04667			.2170682	.4029418
var(e.CF_OP7)	.4071903	.0567702			.30983	.535145
var(e.CF_OP8)	.4115437	.0568469			.3139343	.539502
var(e.CF_OP9)	.5317201	.0639174			.4201083	.6729842
var(e.CF_OP10)	.4493097	.0594682			.3466453	.5823797
var(e.CF_OP11)	.5215548	.0638462			.4102986	.6629791
var(e.CF_OP12)	.4970146	.0624327			.3885484	.63576
var(e.CF_OP13)	.4569352	.0602781			.35283	.5917574
var(e.CF_OP14)	.3341222	.0492547			.2502794	.446052
var(e.CF_OP15)	.3178382	.0477446			.236778	.4266491
var(e.CF_OP16)	.3991948	.0556944			.3036882	.5247372
var(Organisational_policy)	1	.			.	.
cov(e.CF_OP3,e.CF_OP7)	.373456	.0780684	4.78	0.000	.2204447	.5264673
cov(e.CF_OP4,e.CF_OP5)	.524804	.0604799	8.68	0.000	.4062656	.6433425
cov(e.CF_OP10,e.CF_OP11)	.3839287	.0745567	5.15	0.000	.2378004	.5300571
cov(e.CF_OP13,e.CF_OP14)	.3749466	.0739474	5.07	0.000	.2300123	.5198809
cov(e.CF_OP14,e.CF_OP15)	.2410573	.0606292	3.98	0.000	.1222262	.3598884
cov(e.CF_OP15,e.CF_OP16)	.6222713	.0517349	12.03	0.000	.5208727	.7236699

```
LR test of model vs. saturated: chi2(98)  =    183.64, Prob > chi2 = 0.0000
```

Fit statistic	Value	Description
Likelihood ratio		
chi2_ms(98)	183.641	model vs. saturated
p > chi2	0.000	
chi2_bs(120)	1817.367	baseline vs. saturated
p > chi2	0.000	
Population error		
RMSEA	0.077	Root mean squared error of approximation
90% CI, lower bound	0.060	
upper bound	0.094	
pclose	0.007	Probability RMSEA <= 0.05
Information criteria		
AIC	5898.646	Akaike's information criterion
BIC	6012.283	Bayesian information criterion
Baseline comparison		
CFI	0.950	Comparative fit index
TLI	0.938	Tucker-Lewis index
Size of residuals		
SRMR	0.045	Standardized root mean squared residual
CD	0.942	Coefficient of determination

- Glass ceiling



Structural equation model — Number of obs = 147
Estimation method = ml
Log likelihood = -389.25618

(1) [CF_GC1]Glass_ceiling = 1

Standardized	Coef.	OIM Std. Err.	z	P>|z|	[95% Conf.	Interval]
Measurement						
CF_GC1 <- Glass_ceiling	1	209.1752	0.00	0.996	-408.9758	410.9758
CF_GC2 <- Glass_ceiling	.7804458	163.2499	0.00	0.996	-319.1834	320.7443
var(e.CF_GC1)	2.89e-09	418.3503			.	.
var(e.CF_GC2)	.3909044	254.8153			.	.
var(Glass_ceiling)	1	.			.	.

LR test of model vs. saturated: chi2(-1) = 0.00, Prob > chi2 = .

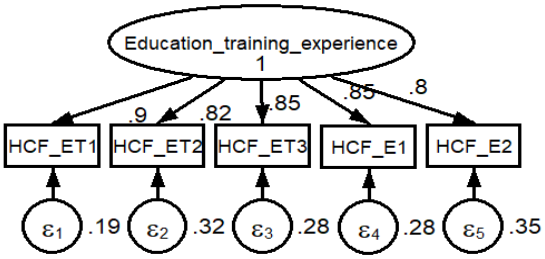
H2. Feminist/gender factors

- **Discrimination, patriarchy and women's position in society**

```
Structural equation model                       Number of obs     =        147
Estimation method  = ml
Log likelihood     = -894.08291

 ( 1)  [FG_FD1]Discrimination_patriarchy = 1
------------------------------------------------------------------------------
                             |                 OIM
                Standardized |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-----------------------------+------------------------------------------------
Measurement                  |
  FG_FD1 <-                  |
    Discrimination_patriarchy|    .7584119   .0464706    16.32   0.000     .6673312    .8494927
  -----------------------------+------------------------------------------------
  FG_FP1 <-                  |
    Discrimination_patriarchy|     .797199   .0451966    17.64   0.000     .7086154    .8857826
  -----------------------------+------------------------------------------------
  FG_FP2 <-                  |
    Discrimination_patriarchy|    .8014466   .0441837    18.14   0.000     .7148481    .8880452
  -----------------------------+------------------------------------------------
  FG_FWPS1 <-                |
    Discrimination_patriarchy|    .5789166   .0641371     9.03   0.000     .4532102     .704623
-----------------------------+------------------------------------------------
                 var(e.FG_FD1)|    .4248113   .0704878                      .3068729    .5880762
                 var(e.FG_FP1)|    .3644738   .0720613                      .2473845    .5369825
                 var(e.FG_FP2)|    .3576833   .0708218                      .2426384    .5272758
                var(e.FG_FWPS1)|    .6648555   .0742601                      .5341381    .8275629
var(Discrimination_patriarchy)|           1          .                            .           .
------------------------------------------------------------------------------
LR test of model vs. saturated: chi2(2)   =      7.35, Prob > chi2 = 0.0253
```

```
------------------------------------------------------------------------------
Fit statistic               |      Value   Description
----------------------------+-------------------------------------------------
Likelihood ratio            |
          chi2_ms(2)        |      7.354   model vs. saturated
            p > chi2        |      0.025
          chi2_bs(6)        |    219.885   baseline vs. saturated
            p > chi2        |      0.000
----------------------------+-------------------------------------------------
Population error            |
                RMSEA       |      0.135   Root mean squared error of approximation
 90% CI, lower bound        |      0.041
         upper bound        |      0.245
              pclose        |      0.064   Probability RMSEA <= 0.05
----------------------------+-------------------------------------------------
Information criteria        |
                  AIC       |   1804.166   Akaike's information criterion
                  BIC       |   1828.089   Bayesian information criterion
----------------------------+-------------------------------------------------
Baseline comparison         |
                  CFI       |      0.975   Comparative fit index
                  TLI       |      0.925   Tucker-Lewis index
----------------------------+-------------------------------------------------
Size of residuals           |
                 SRMR       |      0.034   Standardized root mean squared residual
                   CD       |      0.844   Coefficient of determination
------------------------------------------------------------------------------
```

H3. Human capital factors



Structural equation model — Number of obs = 147
Estimation method = ml
Log likelihood = -879.54335

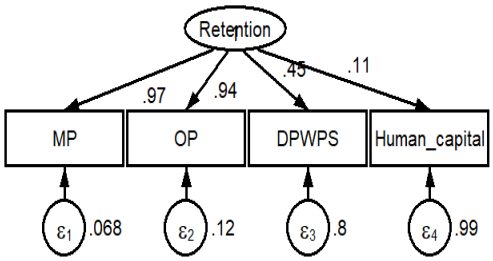
(1) [HCF_ET1]Education_training_experience = 1

	Standardized	Coef.	OIM Std. Err.	z	P>|z|	[95% Conf.	Interval]
Measurement							
HCF_ET1 <- Education_training_experience	.8999521	.8590705	.0208583	43.15	0.000	.9408337	
HCF_ET2 <- Education_training_experience	.8240538	.7643758	.0304485	27.06	0.000	.8837318	
HCF_ET3 <- Education_training_experience	.8480418	.7942267	.0274572	30.89	0.000	.9018569	
HCF_E1 <- Education_training_experience	.8494815	.796331	.0271181	31.33	0.000	.9026319	
HCF_E2 <- Education_training_experience	.8036286	.7389916	.0329787	24.37	0.000	.8682656	
var(e.HCF_ET1)	.1900862	.1290726	.037543			.2799414	
var(e.HCF_ET2)	.3209353	.2362224	.0501824			.4360276	
var(e.HCF_ET3)	.2808251	.2028989	.0465697			.38868	
var(e.HCF_E1)	.2783812	.2012633	.0460726			.3850484	
var(e.HCF_E2)	.3541811	.2641425	.0530052			.4749113	
var(Education_training_experience)	1	.	.			.	

LR test of model vs. saturated: chi2(5) = 5.22, Prob > chi2 = 0.3897

Fit statistic	Value	Description
Likelihood ratio		
chi2_ms(5)	5.219	model vs. saturated
p > chi2	0.390	
chi2_bs(10)	551.993	baseline vs. saturated
p > chi2	0.000	
Population error		
RMSEA	0.017	Root mean squared error of approximation
90% CI, lower bound	0.000	
upper bound	0.117	
pclose	0.586	Probability RMSEA <= 0.05
Information criteria		
AIC	1779.087	Akaike's information criterion
BIC	1808.991	Bayesian information criterion
Baseline comparison		
CFI	1.000	Comparative fit index
TLI	0.999	Tucker-Lewis index
Size of residuals		
SRMR	0.015	Standardized root mean squared residual
CD	0.930	Coefficient of determination

H4 – Overall model




```
Structural equation model                       Number of obs     =        147
Estimation method  = ml
Log likelihood     = -677.90817

 ( 1)  [MP]Retention = 1
------------------------------------------------------------------------------
                    |                 OIM
       Standardized |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------------+---------------------------------------------------------
Measurement         |
  MP <-             |
          Retention |   .9656184   .0379462    25.45   0.000     .8912452    1.039992
  -------------------+---------------------------------------------------------
  OP <-             |
          Retention |     .93753   .0377807    24.82   0.000     .8634811    1.011579
  -------------------+---------------------------------------------------------
  DPWPS <-          |
          Retention |   .4505983   .0685159     6.58   0.000     .3163096     .584887
  -------------------+---------------------------------------------------------
  Human_capital <-  |
          Retention |   .1094288   .0870092     1.26   0.209    -.0611062    .2799638
--------------------+---------------------------------------------------------
           var(e.MP) |   .0675812    .073283                      .0080688    .5660357
           var(e.OP) |   .1210376   .0708412                       .038435    .3811654
        var(e.DPWPS) |   .7969612   .0617463                      .6846813    .9276536
var(e.Human_capital) |   .9880253   .0190426                      .9513986    1.026062
      var(Retention) |          1          .                             .           .
------------------------------------------------------------------------------
LR test of model vs. saturated: chi2(2)    =      3.45, Prob > chi2 = 0.1779
```

```
--------------------------------------------------------------------------
Fit statistic          |      Value   Description
-----------------------+--------------------------------------------------
Likelihood ratio       |
          chi2_ms(2)   |      3.453   model vs. saturated
            p > chi2   |      0.178
          chi2_bs(6)   |    288.535   baseline vs. saturated
            p > chi2   |      0.000
-----------------------+--------------------------------------------------
Population error       |
               RMSEA   |      0.070   Root mean squared error of approximation
 90% CI, lower bound   |      0.000
         upper bound   |      0.192
              pclose   |      0.287   Probability RMSEA <= 0.05
-----------------------+--------------------------------------------------
Information criteria   |
                 AIC   |   1371.816   Akaike's information criterion
                 BIC   |   1395.740   Bayesian information criterion
-----------------------+--------------------------------------------------
Baseline comparison    |
                 CFI   |      0.995   Comparative fit index
                 TLI   |      0.985   Tucker-Lewis index
-----------------------+--------------------------------------------------
Size of residuals      |
                SRMR   |      0.015   Standardized root mean squared residual
                  CD   |      0.955   Coefficient of determination
--------------------------------------------------------------------------
```

Appendix D – Scale reliability tests

D1. Career factors

Reliability Statistics	
Cronbach's Alpha	N of Items
.962	22

- **Management policy**

Reliability Statistics	
Cronbach's Alpha	N of Items
.899	6

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
CF.MP1	20.03	23.342	.699	.885
CF.MP2	19.89	23.796	.753	.879
CF.MP3	20.16	22.507	.673	.891
CF.MP4	20.23	21.932	.773	.874
CF.MP5	20.42	22.547	.707	.884
CF.MP6	19.95	22.929	.775	.874

- **Organisational policy**

Reliability Statistics	
Cronbach's Alpha	N of Items

.945	16

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
CF.OP1	57.70	175.458	.707	.941
CF.OP2	57.62	175.265	.646	.943
CF.OP3	57.29	175.192	.767	.940
CF.OP4	58.58	184.547	.405	.947
CF.OP5	58.35	179.023	.537	.945
CF.OP6	57.57	173.685	.793	.939
CF.OP7	57.32	176.123	.727	.941
CF.OP8	57.80	172.287	.715	.941
CF.OP9	58.04	173.245	.672	.942
CF.OP10	57.82	172.832	.735	.940
CF.OP11	58.07	172.899	.698	.941
CF.OP12	57.90	174.854	.702	.941
CF.OP13	57.77	173.549	.733	.941
CF.OP14	57.68	171.205	.808	.939
CF.OP15	57.37	173.811	.817	.939
CF.OP16	57.41	174.969	.761	.940

D2. Feminist/gender factors

Reliability Statistics	
Cronbach's Alpha	N of Items
.819	4

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
FG.FD1	10.12	9.930	.649	.776
FG.FP1	10.05	10.929	.717	.738
FG.FP2	10.10	10.955	.708	.742
FG.FWPS1	9.64	12.849	.514	.825

D3. Human capital factors

Reliability Statistics	
Cronbach's Alpha	N of Items
.924	5

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
HCF.ET1	15.92	17.404	.854	.898
HCF.ET2	16.12	17.226	.783	.911
HCF.ET3	16.09	16.835	.811	.905
HCF.E1	16.00	17.288	.810	.905
HCF.E2	16.29	16.685	.765	.915

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