

**Identifying the factors that influence the
advancement of women into managerial positions
at a steel manufacturing company**

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DECLARATION

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ABSTRACT

This study aimed at identifying the factors that influence the advancement of women into managerial positions at a steel manufacturing company based in Gauteng. The objectives included analysing the gender-balanced leadership in organisations, the advantages and disadvantages of having women in leadership positions, the current efforts put in place to encourage the appointments and retentions, and to ascertain the necessary steps put in place to ensure that the progress for women to occupy the leadership roles are achieved.

A literature review was compiled to assess the progress made to advance women into leadership positions in various organisations. The literature was structured in three main categories: societal factors, individual factors, and organizational factors. A quantitative study was conducted using a self-compiled questionnaire by the researcher. A total number of 134 personnel who responded were to the questionnaire were from the steel manufacturing company based in Gauteng participated in this study. Google forms were used to distribute the questionnaire to the participants. The responses were anonymously captured to protect the rights of all respondents. The collected data were evaluated for reliability and validity before the analysis. The statistical analysis was conducted using the SPSS software.

The analysis included demographic data, descriptive analysis, statistical factor analysis, effects of the biographical data, and the relationships of the various sections stipulated in the questionnaire. The conclusion assessed if the assumptions made, based on the population, were accurate, and the results matched the premises, so the study was valid. The study made practical recommendations on promoting strategies that could enhance the advancement of women into leadership roles in South African steel manufacturing companies.

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NOMENCLATURE

CEO	Chief Executive Officer
COVID-19	Corona Virus Disease - 2019
DF	Degree of Freedom
ECSA	Engineering Council of South Africa
GUI	Graphic User Interface
HR	Human Resource
KPIs	Key Performance Indicators
Ph.D.	Philosophiae Doctor
SE	Standard Error
Sig.	Significance
Std. Dev.	Standard Deviation
STEM	Science, Technology, Engineering and Mathematics
US	United States

CHAPTER 1: INTRODUCTION

1.1 Background

The population of South Africa was estimated to 56 612 920 people, with females representing 50.5% and males 49.5% of the people as of the 1st of January 2019 (Population, 2019). These statistics indicate that there are more females than males in South Africa. The steel manufacturing company based in Gauteng, South Africa, used in this study, employs about 4500 personnel. Women are no longer happy being house dwellers and doing domestic chores. They have grown interests in joining challenging and exciting jobs, and men are also open to the idea of sharing household responsibilities (Ganesh & Ganesh, 2014:230).

It is evident that despite the changes most corporates pledge, women's career advancement into senior executive teams and boards is still limited to about 15% in many countries (Barsh & Yee, 2011:2). Numerous factors that inhibit women from occupying senior executive roles in the workplace have been debated over the years as women are regarded as incapable of leading in top positions (Fitzsimmons *et al.*, 2014:245).

Joan (2009:200) states that more women in leadership roles would be advantageous for more women to be in senior positions. The author argues that it would minimise gender discrimination and therefore reduce gender-based wage disparities. Dezso and Ross (2012:1072) believe that more females in leadership roles enhance organisations' performance, yet the under-representation of women is still a societal and business problem. The same authorities also state that a lack of gender diversity implicates organisations' competitiveness and that women would improve information processing and decision-making skills (Dezso & Ross, 2012:1073).

Women are prone to leave the manufacturing industries due to poor relationships in the workplace with their male counterparts, lack of promotion opportunities, and usually earn less income than males. Furthermore, the lack of flexibility in their workplaces makes it difficult for women to fully commit to their families' responsibilities without weakening their career advancement (McNelly, 2015:20). This research added that women stay in jobs that allow them to have a sufficient

work-life balance, reasonable income, and when they are granted opportunities to work on exciting and challenging tasks.

This study is an effort to identify the issues hence the factors that influence the advancement of women into managerial positions with a focus on a case of interest; a steel manufacturing company.

1.2 Problem statement

From the preceding background, it is evident that certain factors influence the advancement of women in manufacturing companies, which subsequently result in either the retention or attrition of women in the workplace. The continuing gender stereotype proposes the ideology that management posts should be filled by males, which may result in women being perceived either as incapable, less capable, or not as competent leaders as men (Glass & Cook, 2016:51). Several authorities argue that a gender-balanced leadership would improve information processing and decision-making skills (Dezso & Ross, 2012:1073). It would reduce gender discrimination and the wage gap between men and women in an organisation (Joan, 2009:200).

The steel manufacturing organisation used in this study has about 4500 personnel, an estimated value of about 35% out of the total number of the 4500 employees in the group are women, and the remaining 65% are males. The organisation has about 38 women in managerial roles, representing 12% of the overall management positions in the group, which currently stands at 310. Yet, on an annual basis, estimated figures of about 60% of the candidates in the engineering graduate programme are women. There is a disproportionate representation of women in managerial roles, although the pipeline of new graduates favours female candidates. The trend of promotions is contrary, suggesting constraints or barriers in women's progression into leadership, which is evident at the senior leadership level. Thus, this study will explore the factors that influence the advancement of women into managerial positions at a steel manufacturing company.

1.3 Research objectives

This study had one primary objective and three secondary objectives that helped to address the primary goal.

1.3.1 Primary objective

The primary objective of this study was to identify the critical factors that influence the advancement of women into managerial positions at a steel manufacturing company.

1.3.2 Secondary objectives

- To evaluate the pros and cons of gender-balanced leadership in a manufacturing organisation;
- to ascertain steps that manufacturing companies have taken to progress women into leadership roles; and
- to contribute to the current efforts in promoting the appointment and retention of women in leadership roles in the manufacturing sector.

1.4 Importance of the proposed study

The significance of this proposed study was to address patriarchy issues in the steel manufacturing company. It was essential to empower women to demonstrate their managerial skills and evaluate the strategies women can bring to the organisation to improve its business objectives and goals.

1.5 Purpose of the study

This study aimed to identify specific factors that influence the advancement of women into managerial positions using a steel manufacturing company as the population. Furthermore, this study explored strategies that companies can use to promote the appointment and retention of women in leadership roles in the manufacturing sector.

1.6 Assumptions of the study

- The study assumed that women in manufacturing industries are constrained in some way or have challenges in progressing in or towards managerial roles.
- This study assumed that women who participated in this study have the requisite experience and qualifications equal to their male counterparts.
- The study assumed that the research participants answered the questions truthfully and were in no way coerced or unduly influenced to participate.

1.7 Definition of key terms

- **Career capital** – is a term used to define a woman taking a risky career, such as being part of the executive management, when their male counterparts decline the offer (Fitzsimmons *et al.*, 2014:257).
- **Glass ceiling** – is a term that explains that while there is an increased entry of women into working environments traditionally occupied by men, women's advancement into prestigious positions such as leadership roles with high salaries is still limited (Zhuge *et al.*, 2011:1).
- **Glass cliff** – is a phenomenon where women are appointed into leadership roles highly associated with risk, which increases their chances of failure and criticism from their male counterparts (Haslam & Ryan, 2008:531).
- **Glass escalator** – is a term used to describe the increased chances of men obtaining managerial posts in a company (Haslam & Ryan, 2008:530).
- **Leadership** – a process implemented by an individual to influence a person or group of people to achieve a common goal and cultivate a vision (Algahtani, 2014:75).
- **Management** – a formal position where an individual directs and controls an employee or a group of employees, resources, structures, and systems used in an organisation (Algahtani, 2014:74).
- **Patriarchy** – is a social and ideological paradigm that considers men superior to women (Rawat, 2014:44).

1.8 Ethical Considerations

Research ethics govern the standards of conduct for scientific researchers. It is essential to adhere to ethical principles to protect research participants' dignity, rights, and welfare. Most ethical issues fall into one of the four categories, namely:

- Protection from harm,
- Informed consent,
- The right to privacy and confidentiality and
- Honesty with professional colleagues (Leedy & Ormrod, 2005:101).

Research ethics are a set of principles that guide researchers and their organisations on how to conduct themselves when dealing with their respective research participants, their colleagues and other researchers, and any other people who may use their research and society in general (Araya, 2017:4). Participants have the right to know what kind of research they will be involved in, the impact the study will have on them, and the risks and benefits of participating in it. Therefore, they have a right to decline or accept to participate in the study.

The North-West University Economic and Management Sciences Research Ethics Committee received all the ethical considerations from the steel manufacturing company to permit the researcher approval to proceed with the study. Each participant declared their consent for participating in the survey by clicking on the acknowledgement checkbox of the google forms. The checkbox was designed so that if it is not clicked, the participant cannot answer the questions in the google forms questionnaire.

The informed consent letter from the organisation was provided officially to authorise the use of the information from the organisation. The respondents openly stated that participation in this study is voluntary in the introductory email to the respondents. The results did not reveal any of the participants' identities, unique identifiers, or contact details to ensure anonymity as it is of paramount importance to protect the respondents. There was no use of discriminatory, offensive, or any other unacceptable language in the formulation of the questionnaire.

The researcher adhered to the school ethics policy by ensuring correct information from the survey was provided in the data analysis, and no ethical codes were violated. The researcher ensured that they reduce any potential risks associated with the study as much as possible and appropriate precautions were put in place. The researcher indicated to the participants that they are fully qualified to conduct the nature of this study. The researcher ensured there is no deviation between the actual dissertation and the approved research proposal. The research was conducted with all the related documents required to commence this study. The researcher working on this study obtained the ethics clearance from the NWU University as required.

1.9 Chapter layout

This section below indicates the chapter layout of this study.

Chapter 1 defines the project title and background of the study, including the problem statement, the primary research questions, the objectives, the assumptions, and the delimitations of the study.

Chapter 2 covers the relevant definitions and previous findings of other researchers regarding the topic at hand. It also provides empirical evidence between male and female differences in leadership skills, as explained in Figure 2.1.

Chapter 3 discusses the overall research design and population analysis, sampling, design, and data collection methods used to complete this investigation.

Chapter 4 includes the results that were obtained from analysing the data collected for this study. It also covers the results from the software programs that were used to analyse data in this report. These results include the demographics of the survey participants, the correlation analysis, and descriptive statistics of the variables indicated in the questionnaire.

Chapter 5 covers the discussion concerning the results of this report. It also includes the conclusions and recommendations that were drawn from the findings.

1.10 Conclusion

The main aim of this chapter was to explain the background and introduction of the study. The problem statement was defined based on the statistics of the steel manufacturing company. The research objectives, both primary and secondary objectives based on the background of the study, were provided. The key terms used in the study were explained in this section. The significance and purpose of the study were discussed. The assumptions of the study were also outlined in this section. The chapter ended with a clear identification of the ethical considerations that must be adhered to throughout the research process. The following section includes the literature review related to the lack of women's advancement into senior leadership roles.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The main reason for reviewing the literature is to understand the findings related to the subject area of this research (Hart, 2018:11). As indicated in the introduction of this study, the main objective of this study was to understand the critical factors that influence the advancement of women into senior managerial roles in male-dominated industries such as steel manufacturing companies. Hart (2018:13) declares that literature review is essential for an academic study. It increases one's understanding of the particular topic, indicates what has already been tested and done, how other researchers conducted their findings, what the key issues are, and what is unknown.

A comparative study was conducted to investigate the career paths of males and females, leading to senior roles such as Chief Executive Officer (CEO) roles. This study revealed several factors responsible for the lack of equal integration of both female and male leadership. These factors included cognitive isolation, treatment, and isolation in terms of fields of study according to gender. It was also proven that influential rule-makers in the corporate system decide who they want to open senior-level opportunities for, between males and females. They are likely to appoint people with similar experiences to theirs, and they cater to people they believe possess financial resources valuable to them (Fitzsimmons *et al.*, 2014:251). The same authorities argue that these forces have a significant effect on women's progress in top positions.

A 2016 report by the Engineering Council of South Africa indicated a high ratio of males to females in the Engineering industry. These statistics were reported on the 31st of March 2016 and are presented in Table 2.1 below. Engineers mostly hold managerial posts in manufacturing industries. It should be noted that figures in Table 2.1 indicate the historical content of professional registrations of all ages, including people who have moved out of the engineering sector into other roles in other businesses.

Table 2.1: ECSA Gender Statistics

Professional registrations statistics by gender and category		
Category	Male	Female
Professional engineer	16526	773
Professional engineer technologist	5491	346
Professional certificated engineer	1076	7
Professional engineering technician	5214	705

Source: (ECSA, 2016:37).

Fitzsimmons and Callan (2016:363) identify three critical factors that influence the advancement of women into leadership roles across distinct corporate and manufacturing industries. Their findings classified these factors into three main categories: societal factors, organisational factors, and individual factors.

The researcher followed the literature synthesis framework presented below (see Figure 2.1) to enhance the theoretical understanding of the research problem in a structured way.

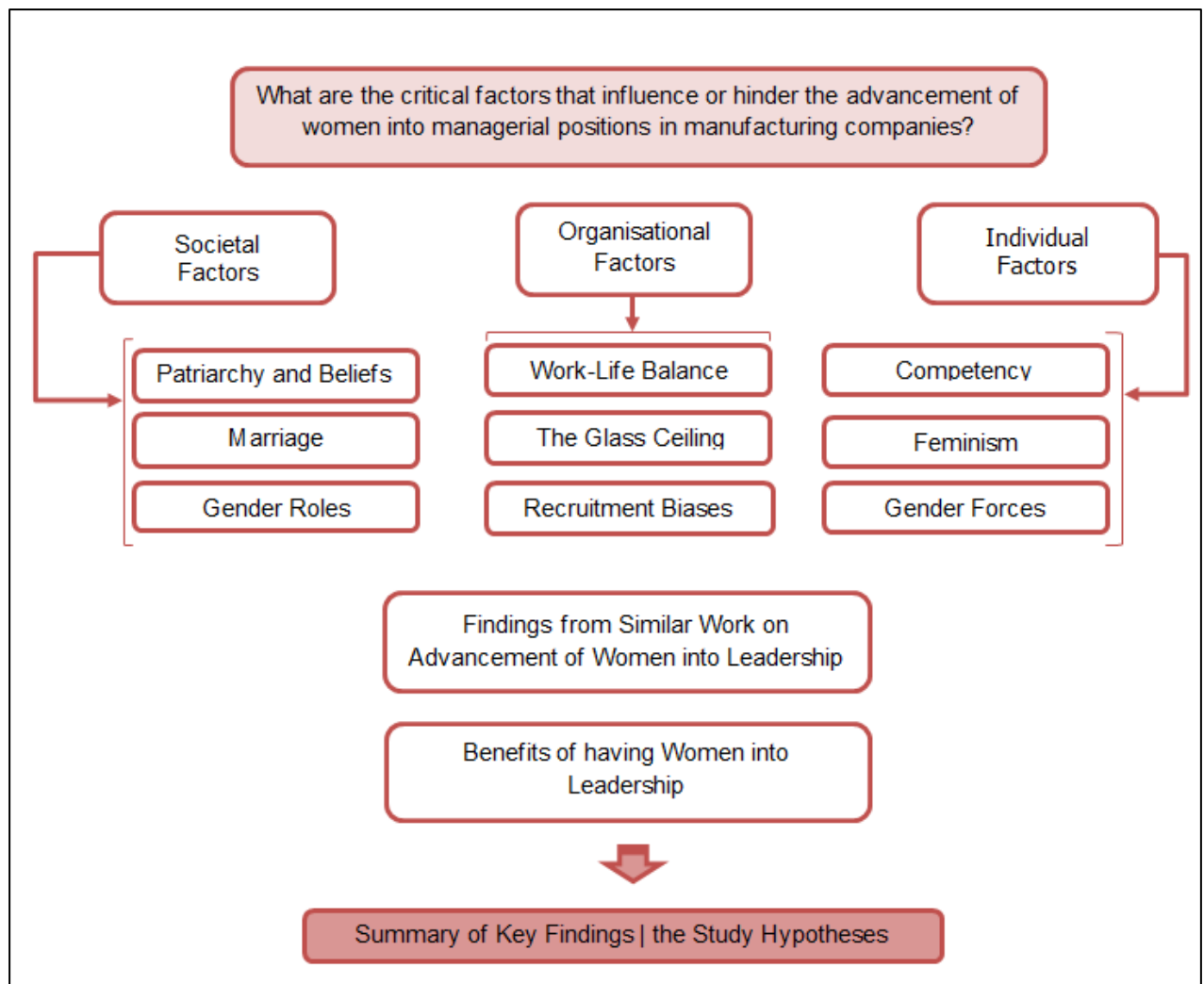


Figure 2.1: Literature synthesis framework

2.2 Societal factors

2.2.1 Patriarchy and beliefs

Patriarchy is a social system that encourages male leadership, male domination, and, most importantly, male power. It is a practice that gives men authority over women and children. It is a social system that forms women to be subject to domestication, financial or economic dependence, violence, and decision-making peripherals (Toyin Ajibade *et al.*, 2019:22). The same authorities explain that patriarchy enforces structures that categorise men's work and the type of work that women should perform. Gender inequality and sexism are some of the characteristics of the patriarchal society.

These are factors related to gender behaviour influenced by standards during the early stage life experiences and the adolescent phase. The difference between boys' and girls' upbringing contributes significantly to the life choices they independently make as they grow up. Boys are encouraged to take risks from a tender age (Fitzsimmons & Callan, 2016:357). They are taught to be independent and succeed more than girls. The analysis and results are presented in the journal article written by Sutter and Glatzle-Rutzler (2015:2). By extension, this, in turn, builds up self-confidence in males, and it increases their chances of risk-taking in later stages of life, which gives men an advantage when competing with females. The same authorities conclude by arguing that this then results in girls having less confidence and low self-esteem.

Contexts based on gender are created by society, and their effects are evident in children as these are applied early in their lives. Societal norms endorse decisions that create distinguished gender roles and levels of valuable capital (Fitzsimmons *et al.*, 2014:259). An example of these decisions is the pink and blue classification made by families, communities, and schools, all of which should be put under careful consideration as they appear to bear no consequences. However, they can have enduring and significant effects on the women's ability to gain exposure to opportunities that can grant them capital growth (Fitzsimmons & Callan, 2016:357).

Toyin Ajibade *et al.* (2019:22) further explain that patriarchy is the major obstacle to women's advancement and development as its ideologies exaggerate the biological differences between men and women by emphasising men's masculinity, thus, giving them prominent roles, and by claiming women have feminine traits which make them subordinates. Various institutions such as academies and churches impose women's weaknesses. Culture and religion constitute specific responsibilities women have regardless of their employment status and career. These are some of the reasons women face many challenges to attain a healthy work-life balance.

2.2.2 Social beliefs based on gender affability

There are social categories of people by either femininity or masculinity, which affords the foundation for classifying others. The categorisation behavior is constructed by society, brings forth associations of the mind, and is quickly learned (Fitzsimmons *et al.*, 2014:246). Furthermore, gender categorisation, coupled with stereotypes surrounding gender, incorporates views that mould behaviours of the gender groups against each other. Glass and Cook (2016:51) state that the continuing and constant gender stereotype proposes that males should fill management posts. Furthermore, the same authorities argue that this may result in women being perceived by those making decisions as either incapable, less capable, or not as competent leaders as men are.

Gender stereotyping has believed that female learners are not good at Science, Technology, Engineering, and Mathematics subjects (STEM) (Else-Quest *et al.*, 2013:294). The same authorities state that gender stereotyping has negatively impacted the academic choices made by female learners in high school. This belief often results in these female learners doubting their abilities to perform exceptionally in the said subjects. The learner's choice to circumvent these subjects in high school deprives them of competing with their male counterparts in the technical industries. It precludes them from performing roles that may provide a variety of opportunities. In addition to the above, girls are often at a disadvantage when developing their capital growth within the functions of making strategic decisions such as senior management and executive-level positions (Glass & Cook, 2016:56).

There also exist cultural labels and categorisations, which lead to males being selected for senior managerial roles over their female counterparts, thereby limiting the scope of potential wealth accumulation by females (Desai *et al.*, 2014:331). A typical example of cultural labels is the societal model that encourages organisational behaviours and actions of men who are married to wives who are not in the employment market and are, therefore, homemakers. There is also an inference that these men may disapprove of women in the workplace. As they are usually in decision-making roles, these men may make bad decisions to advance and progress women into senior managerial and leadership roles. The above is comparable to circumstances where societal factors influence organisations to select

and appoint women for tasks that are regarded as undemanding such as support functions, which then creates barriers for women to attain positions that are perceived to be complicated (Desai *et al.*, 2014:330).

2.3 Individual factors

2.3.1 Competency issues between males and females

Males believe that interpersonal competencies are more critical, while females believe that analytical and operational skills are more significant (Mbokazi *et al.*, 2004:7). To answer the question of managerial competencies between males and females, Balci and Arditi (2009) developed a competency survey questionnaire distributed to 63 participants in the construction industry to assess 20 various skills across five main categories, as shown in Table 2.2 below.

Table 2.2: Male and female competencies

Global Competencies	Competencies	STEN scores		p-Value
		Women	Men	
Managing change	Initiative	5.71	5.16	0.236
	Risk-taking	4.61	4.74	0.845
	Innovation	5.65	5.13	0.442
	Flexibility and adaptability	4.23	3.32	0.159
Planning and organising	Analytical thinking	5.32	4.94	0.530
	Decision-making	4.90	4.65	0.548
	Planning	4.94	4.81	0.648
	Quality focus	5.35	5.06	0.420
Interpersonal skills	Oral communication	5.52	5.39	0.484
	Sensitivity	4.87	3.52	0.019 ²
	Relationships	5.10	5.00	0.866
	Teamwork	4.58	3.61	0.096

		STEN scores		
Global Competencies	Competencies	Women	Men	p-Value
Result orientation	Achievement	4.61	5.19	0.094
	Customer focus	4.23	3.23	0.015 ²
	Business awareness	5.52	5.48	0.900
	Learning orientation	5.61	5.94	0.117
Leadership	Authority and presence	6.16	5.03	0.004 ²
	Motivating others	4.90	4.71	0.743
	Developing people	4.39	3.90	0.311
	Resilience	3.77	3.84	0.82

Source: (Arditi & Balci, 2009:1276).

This study showed that women have an equivalent strength in managerial competencies than males, and women scored significantly higher than males in three skills: sensitivity, customer focus, authority, and presence.

Some suggested recommendations to improve male-dominated industries to accommodate an increased number of females include modifying the industry image, implementing flexible working hours, and improving working conditions to suitable environments (Balci & Arditi, 2009:1277).

2.3.2 Masculinity and feminism

In Hofstede's cultural framework, masculinity is a term used to define characteristics of a man in terms of their sex, physical strength, being assertive, material success, and having ambition (Ganesh & Ganesh, 2014:230). The same authorities argue that women are perceived as tender and modest, prioritising relationships and quality of life. Ganesh and Ganesh (2014:230) define feminism as a theory that combines political, economic, and social factors that advocate women's rights in gender equality. Furthermore, the same authorities argue that with the cultural and social changes that have taken place in the past few decades, men think of the value of life and personal relations as precarious factors to them, which is a contradiction to the initial definition from Hofstede's framework. At the same time, women occupy top

management positions and desire material success in addition to their feminine characteristics.

2.3.3 Role models

Porter and Serra (2020:226) address various constraints contributing to the lack of women's representation in traditionally male-dominated industries. They state that the rare number of female role models due to historical gender imbalances makes it difficult for young women to draw inspiration from textbooks and other sources, such as movies and other inspirational videos that speak about successful women's leadership. The same authorities argue that it is difficult for young women to contact successful women from male-dominated industries. They conducted a field experiment at a US university to assess the impact of role models influencing female students to major in male-dominated studies. The focus was economics major. It was a face-to-face interaction between female role models already working in the quantitative economic fields and the students. There was significant evidence that post the visit, more female students enrolled to major in economics. There was an increase of about 8% due to the intervention (Porter & Serra, 2020:251).

Latu *et al.* (2019:11) state that female role models in various male-dominated domains such as athletics, STEM, managerial and political leadership can inspire girls and women. Numerous mechanisms create these aspirations, mainly women's increased self-confidence and sense of belonging. Hoyt and Simon (2011:154) argue that outstanding top-level female leaders can hurt women in terms of self-perception compared to the exposure of less elite female leaders or male leaders. Women are more likely to relate to female leaders who lack confidence and conform to typical stereotype behaviours in the workplace. Hoyt and Simon (2011:155) further explain that most women feel discouraged and believe that they can never attain the same success as outstanding female role models. This significantly contributes to women having lower self-evaluations, lower leadership aspirations, and lower self-leadership association.

2.3.4 Gender roles

The imbalance in the division of domestic duties between gender continues to be a significant factor of domestic labour as women are still expected to take on more

household chores and responsibilities than their male counterparts (Groysberg & Abrahams, 2014:363). The same authorities argue that these responsibilities include nurturing children, cooking, cleaning, and laundry. While these are important activities, they also hinder women's career growth paths and create barriers to access opportunities. Fitzsimmons et al. (2014:363) illustrate the 'gendered forces' women face during various stages of life, from birth to directorship or chairman level in the workplace (see Figure 2.2 below).

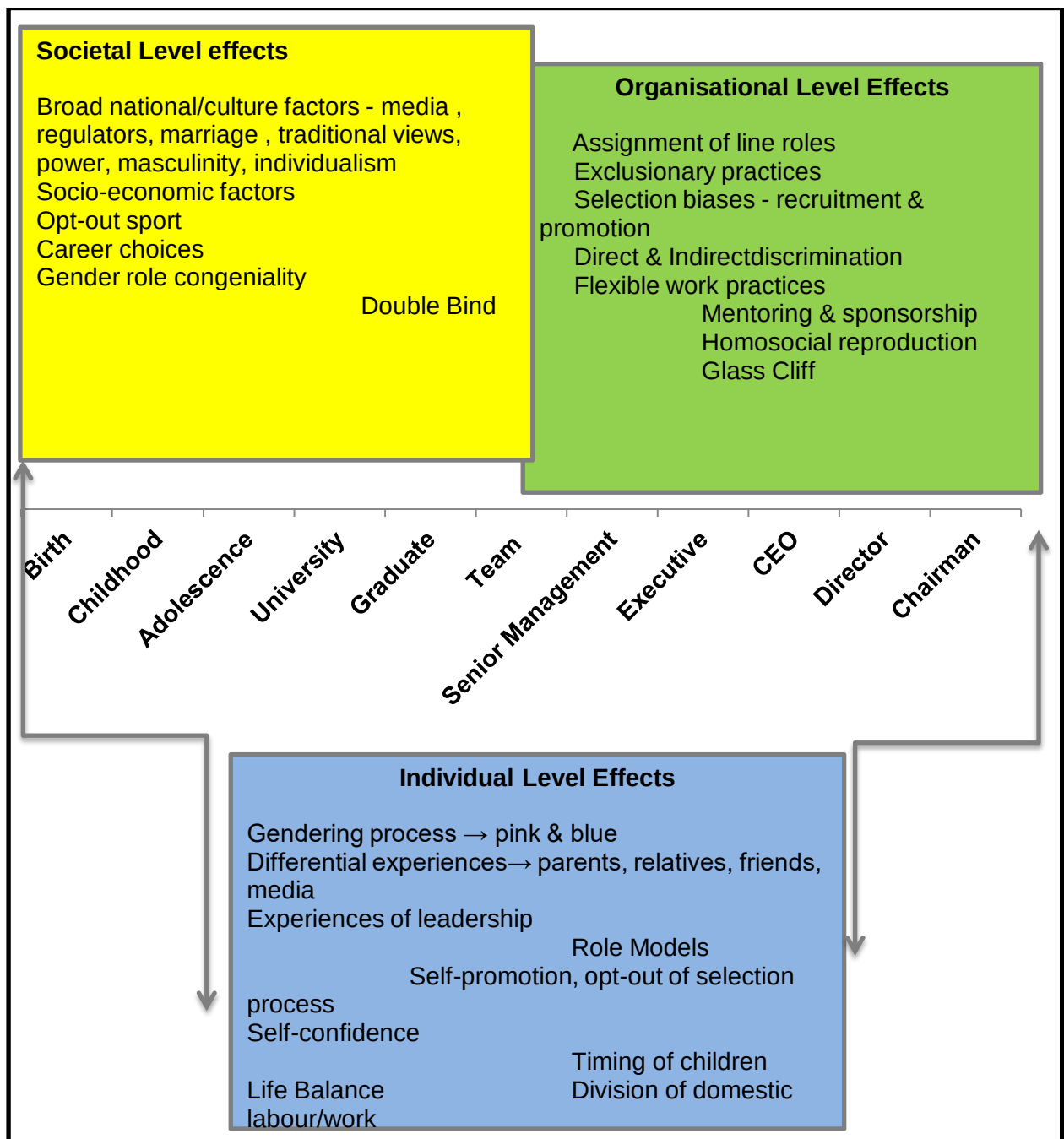


Figure 2.2: 'Gendered forces' at various stages of life

Source (Fitzsimmons et al., 2014:363)

2.4 Organisational factors

2.4.1 Advancement of women into leadership

2.4.1.1 Leadership

In ancient years, it was believed that leaders are born and not made. Recent research indicates that leadership can be taught and learned (Shore *et al.*, 2014). The same authorities further explain that management practitioners and professors believe leadership is both a behaviour trait and a skill set.

Ely *et al.* (2013:66) state that being a leader is not achieved by being placed in a leadership role. It is a process that requires more than learning a new skill. It involves having a change in identity. Influential leaders need to ensure that they serve and benefit their subordinates and the entire organisation. Organisations need to focus on policies and practices that bring about a mismatch between how females are perceived in the workplace and the qualities and experiences linked to leaders before advising women to seek leadership roles.

Amid problems that women face and their questioned ability to perform well in senior roles are the pressure that is intrinsically embedded in these senior roles (Fitzsimmons & Callan, 2016:361). Furthermore, this perpetuates the perception that women are unable to meet the pressure. Shore *et al.* (2014:164) agree that there is an impression that it is difficult and challenging for women to handle the stresses associated with jobs at a senior level than for males for occupying similar positions. The same authorities argue that males are better leaders as their masculinity is viewed as a leadership trait and skill in most cultures. Also, Shore *et al.* (2014:164) state that masculinity is a barrier directly created by cultural influences, gender biases, family structures, values, and negative labeling. The negative labeling of women's roles could negatively impact their performance or preclude women from filling ordinarily male-dominated positions (Farrington, 2012:109).

2.4.1.2 Recruitment biases

Statistics indicate that more than 2/3 of women who participated in an investigation conducted by Deloitte state that their companies do not emphasise attracting female

employees in their recruitment programs (McNelly, 2015). McNelly mentions that only 1/3 of women agree that their companies are putting more effort into recruiting and retaining women. The authority further explains that most women in manufacturing industries indicate that they participate in networking groups for women in their organisations. Still, the groups are ineffective in advancing them to senior positions. Judith (2000:323) explains that various factors, such as corporate strategies and practices in the training and career development, compensations, and promotions in the workplace, are the main contributors to the 'glass ceiling.' Furthermore, the authority adds that young women managers in operations, manufacturing, and marketing are rarely given the adequate experience required to climb up the ladder in their professional ranks.

Zena and Phyllis (2002:42) agree with Judith's findings. They further state that women managers could be developed internally within an organisation by providing them with superior experience and promoting their career advancements to leadership roles. The State of Industry Research (2020:31) agrees with McNelly's findings. They also state that the under-presentation of women in leadership roles is a result of the following: organisations not making gender diversity in leadership a high priority, organisations not having formal platforms to communicate the importance of gender diversity, organisations lacking programs that promote women leadership and not creating such programs for the future, and HR not getting sufficient support to increase gender diversity in leadership roles from seniors in other departments.

Organisations are often expected to hire a temporary replacement for most women who go on maternity, this is an expensive benefit when the company has to pay for both the employee on maternity and the temporary replacement, and the other challenge is the uncertainty of not knowing if the employee on maternity would return to work post the arranged period (State of Industry Research, 2020:35). This might add to the bias performance review process for women, which negatively affects the advancement of women obtaining leadership positions.

2.4.1.3 Key factors inhibiting the advancement of women into leadership roles

A research carried out by Motsa (2016:61) highlights specific reasons that hinder women from being promoted into senior positions. Table 2.3 shows these specific factors ranked according to the number of times the particular aspect was mentioned in the study.

Table 2.3: Factors that prevent women from obtaining managerial roles **Source:** (Motsa, 2016:61)

Rank	Factors that inhibit the promotion of women	No. of mentions
1	Gender stereotyping and societal influence	9
2	Male domination	8
3	Self-limiting beliefs	7
4	Tough and inflexible work environments	4
4	Employment tenure	4
5	Lack of mentorship	3
5	Breaking through established networks	3
5	Gender inequality and discrimination	3
5	Family responsibility	3
6	Lack of support networks	2
6	Limit career strategies/choices	2
6	No regard for women advancement	2
7	Lack of role models	1
7	No access to opportunities	1
7	Negation skills	1
7	Lack of training	1
7	No succession planning	1
7	Favouritism	1

2.4.1.4 Work-life balance

Active participation in social networks by women tends to be limited. Added responsibilities that women account for in their homes, the exercise of networking usually occurs outside of regular working hours and sometimes necessitates for one to spend extended hours at work or even engage in travel (Fitzsimmons & Callan, 2016:361). This may be a disadvantage for women growing their valuable career capital and those who have been granted career advancement opportunities (Fitzsimmons & Callan, 2016:360). Flexibility is a crucial factor in the workplace as it would increase the accumulation of career capital of most women. It often follows that the crowning or the highest point in most women's careers is concurrent with the stage where women start and build their families and consequently leave the labour force at that point (Fitzsimmons & Callan, 2016:365).

The State of Industry Research (2020:32) mentions that women hardly make it to senior roles because most of them leave the workforce as soon as they start having children. Statistics reveal that about 43% of women quit their jobs for a certain period to raise their children, creating resume gaps in their profiles. The gaps contribute to difficulties in obtaining full-time leadership roles. On the other hand, some women decide to go for part-time and low-paying jobs after maternity, which reduces their chances of getting leadership roles. The same authorities argue that although the percentage of women leaving their jobs after maternity has diminished in recent years, they believe that the main reason for the under-presentation of women in leadership roles is created by some level of bias or discrimination in the workplace.

"Women are not choosing to leave the workforce to raise their children; antiquated policies and unintentional discriminatory practices leave them no choice but to choose one over the other. Women in the mid-career face the same challenges if they care for aging relatives. The demographics of the workforce have changed, yet our cultural constructs have not caught up because there is no real catalyst for those currently in power," says Dr. Patti Fletcher, Chief Workplace Disrupter and Equity Advocate (State of Industry Research, 2020:32).

2.4.1.5 Glass ceiling effect

A glass ceiling is an abstract obstacle that prohibits women from obtaining leadership roles despite the fundamental processes applied in a company (Haslam & Ryan, 2008:530). Furthermore, the same authorities define the opposite term used favouring men as 'glass escalator,' which implies the accelerated opportunities in corporate industries selecting men to be in managerial positions. Haslam and Ryan (2008:531) further explain that women are usually given a chance to be appointed into leadership roles when there is a crisis within an organisation. The authorities refer to this phenomenon as the 'glass cliff.' However, a recent study has indicated that over the past 15 years, most women have managed to overcome the glass ceiling as there were considerable gains in the presentation of women in senior roles across the world (Bureau of Labour Statistics, 2005:1). In 2004, the US presented over 50% of women in supervision roles. The number of women in executive positions in Britain also doubled around the same era, while the number of women in directorship tripled (Haslam & Ryan, 2008:531). Figure 2.3 below indicates the statistics of men and women in corporate industries in 2012 and 2015. It is noted that there was only a 1% improvement in women's representation realised in 3 years. Women's advancement is not accelerated as that of their counterparts, males. The male representation is 15% higher than that of women (LeanIn.Org & McKinsey, 2015:1).

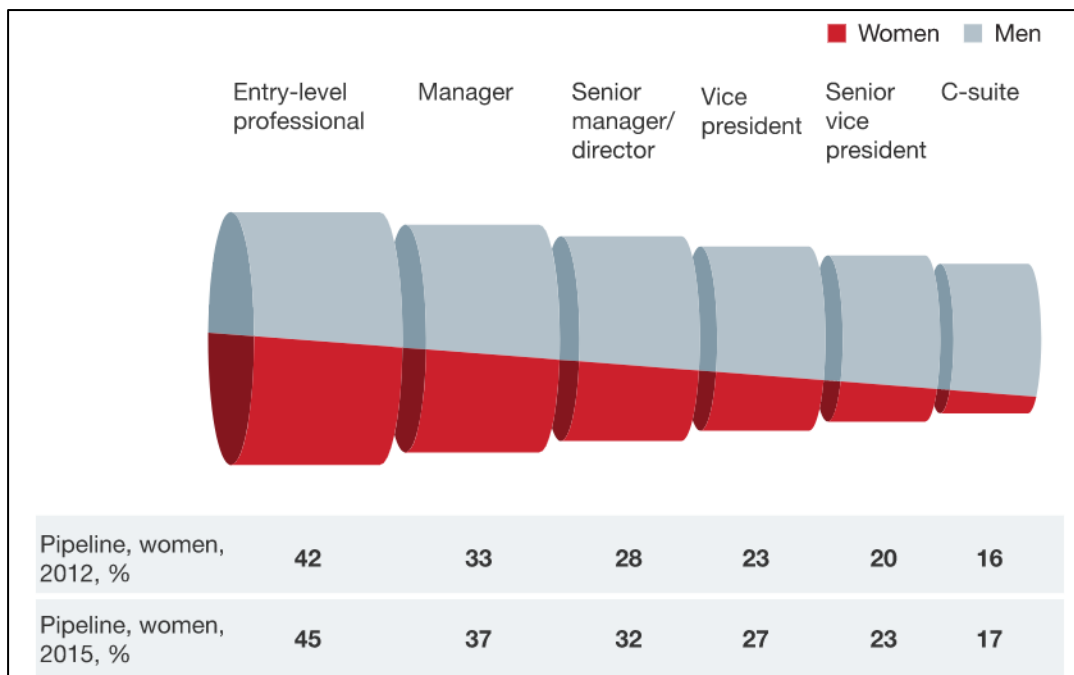


Figure 2.3: Corporate-talent pipeline concerning gender

Source:(LeanIn.Org & McKinsey, 2015:1)

2.4.1.6 Occupational segregations

The dominant number of men in distinct organisations as compared to their female counterparts remains unchanged. This is the main contributor to gender inequality (McLaughlin *et al.*, 2017:335). The Bureau of Labor Statistics (2013:1) demonstrates statistical trends that indicate that women earned a median salary of about 81% that of their male counterparts, and this gap has been constant for more than a decade. McLaughlin *et al.* (2017:336) further argue that educational attainment does not place women at an advantage in occupations; most are overrepresented in “pink-collar” occupations. Although some women enjoy such work, some of them are forced out of fields regarded as masculine by practices that place women at a disadvantage and policies that discriminate against women.

2.4.2 Organisational diversity in leadership at manufacturing industries

Contributing factors to the under-representation of women in manufacturing industries show that 74% of the women feel that there is industry favouritism of males towards leadership positions (McNelly, 2015:14). Furthermore, McNelly’s

study indicates that about 53% of women say leadership opportunities show organisational cultural norms. About 47% of women think that they do not have enough mentorship from their manufacturing companies, and 46% of the women say it is because of the perception of manufacturing industries. They are viewed as environments that are not conducive for women.

Recent research indicates that women are better leaders than their male counterparts. Dezso and Ross (2012:1073) evaluated the leadership of men and women. The results showed that women are better leaders because they have relational and corporate nurturing skills. This study revealed no significant variances in cooperative learning, cohesion, and participative communication between men and women. Furthermore, context is the essential element that defines relationships between the different genders. It is evidenced that more influential groups that require coordination perform better with female leadership. They concluded that women excel in information processing and decision-making for their teams. Folkman (2015:168) disagrees that females have better-nurturing competencies, which include good relationship building with co-workers. The authority argues that there are vast differences between males and females. These include the drive to take the initiative, honesty and integrity, self-development, and thriving for better results.

Figure 2.4 below is an example of ways that have been adopted to benefit women to advance to leadership roles.

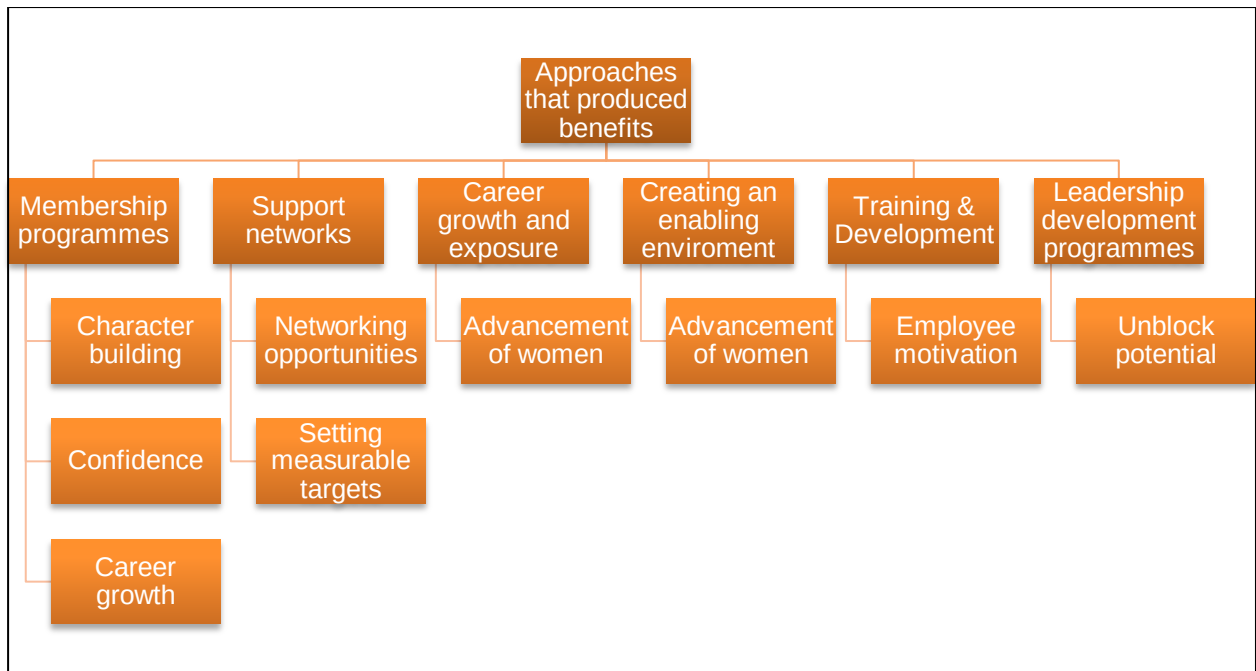


Figure 2.4: Approaches applicable to empower women

Source: (Motsa, 2016:57)

The effectiveness of these approaches in corporate companies is shown in Figure 2.5 below.

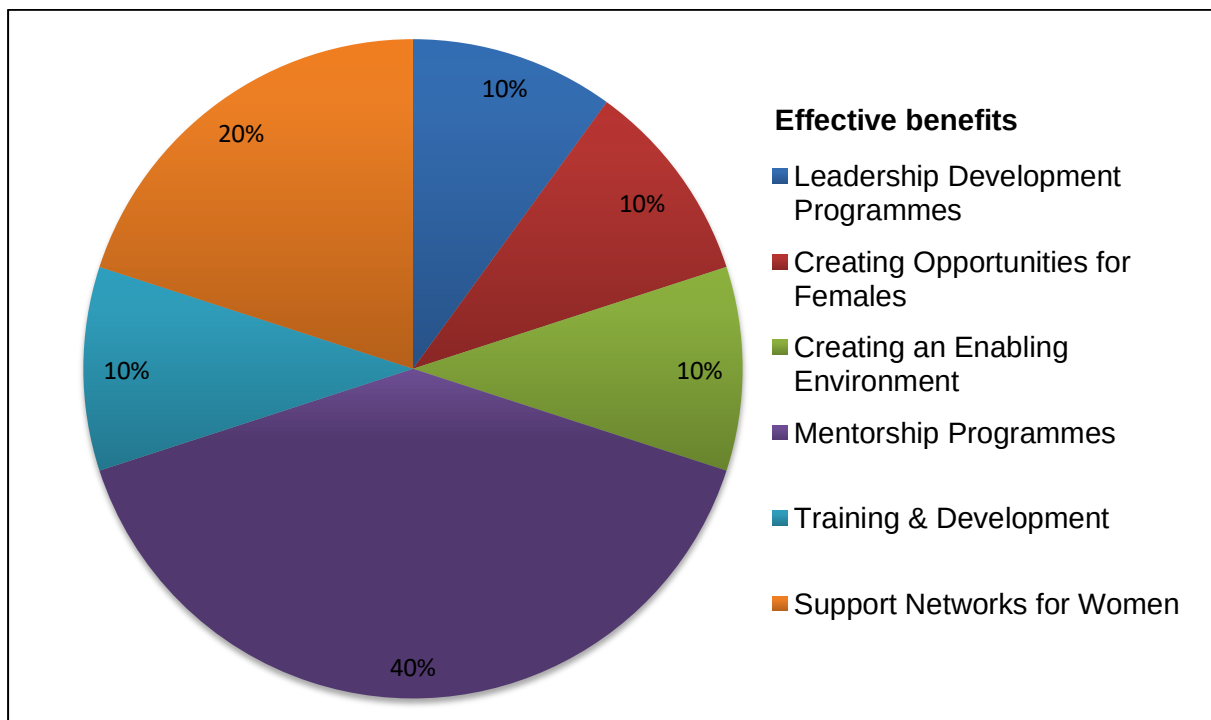


Figure 2.5: Effective benefits adopted by corporate industries

Source: (Motsa, 2016:58)

2.4.3 Support structures for women

Informal networking platforms are a vital initiative to shape the development of women for leadership opportunities as they are ideal spaces for sharing access to jobs, knowledge sharing, and referrals (Ely *et al.*, 2011:478). Hofmeyr and Mzobe (2012:1286) agree that support networks contribute to advancing women as they work together to find ways to modify their crafts through sharing ideas and experiences. About 25% of the participants in this study indicated that support networks are an excellent solution to advance women into leadership as they get to engage with influential women leaders and mentors from various industries, including successful businesswomen (Hofmeyr & Mzobe, 2012:1286).

Ely *et al.* (2011:478) further explain that these network platforms provide emotional support, build reputations, increase positive influence, supply political advice, and increase women's promotions in various workplaces. The same authorities argue that although the support networks for women are beneficial, their success rate is still less than support networks conducted by men. Women's support networks have less visibility, fewer leadership opportunities, less recognition and endorsement than men's networks. Men in leadership positions are more likely to develop opportunities for their male subordinates that they perceive will do better than women (Ibarra *et al.*, 2010:23). Women also struggle to access their other female colleagues who are already in leadership positions in their organisations (Ely *et al.*, 2011:478).

2.4.4 Sexual harassment

McLaughlin *et al.* (2017:333) state that most women in many organisations have experienced sexual harassment at some point in their careers. This leads to some of them leaving their jobs to escape such abusive environments. The same authorities argue that it is challenging for the victims to pursue legal action due to insufficient evidence to demonstrate the harm caused. Ancient research from the 1970s indicates that sexual harassment occurred in scenarios where males were bosses. For instance, the female would be a secretary or a cleaner (Folke *et al.*, 2020:180). However, recent research has shown that with more females advancing to leadership positions and decreasing the power gap in organisations, there is a

“paradox of power,” as the power in the workplace for a female puts her at a greater risk of being exposed to sexual harassment.

Previous studies have documented that sexual harassment causes psychological harm to women, resulting in low job satisfaction, absenteeism, work withdrawals, resentment with coworkers, and rapid job turnovers. Thus, most women suffer from long-term consequences in their career progression (McLaughlin *et al.*, 2017:335). McDonald (2012:1) expounds that sexual harassment has deleterious results for a person's physical and mental well-being and that it is experienced by more women than men in various organisational settings. The same study states that people who have suffered from sexual harassment can have depression symptoms, anger, and self-doubt for over decades.

2.5 Significance of the study

According to Mathur-Helm (2005:63), organisational researchers are increasingly interested in women's management issues worldwide. They are reporting on the demographic changes in top and senior management positions by debating the status and conditions of professional women. Numerous studies have conducted the importance of having gender diversity in the workplace. The steel manufacturing company's statistics indicate that although women are motivated to join the workforce, their representation in senior or leadership roles is still deficient. This study aims to understand better why the progression of women in the workplace is still lagging.

2.6 Conclusion

This chapter focused on the previous literature reviews on the factors that influence the advancement of women into leadership positions in various industries. Various authors stated their views on societal factors, individual factors as well as organisational factors. The upbringing and treatment of children according to their gender are influenced by society. Patriarchy and social beliefs affect the character traits of men and women. Organisations battle with discriminatory treatment due to having challenges related to work-life balances and other occupational segregations that bring about gender inequality. Literature indicates that leadership is not a gender-orientated skill, either one can be born with it, or it is also a skill that can be

taught. Organisational diversity has proven to benefit as the differences between men and women can positively contribute to the company's growth. This section is followed by the research methodology that was developed to complete this study. The research methodology includes the unit of analysis used to collect data and methods of data analysis used.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This chapter focuses on the research methodology of this study. This chapter addressed the research design, data collection instrument, statistical data analysis, the practical and statistical significances of the study to achieve the objectives defined in chapter one.

The research methodology is defined as the description of the instruments used to collect data from the study participants, the population sample of the data collected, and the techniques that will be used to analyse the data collected (Hofstee, 2011:112). Leavy (2017:16) describes it as a combination of theory and methods that a researcher uses to plan on how the study will be carried out, based on how they conceive the data collection and the use of those tools and taking note of the ethics applied for the participants of the study. This chapter covers the research design, the population and sampling strategy; the research instrument; the data collection and the data analysis techniques; and the credibility of the research.

Thompson further explains that it is essential to note that the relationship between the theory extracted from the literature review and the research conducted is illustrated in terms of numeral data collected, and the results of the survey indicate the deductive view and objectivity of the social reality. The methodological choice for this study is this quantitative approach.

3.2 Research design

3.2.1 Methodological choice: Quantitative

The study was carried out using a quantitative research approach. A quantitative research approach evaluates the relationships among distinct sets of variables to one another (Creswell & Creswell, 2018:38). The method allows for systematic measurement, statistical data, and experimentation (Fox & Bayat, 2007:7). Quantitative data analysis is the process of turning raw numbers into meaningful data through the application of rational and critical thinking. A quantitative approach is usually associated with finding evidence to either support or reject hypotheses you

have formulated at the earlier stages of your research process. An important aspect of quantitative research is the statistical data analysis regarding answering the research problem and testing the hypothesis. The statistical method is chosen for understanding the research data that leads to a proper conclusion. According to Disman *et al.* (2017:51), research has found that when data analysis techniques are misused, a researcher lacks awareness in deciding the statistical method, the validity of research formation, and the measurement scale of the variable, and power-efficiency testing.

A cross-sectional approach was used in this research. A questionnaire was developed from the literature study and was used to collect data. Quantifiable data establishes a systematic and standardized method that measures variation, and it also assigns the research with a constant benchmark (Bryman *et al.*, 2014:106).

The relationships between the representations of women, the mentorship provided to males and females, the opportunities granted to women, and their turnover in the manufacturing company were tested using the statistic techniques.

3.2.2 Population and sampling

When academic research is conducted, data is collected and processed into useful information from people with similar characteristics who meet specific requirements relevant for the particular study. These participants are collectively referred to as a study population or target population (Mohsin, 2016:50). A general population is a large group of people who participate in a survey to acquire information that needs to be established about them or their experience (Asiamah *et al.*, 2017:1611). The target population is defined as a group of participants with a set of similar attributes of interest and appropriateness to a particular study conducted (Asiamah *et al.*, 2017). Furthermore, the same authorities describe the accessible population as the participants who can reach the target population. The sources further explain that this is the smallest population and is the final group of individuals participating in the survey. This group represents the sampling frame. Figure 3.1 below shows the various sizes of the population as illustrated by Asiamah *et al.* (2017).

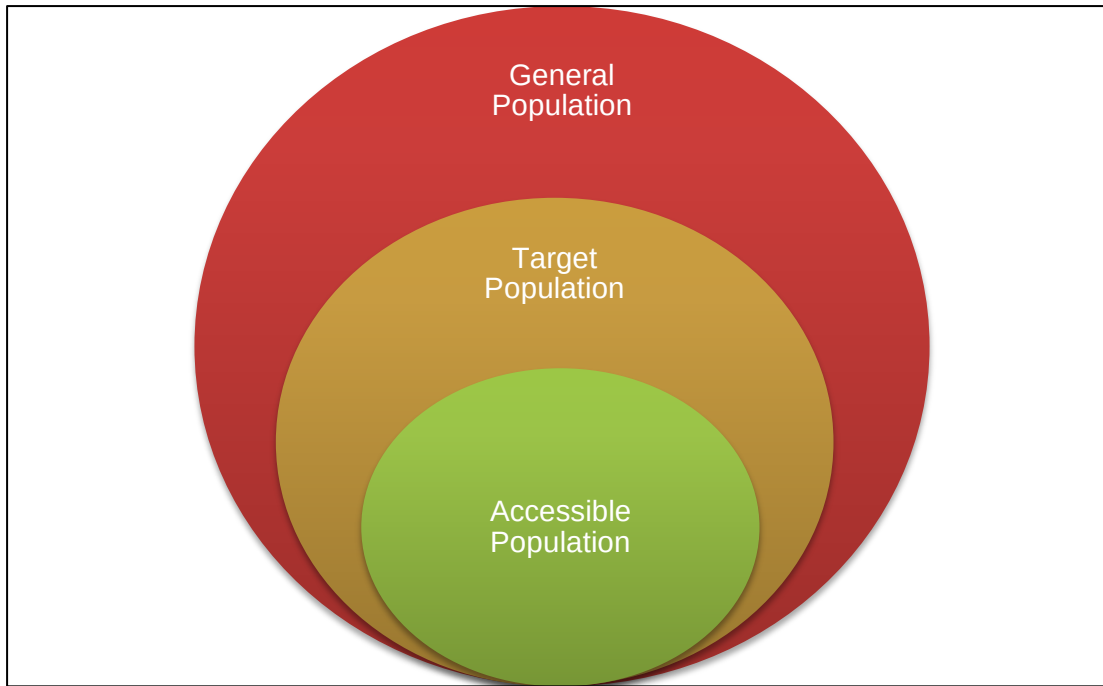


Figure 3.1: The relationships among population types in research

Source: (Asiamah *et al.*, 2017)

In this study, the target population consists of employees at the selected Gauteng province-based steel manufacturing company. The accessible population was the workers at the steel manufacturing company. They are office-based and have access to work remotely on their laptops and cell phones. All personnel from the various departments, such as Human Resource, Engineering, Marketing, Finance, Procurement, Business Improvement, Information Management, and others, were invited to participate. The study included participants of various races and backgrounds. The employees were from junior management to top management. Both males and females participated in this study.

Stratified sampling is a type of sampling method used by researchers where a group or total population is divided into smaller groups or strata to complete the sampling process (The Economic Times, 2020). In other words, it is a sampling method used to improve precision relative to simple random sampling. Stratum is defined as similar traits in the population data (The Economic Times, 2020). The researcher collects a random sample from each stratum while ensuring that all the relevant strata are included in the model (The Economic Times, 2020).

A stratified, random sample was used to select participants. The stratification was per department, while within the departments, random sampling was used. This ensured that the sample is representative of all the departments of the organisation.

3.2.3 Research procedure

Virtual meetings were arranged with managers from various departments to request the employees to participate in this study to discuss the rationale of the survey. In addition, the virtual meetings served to ensure the COVID-19 protocol was observed as required. The sessions were also an opportunity for the researcher to clarify any issues misunderstood regarding the survey. Respondents were invited to participate in the study through Google forms by first acknowledging a covering letter which informed them of the purpose of the study. The letter also requested their consent for on the Google platform. The Google forms were linked to the questionnaire, and the latter were distributed via email. The participants were given the option to withdraw from the survey at any stage if they wished to do so. This was achieved by the researcher providing relevant and sufficient information to the participants and assurance that the recorded answers would be embedded in the survey software. Only trends and patterns of the responses will be extractable and published. The responses were anonymous, although they indicated their respective departments, age, and gender. The target population sample for this study was 600. The aim was to get 120 respondents to complete and submit the questionnaires that were distributed via email. A response rate of 20% was targeted because online surveys via emails are self-administered and usually have a low response rate (Leavy, 2017:107).

3.3 Data collection instrument

The researcher compiled the questionnaire from the literature review and was framed around the research objectives. The questionnaire was influenced by the size, type of the population, and background of the steel industry. The use of demographics was to observe if various generations and genders have similar or different views on this study. The survey indicated the multiple departments in the steel manufacturing place to determine if all the other sections were well represented to avoid biased results based on a few responses from particular departments.

All questions were close-ended to assess the variables of interest, thereby facilitating the quantitative approach for this research. A set of multiple questions were assigned to identical response categories. Refer to Annexure-A for the data collection instrument for the questions that were asked in this study. The questionnaire was structured around five sections with 24 questions in total.

3.3.1 Section A

Section A of the questionnaire involved questions on the participants' demographical information. The responses were asked for the following six variables in this section:

- Gender in three categories, namely, male, female and prefer not to say
- Age in categories of years
- Various work departments
- Educational Background
- Working experience categories in years
- Role or position

3.3.2 Section B

The questions in sections B to E consisted of a matrix format with response categories following a Likert scale of 1 to 5, respectively. This made the questionnaire user-friendly, and it did not consume the participants' time when answering the questions as they did not have to worry about ways to construct their answers (Roopa & Rani, 2012; 274).

The Likert scale was in the following order, from 1 to 5, where:

- 5 = Strongly Agree
- 4 = Agree
- 3 = Neutral
- 2 = Disagree
- 1 = Strongly Disagree

Section B consisted of four questions with regards to the advancement of women (AW). The questions were about the opportunities and mentorship available for men

and women in the steel manufacturing industry. The other questions were about the advancement of women's careers into leadership roles and the type of tasks assigned to women instead of their male counterparts.

3.3.3 Section C

This section contained six questions that dealt with the pros and cons of gender-balanced leadership (GL). The questions covered issues related to the workplace's flexibility, the representation of women in various departments of the organisation, the way men and women are perceived in the workplace, and the commitment of women at work and to their family responsibilities to achieve a work-life balance.

3.3.4 Section D

This section was made up of five questions concerning the appointments and retentions (AR) of women in the steel manufacturing company. The questions highlighted the working conditions and image of the organisation. The representation of women, their turnover rates, and the relationship between them and men were also covered in this section.

3.3.5 Section E

This section focused on four questions that addressed the steps put in place in the organisation to progress women into leadership (WL) positions. This section covered queries about the networking structures, leadership programmes, and support groups that women have in the organisation. It also highlighted opportunities for women to further their studies to qualify for leadership roles.

3.4 Research instrument: survey questionnaire

A questionnaire survey is a research technique made up of a structured set of questions used to collect statistical information about specific actions, behaviour traits, or attributes from a particular population (Kitchin & Thrift, 2009:46).

Table 3.1 below indicates the advantages and disadvantages of a survey questionnaire.

Table 3.1: Advantages and disadvantages of a survey questionnaire

Advantages	Disadvantages
Open-ended questions may be challenging to interpret as people differ in having the ability or the willingness to write answers.	It inhibits the researcher from interacting with the participants.
It does not permit the digression from the topic at hand.	It limits the depth to which the research can probe the participants.
It offers confidentiality to the participants. Responses can be captured anonymously.	It lacks personalisation.
It is easier to analyse the results due to the same questions and answers, depending on the scale used.	It is hard to convey the feelings and emotions of the participants.
It allows for a greater volume of participants.	The understanding and interpretation of the participants may vary.

Source: (Hofstee, 2011)

The questionnaire was relevant for this type of research as the participants had working experience from the steel manufacturing company being studied. The set of questions is relevant to them, and they know about the said topic.

3.4.1 Data Capturing

Google forms captured the responses and sent the statistics without revealing the participants' identity or contact details.

3.5 Statistical data analysis

The statistical data analysis results were produced from a statistical package program for manipulating, analysing, managing and visualising data, and other data mining tool sets known as SPSS, Statistical Package for the Social Sciences (IBM, 2018:12). It is not a programming software but a Graphical User Interface (GUI) application (DataOne, 2019:1). The IBM SPSS software is a statistical application that is mainly used to solve research problems by applying ad hoc analysis, hypothesis testing, and predictive analysis. This is achieved by validating the initial assumptions of the research questions and deriving accurate conclusions based on the analysed data trends (IBM, 2019:1).

3.5.1 Validity and reliability

There are two main methods used to assess the validity and reliability of research design. A satisfactory method of measurement should reflect both the validity and reliability of the results. Various methods of validity and reliability can be applied for quantitative analysis. Validity is described as the degree to which a measurement is a covenant with what is assumed (Leavy, 2017:113). Heale and Twycross (2015:66) define validity as “the extent to which a concept is accurately measured in a quantitative study.” Multiple resources, namely, the steel manufacturing employment statistics, literature, and a survey instrument (questionnaire), will be used to assess the validity of this study. Reliability refers to the uniformity of the obtained results from the analysis (Leavy, 2017:113). In other words, the “*consistency of a measure*” as described by (Heale & Twycross, 2015). A satisfactory method of measurement should reflect both the validity and reliability of the results. Various methods of validity and reliability can be applied for quantitative analysis (Leavy, 2017).

In this study, the validity and reliability of instruments were tested using statistical methods. The Cronbach alpha coefficient was calculated to determine the reliability of the scales used in the questionnaire. Cronbach is a mathematical function of the number of unit tests and the mean covariance between the unit pairs (Cronbach, 1951:296). It measures the inner consistency: the relation of the set of items when identified as a group (Shekhar *et al.*, 2019:10). Cronbach (1951:297) alludes that no validity coefficient and no factor analysis can be interpreted without some appropriate estimate of the magnitude of measurement error. The Likert scale of measurement scales the Cronbach alpha reliability coefficient. The Cronbach's alpha coefficient is expressed as a value from 0 to 1 (Cronbach, 1951). Internal consistency defines that all the items in a test are of the same concept, whether the items in the test are related to each other. Suppose the things in a trial are connected, the alpha value increases. However, the high alpha coefficient does not always mean that the internal consistency is high. Thus, when survey questions are concise, alpha is decreasing (Tavakol & Dennick, 2011). The best Cronbach coefficient alpha is regarded as any value greater than 0.70. The preferred way to determine how accurate one measures is to make two independent measurements and compare them. Therefore, Kaiser-Meyer-Olkin's (KMO) measure of sampling

adequacy and Bartlett's test of sphericity were used to ensure accuracy and the appropriate inferential statistical analysis method.

3.6 Practical significance and combination of statistical significance

3.6.1 Practical significance

The practical significance used for this study is called the effect size. Ellis and Steyn (2003:51) define the effect size as a measure of a practical significance value independent of the study sample size. It describes the effect of differences in means for a relationship of a two-way frequency table and multiple regression fits. The standardised difference between the two frequencies is the difference between the two means divided by the estimated standard deviation (Ellis & Steyn, 2003:53). The significance is measured using the following values:

- 0.2 – small significance
- 0.5 – medium significance
- 0.8 – large significance

Any value less than 0.5 indicates no difference between the means as the significance is regarded as medium or small. Any value above 0.8 indicates a difference between the means, meaning the difference is significant.

3.6.2 Statistical significance

The statistical significance used for this study is referred to as the p-value. Ellis and Steyn (2003:51) state that a p-value is a criterion that indicates the probability of the obtained value being attained under the null hypothesis, for example, when there is no difference between the population means, is true. A p-value less than 5% (0.05) is considered a sufficient value, meaning the result is statistically significant. It should be noted that the p-value might not necessarily be significant in practice because as the size of the sample data increase, the p-values tend to decrease, indicating significance.

3.6.3 Inferential statistics

The inferential statistics method applied to the study is known as the Statistical Factor Analysis (SFA). The general purpose of factor analysis is to summarise the dataset on hand such that the correlated variables having the same patterns can be easily interpreted and understood. It is often used to regroup variables into a limited set of clusters based on shared variance. Hence, it helps to isolate constructs and concepts. Statistical factor analysis accumulates standard variables into descriptive categories. Factor analysis is useful for studies that involve a few or hundreds of variables from the questionnaire (Yong & Pearce, 2013; 79 - 80).

3.6.4 Descriptive statistics

Tables, charts, and summarising values were used to analyse the research dataset from the respondents. This is known as descriptive statistics. The data obtained through questionnaires were summarised through the two measures of central tendency, named mean and skewness. The measure of central tendency is the extent to which the values of a numerical variable group around the central point allow the researcher to report where most responses fall (Levine *et al.*, 2016; 119 - 131). The mean, median, and mode are the most common measure of central tendency, also known as the measures of location (Wegner, 2010).

3.7 Conclusion

This chapter provided an overview of the quantitative research methodology adopted for this study. It is part of the context that demonstrates the research validity, describes the method, and research procedures in detail. Thus, for this study, a quantitative research approach was identified with a cross-sectional design. The participants were identified concerning the target population description and sample size. The research method outlined the data measurement, the measuring instrument, and the data analysis process. Thorough attention was given to the descriptive and exploratory questions that need to be answered through the research method and the statistical methods and packages required to analyse the raw data. The following chapter will present the results obtained from the statistical analysis outlined in this chapter.

CHAPTER 4: DATA ANALYSIS

4.1 Introduction

The main goal of this chapter is to present the quantitative research method steps present the detailed Statistical analysis and interpretation. The study aimed at identifying specific factors that influence the advancement of women into managerial positions. The main objectives of the study are given as follows:

- To determine the critical factors that influence the advancement of women into managerial positions at a steel manufacturing company;
- To evaluate the pros and cons of gender-balanced leadership in a manufacturing organisation;
- to ascertain steps that manufacturing companies have taken to progress women into leadership roles; and
- to contribute to the current efforts promoting the appointment and retention of women in leadership roles in the manufacturing sector.

A structured questionnaire was created to obtain the necessary dataset from the respondents. The study population and the respondents' demographic information of the respondents are indicated in this section. The descriptive statistics results and interpretation of the respondents' feedback from the questionnaire were discussed, followed by the inferential statistics based on exploratory factor analysis. This section was concluded by the validity and reliability analysis of the data collected for this study.

4.2 Study population

The researcher sent out 600 questionnaires to the steel manufacturing personnel to receive at least 120 responses. There were 134 responses received for this study. All 134 respondents fully participated in all sections of the questionnaire.

4.3 Demographic information

The analysis of the respondents' demographic information is provided by making use of figures and tables in this section.

4.3.1 Department of respondents

According to Figure 4.1, slightly over half (50.75%) of the respondents reported to be working under the Department of Engineering; this was mainly because the steel manufacturing organisation is dominated by Engineering personnel. This is followed by the other category of 23.13%, which could be any of the other departments not indicated in the questionnaire used to collect data, such as the Department of Health, Safety, Legal, Media, or Procurement. Respondents from the Human Resource Department comprised 8.21% of the sample, while 8.96% were from the Finance department. About 5.22% and 3.73% of the 134 respondents were from the Information Management and Marketing departments, respectively.

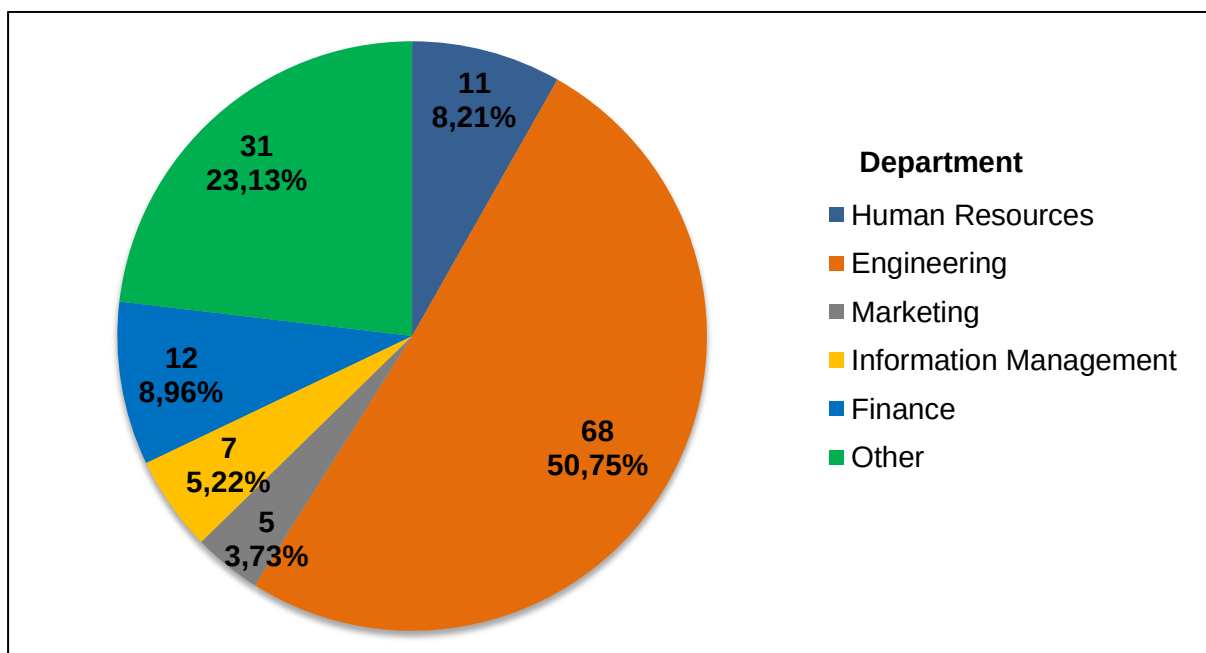


Figure 4.1: Department of respondents

4.3.2 Gender

Gender was included in the demographical information of the respondents to assess the views of the study from both males and females; this was to avoid a biased perspective from one gender. Two assumptions were indicated in Chapter 1 that

requires a comparison between the respondents' gender and their views on challenges women face at the workplace and a comparison between the respondents' gender and their respective educational backgrounds. Based on the summary of the responses in Table 4.1, most of the respondents were males (51.5%) while females comprised 45.5%, and 3% were the respondents who preferred not to disclose their gender. According to Statistics South Africa, South Africa has made some headway in gender representation of women in leadership. However, it is still below the 50% mark for positions that come with a great deal of influence.

Table 4.1: Gender

	Frequency	Percent (%)	Valid Percent (%)	Cumulative Percent (%)
Male	69	51.5	51.5	51.5
Female	61	45.5	45.5	97.0
Prefer not to say	4	3.0	3.0	100.0
Total	134	100.0	100.0	

4.3.3 Age of respondents in years

There are currently five generations that represent the workforce in various organisations. The generations range from the silent generation (1925 to 1945), baby boomers (1946 to 1964), generation X (1965 to 1980), generation Y (1981 to 1995), and then generation Z (1996 and later), in that order. Age diversity is essential in the workplace as it enhances, reduced employee turnover, improved performance, and productivity, and it also drives innovation (Mazzotta, 2018:1). Age was included in the demographical information of the respondents to understand the views of various generations better.

Figure 4.2 reveals that most respondents were in the 30-39 years (45.52%) category. The age categories were not uniformly distributed across the sample, with 37.31% of the participants being in the 20-29 years category, 16.42% from 40-49 years, and 0.75% in the 50-59 age groups. The sample consisted of most youth and

young-adults age categories between the ages of 20-39, with a cumulative percentage of 82.83%.

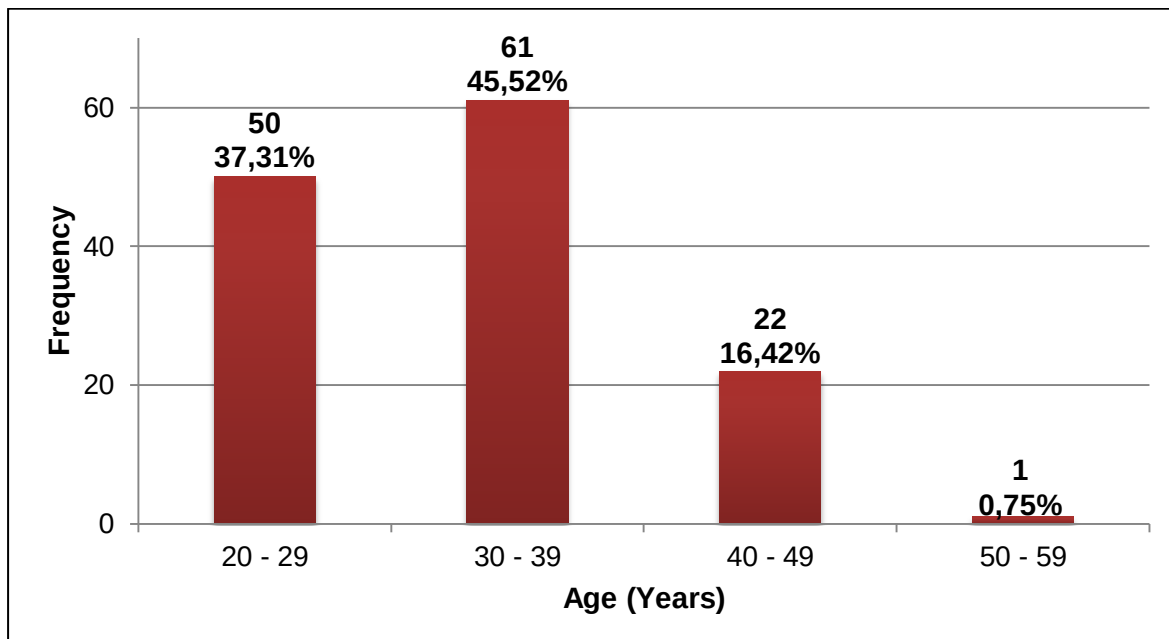


Figure 4.2: Age of respondents

4.3.4 Educational background

Figure 4.3 reveals that most respondents (48.51%) have attained degrees, 25.37% of the respondents have diplomas and 10.45% have master's degrees. About 8.96% and 0.75% of the 134 respondents have grade 12 certificates and Doctor of Philosophy (Ph.D.), respectively. The educational background in the other category was 5.97% of the respondents; this could be respondents who have attained certificates and finished school at lower grades other than Grade 12. The response shows that the majority of the steel manufacturing personnel are qualified.

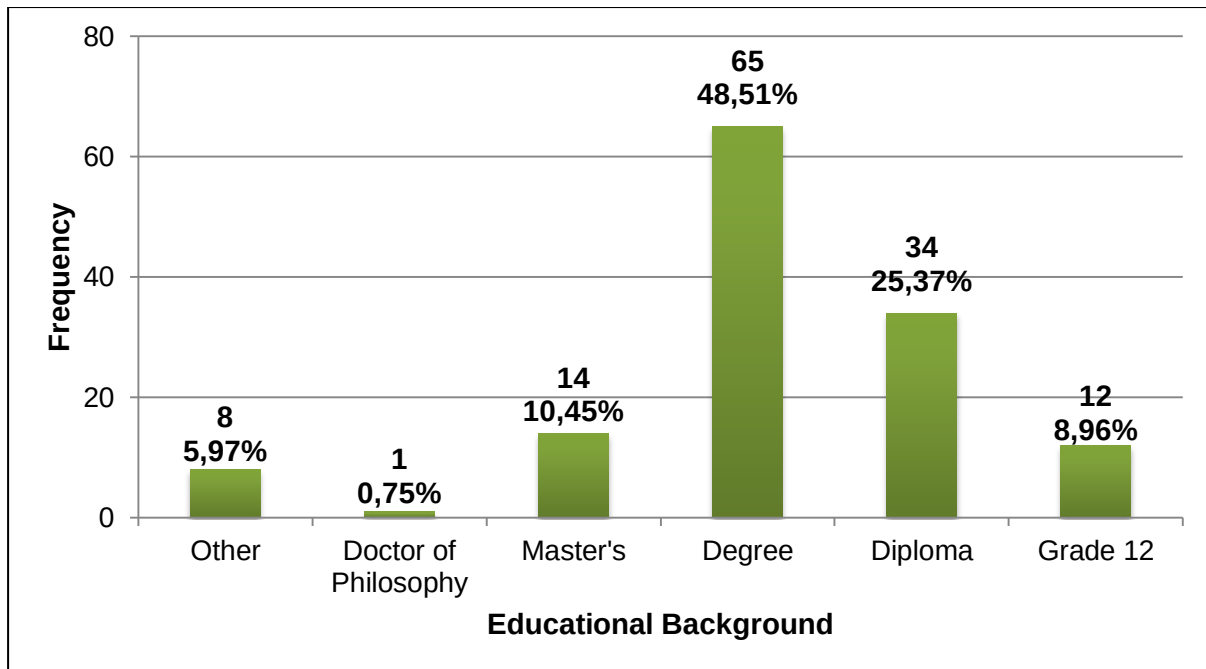


Figure 4.3: Educational background

4.3.5 Working experience

The majority of the respondents (67.91%) indicated that they have working experience of between 0-10 years in the steel manufacturing business, as shown in Figure 4.4 below. About 26.87% of the 134 respondents have indicated that they have 11-20 years of working experience, followed by 4.48% of the respondents who have been working for 21-30 years. It is indicated that 0.75% of 134 respondents specified that they have between 31-40 years of work experience.

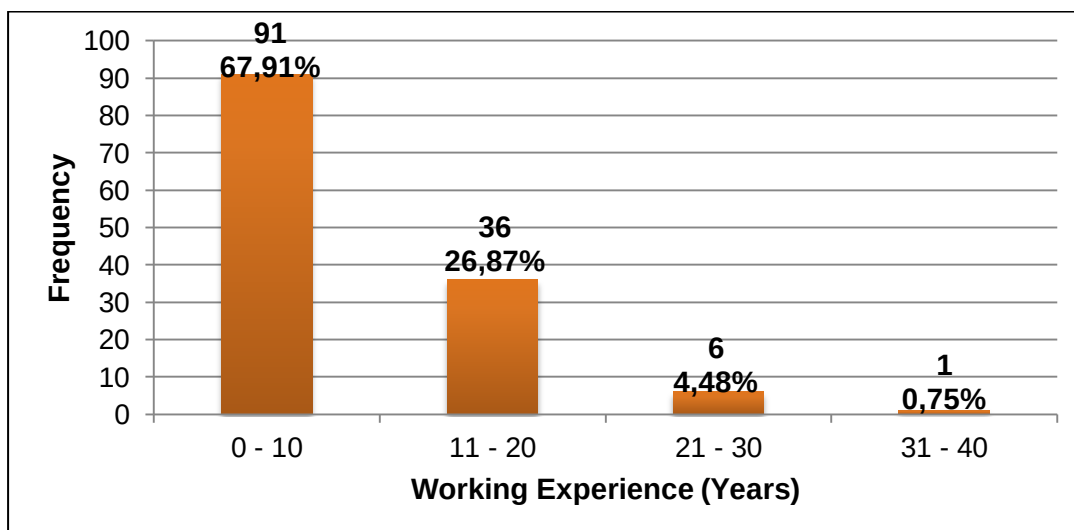


Figure 4.4: Working experience (years)

4.3.6 Employment positions of the respondents

The respondents' employment positions were collected in the questionnaire. There was no comparison between the number of men and women in certain positions. This was due to the imbalance of the representation of all the departments considered for this study. The employment positions were collected to indicate the views of various personnel according to their employment roles. Table 4.2 shows that most of the 134 respondents (27.6%) are in the Other roles. The category, Other, refers to roles such as general workers, artisans, receptionists or clerks, personal assistants, or supervisors in various departments of the steel manufacturing company. This is followed by 26.9% of the respondents in specialist/senior specialist positions. Junior - and middle management are represented by 24.6% and 17.2%, respectively. While the minority of the respondents, which is 3.7%, represent top management in this survey.

Table 4.2: Employment positions of respondents

	Frequency	Percent (%)	Valid Percent (%)	Cumulative Percent (%)
Junior Management	33	24.6	24.6	24.6
Middle Management	23	17.2	17.2	41.8
Top Management	5	3.7	3.7	45.5
Specialist/Senior Specialist	36	26.9	26.9	72.4
Other	37	27.6	27.6	100.0
Total	134	100.0	100.0	

4.3.7 Demographics findings

According to Figure 4.5, below, there is a good balance of educational background between males and females except for one male with a higher qualification, that is, Ph.D. Most of the participants of the study, both males and females, have degrees. Therefore, the assumption that women respondents have the same qualifications as their male counterparts has been confirmed. 4 outliers preferred not to state their gender, and they all have degrees.

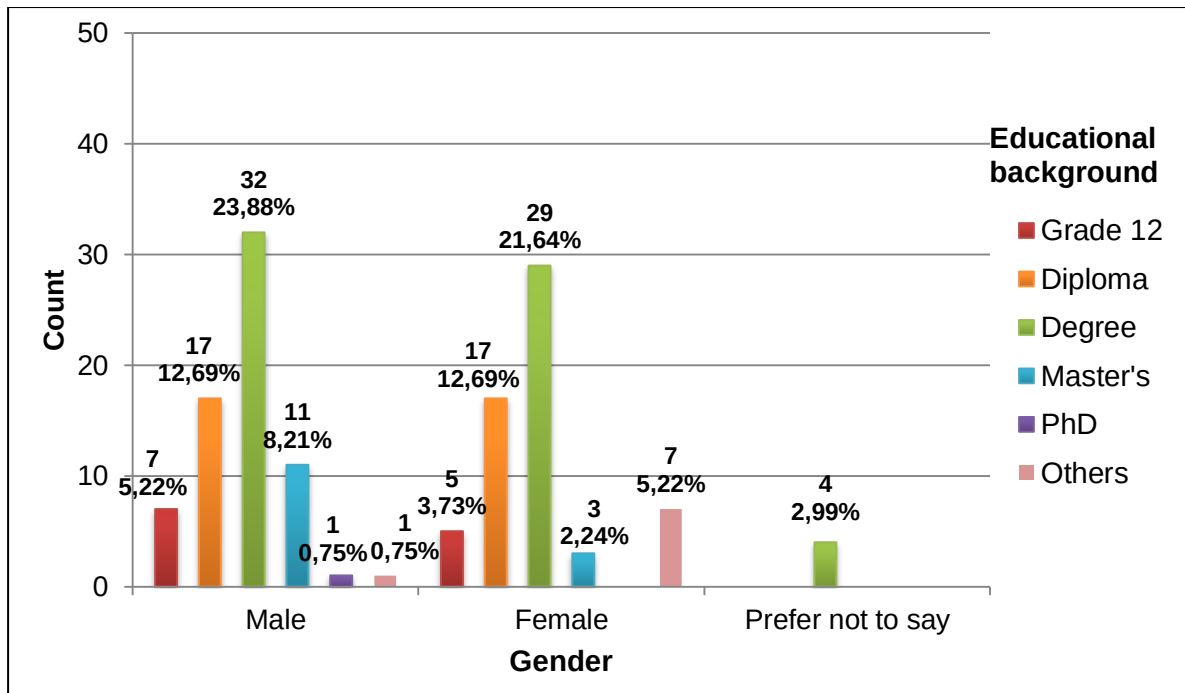


Figure 4.5: Gender v/s. educational background

Figure 4.6 below indicates a fair balance between men and women who work at the steel manufacturing company with working experience. The trends illustrate 34.33% of male respondents with 0 to 10 years of working experience and 30.60% female respondents with the same working experience. There is one exception, the female with 31 to 40 years of working experience. Therefore, women respondents in this study have the requisite expertise that is equal to their male counterparts.

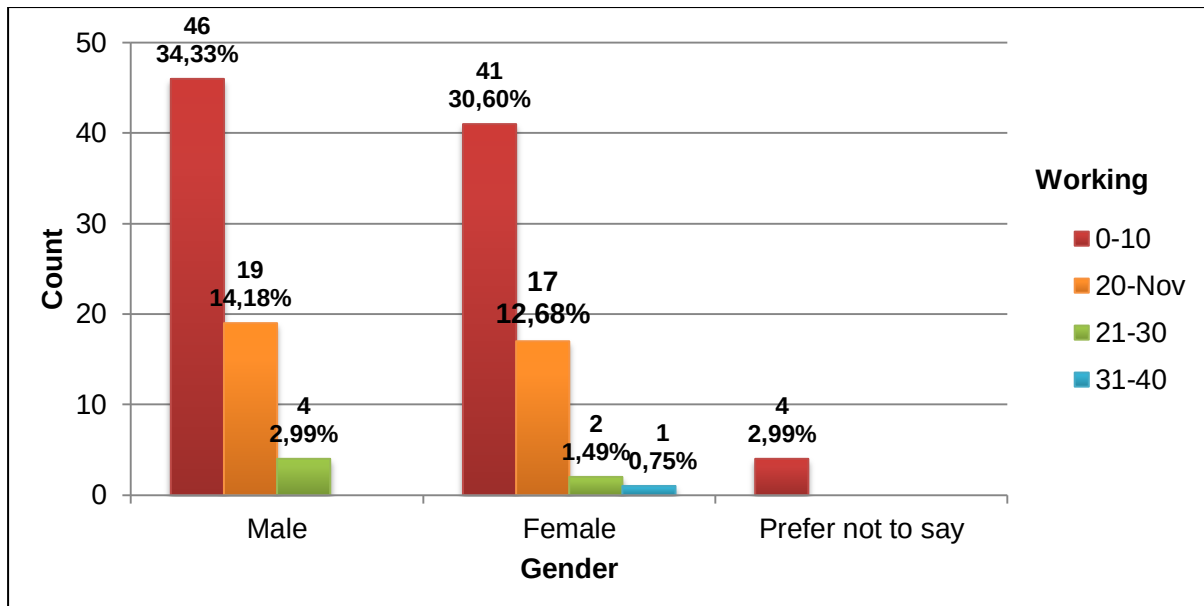


Figure 4.6: Gender v/s. working experience in years

4.4 Descriptive analysis

This section gives the descriptive statistical analysis of the respondents' understanding and perception towards the advancement of women, their view on the pros and cons of gender-balanced leadership, the respondents' perception towards the appointments and retentions of women in a steel manufacturing company, and respondents' perception to the progression of women into leadership roles in a steel manufacturing company.

The following factor abbreviations were used in the discussions and tables below to explain the results from the analysis:

- AW - Advancement of Women (Section B)
- GL - Gender-balanced Leadership (Section C)
- AR - Appointments and Retentions (Section D)
- WL - Women in Leadership (Section E)

The numbers next to the abbreviations mentioned above indicate the question number for that particular section in the questionnaire.

The descriptive statistics in terms of arithmetic mean, standard deviation, and skewness were interpreted. Since the response format contained at least five categories, these were treated as continuous variables, and the mean and standard deviations for each item were reported (Harpe, 2015; 839).

4.4.1 Advancement of women

According to Table 4.3, the mean of 2.57, which is less than 3, and the skewness statistic of 0.35, which is positive, indicate that most respondents strongly disagreed and disagreed with the statement that there are equal opportunities for males and females in the organisation.

With a mean of 2.73 and skewness of 0.26, most respondents have indicated that there is no equal mentorship for males and females in the manufacturing industry. However, the respondents mostly agreed that women have the opportunity to advance their careers into leadership roles with a mean of 3.22 and skewness of 0.21. Still, the women are not granted the opportunity to handle exciting and challenging tasks as their male counterparts.

Table 4.3: Advancement of Women (AW)

	N	Min	Max	Mean		Std. Dev.	Skewness	
		Stat.	Stat.	Stat.	SE	Stat.	Stat.	SE
AW1	134	1.00	5.00	2.57	0.11	1.28	0.35	0.21
AW2	134	1.00	5.00	2.73	0.10	1.17	0.26	0.21
AW3	134	1.00	5.00	3.22	0.10	1.21	-0.11	0.21
AW4	134	1.00	5.00	2.87	0.10	1.20	0.22	0.21
Valid N (likewise)	134							

Note: AW1, AW2, AW3, and AW4 are explained in the questionnaire in Annexure A.

4.4.2 Pros and cons of gender-balanced leadership

Table 4.4 descriptive statistics analysis reveals that women are not well represented in the leadership roles across the company in various departments with a mean of 2.63 and skewness of 0.34. There is insufficient flexibility in the workplace that

allows women to have satisfactory work-life balance; this is indicated by a mean of 2.88 and skewness of 0.27. However, the respondents indicated that women could commit to their family responsibilities while working in a manufacturing company with a mean of 3.48 and skewness of -0.38. The results also suggest that women mostly occupy positions that require soft skills with a mean of 3.47 and skewness of -0.43 and are perceived to be tender and modest. At the same time, males are regarded to be strong, ambitious, and assertive.

Table 4.4: Pros and cons of Gender-balanced Leadership (GL)

	Min	Max	Mean		Std. Dev.	Skewness	
	Stat.	Stat.	Stat.	SE	Stat.	Stat.	SE
GL1	1.00	5.00	2.63	0.11	1.32	0.34	0.21
GL2	1.00	5.00	2.88	0.11	1.31	0.27	0.21
GL3	1.00	5.00	3.48	0.11	1.25	-0.38	0.21
GL4	1.00	5.00	3.47	0.11	1.24	-0.43	0.21
GL5	1.00	5.00	3.80	0.09	1.09	-0.73	0.21
GL6	1.00	5.00	4.22	0.08	0.98	-1.36	0.21
Valid N (likewise)	134						

Note: GL1, GL2, GL3, GL4, GL5, and GL6 are explained in the questionnaire on Annexure A.

4.4.3 Appointments and retentions

According to Table 4.5 descriptive statistics analysis, the representation of women in the manufacturing industry indicates that there is industry favouritism of males towards leadership positions with a mean of 3.76 and skewness of -0.76. The results suggest that there is a good relationship between males and females in the workplace. Most of the respondents strongly disagreed and disagreed that there is a high turnover of females; this is illustrated by a mean of 2.87 and skewness of -0.01. However, the manufacturing industry image is not attractive for all genders, and the working conditions in a manufacturing company are not suitable environments for women.

Table 4.5: Descriptive statistics for Appointments and Retentions (AR)

	Min	Max	Mean		Std. Dev.	Skewness	
	Stat.	Stat.	Stat.	SE	Stat.	Stat.	SE
AR1	1.00	5.00	3.76	0.10	1.20	-0.76	0.21
AR2	1.00	5.00	3.53	0.09	1.02	-0.13	0.21
AR3	1.00	5.00	2.87	0.10	1.18	-0.01	0.21
AR4	1.00	5.00	2.90	0.11	1.22	0.16	0.21
AR5	1.00	5.00	3.07	0.09	1.09	0.06	0.21
Valid N (likewise)	134						

Note: AR1, AR2, AR3, AR4, and AR5 are explained in the questionnaire on Annexure A.

4.4.4 Steps to progress women into leadership

Table 4.6 shows the descriptive statistics analysis indicating that women are encouraged to further their studies to get into managerial positions. This statement is due to the mean of 3.42, greater than 3, and negative skewness of -0.45. Furthermore, the remaining statements show the mean values less than 3 and positive skewness, indicating that the company lacks a support group for women empowerment with a mean of 2.62 and skewness of 0.21. The company does not have leadership programmes in place to unlock women's potential. The company does not have substantial networking opportunities to measure progress for women into leadership positions; this is indicated by a mean of 2.52 and skewness of 0.20.

Table 4.6: Steps to progress Women into Leadership (WL)

	Min	Max	Mean		Std. Dev.	Skewness	
	Stat.	Stat.	Stat.	SE	Stat.	Stat.	SE
WL1	1.00	5.00	3.42	0.10	1.19	-0.45	0.21
WL2	1.00	5.00	2.62	0.11	1.26	0.21	0.21
WL3	1.00	5.00	2.55	0.11	1.22	0.29	0.21
WL4	1.00	5.00	2.52	0.11	1.22	0.20	0.21
Valid N (likewise)	134						

Note: WL1, WL2, WL3, and WL4 are explained in the questionnaire in Appendix A.

4.5 Statistical factor analysis

Table 4.7 represents the results of Kaiser's criteria and Scree tests used to determine the number of initial un-rotated factors extracted. The eigenvalues correlating with each factor signify the variance explained by those specific linear components. The correlation coefficient value of variables less than 0.5 is suppressed. Thus, any factor loadings with values less than 0.5 are hidden and not shown on the table as the values are insignificant.

Table 4.7 shows the results of the factor analysis, which reveal the eigenvalues and total variance explained. The extraction method of factor analysis used in this work is a Principal Component Analysis (PCA). Before extraction, nineteen (19) linear components were recognised from the dataset. After extraction and rotation, five different linear components from the dataset were denoted with greater eigenvalues (>1). These five factors extracted accounted for a combined total variation of 68.58% within the dataset, which is greater than the suggested rule of thumb of 50% of the total variation for factor retention.

The results show that 68.58% of the common variance shared by the 19 variables can be accounted for by only five factors. This reflects the KMO value = 0.84, which can be considered sufficient, and that the factor analyses are beneficial to select the significant variables in this study. The initial factor analysis results revealed that it would extract not more than five factors. The first component has explained 18.16% of the total variance with an eigenvalue of 6.89. The second component has described 18.03% of the variance with an eigenvalue of 2.09. The third component has explained 14.82% of the variance with an eigenvalue of 1.59. The fourth component has presented 9.44% of the variance with an eigenvalue of 1.35, and the fifth component has explained 8.14% of the variance with an eigenvalue of 1.11.

Table 4.7: Factor Analysis Total Variance Explained

Component	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	6.89	36.29	36.29	6.89	36.29	36.29	3.45	18.16	18.16
2	2.09	11.02	47.31	2.09	11.02	47.31	3.43	18.03	36.19
3	1.59	8.37	55.68	1.59	8.37	55.68	2.82	14.82	51.01
4	1.35	7.08	62.76	1.35	7.08	62.76	1.79	9.44	60.45
5	1.11	5.83	68.58	1.11	5.83	68.58	1.55	8.14	68.58
6	0.92	4.85	73.44						
7	0.76	4.02	77.46						
8	0.62	3.26	80.71						
9	0.57	3.00	83.71						
10	0.51	2.70	86.42						
11	0.48	2.50	88.92						
12	0.44	2.33	91.25						
13	0.37	1.95	93.21						
14	0.34	1.79	95.00						
15	0.26	1.35	96.35						
16	0.22	1.15	97.50						
17	0.19	0.99	98.49						
18	0.15	0.81	99.30						

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
19	0.13	0.79	100.00						
<i>Extraction Method: Principal Component Analysis.</i>									

The scree plot in Figure 4.7 shows five factors for which the eigenvalues are more significant than one and account for most of the total variability in the dataset. The other factors account for very small proportions of the variability and are considered to be insignificant.

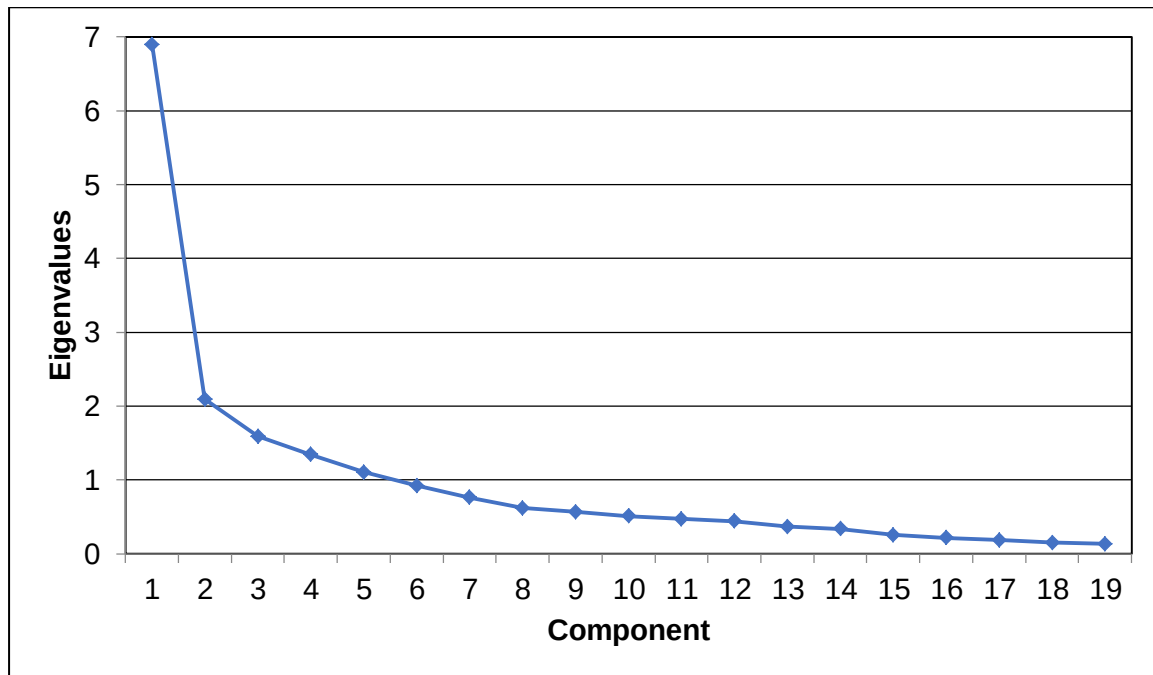


Figure 4.7: Scree plot of eigenvalue vs. component numbers

4.5.1 Component 1 analysis

Table 4.8 provides the details of which the variables measure the loading factors for components. The variables with a significant loading factor value greater than 0.40 indicate that they represent the component (Shrestha, 2021:9). Component 1 can be considered as the advancement of women in the steel manufacturing company because all the necessary variables with high loading factors are included; that is, women have the opportunity to advance their careers into leadership roles (AW3) with a loading factor of 0.75 against Component 1, women are granted the equal mentorship as their male counterparts (AW2) with loading factor of 0.79, there are equal opportunities for males and females in the organisation (AW1) with loading factor of 0.83, and women are given opportunities to handle complex and exciting tasks in the manufacturing industry as their male counterparts (AW4) with loading factor of 0.59.

Component 1 further indicates that women are well represented in the leadership roles across the company in various departments (GL1) with 0.56. These were the questions that had the majority of the responses in their respective categories of strongly agree and agree. The company has support groups for women empowerment (WL2) with a negative loading factor of -0.34. The company has substantial networking opportunities to measure progress for women into leadership positions (WL4) with a loading factor of 0.37. This implies that most respondents have disagreed and strongly disagreed that the company has support groups for women empowerment and that the company has substantial networking opportunities for women. Therefore, WL2 and WL4 were discarded from being significant component influencers 1.

4.5.2 Component 2 analysis

In Table 4.8, Component 2 can be considered the gender-balanced leadership in the steel manufacturing company, mainly because its loading factor relates to the women's leadership status and support. There are six variables contributing significantly to Component 2, and those are women are well represented in the leadership roles across the company in various departments (GL1) with a loading factor of 0.55, and there is sufficient flexibility in the workplace that allows women to have satisfactory work-life balance (GL2) with loading factor of 0.89. Women can commit to their family responsibilities while working in a manufacturing company (GL3) with a loading factor of 0.87. Women mostly occupy posts that require the soft type of skills (GL4) with a loading factor of 0.85, and women are perceived to be tender and modest (GL5) with a loading factor of 0.57, and men are regarded to be strong, ambitious, and assertive (GL6) with loading factor of 0.48.

4.5.3 Component 3 analysis

Component 3 can be considered the working conditions (contributor to appointments and retentions) for all gender-based in the steel manufacturing company. There are six variables contributing significantly, illustrated as women are granted the opportunity to handle exciting and challenging tasks as their male counterparts (AW4) with a loading factor of 0.45, and men being regarded to be strong, ambitious, and assertive (GL6) with a loading factor of 0.400. The representation of women in the manufacturing industry indicates that there is industry favoritism of males towards leadership positions (AR1) with a loading factor of 0.78, the manufacturing industry image is attractive for all genders (AR4) with a loading factor of 0.64, there is a good relationship between males

and females in the workplace (AR2) with loading factor of 0.71, there is a high turnover of females (AR3) with a loading factor of 0.69. Therefore, GL6 was discarded as a significant contributor.

4.5.4 Component 4 analysis

Factor analysis results shown in Table 4.8 reveal that Component 4 has only three highly significant variables. Component 4 can be considered as the perception of women in a steel manufacturing company. These three variables are that the working conditions in a manufacturing company are suitable environments for women (AR5) with a loading factor of 0.76, women are encouraged to further their studies to get into managerial positions (WL1) with a loading factor of 0.76, and that the company has a support group for women empowerment (WL2) with a loading factor of 0.64.

4.5.5 Component 5 analysis

Lastly, Table 4.8 below illustrates Component 5 results, and this Component can be considered the gender-based progression in the steel manufacturing companies. Two variables contribute significantly: the company has leadership programmes to unlock women's potential (WL3) with a loading factor of 0.73. The company has substantial networking opportunities to measure progress for women into leadership positions (WL4) with a loading factor of 0.63. The other variables, namely, a high turnover of females, women are encouraged to further their studies to get into managerial positions. The company has support groups for women that were disregarded as significant variables for this Component as they all had loading factors less than 0.400.

Table 4.8: Factor analysis rotated component matrix

	Component				
	1	2	3	4	5
AW1	0.83				
AW2	0.79				
AW3	0.75				
AW4	0.59		0.45		
GL1	0.56	0.55			
GL2		0.89			
GL3		0.87			
GL4		0.85			
GL5	0.53	0.57			
GL6		0.48	0.40		
AR1			0.78		
AR2			0.71		
AR3			0.69		-0.37
AR4			0.64		
AR5				0.76	
WL1				0.76	-0.31
WL2	-0.34			0.64	0.35
WL3					0.73
WL4	0.37				0.63
<i>Extraction Method: Principal Component Analysis.</i>					
<i>Rotation Method: Varimax with Kaiser Normalisation.</i>					
<i>a. Rotation converged in 8 iterations.</i>					

4.6 Effects of biographical data

Table 4.9 below indicates the correlations of the biographical data to Section B to E from the questionnaire. The correlation values range from -1 to 1.

The data collected from the respondents were captured on the SPSS software in order from the youngest respondents to the oldest respondents, the same order was applied for working experience, from the least number of years' experience to most years, and educational background was in the order from Grade 12 to Ph.D. It should be noted that the number of samples is 126 respondents on the educational background, as the

respondents who had replied with “Other” were not considered on order, this is because some of them may only have certificates that are between Grade 12 and Diploma or qualifications below Grade 12 and above Ph.D.

The results indicated that the older the respondents were, there more they agreed and strongly agreed to the Advancement of Women subscale (B_AW) questions; this is shown by the positive correlation of 0.203, which is close to the medium correlation. The results also indicated that the older the respondents were, the more they agreed and strongly agreed to Appointments and Retentions (D_AR) subscale questions with a positive correlation of 0.204. It is shown that the more educated the respondents were, the less they agreed to D_AR, with a negative correlation of 0.201. The rest of the results indicated minimal correlations.

Table 4.9: Effect of biographical data statistics

Factor name	Statistics	Age (Years)	Educational Background	Working experience (years)
B_AW	Correlation Coefficient	0.203	0,018	0,134
	Sig. (2-tailed)	0,018	0,843	0,122
	N	134	126	134
C_GL_pros	Correlation Coefficient	0,168	-0,116	0,041
	Sig. (2-tailed)	0,053	0,197	0,634
	N	134	126	134
C_GL_cons	Correlation Coefficient	-0,086	-0,027	-0,155
	Sig. (2-tailed)	0,321	0,766	0,074
	N	134	126	134
D_AR	Correlation Coefficient	0.204	-0.201	0,071
	Sig. (2-tailed)	0,018	0,024	0,416
	N	134	126	134
E_WL	Correlation Coefficient	0,145	-0,161	0,126
	Sig. (2-tailed)	0,094	0,072	0,146
	N	134	126	134

4.7 Reliability and test validation

Cronbach's Alpha was employed to establish the internal consistency reliability for the questionnaire used in this study, as shown in Table 4.10 below. Cronbach's alpha on N=19 items of questions scored 0.83, indicating that the measurement scale was reliable and had high internal consistency. It implied that the measurement instrument measured the questions of interest consistently and that the various questions in the

measure questionnaire are strongly interrelated. More information about the consistency and reliability analysis is given in Annexure B.

Table 4.10: Reliability statistics

Cronbach's Alpha	Cronbach's alpha based on standardised items	N of items
0.83	0.83	19

The Kaiser-Meyer-Olkin (KMO) Measure of Sampling shown in Table 4.11 is 0.84, greater than 0.8. Therefore, this result is an indication that the sampling was adequate to perform factor analysis.

Bartlett's test of Sphericity is highly significant at a probability value less than 0.001, which shows that there are substantial correlations among some of the variables. The considerable value given in Table 4.11 is far less than the significance level of 0.05; thus, the factor analysis was worthwhile for the dataset in this study.

Table 4.11: Kaiser-Meyer-Olkin and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.84
Bartlett's test of Sphericity	Approx. Chi-Square	1332.96
	df	171
	Sig.	0.000

Section A was the demographics of the respondents, and sections B to E were the subscales relating to the objectives of this study. Validity analyses for sections B to E of the questionnaire were conducted and are shown in Table 4.12 below. Section C was divided into 2 factors, namely, the pros and cons of gender-balanced leadership. The KMO values for all sections are above 0.6, indicating that the subscales are good enough to fit all questions in 1 factor. The % variance values are also above 40%, meaning most of the information of all questions under each subscale is covered, making the study valid. Refer to Annexure D to see all results in detail for all the sections.

Table 4.12: Validity results of the questionnaire subscales

	Factor	Number of factors	Factor name	KMO	% Variance explained
Section B	B_AW	1	B_AW	0,76	72,30
Section C	C_GL	2	C_GL_pros	0,63	64,84
			C_GL_cons	0,63	64,84
Section D	D_AR	1	D_AR	0,70	44,06
Section E	E_WL	1	E_WL	0,78	69,94

Reliability analyses for sections B to E of the questionnaire were conducted and are shown in Table 7.2 below. The Cronbach alpha values for all sections are above 0.6; this indicates that the subscales are reliable. Refer to Annexure D to see all results in detail for all the sections.

4.8 Group statistics

The group statistics illustrated in Table 4.13 below show the practical and statistical significance tests between the male and female respondents. The results indicate that the only p-value that was statistically significant in this study was for gender-balance leadership cons (C_GL_cons) (0.000) as it is the only p-value less than 5% (0.05), meaning there was a difference between the males and females respondents answers for C_GL_cons. The rest of the p-values were insignificant. The results also indicate that the effect size for C_GL_cons was practically significant with a medium significance value of 0.67, meaning there was a substantial difference between the response between the males and females for C_GL_cons. The difference illustrated by both the p-value and effect size of C_GL_cons is also indicated by the significant difference between the male respondents' mean (3.58) and the female respondents' mean (4.13), this suggests that the females agreed more than the males on Section C, the gender-balance leadership cons.

Table 4.13: Practical significance and statistical significance results

Factor names	Gender	Number of respondents	Mean	Std. Dev.	p-value	Effect size
B_AW	Females	61	2,74	1,04	0,292	-0,19
	Males	69	2,93	1,03		
C_GL_pros	Females	61	2,93	1,12	0,679	-0,07
	Males	69	3,01	1,07		
C_GL_cons	Females	61	4,13	0,81	0,000	0,67
	Males	69	3,58	0,81		
D_AR	Females	61	2,91	0,89	0,691	-0,07
	Males	69	2,96	0,62		
E_WL	Females	61	2,71	1,06	0,658	-0,08
	Males	69	2,79	0,99		

4.9 Relationships among the various questionnaire sections

4.9.1 Advancement of women

Table 4.14 illustrates the relationships among the distinct questionnaire sections. The results show that the more the respondents agreed with the Section B, Advancement of Women questions (B_AW), the more they agreed with Section C, the Gender-Balanced Leadership pro questions (C_GL_pros) with a significant positive correlation of 0.636. The more the respondents agree with B_AW, the less they agreed with Section C, the Gender-Balanced Leadership cons questions (C_GL_cons) with a medium positive correlation of -0.293. The more the respondents agreed with B_AW, the more they agreed with Section D, the Appointments and Retentions of women (D_AR), and the more they agreed with Women in Leadership (E_WL) subscale questions.

4.9.2 Pros of gender-balanced leadership

The results in Table 4.14 below show that the more the respondents agreed with the Section C, Gender-Balanced Leadership pro questions (C_GL_pros), the less they agreed with C_GL_cons with a medium negative correlation of -0.254. The more the respondents agree with C_GL_pros, the more they also agreed with Section D, the Appointments and Retentions of women, (D_AR) with a significant positive correlation of

0.522, and the more they agreed with Women in Leadership (E_WL) subscale questions with a large positive correlation of 0.624.

4.9.3 Cons of gender-balanced leadership

Table 4.14 illustrates the more the respondents agreed with Section C, Gender-Balanced Leadership cons questions (C_GL_cons), the less they agreed with B_AW with a medium negative correlation of -0.293. The more the respondents agree with C_GL_cons, the less they also agreed with C_GL_pros with a medium negative correlation of -0.254.

4.9.4 Appointments and retentions of women

The results in Table 4.14 below show that the more the respondents agreed with the Section D, Appointments and Retentions of women questions (D_AR), the more they agreed with B_AW with a larger positive correlation of 0.570. The more the respondents agree with D_AR, the more they agreed with C_GL_pros with a large positive correlation of 0.522, and the more they also agreed with Section E, Women in Leadership (E_WL) subscale questions.

4.9.5 Women in leadership

The results in Table 4.14 below indicate that the more the respondents agreed with the Section E, Women in Leadership (E_WL) subscale questions, the more they agreed with B_AW with a larger positive correlation of 0.465. The more the respondents agree with E_WL, the more they agreed with C_GL_pros with a large positive correlation of 0.624, and the more they also agreed with D_AR.

Table 4.14: Relationships among the various questionnaire sections

Factor name	Statistics	B_AW	C_GL_pros	C_GL_cons	D_AR	E_WL
B_AW	Correlation Coefficient	1,000	0.636	-0.293	0.570	0.465
	Sig. (2-tailed)		0,000	0,001	0,000	0,000
	N	134	134	134	134	134
C_GL_pros	Correlation Coefficient	0.636	1,000	-0.254	0.522	0.624
	Sig. (2-tailed)	0,000		0,003	0,000	0,000
	N	134	134	134	134	134
C_GL_cons	Correlation Coefficient	-0.293	-0.254	1,000	-0,113	-0,109
	Sig. (2-tailed)	0,001	0,003		0,192	0,209
	N	134	134	134	134	134
D_AR	Correlation Coefficient	0.570	0.522	-0,113	1,000	0.462
	Sig. (2-tailed)	0,000	0,000	0,192		0,000
	N	134	134	134	134	134
E_WL	Correlation Coefficient	0.465	0.624	-0,109	0.462	1,000
	Sig. (2-tailed)	0,000	0,000	0,209	0,000	
	N	134	134	134	134	134

4.10 Conclusion

The primary purpose of this chapter was to give a broad overview and presentation of the dataset collected by using the survey questionnaires, the dataset of the

demographics information, and the descriptive analysis of the four components of women's involvement in the leadership of the steel manufacturing company. These components include the advancement of women, the pros and cons of gender-balanced leadership, appointments and retentions, and steps to progress women into leadership with the steel manufacturing company. This information was instrumental in reaching a conclusion that was in line with the objectives of the study. The final results were the inferential statistics, precisely the exploratory factor analysis results, showing the combination of variables contributing statistically significant consequences to the study's objectives. The five components proposed chronologically by the analysis of the steel manufacturing company were as follows:

- Component 1: The advancement of women,
- Component 2: Gender balance leadership,
- Component 3: Working conditions (contributor to appointments and retentions),
- Component 4: Biased perception of women in employment, and
- Component 5: Gender-based progression in steel manufacturing companies.

Further discussion, conclusions, and recommendations of this study will be elaborated on in Chapter 5.

CHAPTER 5: RECOMMENDATIONS AND CONCLUSION

5.1 Introduction

This chapter provides a summary of the study and conclusions of the findings obtained concerning the research objectives. The limitations of the study and recommendations for the steel manufacturing company are discussed. Research opportunities that stem from this study and recommendations for future research are presented.

5.2 Summary of the study

In Chapter 1, the background, problem statement, objectives of the study, assumptions of the study, and ethical considerations were discussed. Chapter 2 analysed the relevant literature, and Chapter 3 discussed the research methodology. This was followed by Chapter 4, where the data were analysed and discussed. The last chapter will focus mainly on the limitations, delimitations, conclusions, and study recommendations.

5.3 Conclusions of the study

The conclusions based on the study's findings represent some of the main recommendations, which need to be put in place by companies for them to be in a position to gain the benefits, which are linked to the factors influencing the advancement of women in the steel manufacturing companies. Finally, suggestions for further research were also given to conclude the study.

According to the National Development Plan 2030 (2020:1), women make up a large percentage of the poor, particularly in rural areas. The plan considers gender, race, and geographic location, proposing a range of measures to advance women's equality. Based on this fact, the National Planning Commission from The Presidency office for the Republic of South Africa made recommendations aligned to the advancement of women.

5.4 Findings and discussions

This chapter aims to answer the research objectives presented in Chapter 1, section 1.3, considering all the findings in the literature review and the results of the data analysis presented in the previous chapter.

5.4.1 Advancement of women into leadership roles

The primary objective of this study was to identify the critical factors that influence the advancement of women into managerial positions at a steel manufacturing company. The literature study stated that patriarchy is the main obstacle to women's progress in leadership roles as it emphasises biological differences, such as men's masculinity. It also indicated that gender stereotypes also suggest that men should only occupy management positions, and women should handle undemanding support functions in the workplace, creating a barrier for women to obtain leadership roles. The literature study also argued that men and women have equivalent managerial competencies and that leadership can be taught and learned. It is a combination of both behaviour and skill-sets.

The results obtained from the data analysis, refer to Table 4.3 in chapter 4, depict that the respondents of the questionnaire strongly disagreed and disagreed with the notions that there are equal opportunities for males and females in the steel manufacturing organisation; the respondents also indicated that their mentorship provided for males and females in the industry is not identical, and women are not offered opportunities to handle challenging and exciting tasks as their male counterparts. On the other hand, the respondents agreed that women have the opportunity to advance their careers into leadership roles.

5.4.2 Pros and cons of gender-balanced leadership

The study's second objective was to evaluate the pros and cons of gender-balanced leadership in a manufacturing organisation. According to Mathur-Helm (2005:68), South Africa is still a rare situation for women to reach top-level positions. However, most of them succeed in obtaining entry- and middle-level jobs and only a very few senior management-level jobs. The literature study stated that various cultures and religious practices embed specific family responsibilities, for example, nurturing children, on women regardless of their employment status and career. However, literature also indicated that there had been cultural and social changes in the past years that illustrate that men and women value the same qualities, for example, ambition.

The data analysis in chapter 4, section 4.2.2, revealed that women could commit to their family responsibilities while working in a steel manufacturing company. They mainly occupy posts that require soft skills, and they are perceived to be tender and modest while males are regarded as strong, ambitious, and assertive. These observations are in line with the findings by Mathur-Helm (2005:68), that women must review their perceptions regarding their professional roles and accept themselves as competent professional women regardless of their family responsibilities. Moreover, men will have to acknowledge and teach themselves to accept their women counterparts as professional business or corporate women and as leaders by changing their perceptions regarding women's traditional roles as housewives.

This study found disadvantages of gender-balance leadership in the steel manufacturing companies to under-represent women in the leadership roles across the companies in various departments. Furthermore, there is insufficient flexibility in the workplace that allows women to have a satisfactory work-life balance. These notions remain critical facts that the steel manufacturing companies should continuously review to accommodate women in senior and executive management levels since they do not benefit from government policies and legislation to advance their careers.

5.4.3 Appointments and retentions objective

Furthermore, the other objective was to contribute to the current efforts to promote the appointment and retention of women in leadership roles in the manufacturing sector. The steel manufacturing company's human rights policy requires conducting an open and inclusive dialogue with their employees, especially the under-represented groups such as women. Literature from previous research stated that about 67% of the women who participated in the study conducted by Deloitte, *Women in Manufacturing*, mentioned that their companies do not put any emphasis on attracting females to join their organisations, the other 33% stated that their company focuses on recruiting and retaining women in their organisations. Another literature study illustrated that the salary gap between men and women continues to be a challenge as most women earn about 81% of their male counterparts' salaries for the same roles in the company. The literature study also denotes that companies do not emphasise creating elevated platforms to discuss the importance of gender diversity in leadership roles.

According to Table 4.5 results in Chapter 4, the representation of women in the manufacturing industry indicates that there is industry favouritism of males towards leadership positions. Literature indicated that men in leadership positions are more likely to develop opportunities for their male subordinates that they perceive will do better than women. The results from Chapter 4, section 4.4.3, indicate a good relationship between males and females in the workplace. Most respondents strongly disagreed and disagreed that there is a high turnover of females. However, the results denoted that the steel manufacturing industry image is not attractive for all genders, and the working conditions in a manufacturing company are not suitable environments for women.

5.4.4 Women into leadership objective

The last objective was to ascertain steps that manufacturing companies have taken to progress women into leadership roles. Literature study indicated that support networks for women broaden knowledge sharing and ideas; they enhance emotional support, mentoring channels, and opportunities for women in the organisation to meet the women who are already well-established in the leadership roles. The networking platforms also enhance the increased speed of advancement of promotions for women in various workplaces, although their success rate is still less than support networks conducted by men.

The findings from Chapter 4's Statistical analysis revealed that women are encouraged to further their studies to get into managerial positions. On the contrary, literature indicated that educational attainment for women does not give them the advantage to attain senior or leadership roles in the workplace. However, the steel manufacturing company needs to invest more in solid staff networking, leadership programmes, and training to unlock women's potential to lead. This would advance women within the workplace for women empowerment. Findings from chapter 4 outline that the company lacks substantial networking opportunities to measure progress for women into leadership positions that the organisation can eradicate through developing women leadership programmes. On the contrary, it should also be noted that women often choose to go for less firm work schedules than men do, so they have the flexibility to participate in a shared appointment without forgoing income (Blau & Kahn, 2017:28). Therefore, if the organisation initiates staff networking platforms and all other necessary

empowerment programmes, they will be able to identify women who are fit for leadership roles and are not interested in the programmes.

5.5 Limitations of the study

The study only focused on the advancement of women in one steel manufacturing company within the Gauteng province, Republic of South Africa. Thus, the study has consequences for the generalisability of the findings to other provincial and national steel manufacturing companies. Therefore, this study might be comprehensive to other provincial and national steel manufacturing companies and the general manufacturing sector in South Africa.

5.1 Delimitations of the study

Delimitations are described as factors that are beyond the researcher's control that can significantly have an impact on the results of the research study (Baron, 2008:5). In other words, delimitations refer to the scope of the research or the limits for the study that set up the parameters that will be used to conduct research. This includes the sample size, the geographic region of where the data was collected, the formats used to collect data from the participants, and the time frame to conduct the study (Baron, 2008:6). This study was limited as it was only performed at a steel manufacturing organisation based in Vanderbijlpark in Gauteng, South Africa. Therefore, the results cannot be used as an authoritative reference for manufacturing companies globally. Still, the study insights may be useful in similar heavy manufacturing companies in South Africa or developing economies with similar developmental indices. The population that was used for this study were only the workers at the steel manufacturing company based in Vanderbijlpark.

5.2 Significance of the study

The findings from this study could support and foster new developments in strategies that could enhance the advancement of women leaders of high calibre in South African steel manufacturing companies.

5.3 Recommendations from the study

- The government should implement stringent transformation policies in the economy to enhance women's active participation and empowerment. The role of women as leaders in all sectors of society should be actively supported.
- The steel manufacturing company should improve the industry image by creating more awareness in the communities to attract more females to work for the organisation. It should indicate that the industry does not practice any gender bias as not all jobs in the organisation require physical strength.
- The steel manufacturing company should consider implementing flexible working hours for all genders so that females can handle work and household responsibilities. This will ensure that females practice a healthy work-life balance without compromising any of the two factors.
- The steel manufacturing company should improve working conditions for all genders. It should be noted that during the National Lockdown for the global pandemic, COVID-19, the company was able to allow more than 70% of its personnel to work from home. This illustrated that the organisation could implement favourable working conditions for all genders as not all tasks in the company require all personnel to report to the site.
- The organisation needs to invest in having support groups and leadership programmes for women empowerment. This will help women identify their talents, increase their self-confidence and sense of belonging. It will also reduce the barrier of women interacting with women who are already occupying leadership roles and increase the chances of successful mentorship for women.
- The company should indicate clear strategies to management, such as Key Performing Indicators (KPIs) that show the number of women being put on succession plans for senior roles or managerial roles. Consequences should be put in place for managers who do not support the strategy, for instance, creating awareness for such managers to eliminate gender stereotypes in the workplace by sharing benefits of gender-diversity leadership.

5.4 Recommendations for future studies

- Research should be conducted on how organisations should apply policies and practices that reduce a mismatch between how females are perceived in the workplace and the qualities and experiences linked to leaders before advising women to seek leadership roles. This will assist in achieving a gender-balanced leadership culture in the organisation.
- Research should be conducted in companies with gender-balanced leadership to assess the effectiveness of advancing women into senior roles. This will assist in evaluating the benefits and drawbacks of having males dominating leadership positions in more detail.
- The ineffectiveness of women networking groups in advancing them to senior positions. Research indicates that there are various networking platforms in South Africa, but their progress in assisting women in moving into senior roles is still not significant.

5.5 Concluding remarks

This chapter provided a conclusion aligned with the objectives of the study. The findings and limitations of the research were noted, and recommendations were made for the advancement of women in leadership in the manufacturing company and future research that can be conducted. The objectives that were formulated for this study were successfully attained.

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APPENDICES

Annexure A: Survey questionnaire (the data collection tool)

Study Background

Several authorities have argued that a gender-balanced leadership would improve information processing and decision-making skills (Dezso & Ross, 2012:1073). Some have argued it would reduce gender discrimination and the wage gap between men and women in an organisation (Joan, 2009:200). However, there has been very little change over the years, especially in male-dominated industries – mining, manufacturing, and engineering firms alike. The purpose of this study hence this survey, is to identify specific factors that influence the advancement of women into managerial positions. Furthermore, this study will explore strategies that companies can use to promote the appointment and retention of women in leadership roles in the manufacturing sector.

This survey questionnaire is divided into 5 sections (section A to E) and should take you 15 to 20 minutes to complete. Please answer the following questions to the best of your ability. It should be noted that all privacy commitments will be honoured in line with the North West university ethics requirements. Thank you for your time and participation.

Section A focuses on capturing the demographic information of the participant. Please indicate your category by crossing (X) where appropriate. The following sections (section B to E) present a list of statements for ascertaining your understanding and perception of women's advancement. Please state whether you agree or disagree with each statement by crossing (X) on your corresponding answer guided by the Linear scale below.

Consent

☐ I hereby declare that I have read and understood the content of the Informed Consent Statement and give my full consent to Keatlegile Modise to use the information from the questionnaire in the MBA research.

SECTION A: Demographic Information

Demographics						
Gender	Male		Female		Prefer not to say	
Age (years)	20-29	30-39	40-49	50-59	60-63	
Department	Human Resource	Engineering	Marketing	Information Management	Finance	Other
Educational Background	Grade 12	Diploma	Degree	Master's	PhD	Other
Working experience (years)	0-10	11-20	21-30	31-40	41-50	
Role	Junior Management	Middle Management	Top Management	Specialist/ Senior Specialist	Other	

SECTION B: Advancement of Women (AW)

Advancement of Women		Likert Scale				
1 = Strongly disagree, 2 = Disagree, 3 = Slightly agree, 4= Agree 5 = Strongly agree		1	2	3	4	5
AW1	There are equal opportunities for males and females in the organisation					
AW2	There is equal mentorship for males and females in the manufacturing industry					
AW3	Women have the opportunity to advance their careers into leadership roles					
AW4	Women are granted the opportunity to handle exciting and challenging tasks as their male counterparts					

SECTION C: Pros and cons of gender-balanced leadership (GL)

Pros and cons of gender-balanced leadership		Likert Scale				
1 = Strongly disagree, 2 = Disagree, 3 = Slightly agree, 4= Agree 5 = Strongly agree		1	2	3	4	5
GL1	Women are well represented in the leadership roles across the company in various departments					
GL2	There is sufficient flexibility in the workplace that allows women to have a satisfactory work-life balance					
GL3	Women can commit to their family responsibilities while working in a manufacturing company					
GL4	Women mostly occupy posts that require the soft type of skills					
GL5	Women are perceived to be tender and modest					
GL6	Males are regarded to be strong, ambitious, and assertive					

SECTION D: Appointments and Retentions (AR)

Appointments and Retentions		Likert Scale				
1 = Strongly disagree, 2 = Disagree, 3 = Slightly agree, 4= Agree 5 = Strongly agree		1	2	3	4	5
AR1	The representation of women in the manufacturing industry indicates that there is industry favoritism of males towards leadership positions					
AR2	There is a good relationship between males and females in the workplace					
AR3	There is a high turnover of females					
AR4	The manufacturing industry image is attractive for all genders					
AR5	The working conditions in a manufacturing company are suitable environments for women					

SECTION E: Steps to Progress Women into Leadership (WL)

Steps to Progress Women into Leadership		Likert Scale				
1 = Strongly disagree, 2 = Disagree, 3 = Slightly agree, 4= Agree 5 = Strongly agree		1	2	3	4	5
WL1	Women are encouraged to further their studies to get into managerial positions					
WL2	The company has a support group for women empowerment					
WL3	The company has leadership programmes in place to unlock women's potential					
WL4	The company has substantial networking opportunities to measure progress for women into leadership positions					

Thank you so much for your time and contribution to this study. It is highly appreciated.

End of Questionnaire

Annexure B: Reliability statistics

Table 7.1: Summary item statistics

	Mean	Min	Max	Range	Max/ Min	Variance	N of Items
Item Means	3.11	2.52	4.22	1.69	1.67	0.25	19

Table 7.2: Item-total statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
AW1	56.55	110.52	0.59	0.65	0.82
AW2	56.39	111.73	0.61	0.68	0.82
AW3	55.90	111.24	0.60	0.67	0.82
AW4	56.25	111.39	0.60	0.684	0.82
GL1	56.49	106.40	0.73	0.75	0.81
GL2	56.24	107.33	0.70	0.77	0.81
GL3	55.64	114.14	0.46	0.47	0.82
GL4	55.65	128.64	-0.07	0.34	0.85
GL5	55.32	130.10	-0.13	0.46	0.85
GL6	54.90	127.91	-0.04	0.37	0.84
AR1	55.36	135.12	-0.30	0.40	0.86
AR2	55.59	115.37	0.54	0.44	0.82
AR3	56.25	119.79	0.27	0.30	0.83
AR4	56.22	113.75	0.49	0.48	0.82
AR5	56.04	115.61	0.48	0.46	0.82
WL1	55.70	113.56	0.52	0.44	0.82
WL2	56.50	111.11	0.58	0.72	0.82
WL3	56.57	110.40	0.63	0.75	0.81
WL4	56.60	110.57	0.63	0.69	0.81

Table 7.3: Scale statistics

Mean	Variance	Std. Dev.	N of Items
59.12	128.09	11.318	19

Annexure C: Factor analysis results**Table 7.4: Communalities**

	Initial	Extraction
AW1	1.00	0.69
AW2	1.00	0.63
AW3	1.00	0.78
AW4	1.00	0.76
GL1	1.00	0.71
GL2	1.00	0.72
GL3	1.00	0.69
GL4	1.00	0.60
GL5	1.00	0.66
GL6	1.00	0.69
AR1	1.00	0.79
AR2	1.00	0.53
AR3	1.00	0.54
AR4	1.00	0.64
AR5	1.00	0.65
WL1	1.00	0.53
WL2	1.00	0.81
WL3	1.00	0.84
WL4	1.00	0.77
<i>Extraction Method: Principal Component Analysis.</i>		