Gordon Institute of Business Science
University of Pretoria

The role of perceived inclusion and organisational commitment as a mediator on the retention of women in manufacturing

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A research project submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfilment of the requirements for the degree of Master of Business Administration.

4 March 2025

Abstract

The South African manufacturing industry has been experiencing high attrition rates of women at a time when a critical STEM skills shortage is hampering economic growth of the country. The lack of retention of women within the industry is a topic of interest as organisations grapple with the effectiveness of their DEI programs. Whilst diversity has been well researched over the years, inclusion is still a topic in its infancy, with limited empirical studies resulting in a lack of understanding of the meaning and impact of inclusion within the workplace. This research project was therefore a study on the role of perceived inclusion and organisational commitment as a mediator on the retention of women in manufacturing in South Africa. Through a quantitative approach, data was collected from 253 employees within the industry to obtain insights and statistically analysed. Tests for differences and structural equation modelling supported findings of gender differences of perceived inclusion leading to women perceiving less inclusion in the workplace compared to men. Contrary to academic literature, the strengths of the relationships between perceived inclusion and retention were not found to be stronger for men. Additionally, organisational commitment partially mediated the relationship by complementing the perceptions of inclusion into retention. A model was provided to assist the manufacturing industry in using perceived inclusion to drive retention through organisational commitment. The results provided insights on the importance of motivational factors such as inclusion in driving organisational commitment and the inclusion of women through decision making, access to information, formal and informal work activities and male advocacy in order to improve the retention within the manufacturing industry.

Keywords

Perceived inclusion, organisational commitment, retention, social identity, STEM

Plagiarism Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

Signature: …….

Date: 4 March 2025

Table of Contents

List of Tables

Table of Figures

List of Abbreviations

α	Cronbach alpha
4IR	4th Industrial Revolution
AMOS	Analysis of Moment Structures
AVE	Average Variance Extracted
β	Standardised estimate
BBBEE	Broad Based Black Economic Empowerment
CFA	Confirmatory Factor Analysis
CFI	Comparative fit Index
CR	Composite Ratio
DEI	Diversity, Equity and Inclusion
EEA	Employment Equity Act
f^2	Effect size
FMCG	Fast Moving Consumer Goods
GDP	Gross Domestic Product
HRM	Human Resource Management
HTMT	Heterotrait-Monotrait Ratio of Correlations
IFI	Incremental Fit Index
ILO	International Labour Organisation
IoT	Internet of Things
IT	Information Technology
KPI	Key Performance Indicator
M	Mean
Md	Median
OC	Organisational Commitment
OCQ	Organisational Commitment Questionnaire
p	Significance level
PLS-SEM	Partial Least Square- Structural Equation Modelling
PI	Perceived Inclusion
POPIA	Protection of Personal Information Act
r	Size of effect
R^2	Coefficient of determination
RMSEA	Root Mean Square Error of Approximation
RT	Retention
SDG	Sustainable Development Goals

SEM	Structural Equation Modelling
SIT	Social Identity Theory
SPSS	Statistical Package for Social Sciences
SRMR	Standardised Root Mean Square Residual
STEM	Science, Technology, Mathematics and Engineering
TLI	Tucker Lewis Index
VIF	Variation Inflation Factor

1 CHAPTER ONE: Research Problem

1.1 Introduction

Diversity and inclusion has become an important topic since the onset of different civil rights movements across the world that have started to break down barriers of previously exclusionary workplaces (M. Ali et al., 2011; Coll, 2024; Daya, 2014; Seekings, 2008). The business case for diversity and inclusion within the workplace has also grown as a business strategy on the basis of diversity improving organisational performance (Hoobler et al., 2018; Mor Barak et al., 2016; Shivhare & Gurunathan, 2024). Subsequently, for women in manufacturing, the importance of diversity has been underscored by the presence of women in the workplace providing new perspectives and heterogeneity to improve decision making, problem solving, resilience and an ability to adapt to change (Cho et al., 2017; Hoobler et al., 2018; Müller et al., 2014; Rodríguez-Fernández et al., 2019; Sawyer & Valerio, 2018).

Despite this progress of diversity within the workplace, women still remain underrepresented in the manufacturing industry- 33% in South Africa (Department of Labour, 2022). This stalled progress on the representation of women has led to the International Labour Organisation (ILO) defining diversity and inclusion as a "wicked problem", that is, one that has many interdependent factors which are difficult to define and with not one single right answer or solution (International Labour Organization, 2022). Academic scholars over the years have posited different reasons for the poor representation of women, including low retention as a result of female employees experiencing lower levels of perceived inclusion compared to their male counterparts (Cho & Mor Barak, 2008; Findler et al., 2007; Flaming Yeats, 2018; Li et al., 2019). In male dominated fields in South Africa such as manufacturing (Foley et al., 2022; Shivhare & Gurunathan, 2024; Statistics South Africa, 2024c) these low levels of inclusion have been based on the continued experiences of women facing organisational cultures that drive exclusion through stereotyping, discrimination, gender pay and work-life balance gaps and harassment (Akbari et al., 2024; Bridges et al., 2020, 2023; Brumley, 2018; Khoza, 2020).

Whilst literature on diversity, equity and inclusion (DEI) has shown an increase in recent years, the big advancements have mainly been made on diversity and not on

inclusion which is still a relatively new construct (Roberson, 2019; Shore et al., 2018). Owing to this, inclusion within the workplace is still not fully understood. Studies to understand the inclusion of women in manufacturing in South Africa have been limited compared to other industries such as Information Technology (IT) and healthcare, and compared to other countries in Western and Asian cultures, with scholars such as Randel (2023) imploring academics to explore future research avenues to advance the literature on inclusion to help organisations in their goal of increasing inclusion in the workplace and retaining employees (Randel, 2023). Similarly other authors on the construct have echoed these views with particular guidance on studying inclusion in non-Western cultures and other industries such as manufacturing (Li et al., 2019; Li Yixuan et al., 2022; Roberson, 2019; Shore et al., 2018).

The retention of women is an important aspect linked to diversity and inclusion, as the diversity of the workplace gives organisations a competitive advantage leading to organisational success (Deloitte, 2021; Gallup, 2022). Moreover the retention of employees ensures that organisations reduce the costs associated with having to recruit and train new employees (Donkor et al., 2022; Ghani et al., 2022; Mahadi et al., 2020; Najib et al., 2019; Vincent & Paul, 2018) The retention of women in Science, Technology, Engineering and Mathematics (STEM) fields such as manufacturing is seemingly a challenge that practitioners are faced with, with women leaving the field at a higher rate than their male counterparts (Fouad et al., 2017; J. Hunt, 2016; Lubinski et al., 2014). In South Africa, this poses a challenge as the country is facing a critical shortage in the STEM skills required in manufacturing (Abe & Chikoko, 2020; ECSA, 2024; Ngonyoza, 2023; Poorun, 2018). In order to accelerate the growth of the economy of the country, scholars have lamented the need to recruit and retain engineers within the engineering and manufacturing industries (Ngonyoza, 2023; Poorun, 2018). Zuccarini (2023) further added to this by calling out the need for human resources professionals to specifically attract and retain artisans and engineers whilst simultaneously growing the number of youth and women among these positions (Zuccarini, 2023).

With a thin talent pipeline, it becomes imperative for manufacturing organisations to understand how they can retain the women with these critical skills within their

workplaces, and understand the notion ‘perceived inclusion’, as perceived inclusion is about the perception of the employees’ inclusion status and experiences within the organisation, which has relevance for women, more so in manufacturing . In addition to this, the levels of engagement and dedication of women to their manufacturing organisations through organisational commitment needs to be understood. There is therefore a need for a study to understand the concept of organisational commitment in the relationship between women retention and perceived inclusion in the manufacturing industry.

Thus, this study seeks to understand *the retention of women in manufacturing, in consideration to the role of their perceived inclusion, with organisational commitment as a mediator.*

1.2 Research Background

1.2.1 Context

Diversity practices in the workplace focus on increasing the number of different groups within organisations through policies and practices (Moorhead & Griffin, 2010; Nidhi, 2020). Inclusion on the other hand is the extent to which individuals feel they are part of an organisation and significant organisational processes (Mor Barak & Cherin, 1998), and focuses on integrating diversity into the workplace (Tang, 2024). Inclusion has several different constructs including perceived inclusion which explores the individual level of inclusion through the degree to which individuals of all backgrounds are a part of an organisation, treated fairly and valued through involvement in work groups, decision making and access to information and resources (Mor Barak & Cherin, 1998; Nishii, 2013; Shore et al., 2018). For women in male dominated industries such as manufacturing, perceived inclusion acts as a gauge of whether institutional norms, that have been historically tailored to men, have been broken down in order to include women in the most important aspects of organisations. Insights on perceived inclusion touch on psychological factors such as self-esteem, anxiety, depression and satisfaction, impacting both motivation and behaviours inside and out of work (Mor Barak, 2017; Rezai et al., 2020). The importance of the perceived inclusion of women in manufacturing is highlighted by the fact that women in male dominated industries have been shown to experience

exclusion and exhibit higher than average levels of anxiety and depression than their male counterparts in other industries (Battams et al., 2014).

1.2.2 Challenges of women representation in the workplace

In 2015 the member states of the United Nations adopted 17 sustainable development goals with 169 targets to be achieved by 2030 (United Nations Development Group, 2016). Goal number 5 was set to achieve gender equality and empower all women and girls (Fleming et al., 2017) across the world. However in 2023, half way to the target of 2030, the United Nations reported that this goal had stalled and is at risk of not being met (United Nations Women & United Nations Department of Economic and Social Affairs, 2023). Despite an increase of diversity within the work place reported by Shore et al (2018), gender parity in the labour market continues to be challenging, with the participation of women in the labour market having declined in the past few years (World Economic Forum, 2023), further highlighting a gap in efforts to promote sustainable inclusion of women within the workplace (Akbari et al., 2024)

The diverging views of the representation of women over the years show evidence of the unstable trajectory of women. STEM industries such as manufacturing, energy and infrastructure in particular still show low levels of women representation (Wilfred et al., 2023). Whereas this poor representation of women is seen in the workforce, it comes in spite of organisations having diversity, equity and inclusion (DEI) programs in place. On top of this, only 11% of companies wholly understand what inclusion is or its impact on employees (Mondal, 2021). This suggests a need for manufacturing organisations to do more in driving the retention of their female employees by understanding inclusion and its role. With the high attrition rates of women seen, this effort in improving inclusive practices within manufacturing will assist organisations.

1.2.3 Women in South African manufacturing organisations

The contraction of the manufacturing sector in South Africa over the past few years has been well documented, contracting from a historic output of 26.0% to 13.6% in 2023 (Arnoldi, 2023) at a time when organisations in more mature economies are using Industry 4.0 (4IR) to drive their competitiveness. The manufacturing industry is

hampered by a shortage of the critical skills required to implement technologies such as automation, artificial intelligence, smart factories and the internet of things (IoT) to drive 4IR and green manufacturing (Langeni, 2020; PwC, 2024).

Manufacturing companies in South Africa are having to compete not only with each other but other countries for these critical skills they require. Countries such as the United Kingdom, Canada, Netherlands and Australia have been noted as competing for the same talent pools of critical skills from South Africa, with some such as Australia even going one step further to establish emigration programs to attract engineering professionals from the country (Fraser, 2023; Libera, 2024; Ridout, 2022). Owing to this the manufacturing sector in South Africa experiences high turnover rates- 22% in 2023 (Jagdessi & Richter, 2023). Retaining talent in manufacturing is therefore a very important and difficult process given the current landscape in the war for talent. Furthermore, employees take into account the level of inclusiveness of an organisation when making career decisions (Mckinsey & Company, 2020). If manufacturing organisations are to attract and retain talent to close the skills gaps and low number of women in their organisations, they will also need to be more inclusive to ensure the organisational commitment of women.

Adding on to the current challenges of the retention of women in manufacturing in South Africa, whilst 47% of STEM graduates in Africa are women, women in South Africa remain a minority in STEM fields (Department of Trade and Industry, 2019a, 2019b). Furthermore women are less likely to enter and more likely to leave STEM careers (Statistics South Africa, 2024c; World Economic Forum, 2024). This also comes at a time where women make up more than 51% of the population in South Africa (Maluleke, 2024). A workforce in manufacturing reflecting the country's demographics is needed and amplified by the fact that women head up 42.3% of households in South Africa (Statistics South Africa, 2024a) and are therefore the primary breadwinners for their families whilst simultaneously facing a higher risk of poverty (World Bank, 2018). The Commission of Gender Equality has noted the declining rates of women in manufacturing (Commission for Gender Equality, 2023) and it can be argued that these numbers add to the challenges that the manufacturing sector faces at the moment with stagnating performance of the fourth largest industry hampering gross domestic product (GDP) growth of South Africa

(Statistics South Africa, 2024b). Creating retention rich organisations that attract, engage and build loyalty among employees is a key success factor within economies (Devi, 2009).

1.2.4 The importance of organisational commitment

Critical to the discussion around inclusion and retention is organisational commitment. When employees feel that their organisation values diversity and inclusion, they are more likely to be engaged, satisfied, and committed to their work. In turn, this leads to higher retention rates and lower turnover costs (Bulut & Culha, 2010; Kamalaveni et al., 2019; Mehta et al., 2014). This implies that diversity and inclusion can impact retention by creating a more positive work environment, which in turn will foster commitment from employees driving them to contribute to the positive performance of the organisation.

This context provides a pertinent relevance for this study and lays a rich foundation for the purpose statement of the study.

1.3 Purpose statement

This study seeks to understand retention of women in manufacturing, in consideration to the role of perceived inclusion, with organisational commitment as a mediator.

Given the current challenges that exist in the representation and retention of women in manufacturing in South Africa, this research will primarily aim to explore the perceptions around the role of inclusion in retaining women in manufacturing. It will investigate whether there are any differences in how men experience inclusion as compared to women and if this is related to the higher attrition rates that are seen amongst women compared to men (Daya & April, 2014; Department of Trade and Industry, 2019a; Li et al., 2019; Mor Barak, 2015) despite an increase in the number of women going into the labour force over the years (Shore et al., 2018). Whilst most studies have succeeded in quantifying diversity, inclusion still remains under emphasised (April & Blass, 2010; Hinton & Lambert, 2022). This focus on inclusion will therefore add to the limited body of literature which is currently not as well defined

as diversity in academia (Mor Barak, 2015; Shore et al., 2018). Importantly the study will seek to understand whether the perceptions of inclusion of women within manufacturing may drive them to commit to their organisations which in turn may improve their retention.

From a South African perspective scholarly work on inclusion takes on a greater significance given the apartheid history of the country. Through a legacy of institutional racism segregating rights by gender and race (Macpherson, 2024; Vyas-Doorgapersad, 2023) the country was made into one of the most unequal countries in the world (Ahmed et al., 2022) with the world's highest Gini coefficient augmenting this to this day (The World Bank Group, 2024). In an effort to reverse this the democratic South African government has in post-apartheid adopted measures to overturn this deficit through several interventions including equity policies and structures. In the manufacturing industry organisations have adopted DEI programs to drive the inclusion of women, however it has been noted that translating concepts of DEI into initiatives and actions with measurable outcomes is something that organisations still struggle with (Tang, 2024). Through public private partnerships with industry and academia, the government can further efforts on successfully implementing these interventions to speed up the inclusion of women through effective DEI efforts. This research will also assist in this regard.

1.4 Key Constructs

Based on the discussion in 1.3, it is important to provide the key constructs for this study. The key constructs for this study are perceived inclusion and retention in the workplace with organisational commitment also investigated as a construct that plays a mediating role in the relationship. These are highlighted in the following discussion. Later, using a literature review, the constructs will be explored further in order to better understand their relationship and how this influences women's decisions in the workplace. The underpinning theory of social identity, linking inclusion to retention will be discussed as well, laying a foundation to the research objectives that will be studied.

1.4.1 Perceived Inclusion

Inclusion is a multi-faceted construct comprising of several different elements (Shore et al., 2018). Over the years inclusion has been found to be a contextual concept, existing at both an organisational and individual level (O'Donovan, 2018; Shore et al., 2018). Perceived inclusion exists as a sub-construct of inclusion and refers to the individual level of perceptions of belonging and being valued for their uniqueness through involvement in decision making, having a voice and being accepted into a group (Mor Barak, 2017; Nishii, 2013; Shore et al., 2011). For women in manufacturing for example, perceived inclusion would indicate how much women feel that the manufacturing industry they work in makes room for their uniqueness and if men and women are treated as equals (Innstrand & Grødal, 2022). Whereas over the years the topic of inclusion has moved more into mainstream discussions around human resource management, there are still a lot of unknowns on the topic emanating from a lack of more diverse published studies of the perceptions of inclusion of women within different geographic regions and nationalities such as in Africa, to incorporate the nuances of culture (Li et al., 2019; Randel, 2023; Roberson, 2019; Shore et al., 2018) and industry specific studies such as in manufacturing to understand differences (Li Yixuan et al., 2022).

In order for an organisation to succeed it needs to have the best talent. It is therefore essential that whilst an organisation focuses on attracting the best talent it must also prioritise retaining it. The high cost of losing employees including the cost of recruitment, training and development and loss of knowledge serves as a motivator for organisations to focus on retention (Aman-Ullah et al., 2020). Consequently, some organisations have put in place DEI programs to try drive a focus of retention of women within manufacturing, necessitated by the high attrition rates of women and their experiences of exclusion and stereotyping. As a result, employee retention of women has become one of the biggest focus areas for organisations in terms of resources, strategy and competitive advantage (Ghani et al., 2022).

1.4.2 Organisational commitment

Organisational commitment plays a mediating role between inclusion and retention (Bulut & Culha, 2010; Kamalaveni et al., 2019; Mehta et al., 2014). The implication of this is the inference that employee inclusion influences organisational commitment

which in turn influences retention. Of particular importance and relevance in the context of perceived inclusion of women, is affective commitment which involves the emotional ties of an employee to an organisation based on positive feelings of their work experience (Jaros, 2007). Owing to this, organisational commitment has been suggested to be a pre-requisite for retention of employees and improves productivity levels, driving employees to make personal sacrifices for their organisations. Based on the high attrition rates of women in the South African manufacturing context, it will be important to understand the role of organisational commitment on their inclusion and retention in the organisations they work for.

1.4.3 Social identity theory

In its definition, the social identity theory (SIT) has been used by scholars such as Nishii (2013) and Shore et al (2011) to describe the relationship between inclusion and organisational outcomes such as organisational commitment, satisfaction and turnover intent of employees (Nishii, 2013; Shore et al., 2011). For women trying to fit in in the manufacturing industry, this theory helps to define how they relate to inclusion through involvement in decision making, being treated fairly and valued (Nishii, 2013) in an environment that has been traditionally set up for men. It further identifies how their feelings of inclusion impacts their commitment to stay in these environments.

1.5 Significance of the study

1.5.1 Academic relevance

With the infancy on the meaning of inclusion, the academic relevance of studying the topic becomes clear (Nguyen et al., 2024; Randel, 2023; Shore et al., 2018). Owing to the poor status of the retention of women within manufacturing in South Africa and the minimal views of perceptions of inclusion between men and women within the workplace, this academic research adds a pressing need to provide further clarity on this topic (Cho & Mor Barak, 2008; Daya & April, 2014; Findler et al., 2007; Hwang & Hopkins, 2015; Li et al., 2019; Mousa et al., 2021; Mousa & Puhakka, 2019; Nishii, 2013). Whereas the topic diversity has been extensively studied across different demographics and industries over the years, inclusion remains a construct that is still new in terms of academic literature (Randel, 2023; Shore et al., 2018). This research

will directly tackle that gap within a South African manufacturing context, helping academics to further understand how gender affects the relationships between perceived inclusion, organisational commitment and retention to predict the interactions of women in male dominated fields through theory (Foley et al., 2022; Innstrand & Grødal, 2022; Shivhare & Gurunathan, 2024).

Furthermore, with current published studies within manufacturing have mostly been limited to exploring inclusion in singular organisations, (Booysen & Nkomo, 2014; Daya, 2014; Daya & April, 2014) this academic study will contribute by adapting existing models on inclusion and retention to include the impact of cultural influences across manufacturing organisations in South Africa based on an industry wide view (Kulkarni et al., 2021; Tang et al., 2015). Finally this study will help to reduce the reliance on works based on western culture, as most studies on inclusion and retention have come from western countries (Randel, 2023; Shore et al., 2018).

1.5.2 Business relevance

In a country and industry where extreme demographic misrepresentation exists due to history, this topic of diversity and inclusion is a key business and societal issue (Daya, 2014; Shepherd, 2008). As a result, this study will contribute to the manufacturing sector by providing recommendations to organisations to improve inclusion and retention of women through key considerations for effective DEI programs that will drive sustainable inclusive practices and organisational cultures to curb the high attrition rates seen (J. Hunt, 2016; Lubinski et al., 2014; Preston & Russell Sage Foundation., 2004; Wilfred et al., 2023). This will in turn reduce the costs incurred from high turnover rates (Aman-Ullah et al., 2020). With the high level of attrition and brain drain in manufacturing in South Africa resulting in a loss of skills that should be contributing to the socio- economic development and the growth of the stagnating economy (Govender, 2024), this research will also assist in providing insights on how organisations can use inclusion to ensure a diverse workforce in manufacturing which can contribute to slowing down this trend in manufacturing, which is a major contributor to the economy (Arnoldi, 2023; Ngonyoza, 2023; Poorun, 2018; Zuccarini, 2023) .

In tough economic times such as during and post COVID, and economic downturn, organisations tend to cut back on DEI initiatives given the disputed view of the benefits of having diverse workforces (C. S. Tang, 2024). In providing businesses with an academically sound direction on where to focus their DEI initiatives for maximum impact, this study will serve the added purpose of helping organisations to ensure a return on investment of financial, time and people resources in effective inclusion practices that will help them retain women. Finally as South Africa has committed to achieving the Sustainable Development Goals, this research will offer recommendations to keep the country on track to achieve SDG 5 on gender equality by 2030, particularly on the ratio of female to male labour force participation rate (Sachs et al., 2024).

With the relevance of the study clear, the approach to be taken to deliver this is now discussed.

1.6 Outline of the study

The outline of the approach that will be followed in this study is captured below:

Chapter 1: Introduction to research problem
Chapter 2: Literature review
Chapter 3: Research objectives
Chapter 4: Research methodology
Chapter 5: Results
Chapter 6: Discussion of results
Chapter 7: Conclusions and recommendations

1.7 Conclusion

Chapter one has focused on first introducing the research problem and context of the lack of retention of women in manufacturing in South Africa and the role of perceived inclusion and organisational commitment in this. The key constructs that will be studied were shared in brief to be expanded on in more in detail in the literature review. Finally the academic and business needs for the study of inclusion and retention within a South African manufacturing context was defended. Chapter 2 will consider a review of literature relevant to the topic.

2 CHAPTER TWO: Literature review

2.1 Introduction

This chapter reviews existing literature that is relevant to the topic of inclusion and retention and will focus on key concepts and theories on the two constructs. Firstly, literature on inclusion will be analysed and critiqued given that inclusion has not been as fully developed and researched as diversity, the more commonly known and studied construct within the social sciences field of study. Next the construct of retention will be studied to show how inclusion impacts it as an output. In addition to this, organisational commitment as a mediator will be explored. These constructs will be underpinned through the Social Identity Theory (SIT), connecting inclusion and retention to show how they relate to each other through organisational commitment. Considerations of what is unknown in literature will also be made in the chapter to determine research objectives for the study.

2.2 Inclusion in the workplace

2.2.1 Diversity management

Since the advent of diversity in the early 1990s a shift of socio-economic trends has resulted in an increase in the number and types of people entering the workforce (Chen & Tang, 2018; Roberson, 2019; Shore et al., 2018). The Civil Rights movement of 1954-1965 in the United States gave rise to a shift in including previously disadvantaged minority groups such as women into the workplace (Appel Alison L Gray Nilufer Loy et al., 2005; Shore et al., 2018). This approach, termed affirmative action, encouraged employers to hire and promote women and people of colour to promote equity in the workplace to redress past discrimination that had prevented diverse and representative workforces (Leslie et al., 2014; Riccucci, 2021). South Africa has been no exception to this. Reeling after the inequalities created by the apartheid era of discrimination against black people and women, the country implemented legislation such as the Employment Equity Act (EEA) and the Broad- Based Black Economic Empowerment (BBBEE) legislation to correct for the gross underrepresentation and participation of underrepresented groups in the workplace, such as black people and women within male dominated industries including manufacturing (Roche et al., 2016). Other legislation, societal pressures and the development of the United Nations Sustainability Goals in 2015 also placed

priority in achieving equality for women in society (United Nations Development Group, 2016).

With the importance of diversity becoming clearer from a social aspect, businesses have taken further interest in diversity as hypotheses of the positive impact on organisational performance became apparent as proposed by early scholars such as Cox (1994) and Fernandez (1991). These scholars posited that, besides it being the right thing to do, workplace diversity would bring value add to organisational processes, giving organisations a competitive advantage (Cox, 1994; Fernandez, 1991; Hoobler et al., 2018; Mor Barak et al., 2016). The focus on women especially was derived from views of women providing new perspectives and heterogeneity to organisations to improve decision making, problem solving, resilience and an ability to adapt to change (Cho et al., 2017; Hoobler et al., 2018; Müller et al., 2014; Rodríguez-Fernández et al., 2019; Sawyer & Valerio, 2018) . In the manufacturing industry the skills and talent of women has been called out as being critical to the transformation and productivity of the manufacturing industry (Abbey & Adu-Danso, 2023; Giffi et al., 2017).

This view has however been contested and creates an inconclusive proposal, given that there have been conflicting studies on the effects of workplace diversity on organisational performance (Mor Barak et al., 2016). Proponents against diversity in the workplace have argued that increased diversity can cause conflicts between the diverse groups which negatively impact performance of the organisation by causing low levels of engagement, stress and ultimately higher levels of turnover within the organisation (Gonzalez & Denisi, 2009; Mamman et al., 2012; Shore et al., 2018). This debate continues in more recent literature, with practitioners in industry weighing in. Schmader (2023) for example documented the costs of the lack of women in the engineering and manufacturing fields by giving an example of the lack of crash-test dummies for women and children which for years resulted in an excess loss of life for women and children in car crashes (Criado- Perez, 2021; Schiebinger, 2021; Schmader, 2024). Mamman et al (2012) on the other hand challenged the benefits of diversity through findings of research of the undesirable outcomes of diversity such as additional costs resulting from a need of increased coordination and control (Mamman et al., 2012).

In South African the importance of diversity has seen the increase of women within this sector, with authors arguing that transformation through the introduction of legislation has promoted gender equality which has included women in the workplace (Wittmann, 2012). Despite this however there are still big gaps in diversity as women still only make up only 29.20% of the workforce in manufacturing, despite making up 51.00% of the population and 54.30% participation in the labour force (Maluleke, 2024; Statistics South Africa, 2024c). Academics have posited the reason for this is manufacturing is still seen as a male dominated industry, resulting in women facing gender bias and disparity on career development, pay, harassment and training (Janis & Zulkipli, 2020). Çaha and Turgunali (2016) added to this, highlighting the three general obstacles that women face in manufacturing as culture, lack of job satisfaction and work-family conflicts (Çaha & Turgunali, 2016). The resultant impact of this has been argued to be the presence of women in manufacturing remaining minor and even declining (Jaggi et al., 2016).

2.2.2 Diversity link to inclusion

Research on diversity has grounded this construct on social-psychological theories that focused on intergroup relations, with academic work centered on the effects of diversity mostly at a group as opposed to an individual level with a focus on recruitment, training and retention of the workforce (Jung & Welch, 2022; Mor Barak et al., 2016; Roberson, 2019). Following on from this, with organisations becoming more diverse, the need to ensure these diverse groups are included in the workplace became more important (Nishii & Rich, 2014). This was supported by Jung and Welch (2022) who argued that despite efforts on increasing diversity in the workplace, discussions on racism and social equity belaboured the need for diverse workforces to be integrated and included into workforces (Jung & Welch, 2022). As a result, the benefits of advancing diverse work places into inclusive ones have been argued for. Hunt et al (2015) for example posited that inclusive organisations are more likely to perform better than competitors due an increase in productivity resulting from leveraging on the unique talents of the workforce (Gallup, 2022; V. Hunt et al., 2015). Psychological research has also shown that when employees feel they belong and can be their unique selves at work they perform better and experience higher levels of well-being and engagement (Berg & Chamorro-Premuzic, 2021; Downey et al., 2015). More efforts have therefore been placed on

understanding inclusion further, signalling a shift from diversity to inclusion within the workplace.

2.2.3 Inclusion definition

Since this shift from diversity to inclusion, organisations have come to realise the importance of work place inclusion as core to their business strategy and sustainability (Rankin-Gomez, 2017), driving positive impact on organisational performance, competitive advantage as well as employee health and well-being (Mor Barak, 2015). With a special focus of earlier studies on women, work on inclusion emerged from Mor Barak and Cherin's musings in 1998, which is believed to have launched the field of inclusion as an academic construct (Shore et al., 2011). Their seminal work focused on providing a tool to understand inclusion and exclusion within the workforce (Mor Barak & Cherin, 1998). This work started to make key distinctions between diversity management and inclusion, which over the years had been used interchangeably (Shore et al., 2018). Mor Barak and Cherin (1998) made the distinction that inclusion within the workplace is the perception of employees that their uniqueness within an organisation is appreciated and they are made to feel like they belong through encouragement of their full participation within the organisation (Mor Barak, 2014, 2015; Mor Barak & Cherin, 1998). In their study of inclusion within the manufacturing industry Chen and Tang (2018) added that inclusion tightly connects employees to the workplace. Moreover, inclusion also involves the removal of obstacles in order to allow participation and contribution of employees in decision making, involvement and influence within workgroups (Flaming Yeats, 2018; Mor Barak & Cherin, 1998; Roberson, 2006).

As work on inclusion has grown there has been a lack of consistency in the definition of the construct (Chung et al., 2020). In an attempt to provide clarity, Shore et al (2011) added to the developing construct of inclusion, proposing a conceptual model of inclusion that highlighted high uniqueness and belonginess as pre-requisites that work together to create inclusion in the workplace (Figure 1).

	Low Belongingness	High Belongingness
Low Value in Uniqueness	**Exclusion** Individual is not treated as an organizational insider with unique value in the work group but there are other employees or groups who are insiders.	**Assimilation** Individual is treated as an insider in the work group when they conform to organizational/dominant culture norms and downplay uniqueness.
High Value in Uniqueness	**Differentiation** Individual is not treated as an organizational insider in the work group but their unique characteristics are seen as valuable and required for group/ organization success.	**Inclusion** Individual is treated as an insider and also allowed/encouraged to retain uniqueness within the work group.

Figure 1: Inclusion framework
Source: Shore et al (2011)

This inclusion framework built on work that was done by Brewer (1991) on social identity and it's opposing needs of assimilation with others whilst also looking for differentiation (Brewer, 1991; Shore et al., 2011). Whilst belonginess refers to the level to which an employee is included as an insider, uniqueness refers to how much an individual is allowed to be their authentic self within the organisation (Huang et al., 2020). Chung et al (2020) agreed with this through studies that found that belonginess and uniqueness need to exist in order for individuals to perceive their work environments as inclusive (Chung et al., 2020). Kander (2024) brought this perspective to the manufacturing industry stating that female engineers' identity is impacted by their sense of belonging to the workplace (Kander, 2024). Innstrand and Grodal (2022) further added to this, opining that in male dominated industries, such as manufacturing, women might feel a need for belonging if they are not included in decision making due to their gender (Innstrand & Grødal, 2022). Another term that has often been used to refer to male dominated industries especially in African cultures is patriarchal environments where, through a superior view of men over women, women are subjected to exclusion from decision making and a lack of career advancement and development (Adisa et al., 2020).

This view of inclusion consisting of both uniqueness and belongingness has been challenged though through an argument that these two factors may be in conflict with each other (Brewer & Roccas, 2001). The argument expressed here seems to

highlight the challenge that in order to belong to a work group, one naturally would need to adapt to the environment they are in, which is in direct conflict of one being authentic to their true selves which accentuates their uniqueness (Ramarajan, 2009). This conflict is observed by practitioners in manufacturing, where women are tasked with fitting in to workplace cultures that are dominated and defined by men, rather than the organisations creating organisational cultures that allow them to bring their authentic, unique selves to their workplaces. Nishii (2013) agreed with this, choosing to focus their study on inclusion within a biomedical manufacturing company to focus on gender, due to a lack of inclusive workplaces assigning disproportionately higher social value to men compared to women due to the lower status of women (Nishii, 2013). The views of inclusion and what it consists highlight the individual context in which the construct exists and it's multi-faceted nature, consisting of several sub-constructs.

2.2.4 Perceived inclusion

Different approaches have been taken by scholars on unpacking inclusion. Shore et al (2018) for example divided inclusion into the sub- constructs of work group inclusion, inclusive leadership, perceived inclusion, organisational practices inclusion and inclusion climate (Shore et al., 2018). Perceived inclusion prioritises the individual feelings of acceptance within a work group (Pearce & Randel, 2004; N. Tang et al., 2015). The International Labour Organisation (ILO) added to this definition, stating that an individual's feeling of belonging relates to not only their own behaviour but also their personal characteristics, other's behaviour and the environment that they are in (International Labour Organization, 2022). This distinction of the individual level of inclusion is important, as it has been noted that individuals may simultaneously feel included and excluded within an organisation, feeling included within their own immediate team for example but not in other teams or departments within the same organisation, or may start feeling less included as time goes by (O'Donovan, 2015, 2018). This highlights a pertinent point that inclusion is not static, but rather an ongoing process that organisations needs to continue to foster and monitor within their workforce to ensure that employees continue to feel included at all times (O'Donovan, 2018). In other terms inclusion is therefore perceived at an individual level. Innstrand and Grodal (2022) equated perceived inclusion to inclusion climate and suggested that in a practical form perceived

inclusion makes clear if women as an example feel their organisations have room for the uniqueness of women and being treated equally to men (Innstrand & Grødal, 2022).

For employees, perceived inclusion has been linked to psychological factors such as self-esteem, anxiety, depression and satisfaction, impacting both motivation and behaviours inside and out of work (Mor Barak, 2017; Rezai et al., 2020). The importance of perceived inclusion of women in manufacturing is highlighted by the fact that women in male dominated industries have been shown to experience exclusion and exhibit higher than average levels of anxiety and depression than their counterparts in other industries (Battams et al., 2014). This results in some of the key factors that drive the lack of retention of women, with attrition driven by the isolation created (Bridges et al., 2023).

2.2.5 Measurement of perceived inclusion

Measures of this sub-construct of inclusion in the manufacturing sector are important in helping organisations assess the level of inclusivity in their workplace and the effectiveness of DEI programs (April & Blass, 2010; Rezai et al., 2020). Mor Barak and Cherin (1998) developed an inclusion-exclusion scale to quantify and measure this construct which has since been widely iterated and used quantitatively to determine the level of inclusiveness of organisations. Whilst the measures on inclusion have been refined over the years to develop other scales such as the Perceived Inclusion Scale (Pearce & Randel, 2004) and the Climate for Inclusion Scale (Nishii, 2013), the focus has mainly centred on measuring the level to which individuals feel included through participation in decision making processes in their work places, have access to information and inclusion in work group activities within and outside of the workplace (Mor Barak, 2017).

Measures of perceived inclusion through the lens of gender have been seen across different studies (Randel, 2023; Shore et al., 2018). Whilst the use of this demographic as it relates to inclusion has varied across different industries and countries, it has been noted that most of these studies have occurred in Western cultures (Shore et al., 2018). In fact in a literature review on inclusion in 2018, of the 45 quantitative studies found on inclusion, only one of them was completed in an

African country, with Daya (2014) studying organisational inclusion in South Africa in the consumer goods industry (Daya, 2014; Shore et al., 2018).

From a manufacturing lens Chen and Tang (2018) studied perceived inclusion in a manufacturing company, focusing on the outcomes of inclusion within the workplace. In later studies in Africa, Mousa et al (2019, 2021) studied inclusion of public health care workers in Egypt (Mousa et al., 2021; Mousa & Puhakka, 2019). Other relevant studies in a South African context have been found lacking as whilst they investigated elements of diversity and inclusion, their focus was either limited to career advancement (Netnou et al., 2020), secondary data (Naicker, 2016) or one organisation (Daya, 2014; Daya & April, 2014; Mazibuko & Govender, 2017). This lack of a wholistic industry wide study to measure perceived inclusion in a South African manufacturing context lends a hand to the academic need for further study. Another point of interest in studying South Africa is the history of the country of apartheid which has leant itself to an ideal case study in how diversity and inclusion efforts have been tackled and their effectiveness at an organisational level, with some scholars arguing that attempts of employment equity in South Africa have been reduced to legal compliance and a negative view of affirmative action (Booysen & Nkomo, 2014).

Based on the discussions above of significance to this study is: *How can the role of perceived inclusion support retention of women in manufacturing in South Africa?* This will be probed into through a hypothesis and data gathering within this study.

2.2.6 Gender differences in perceived inclusion

The role of gender has frequently been studied to understand differences on perceived inclusion by investigating how historically marginalised groups such as women have perceived inclusion compared to men (Carberry & Meyers, 2017; Findler et al., 2007; Li et al., 2019). Gender differences can impact the perceptions of inclusion through enhancement or reduction (Namazi & Namazi, 2016a; Randel et al., 2016; Shore et al., 2018). Understanding this impact of gender has coincided with the growth in the number of women that have entered the workplace over the years, as organisations have either started to better appreciate the value in having diverse workforces or have been forced by legislation and social pressures to be

diverse (Booysen & Nkomo, 2014; Kossek et al., 2017; Mazibuko & Govender, 2017). Moreover, another motivator for studying the gender differences in perceived inclusion has arisen due to organisations continuing to grapple with women reporting lower levels of inclusion despite efforts to close these gaps by accommodating women in the workplace through DEI programs (Kossek et al., 2017; McKinsey & Company, 2022; Piggot et al., 2017; World Economic Forum, 2023).

Some relevant studies on the perceptions of inclusion and the role of gender have been identified in literature and are now discussed. Li et al (2019) investigated the role of demographics as a moderator to inclusion in Australia by testing the hypothesis of employees from historically disadvantaged backgrounds such as women reporting lower levels of inclusion in the workplace. They found that gender has a significant relation to perceptions of inclusion with female employees experiencing lower levels of inclusion. (Cho & Mor Barak, 2008; Findler et al., 2007; Li et al., 2019; Nishii, 2013). In a departure from western culture studies, Findler in 2007 studied this role of gender in Israel and concluded similar findings to Li et al (2019). From a manufacturing context Nishii (2013) also supported these findings of a higher level of perceived inclusion of men compared to women in a biomedical company (Nishii, 2013).

Other studies however have found contrary results, with findings not indicating significant reduced levels of inclusion of women compared to men (Hwang & Hopkins, 2015; Mousa et al., 2021; Mousa & Puhakka, 2019). Interestingly several studies that opined this were completed in an African context between Egypt and South Africa (Daya & April, 2014; Mousa et al., 2021). This gives rise to question of whether inclusion takes on a different meaning in an African context, for example, does the cultural context of African countries impact perceptions of inclusion of women in any way? Another relatively unexplored area in understanding the role of gender in perceived inclusion is how it then impacts the strengths of the relationships of the organisational outcomes of perceived inclusion. Innstrand and Grodal in 2022 hypothesised and confirmed that men not only perceived their organisations to be more inclusive than women but their perception of inclusion was more strongly related to organisational outcomes such as organisational commitment (Innstrand & Grødal, 2022).

The study of Daya and April (2014) is of particular relevance to this current study due to the focus of women in manufacturing in South Africa. The scholars found, in studying the relationship between demographic groups in a large fast moving consumer goods (FMCG) multinational in South Africa, no significant relation between gender and an individual's perception of inclusion (Daya & April, 2014). This is contrary to the studies mentioned previously completed in Western countries (Li et al., 2019; Nishii, 2013). This assertion creates a complexity for manufacturing organisations in South Africa who have invested in diversity, equity and inclusion programs for their employees, with a focus on making accommodations to make women to feel more included in the workplace (Kossek et al., 2017; Piggot et al., 2017; World Economic Forum, 2023). Understanding this phenomenon through further studies will deepen the understanding of South African organisations on the perception of inclusion and how they can use this to tailor their DEI programs to be more effective. Furthermore as Rezai et al (2020) positioned perceived inclusion as an ongoing personal evaluation in relation to one's peers, leaders and the environment (Rezai et al., 2020), studying perceived inclusion of women in manufacturing needs to be recurring and therefore a study in the present time in South African manufacturing will allow for organisations to understand if these perceptions of inclusion have shifted from the earlier studies of Daya and April (2014).

2.2.7 Barriers to the inclusion of women in the manufacturing industry

The inclusion of women within the manufacturing industry faces several barriers. There is an argument presented that workplaces and jobs within them are "gendered" (Acker, 1990). The definition of a gendered workplace is one where workplace culture, policies and practices, and interactions are not gender neutral (Acker, 1990; Akbari et al., 2024; Cohen, 2013). Cohen (2013) argued that within this gendered workplace, gender ideas of men and women impact the jobs and career trajectories of women in manufacturing leaving them "unwelcome" and excluded (Cohen, 2013; Jaggi et al., 2016; Misra & Murray-Close, 2014). The ILO stated the importance of understanding how national context impacts this view of gendered workplaces given a nation's definition and allocation of gender roles within their context in order to remove these barriers (International Labour Organization, 2022). As part of their

study completed in 2022, the ILO identified key main areas of focus that create barriers to inclusion in the workplace of minorities, especially women, namely, diversity and inclusion efforts not positioned as leadership, culture and strategic issues, lack of action and support for transformational change on inclusion and measurement of inclusion as a priority to reduce the gendered workplace and improve diversity and therefore inclusion (International Labour Organization, 2022). This dilemma of ineffective inclusion practices that are also driven by legal obligation as opposed to valid business cases (International Labour Organization, 2022) has left the manufacturing industry with the challenge of not closing the gap of women in leadership and technical positions in STEM and manufacturing, which at 31% is languishing behind and not representative of the economically active population statistics of the country (Statistics South Africa, 2024c).

Having explored gender differences and barriers to women inclusion and the conflicting views on the role of gender, it becomes important to uncover through this study *whether women experience lower levels of perceived inclusion than men in a manufacturing context in South Africa.* This will be considered through a hypothesis and data gathering in this study.

2.3 Retention and employee turnover intentions

2.3.1 Retention definition

Employee retention in the workplace is an organisational outcome that has been associated with inclusion (Brimhall & Mor Barak, 2018; Goswami & Goswami, 2017) and involves the processes that ensure employees remain in the company for longer periods (Najib et al., 2019; Yusof & Ying, 2024). By understanding factors driving employees' intentions to leave workplaces, some key relationships between job satisfaction, organisational commitment and job performance (Hwang & Hopkins, 2015) have been found that have helped practitioners develop strategies to retain employees and reduce the costs associated with employee turnover (Donkor et al., 2022; Najib et al., 2019). As a result of this, retention is this set of policies and processes that organisations use to keep their employees within the organisation for a maximum period of time (Akila, 2012; Hom & Griffeth, 1995; Najib et al., 2019). Hom and Griffeth (1995) associated this construct with encouraging employees to

stay within an organisation through systematic efforts taken by employers to create a conducive environment (Hom & Griffeth, 1995; Paper et al., 2012).

2.3.2 Importance of retention in the workplace

Retention is helpful for human resource planning and reduces the costs associated with employee turnover including the costs to recruit, train and lost knowledge (Aman-Ullah et al., 2020; Kerich, 2024). Given the skills shortages seen in manufacturing with the changing skill requirements in an evolving manufacturing environment, organisations that are able to fully apply retention policies to retain employees obtain a competitive advantage by attracting and retaining employees whilst reducing costs associated with turnover (Ghani et al., 2022; Kyndt et al., 2009; Mahadi et al., 2020). Furthermore having effective policies help organisations grapple with retention, which has been viewed as one of the biggest challenges for leaders in large organisations such as manufacturing (Masangwana, 2022). In academia, retention within the workplace is widely considered a dependent variable in the form of intention to leave, influenced by multiple factors including compensation, job characteristics, opportunities for career growth, learning and development, supervisor support, work-life balance, job performance, organisational commitment and job satisfaction (Aman-Ullah et al., 2020; Brimhall & Mor Barak, 2018; Brunetto & Farr-Wharton, 2002; Goswami & Goswami, 2017; Van Dyk & Coetzee, 2012). Whilst retention has been a well-studied construct in academia, the lack of a universally accepted reason or framework on why employees leave organisations has been noted by Nwokocha and Iheriohanma (2012).

2.3.3 Retention approaches

The study of retention efforts in manufacturing has varied with some scholars treating retention as an input to organisational outcomes (Dhanpat et al., 2018; Ghani et al., 2022). Kerich (2024) highlighted the complexity and uncertainty of employee retention within manufacturing multinational companies due to its impact on costs, productivity and skills within an organisation (Kerich, 2024). Nwokocha and Iheriohanma (2012) added to this by calling out the impacts of retention as a unique challenge to managers at present due to of concerns on employee loyalty and aggressive competition for talent (Nwokocha & Iheriohanma, 2012). Huq et al (2014)

found in Indian garment manufacturing factories that involving workers in decision making and problem solving initiatives significantly reduces turnover intentions, thereby linking retention to the feelings of inclusion as described by Shore et al (2011). In South Africa, Van Dyk and Coetzee (2012) found that retention as an input has a significant relationship with the organisational commitment of employees (Van Dyk & Coetzee, 2012).

Conversely, other approaches have looked at retention of employees as an organisational output (Akila, 2012; Donkor et al., 2022; Haque et al., 2019; Rizwan et al., 2014). This current study favours this approach, seeking to understand how perceived inclusion and organisational commitment affect retention as an organisational outcome. Some retention approaches have also only focused on correcting for hygiene factors and miss the motivation factors that influence the commitment and retention of women. Herzberg's two factor theory explains that focusing only on factors such as compensation, working conditions and policies misses out on motivational factors such as recognition of skills and needs, employee perceptions and responsibility (Alfayad & Suriani, 2017; Alshmemri et al., 2017; Holston-Okae & Mushi, 2018). Expanding inquiry beyond hygiene factors to explore motivational factors such as perceived inclusion will serve manufacturing organisations well in trying to remove some of the barriers to the retention of women.

In order to understand the role that inclusion plays on retention of women in manufacturing, the retention of women will be studied in relation to their intention to leave their organisations, similar to the approach taken by Dhani et al (2022), Hwang and Hopkins (2015), Daya and April (2014), Meyer et al (2002), Mahadi et al (2020) and Dhanpat et al (2018). Studies on retention such as that of Huq et al (2014) provide examples of the link of retention to inclusion, where they found involving workers in manufacturing in decision making and problem solving initiatives significantly reduces turnover intentions. More recently in 2024 Kerich studied the influence of workforce diversity including gender on employee retention among 38 manufacturing based multinational companies in Kenya using the social identity theory (Kerich, 2024). They found that positive perceptions of gender diversity and therefore perceptions of inclusion correlated to retention intentions of employees, emphasising the need for manufacturing organisations to have gender-inclusive

policies and decision making processes. The need for future research to explore further insights and strategies for diversity and inclusion as a much needed solution for employee retention, especially in Africa, was also noted by the scholar (Kerich, 2024). Similarly, in an industry wide review in Nigeria, Nwokocha and Iheriohanma (2012) found the inclusion of employees in the form of involving them in decision making as a key driver for employee retention along with career planning and training and development (Nwokocha & Iheriohanma, 2012). In South Africa Daya and April (2014) sought to understand what factors drive employees' intentions to leave manufacturing organisations and found in part that organisational commitment is an antecedent for turnover intent (Daya & April, 2014). Despite mention of these studies in an African context, further studies on retention in manufacturing in Africa are amiss with scholars lamenting the limited literature in the context of the global south and specifically manufacturing organisations (Nwokocha & Iheriohanma, 2012; Sriram et al., 2019)

2.3.4 Barriers to the retention of women in manufacturing

The lack of retention of women in the South African manufacturing industry as a male dominated field is shown by the higher attrition of women. Driven by a lack of support women feel excluded (Foley et al., 2022) and as a result the International Labour Organisation has found that one in four people feel less valued in their work and are excluded from active and senior roles due to their gender amongst other factors such as age and ethnic background (International Labour Organization, 2022). This lack of inclusion consequently creates a barrier to the retention of impacted groups such as women. With manufacturing industries in South Africa focusing on rebuilding after the impacts of COVID-19, their main focus has been on improving productivity whilst the challenges of women have been overlooked, creating barriers for their retention (Yusof & Ying, 2024).

The high levels of employee attrition also act as a barrier for the retention of women in manufacturing. Sriram et al (2019) argued that a higher level of attrition in an organisation is a signal of organisational performance and can negatively impact an organisation's effectiveness and efficiency (Sriram et al., 2019). Whilst on average turnover rates of 5-10% are deemed acceptable within organisations (Kumar, 2016), the manufacturing industry in South Africa has turnover rates of up to 22% (Jagdessi

& Richter, 2023). On top of this women's turnover in the industry is considerably higher than their male counterparts with the number of women in manufacturing decreasing 13.2% in 2023 (Statistics South Africa, 2024c). These high levels of employee turnover signal to other women a problem within the industry, with women seeking opportunities elsewhere as a result. This turnover also perpetuates the lack of female representation across different levels within manufacturing that continue to leave women in the minority (Hoyt & Murphy, 2016). Gender stereotyping of women adds to this, with stereotypes portraying women as less competent as their male counterparts resulting in reduced performance, demotivation and lack of engagement that could lead to women leaving their organisations (Hoyt & Murphy, 2016).

2.4 Organisational commitment

Organisational commitment builds on the individual feelings of perceived inclusion by identifying with the values and participating in the organisation through an affective attachment (Haque et al., 2019). Committed employees feel psychologically attached to the organisation through shared values, participation and emotional attachment to the organisation (Chen & Tang, 2018; Meyer et al., 2002; O' Reilly & Chatman, 1986) which are requirements in order to drive organisational goals in times of turbulence (Pradhan et al., 2017). McKinsey & Company (2020) agreed to this, finding in a study that employees who feel included within their workplaces are three times more likely to feel committed to their organisations and pursue career development and promotion (Mckinsey & Company, 2020).

Allen and Meyer's (1990) model on organisational commitment played a seminal role in developing a framework on organisational commitment. In their widely used model, the authors found that whilst different concepts of organisational commitment exist, they all mostly agree that employees commit to an organisation in three different ways- through affective, normative and continuance commitment (Allen & Meyer, 1990; Jaros, 2007; Meyer et al., 2002). These factors are treated as mindsets that characterise the type of commitment an employee experiences (Meyer & Herscovitch, 2001) and are determined by personal, structural and job characteristics and work experiences (Mowday et al., 1984). Affective commitment bases commitment on work experiences that generate feelings of identification and

involvement in the organisation (Jaros, 2007; Meyer & Herscovitch, 2001; Ng, 2023). Based on this definitions, authors agree that affective commitment is by far the most prevalent in an employee's decision to commit to an organisation (Allen & Meyer, 1990). Hunt et al (1985) went one step further, arguing that affective commitment is one of the most important traits that organisations want their employees to have (Hunt et al., 1985). Affective commitment will therefore be studied as the main component of organisational commitment.

Affective commitment is extensively used to measure organisational commitment and deals with the emotional ties that one has to an organisation, driven by shared values between the individual and the organisation (Jaros, 2007; Meyer et al., 2002; Ng, 2023). Vazquez et al (2016) and Alqudah (2022) built on this adding that affectively committed employees fully embrace the goals and values of the business by emotionally and personally involving themselves in the success of these goals (Alqudah et al., 2022; Vázquez et al., 2016). Interestingly Jaaron and Backhouse (2011) suggested that effective use of affective commitment of employees is a more favoured way of driving employee productivity than paying employees higher wages (Jaaron & Backhouse, 2011). Given the current landscape of the wage gap between men and women in manufacturing, it will be important for manufacturing organisations to understand what other levers they can pull to retain women along with pay. Jaaron and Backhouse (2011) seem to provide this alternative lever.

The link between organisational commitment through affective commitment, perceived inclusion and retention has been studied by several scholars including Caldwell et al (1990), Tang et al (2015), Meyer et al (2002) and Chen and Tang (2018) who all found significant relationships between the three constructs. Whilst there have been extensive studies on organisational commitment and its impact on retention and perceived inclusion, there is a marked absence of rich literature on studies of these constructs within the South African context, especially in fields with critical and scarce skills (Van Dyk & Coetzee, 2012). The manufacturing industry is no exception to this, with the industry hampered by a shortage of the critical skills required to implement technologies to drive 4IR and the markedly higher attrition of women (Daya & April, 2014; Department of Trade and Industry, 2019a; Langeni, 2020; PwC, 2024). Therefore, a study is critical in order to understand the

organisational commitment of women within the manufacturing field and it's link to their perceptions of inclusion and ultimately retention. Measures to determine affective commitment such as the affective commitment scale from Meyer and Allen (1990) and Meyer et al (1993) have previously been used to gauge the level of emotional commitment an individual has to an organisation.

2.4.1 Organisational commitment as a mediator

The mediating factor of organisational commitment between perceived inclusion and retention has been investigated in literature (Kamalaveni M S et al., 2019). Mediating factors mediate relationships between independent factors such a perceived inclusion and dependent factors like retention by influencing the relationship of the two. The mediation role can also act a link to create a relationship between two factors that otherwise may not be directly linked (Namazi & Namazi, 2016). It is also theorised that organisational commitment of women can be enhanced by the perceptions of inclusion (Allen & Meyer, 1990; Chen & Tang, 2018; Cho & Mor Barak, 2008) leads to reduced turnover intent of employees (Daya & April, 2014; Hwang & Hopkins, 2015; Mehta et al., 2014; Meyer et al., 2002; Pradhan et al., 2017). Allen and Meyer's (1990) early assertions in the 1990s that commitment is what keeps an individual bound to an organisation and thereby reduces the likelihood of turnover, driving retention, is the underlying foundation of most of these studies that have been constructed (Allen & Meyer, 1990).

Specific observations of organisational commitment as a mediator to perceived inclusion and retention of employees has been found through the work of Hwang and Hopkins in 2015, who concluded that even though perceived inclusion is not directly related to employee turnover intentions, organisational commitment as a mediator led to an indirect relationship between perceived inclusion and retention (Hwang & Hopkins, 2015). This view is contradicted however by earlier work from Mowday et al (1984) who asserted that turnover intentions can be brought on directly by low organisational commitment (Mowday et al., 1984). Other published examples of the mediator role of organisational commitment relevant to this current study are limited, as a result of a lack of a clear pattern by academics in the study of mediators (Randel, 2023). Furthermore, published work of South African examples in the manufacturing industry have been hard to come by, suggesting an opportunity to complete similar

studies to confirm this relationship between inclusion and retention through organisational commitment across a different cultural context and industry as suggested by Li et al (2019) and Shore et al (2018). Seeking clarity on this is therefore an opportunity for further research to add to the limited and mostly conflicted role of mediators such as organisational commitment between perceived inclusion and retention within manufacturing. The South African manufacturing industry provides fertile ground for this, as organisations grapple to effectively retain women in the industry despite DEI efforts intended to achieve this (McKinsey & Company, 2024)

From the reviewed literature, it is therefore important to gain understanding, through this study into: *if organisational commitment mediates the relationship between perceived inclusion and retention within the manufacturing industry?*

2.5 Theoretical Framework

2.5.1 Social Identity Theory

The theoretical model that underpins the current study on perceived inclusion and retention is the Social Identity Theory (SIT). Developed from the workings of Tajfel and Turner in 1978 to explain how individuals define themselves and others through group memberships (Randel, 2023; H. Tajfel & Turner, 1978). In practice this theory suggests that individuals seek a sense of belonging to groups (Mor Barak, 2019) which are often socially driven through categories such as organisational membership, religious affiliation, gender, age, socioeconomic status and interests (H. Tajfel & Turner, 1978). Based on this, the SIT directly relates how different groups and individuals respond through their behaviours and attitudes to being marginalised or “low status” (Breinlinger & Kelly, 1994). Williams and Giles (1978) argued that women derive their social identity by comparing themselves to their male counterparts and as a result this social identity is negative based on the norm that has been created around the female gender (Williams & Giles, 1978), especially in the workplace and in manufacturing. Additionally social identity can be informed by the interactions and communications within a group, with diversity driving solidarity and strengthening a group’s ability for coordinated action, efficacy and feelings of collective power (Postmes et al., 2005). Postmes et al (2005) argued that given

diversity within groups is in itself a shared social identity, it creates a shared identity where members of the group are acknowledged as individuals (Postmes et al., 2005), that is, acknowledged for their uniqueness and belonging and therefore included within the group (Shore et al., 2011). Within the manufacturing industry where diversity is arguably not yet achieved given the low number of women in the industry compared to others (Statistics South Africa, 2024c), this social identity and therefore inclusiveness of the workplace is questioned.

The reaction of women in such situations has been theorised through different strategies such as individual mobility, social creativity or social competition (Breinlinger & Kelly, 1994). In an individual mobility response, women either choose to physically or psychologically dissociate themselves from the workgroups they are in (Breinlinger & Kelly, 1994). Based on this turnover intentions and a lack of organisational commitment would be prevalent or alternatively women would hide their uniqueness in order to assimilate the workgroup as “one of the boys” (Becker & Tausch, 2014; Scheifele et al., 2021; van Veelen et al., 2020). Alternatively with social creativity or competition women in manufacturing might chose to change their perception of inclusion in the workplace at an individual level (Breinlinger & Kelly, 1994) by emphasing the values of what is seen a female characteristics (Scheifele et al., 2021) and change the group dynamics of inclusion by changing the status quo and the levels of inclusion within the group (Breinlinger & Kelly, 1994). The role of male advocacy becomes important here, where male employees who are the majority group act as allies, actively promoting gender inclusion and equality through sponsorship and collaboration to improve “gendered” organisational cultures (W. B. Johnson & Smith, 2022; Kezar & Wheaton, 2017). Scholars have suggested that the strategy that women will use is based on their belief of their current situation and the perceived legitimacy of their interactions within the workplace (perceived inclusion), the stability of the group (organisational commitment) and the availability of opportunities for them outside their organisations (turnover intentions) (H. Tajfel, 1982). In manufacturing and in this study, this response will be interrogated.

2.5.2 Perceived inclusion, organisational commitment and retention link through SIT

Understanding the link between perceived inclusion and retention in the workplace helps manufacturing organisations to understand the interventions they need to put in place to ensure that their employees are engaged, committed and satisfied within the workplace in order to deliver and perform to the best of their abilities. The SIT surmises that outcomes of belongingness and acceptance through a social identity drive feelings of commitment of an employee to an organisation which ultimately leads to the retention of the employee through a social exchange that elicits an obligation from the employee (Brewer & Roccas, 2001; Emerson, 1976; H. Tajfel & Turner, 1978). Studying these relationships and its impact on the retention of women in South African manufacturing will therefore help give an indication of what influence inclusion strategies have on organisational commitment in order to drive the retention of women given the high attrition rates (Hunt, 2016). Furthermore, in comparing these relationships across men and women like Innstand and Grodal (2022) will be beneficial to investigate the strengths of associations to gender (Innstrand & Grødal, 2022). This will further add guidance to industry practitioners on the focus for more effective DEI programs.

In summary, this discussion raises thought around *to what extent are the levels of perceived inclusion related to the retention of women through organisational commitment within the manufacturing sector? Furthermore, are the proposed relationships in the model of perceived inclusion, organisational commitment and retention stronger for men compared to women?* This will be investigated through a hypothesis and data gathering.

2.6 Policies, programs and strategy approaches to inclusion and retention

2.6.1 Approaches to inclusion and retention

Organisational policies influence and shape diversity, equity and inclusion programs within organisations. Deepa et al (2024) added that human resource management (HRM) practices and policies play pivotal roles in shaping organisational culture and driving diversity, equity and inclusion within organisations (Deepa et al., 2024). Diversity and inclusion has also been included as part of corporate social

responsibility efforts as organisations look to increase gender equality in the workplace (Shinohara & Alcantara, 2023). This is further linked to the sustainability agenda of governments and institutions globally as they commit to the Sustainable Development Goals (SDGs) (United Nations Development Group, 2016). Goal number 5 in particular of the SDGs was set to achieve gender equality and empower all women and girls (Fleming et al., 2017) across the world.

To gauge DEI efforts within organisations, in a sample of organisations by the World Economic Forum (2023) a majority of companies within all industries reported having DEI programs in place. The manufacturing sector however was seen to be lagging behind with only 28.80% of companies sampled having DEI programs, and furthermore only 7.07% of the share of organisations having specific DEI programs focusing on women as a primary priority. This pales in comparison to the energy and material sector whose organisations make up 91.10% of organisations focusing on women in their DEI programs (World Economic Forum, 2023). Tang (2024) posited that part of the challenge here has been in translating concepts of DEI into initiatives and actions with measurable outcomes is something that organisations still struggle with (Tang, 2024). In tough economic times such as during and post COVID, and economic downturn, manufacturing organisations have also tended cut back on DEI initiatives, rather focusing on efforts to improve productivity (Tang, 2024; Yusof & Ying, 2024). The opportunity here lies in giving organisations guidance in targeted DEI efforts and initiatives that will drive tangible and sustainable progress in the inclusion of women to drive retention.

In a white paper on DEI practices within South African organisations, Mojapelo et al (2024) recommended four layers in dealing with initiatives to ensure DEI moves away from being just a means just to comply with legal obligations as a form of affirmative action to a strategic lever for employee retention and competitive advantage (Booysen & Nkomo, 2014; International Labour Organization, 2022; Mojapelo et al., 2024). The four levers are shown in Figure 2 and highlight the importance of embedding DEI into operational strategies and compliance frameworks and talent management practices, collecting, monitoring and evaluating data in order to benchmark DEI efforts across organisations, linking DEI to Key Performance Indicators (KPIs) to drive accountability of transformational leaders, effective

communication and broadening of DEI efforts to include suppliers, (Mojapelo et al., 2024)

Figure 2: Four layers of DEI efforts

Source: (Mojapelo et al., 2024)

Showing the role the government has to play in DEI, in an effort to reverse the impacts of apartheid the democratic South African government adopted measures through several interventions including equity policies and structures. South Africa passed several acts in order to address inequality caused by the apartheid legacy through several interventions including equity policies and structures such as the Promotion of Equality Act, the Employment Equity Act and the well-known Broad-Based Black Economic Empowerment Act (BBBEE) in 2003. These laws were enacted in part as statutory intervention to enforce structural change in the labour market to create opportunities for all with the necessary support (Horwitz & Jain, 2011). Further institutional mechanisms have also been set up to drive gender equality through the Commission for Gender Equality, the Office on the Status of Women and a Ministry focused on Women, Youth and Persons with Disabilities (Vyas-Doorgapersad, 2023). The Ministry of Women, Children and People with Disabilities has also been a concerted effort from policy makers to drive the inclusion and equality of women (Bangani, 2019). On top of this, South Africa has also committed to the achievement of the Sustainable Development Goals, with efforts to keep the country on track to achieve SDG 5 on gender equality by 2030, particularly on the ratio of female to male labour force participation rate (Sachs et al., 2024). Whilst these instruments have all been designed with the mandate to help drive diversity and inclusion of women within society and the labour market there is still a gap in their effectiveness as seen by the declining number of female representation in the manufacturing sector. Due to this, it is worthwhile to understand best practices

from both policy makers and organisations in tackling the inclusion and retention of women effectively and these are now dicsussed.

2.6.2 Rwanda approach to inclusion policies and programs

Within Africa Rwanda has been identified as one of the most progressive countries when it comes to the inclusion and progression of women. One of the key drivers in this has been the noted commitment of the Rwanda government to create a favourable environment for gender equality and the representation of women (Debusscher & Ansoms, 2013). Through an institutional framework for gender equality the Rwandan government has launched several programs to empower and eliminate discrimination of women and encourage equality (Niyonzima & Bayu, 2023). One of the major initiatives has been the ministry of gender and family promotion which has focused on monitoring and evaluating the implementation of gender policies within private organisations and companies alike (Ministry of Gender and Family Promotion, 2021). Also of note in the approach from Rwanda is the use of gender performance indicators to measure the success of their strategic objectives and allocation of responsibility to specific ministries through a Gender Monitoring Office whose specific role is to monitor these indicators to drive accountability not only at a national level but also within Non- Governmental Organisations (NGOs), the private sector and religious organisations (Debusscher & Ansoms, 2013). In alignment with academic literature lamenting that the involvement of women goes beyond compliance and actually drives competitiveness (Booysen & Nkomo, 2014; Cho et al., 2017; Hoobler et al., 2018; Müller et al., 2014; Rodríguez-Fernández et al., 2019; Sawyer & Valerio, 2018), the Rwandan government has also entrenched the role of women in achieving it's economic objectives (Ministry of Gender and Family Promotion, 2021). Through this approach Rwanda has managed to commit itself to have 30% representation of women in decision making organs of the state (Nsanzimana et al., 2020), an ode to involving women in decision making processes in order to make them feel included (Mor Barak, 2017).

2.6.3 Unilever approach to inclusion programs and policies

At an organisational level, Unilever has been identified as a multinational manufacturing organisation that has embraced DEI policies and used it to drive

quantifiable and sustained transformational change for women. With a presence in the South African manufacturing industry, Unilever has achieved gender parity in their management positions, with 55% of it's managers being women contributing to the organisation been awarded as one of the Top Employers in South Africa (Top Employers Institute, 2025). Through a gender equity framework, the company has developed a set of resources to help the company drive inclusion and equity of women within its organisation and wider supply chain. Their equity assessment tool in particular embeds gender considerations into all of the initiatives of the organisation including recruitment efforts, equal pay and flexible work options to ensure women are included (Unilever Sustainability Function, 2023). The results from these efforts have been studied in scholarly literature. Ahmed (2024) for example found gender diversity within decision making teams in Unilever led to better informed decisions. The diverse teams also led to the promotion of women into management teams, increasing the representation of women managers (Ahmed, 2024). Finally in an effort to be transparent around progress on the inclusion of women, Unilever is a part of the Bloomberg Gender Equality Index which tracks the progress of gender inclusion within companies by measuring five key pillars namely leadership and talent pipeline, equal pay and gender pay parity, inclusive culture, anti-sexual harassment policies and external brand (Bloomberg, 2023a, 2023b).

It is therefore evident that there are programmes, policies and strategies to support women inclusion and retention from both policy makers and manufacturing organisations, however it is key to understand how *DEI programmes can effectively support the retention of women in manufacturing in South Africa?* This study will consider these aspects through data gathering and findings, whilst also leaning on the best practices shared for learnings that can be applied to manufacturing in South Africa.

2.7 Conclusion

This chapter reviewed existing literature on perceived inclusion and retention and the role of organisational commitment in the context of women in manufacturing in South Africa. In summary, with what is currently known some important assertions can be been made with conclusions of what still needs to be uncovered on the topic. It is clear that perceived inclusion plays a role in driving retention (Mor Barak, 2017; Mor

Barak & Cherin, 1998), and that gender can have an influence on perceptions of inclusion (Carberry & Meyers, 2017; Findler et al., 2007; Li et al., 2019). What is unclear for women in the manufacturing industry in South Africa is the contested view in academic literature of what role exactly gender plays in the perceptions of inclusion within this industry and cultural context of South Africa (Daya, 2014; Daya & April, 2014; Hwang & Hopkins, 2015; Mousa et al., 2021; Mousa & Puhakka, 2019). Additionally whilst organisations with high levels of perceived inclusion are associated with organisational outcomes of organisational commitment and reduced turnover intentions of employees (Brimhall & Mor Barak, 2018; Brunetto & Farr-Wharton, 2002; Chen & Tang, 2018; Cho & Mor Barak, 2008; Goswami & Goswami, 2017; Hwang & Hopkins, 2015; Meyer & Allen, 1997) the strength of these relationships is unknown and has not be studied extensively enough in order to understand if DEI programmes in manufacturing in South Africa are effective enough in driving the retention of women in manufacturing. Finally, the role of organisational commitment as a mediator role between inclusion and retention needs to be studied further to add to limited academic literature (Daya, 2014; Hwang & Hopkins, 2015; Meyer et al., 2002). With the Social Identity Theory (SIT) proposed as a grounding theory linking perceived inclusion to retention through organisational commitment, the role of gender here is relatively unknown, with proposals for further research on the hypothesis of men showing stronger relationships between the mentioned constructs compared to women.

In conclusion the purpose of this study is therefore defended as playing a critical role in adding to academic literature on the perceived inclusion, organisational commitment and retention of women within the manufacturing industry in South Africa. Practically this study will give manufacturing practitioners and policy makers alike guidance on the effectiveness of their DEI programs and policies, whilst sharing insights on where they should focus in order to make their interventions more effective. The next chapter delves into this by setting research objectives.

3 CHAPTER THREE: Research objectives

3.1 Introduction

The objective of the study is to explain the relationship between perceived inclusion and retention for women whilst understanding the mediating role of organisational commitment within the manufacturing industry in South Africa. The hypothesis were derived from the analysis of literature, guided by the Social Identity Theory (SIT) and visualised in a conceptual model.

3.2 Development of conceptual model

The conceptual model in Figure 3 summarises the approach of this study in answering what is not known on the topic as applied to women in manufacturing in South Africa. This model, informed by the Social Identity Theory (SIT), provides the framework for developing the hypothesis that will be discussed. The model was developed from the key findings from literature and adapted firstly from the study of Hwang and Hopkins (2015) on perceived inclusion, organisational commitment and retention, secondly Daya and April (2014) work on gender differences on perceived inclusion and finally the study of Innstrand and Grodal (2022) on the role of gender on the strengths of the relationships between the three constructs.

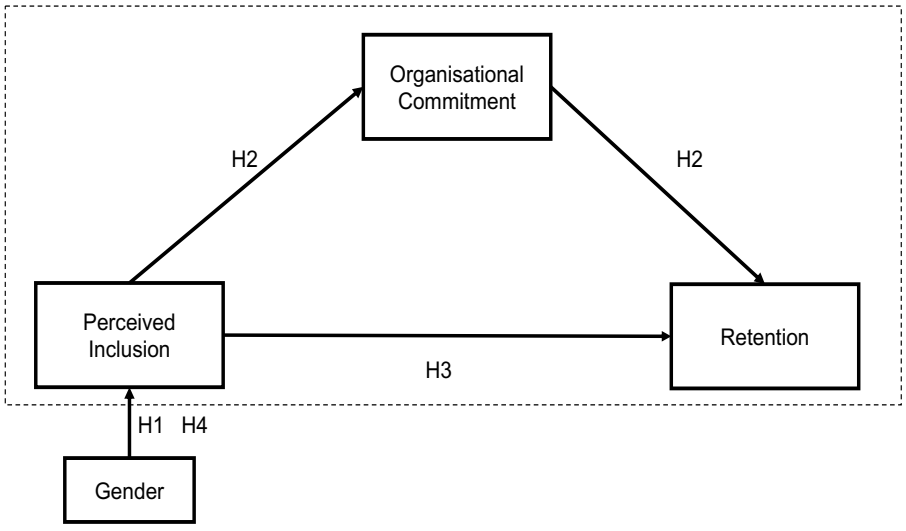

Figure 3: Adapted Conceptual Research Model

Source: (Daya & April, 2014; Hwang & Hopkins, 2015; Innstrand & Grødal, 2022)

3.3 Research hypotheses

Whilst Saunders and Lewis (2018) highlight the importance of grounding research in existing literature, they also implore researchers to research existing topics, themes or theories in different in contexts of time, national culture or work in order to add fresh insights to these areas which could be decade old. Consequently from the literature reviewed, relationships between perceived inclusion, organisational commitment and retention have been found to exist and grounded in the social identity theory (Hwang & Hopkins, 2015; Randel, 2023; Shore et al., 2018), however there is more work to be done in order to understand these relationships in the context of women in manufacturing in South Africa. Through four hypotheses these relationships will therefore be interrogated further.

3.3.1 Hypothesis 1

To understand whether women experience lower levels of perceived inclusion than men in manufacturing in South Africa the chosen hypothesis is:

H1. Women experience significantly lower levels of perceived inclusion than men in the manufacturing industry in South Africa

H1 is based on studies completed by several scholars on the gender differences on perceived inclusion with differing and contrasting results (Cho & Mor Barak, 2008; Daya & April, 2014; Findler et al., 2007; Flaming Yeats, 2018; Hwang & Hopkins, 2015; Li et al., 2019; Mousa et al., 2021).

3.3.2 Hypothesis 2

To understand how organisational commitment impacts the relationship between perceived inclusion and the retention of women within the manufacturing industry in South Africa, the hypothesis to be tested is:

H2. Organisational commitment mediates the relationship between perceived inclusion and retention

The hypothesis posits from the work of Hwang and Hopkins (2015), Lance (1991) and Meyer et al (2002) that organisational commitment mediates the relationship

between perceived inclusion and retention (Hwang & Hopkins, 2015; Lance, 1991; Meyer et al., 2002). The direct and indirect impacts of organisational commitment as a mediator will be tested through assessing if there is therefore a significant and positive relationship between perceived inclusion and organisational commitment (Chen & Tang, 2018; Li et al., 2019; Mousa & Puhakka, 2019; Nishii & Rich, 2014) and organisational commitment and retention (Bell & Sheridan, 2020; Chen & Tang, 2018; Hwang & Hopkins, 2015; Nishii, 2013).

3.3.3 Hypothesis 3

To probe to what extent are the levels of perceived inclusion of women related to the retention of women within the manufacturing sector, hypothesis three tests the relationship between perceived inclusion and employee retention (Brunetto & Farr-Wharton, 2002; Cho & Mor Barak, 2008; Hwang & Hopkins, 2015; Kerich, 2024; Nwokocha & Iheriohanma, 2012; H. Tajfel & Turner, 1978).

H3. There is a significant, positive relationship between perceived inclusion and retention

3.3.4 Hypothesis 4

The final hypothesis four is intended to compare differences between women and men in the strength of the relationships between perceived inclusion, organisational commitment and retention (Innstrand & Grødal, 2022) in order to provide direction for organisations on where they should focus their DEI programs to make them more effective for retaining women.

H4. The relationships between perceived inclusion, organisational commitment and retention are significantly stronger for men compared to women in the manufacturing industry in South Africa

3.4 Conclusion

The objective of this research is to The South African manufacturing sector remains relevant for this study and is the scope as this is also a manufacturing based research project.

4 CHAPTER FOUR: Research Methodology and Design

4.1 Introduction

This chapter provides the basis for the statistical approached used to study the formulated hypotheses in order to fulfil the research objectives. (Casula et al., 2021). With the formulated hypotheses of the relationships between the constructs from Chapter 3, this chapter details the research methodology which was used to collect, analyse and draw conclusions from the data. The research methodology will be defended based on evidence of previous studies of a similar nature through the purpose, philosophy, population, sample size, measurement instrument, quality controls and limitations of the data collected.

4.2 Research methodology

4.2.1 Purpose of research method

Research methods are the set of tools and techniques that are used in order to collect data to find answers to research questions (Taherdoost, 2021; Walliman, 2011). The research design in turn takes these tools and presents them in a framework in order to achieve the objectives of the research through reliable and valid results (Saunders & Lewis, 2018; Zikmund et al., 2019).The purpose of this research design therefore outlines the action plan that was taken in order to test the hypotheses formulated.

4.2.2 Philosophy

Waliman (2011) opines that research is grounded in philosophy as it involves the application of beliefs and assumptions about the development and nature of knowledge (Saunders & Lewis, 2018; Walliman, 2011). One of the most dominant research philosophies in international business and human resource management is positivism, which posits that phenomena in the real world can be understood through theoretical models that are independent of the observer (Bonache & Festing, 2020; Sanchez et al., 2023; Saunders & Lewis, 2018). The positivist philosophy focuses on making observations and measurements in order to collect data that can be used to look for causal relationships between constructs using existing theory to develop hypothesis(Saunders & Lewis, 2018). A positivist philosophy was chosen for this study, coinciding with not only the worldview of the researcher of using scientific methods to gain knowledge (Rahi, 2017) but also previous academic studies

completed on the chosen constructs of perceived inclusion, organisational commitment and retention (Daya & April, 2014; Hwang & Hopkins, 2015; Innstrand & Grødal, 2022). Hwang and Hopkins for example used this approach their study, using the social identity theory as the grounding theory to look for causal relationships between perceived inclusion, organisational commitment and intention to leave amongst workers (Hwang & Hopkins, 2015).

A positivist research allows for a high quality and standard of validity and reliability of data and because data sets are usually larger than those collected in interpretivism, insights from positivist research can be generalised to larger populations (L. Cohen et al., 2011; Pham, 2018; Saunders & Lewis, 2018). The disadvantages of the chosen research philosophy of positivism were also noted in choosing this philosophy. This approach can have limitations in studies that seek to measure some phenomenon related to individual intentions, attitudes and thoughts of humans (Hammersley, 2013). Another disadvantage that was considered in this study was the generalisation of research outcomes causing some unique, individual views to be lost, for example small cultural nuances may be missed (Pham, 2018). Shore et al (2018) and Randel (2023) accounted for these disadvantages in the study of perceived inclusion, with the recommendation of future research on inclusion needing to be conducted across different demographics, geographical locations and industries in order to further enrichen the literature and models on inclusion and it's organisational outcomes.

4.2.3 Approach selected

As a result of the study developing hypothesis from the SIT theory it lent itself to a deductive approach as defined by Saunders and Lewis (2018). This deductive approach was supported by the previous works of Hwang and Hopkins (2015), Barak (2017), Meyer et al (1993), Chen and Tang (2018) and Nishii (2013) in studying inclusion/exclusion and it's organisational outcomes such as retention and organisational commitment. This approach sought to build on existing studies as opposed to developing new theories and aligned with the explanatory approach to research (Adler & Clark, 2008) and the quantitative methods that have been used in previous studies (Chen & Tang, 2018; Daya & April, 2014; Hwang & Hopkins, 2015; Mousa & Puhakka, 2019; Nishii, 2013).

4.2.4 Methodological choices

Academics such as Shields and Whetsell (2016) group the purpose of research as either explanation, description or exploration in nature (Shields & Whetsell, 2016). The research methodological choice for this study was an explanatory study to explain the relationships (Saunders & Lewis, 2018) between perceived inclusion and retention and the impact of organisational commitment on the two constructs. As Zikmund et al (2019) argued that explanatory studies can only be completed if there is a foundation for the understanding of a phenoma, the SIT therefore informed the decision for the use of this methodological choice. Consequently, the study used a mono method through a quantitative research design in line with the positivist research philosophy to provide objective data (Creswell, 2009; Saunders & Lewis, 2018; Žukauskas et al., 2018). This was in line with the increase in quantitative work that has been seen over the years on the topic (Aman-Ullah et al., 2020; Heineke et al., 2014; Kamalaveni M S et al., 2019; O'Keefe et al., 2020; Shore et al., 2018)

Quantitative methods gather numerical data and analyse this data using statistical tools such as Excel, Statistical Package for Social Sciences (SPSS), Python or Strata (Creswell, 2009; Saunders & Lewis, 2018). Some critics of quantitative data such as Johnson and Onwuegbuzie (2004) have argued that this choice of methodology can constrain inquiry into phenomena by limiting the inputs of data through categories and theories that may not be applicable to the population being observed and measured. Alternative approaches have been suggested for a more pragmatist approach with a mixed methods approach to research which includes both qualitative and quantitative methods to provide richer data and insights (R. B. Johnson & Onwuegbuzie, 2004; Saunders & Lewis, 2018). This approach though is time and resource consuming constraints on time and resources in completing this current research study as part of the requirements for the GIBS MBA program, the mono-method approach of quantitative research was deemed appropriate. Previous studies also supported using a single method approach would provide sufficient data for analysis for the proposed research study (Chen & Tang, 2018; Daya & April, 2014; Hwang & Hopkins, 2015; Mousa et al., 2021; Mousa & Puhakka, 2019; Nishii, 2013; O'Keefe et al., 2020) .

4.2.5 Research Strategy

The choice of research strategies are informed by research questions, philosophical choices, time and the extent of existing knowledge on the research topic (Creswell, 2009; Saunders & Lewis, 2018). Based on the deductive approach adopted through a positivist and explanatory choice for the study an appropriate strategy for the study was a survey in the form of a structured questionnaire (Mark et al., 2009; Rahi, 2017). A survey collects data in the form of a pre-designed questionnaire and is appropriate for collecting data within a single time frame to evaluate relationships on separate variables (L. Cohen et al., 2011; Rahi, 2017). The development of the survey questionnaire leant on existing questionnaires on the constructs and relevant questions from these studies were adapted to a South African manufacturing context.

4.2.6 Time horizon

Due to time constraints for the completion of the MBA research project, the study was cross-sectional in nature and data was collected in a single period of time, collecting data at a snapshot in time as opposed to over a longer time period (L. Cohen et al., 2011; Rahi, 2017; Saunders & Lewis, 2018). Previous studies on perceived inclusion, organisational commitment and retention also followed a similar approach, producing a result in a specific time period (Daya & April, 2014; Hwang & Hopkins, 2015). To support this choice further, one the of the research objectives of this study was to understand the topic within the current context of manufacturing organisations in South Africa, hence this time horizon was an appropriate.

4.3 Research design

4.3.1 Target Population

In 2023, Randel reported that 77% of inclusion academic literature came from western cultures and encouraged that scholars complete similar research in other non- Western cultures. On top of this the STEM field and manufacturing industry in particular has been identified as a big opportunity for women retention, with women leaving the field at higher rates than men (Department of Labour, 2022; Fouad et al., 2017; J. Hunt, 2016). In 2024 the South African manufacturing sector made up a total of 12.6% of the country's GDP (Statistics South Africa, 2024b) and employed over 1.63 million people (Statistics South Africa, 2024b). The size of this industry in South

Africa highlights the importance of the South African manufacturing industry as the target population of this study.

The chosen population for this study is therefore male and female employees of manufacturing industries within South Africa. Both men and women were included in the study in order to allow for data collection to measure and compare any differences between their perceived inclusion and the relationships between this perceived inclusion and organisational commitment and retention (Chen & Tang, 2018; Daya & April, 2014; Hwang & Hopkins, 2015; Innstrand & Grødal, 2022). Daya and April (2014) looked into these differences within and between men and women in the South African manufacturing industry however limited their population to one manufacturing organisation. This study sought to expand this work to a larger target population across different organisations to support a more generalised view of the findings as applied to women in manufacturing in South Africa.

4.3.2 Unit of analysis

The unit of analysis for the study was set at an individual level as male and female employees in the manufacturing sector in South Africa. This echoed previous studies where researchers used individuals in manufacturing firms as a unit of measure for perceived inclusion research, such as male and female employees in a the study of Mazibuko and Govender (2017) in a South African manufacturing organisation, frontline employees in an electronic technology company (Chen & Tang, 2018), male and female employees in a large biomedical company (Nishii, 2013) and employees across different organisations (Li et al., 2019).

4.3.3 Sampling method

Sampling methods define the boundaries within which a sample of target population can be found and those chosen for a quantitative approach depend on whether a complete list of the population can be obtained, that is, the sampling frame (Saunders & Lewis, 2018). As the manufacturing industry in South Africa employs over 1.63 million people (Statistics South Africa, 2024b) in this specific case it was not possible to obtain a complete list of the population of all employees within the manufacturing industry in South Africa due to the size of the population and the time and resource

limitations. Additionally the list of employees from these organisations is proprietary information and with the advent of the Protection of Personal Information Act (POPIA) which protects the privacy rights of individuals (de Bruyn M, 2014) this would require the consent of each of the employees and their organisations in order to get the population list. Given this was not feasible, a sampling method was chosen that takes this into consideration and limits the population to a subset of employees (Saunders & Lewis, 2018; Vehovar et al., 2016). The research therefore adopted a non-probability sampling method (L. Cohen et al., 2011; Saunders & Lewis, 2018). This approach differed from the previous approaches taken in relevant studies completed in the manufacturing industry as in these studies the population sets of employees within the organisations were known (Chen & Tang, 2018; Daya & April, 2014; Hwang & Hopkins, 2015). Because the present study focused on the wider manufacturing industry in South Africa, the choice for non-probability sampling was defended.

The importance of gender and employment within the manufacturing industry were important characteristics of the chosen sample for the research questions for this study. As a result purposive sampling was used by the researcher to contact people within who worked in the manufacturing industry in South Africa through LinkedIn, WhatsApp and emails (Etikan, 2016; Rahman, 2023; Saunders & Lewis, 2018). Subsequently the snowball sampling method was used to get further participant (Hossan et al., 2023; Rahi, 2017). Owing to the researcher not having full control of who the questionnaire was then sent to thereafter, a question was added into the questionnaire to ask what industry the respondents worked in. This ensured data integrity by enabling the exclusion of respondents who are not in manufacturing from the data set. Finally since this study sought to collect data from both women and men this was incorporated into the purposive sample method used by continuing to collect responses to the questionnaire until a representative sample size of men and women had been reached.

4.3.4 Sample size

Determining the sample size for this study was an important measure to limit the population to a minimum acceptable number that ensures conclusive, reliable and generalisable results without wasting resources such as time and money to obtain it

(Gowda et al., 2019; Gupta et al., 2016; Rahman, 2023). Ahmed (2024), Saunders and Lewis (2018) and Rahman (2023) opined that for non-probability sampling chosen sample sizes depend on the research objectives at hand, the number of variables, the complexity of the research model, respondent attrition rates and chosen statistical analysis method. The statistical analysis method of Partial Least Square- Structural Equation Modelling (PLS-SEM) was used as the statistical analysis tool and therefore considerations were also made to select appropriate sample sizes based on this. Rahi (2017) cautioned on the difficulties on selecting appropriate sample sizes for surveys, specifically given multiple different recommendations of calculation and selection of samples sizes. Given this complexity, the different ways of selecting a sample size for this research were weighed (Sekaran & Bougie, 2010).

Hair et al (2018) provided a guidance of selecting appropriate sample sizes for multiple regression taking into account the impact of sample size on statistical power and generalisability of the results. The authors opined that multiple regression requires minimum sample sizes of 50 with 100 accepted for most research situations (Hair et al., 2018). Other methods for sample size calculation such as G*power and the inverse square method considered population sizes, confidence levels, precision, population variability study design and attrition rates, yielding target sample sizes of between 20 and 460. These different methods and calculations considered are documented in Appendix C (S. K. Ahmed, 2024; Hair et al., 2018; Kock & Hadaya, 2018; Rahman, 2023). A sample size of 100 was chosen based on this analysis. To account for some samples that might need to be removed due to missing data or not meeting the necessary criteria of being employed in the manufacturing industry the sample size was adjusted up to 120. Finally with the research hypothesis seeking to understand the differences between men and women it was necessary to obtain a representative sample of both men and women hence a total sample size of 120 women and 120 men was chosen, giving a total target sample size of 240. This fell within the range of previous research where sample sizes ranged from 54 to 325 119 (Shore et al., 2018)

4.3.5 Measurement Instrument

The measurement instrument that was used was an electronic online survey questionnaire administered on Google Forms. This was chosen for it's cost effectiveness compared to the alternative of a face to face survey (Kabir, 2016; Sekaran & Bougie, 2010) and ensured anonymity of respondents. It was also beneficial in that collected data could be analysed using statistical software without the need to transcribe physical questionnaires. The survey questionnaire consisted of 27 questions separated into four sections namely demographics, perceived inclusion (PI), organisational commitment (OC) and retention (RT) and adapted the existing measurement scales of Meyer et al's (1993), Mor Barak and Cherin (1998), Mo Barak (2017), and Kyndt et al (2009). Participant consent was included as part of the questionnaire in the introduction to ensure responses were voluntary.

English as the business language of South Africa was used in the questionnaire, ensuring clarity and readability to the participants of the survey. Validity and reliability measures as discussed in later sections were used to ensure that these adaptations of the scale did not compromise on the effectiveness of the current survey. The questionnaires were consolidated in Table 1. The full adaptation can be found in Appendix A. A Likert scale was used with a rating of 1- 5 to examine how strongly respondents agreed or disagreed with the questions asked in sections two, three and four (Sekaran & Bougie, 2010). Participation in the questionnaire was voluntary and indented to be completed in 10-15min so as not to deter respondents. Finally anonymity was maintained through the use identifiers for data capturing.

Table 1: Survey questionnaire development

Construct	Author	Survey Instrument	Number of Questions	Adapted Number of Questions
Retention	(Kyndt et al., 2009)	Self-developed	11	6
Organisational Commitment	Meyer and Allen (1990) (Meyer et al., 1993)	Organisational Commitment Questionnaire (OCQ)	8	8
Perceived Inclusion	(Mor-Barak & Cherin, 1998) (Mor Barak, 2017)	Inclusion-exclusion scale	15	8

Source: (Allen & Meyer, 1990; Kyndt et al., 2009; Meyer et al., 1993; Mor Barak, 2017; Mor Barak & Cherin, 1998)

4.3.5.1 Demographics

Section 1 of the questionnaire consisted of five questions to capture demographic details such as gender, age group, occupation, tenure in business and current industry were requested from a drop down list to help with descriptive analysis of the data. The gender of the respondent was crucial in the survey questionnaire as it was one of the variables being measured and tested for in hypothesis. The industry in which the respondents work was also captured to confirm that the respondents worked within the manufacturing sector to protect the validity of the data.

4.3.5.2 Perceived inclusion

The questionnaire adopted the Inclusion- Exclusion scale for perceived inclusion from Mor Barak and Cherin (1998) that was later refined by Mo-Barak in 2017. The scale measures the degree to which individuals feel part of the organisation in terms of access to information, involvement and participation and influence in the decision making process (Flaming Yeats, 2018). Questions such as *"I am able to influence decisions that affect my organisation", I am rarely invited to join my coworkers when*

they go for lunch or drinks after work" (Mor Barak, 2017) were asked to capture the level of perceived inclusion of an individual. Of the fifteen questions in the scale, eight were chosen in order to ensure the questionnaire was not too long.

4.3.5.3 Factor 2- Retention

The section of the questionnaire on retention relied on a revised questionnaire used by Kyndt et al (2009) to question employee retention intentions. Examples of questions asked here were "*If I could start over again, I would choose to work for another company" and " I'm planning on working for another company within a period of three years"* (Kyndt et al., 2009). The questions here were reduced from the original survey from eleven to six relevant items to reduce the length of the survey.

4.3.5.4 Factor 3- Organisational commitment

Meyer et al's (1993) organisational commitment questionnaire (OCQ) was adapted to help create questions for organisational commitment for this study. In this scale the 8 factors related to affective commitment were used. Here participants were asked questions such as "*I do not feel a strong sense of "belonging*" to my organisation" and "*This organisation has a great deal of personal meaning for me*" in order to understand the level of affective commitment that an individual feels for an organisation (Meyer et al., 1993). All eight questions for affective commitment were used for this questionnaire.

4.3.6 Pilot Questionnaire

The survey questionnaire was subjected to an ethical clearance by the GIBS Ethics Committee upon which after receiving approval a pilot questionnaire was administered to improve the quality and efficiency of a study by allowing a small scale of people to complete the survey and provide input before administering to the bigger sample (In, 2017). From this, the experience of a respondent is improved and therefore the likelihood of them completing the survey is increased. A pilot survey was sent out to five employees within the manufacturing industry who were part of the researchers network to assess the quality and efficiency of the survey. Some grammatical errors in questions were corrected and all respondents were able to complete the questionnaire within the allocated time and did not experience any

challenges with the Google Forms tool. Following this the survey was opened for data collection on 8 October 2024 until 24 December 2024.

4.4 Data analysis

With the data collected the appropriate data analysis methods were important to ensure consistent and reliable data and results that could be generalised to the larger manufacturing population (Saunders & Lewis, 2018; Zikmund et al., 2019. Consequently the treatment of data was an important step to ensure the integrity of the study. Sekaran and Bougie (2010) detail a process to prepare data for analysis that involves coding and editing before removing outliers and missing data (Sekaran & Bougie, 2010). The data from the responses from the Google Form were first downloaded to Excel and analysed for missing data, coded and then assessed for the qualifier of employment within manufacturing. The Statistical Package for Social Sciences version 30 (SPSS30) (IBM, 2024) was then used to complete descriptive analysis, tests for validity and reliability of the data and tests for differences between men and women. For multivariate regression, structural equation modelling in the Analysis of Moment Structures version 26 (AMOS26) statistical software package was used to build and test a measurement model from the conceptual model for this research as depicted in Figure 3 (Arbuckle, 2019). Thereafter the structural model was tested for the hypotheses as defined in Chapter 3. A confidence interval of 95% was selected as a requirement and used in the statistical tools (Hair et al., 2018; Marshall & Jonker, 2011)

4.4.1 Data clean up

Missing data from questionnaires are an unavoidable issue that can obscure the analysis of data in research if not treated adequately (Baraldi & Enders, 2010; Hair et al., 2018). Little (2024) recommended several approaches in dealing with missing data such as predicting, imputing or excluding missing values (Little, 2024). The approach taken for this study was to exclude respondents from the data collected that did not complete any part of the questionnaire to ensure data completeness for the statistical analysis. Following on from this the key qualifying criteria for the population sample was the respondents being male and female employees and employed in the manufacturing industry. Owing to the use of the snowballing

sampling method it would be important to ensure all responses used for analysis were from male and female employees within the manufacturing industry, with entries not meeting this criteria deleted.

4.4.2 Data coding

For ease of analysis in SPSS the data was coded in Excel before being uploaded into the software package. The codes that were used are detailed in Appendix D. A key purpose for the data coding was to convert the responses of questions administered with a Likert scale into numerical data that could be used as interval data to allow for statistical analysis (Sekaran & Bougie, 2010). With this coded data the overall perceived inclusion, organisational commitment and retention of each respondent could be quantified by summing up and averaging the coded responses of each question in the relevant section (Sekaran & Bougie, 2010). Thereafter perceived inclusion, organisational commitment and retention were referred to as PI, OC and RT respectively and subsequently all questions relating to these construct coded accordingly. For example “My coworkers and supervisors openly share work-related information with me” was coded to PI1. The summary the coding principles used are tabulated in Table 2.

Table 2: Coded Questions on Constructs

Question	**Coded Reference**
Perceived Inclusion	**PI**
My coworkers and supervisors openly share work-related information with me	PI1
I am typically involved and invited to actively participate in work-related activities	PI2
I am able to influence decisions that affect my organisation	PI3
I am usually among the last to know about important changes in the organisation	PI4
I am usually invited to important meetings in my organisation	PI5
My supervisor often asks for my opinions before making important decisions	PI6

I am invited to actively participate in meetings	PI7
I am always informed about informal social activities and company social events like after works drinks	PI8
Retention	**RT**
I'm planning on working for another organisation within a period of three years	RT1
If I wanted to do another job or function, I would look first at the possibilities within this organisation	RT2
I see a future for myself within this organisation	RT3
If it were up to me, I will definitely be working for this organisation and industry for the next five years	RT4
If I could start over again, I would choose to work for another organisation	RT5
If I received an attractive job offer from another organisation, I would take the job	RT6
I have a career plan in the organisation that I work for	RT7
I have a development plan in the organisation that I work for	RT8
Organisational Commitment	**OC**
I would be happy to spend the rest of career with this organisation	OC1
I really feel as if this organisation's problems are my own	OC2
I feel a strong sense of "belonging" to my organisation	OC3
I feel "emotionally attached" to this organisation	OC4
I feel like "part of the family" at my organisation	OC5
This organisation has a great deal of personal meaning for me	OC6

Source: Authors Own (2024)

4.4.3 Outliers

Outliers are data points that are inconsistent with the rest of the data set and need to be dealt with as they can disproportionality influence statistical analysis (Chambers et al., 2004; Kline, 2023; Sullivan et al., 2021). Statistical or graphical methods such as box plots can be used to detect outliers and this method was

chosen. The limitations of boxplots of potentially identifying regular observations as outliers in normally distributed data was noted (Sim et al., 2005). Of interest in this study were model fit and prediction outliers which could impact the fit of the structural and measurement model. Auginis et al (2013) suggested acknowledging and keeping outliers in the data set as one of several handling techniques for outliers and this method was adopted for this study based on the robustness of SEM and regression tools in minimising the impact of outliers on models (Aguinis et al., 2013; Hair et al., 2018).

4.4.4 Normality

The normality of a data set tests the degree to which sample data corresponds to a normal distribution and is a fundamental assumption of multivariate analysis such as structured equation modelling (SEM) (Hair et al., 2018). Skewness and kurtosis values were used to test for normality where results within the range of -3 and +3 for skewness and -10 to +10 for kurtosis are considered to represent normally distributed data (Kline, 2016). The Shapiro- Wilk and Kolmogorov-Smirnov tests are also widely recommended as precise and powerful normality tests that allow for smaller sample sizes (González-Estrada et al., 2022; Hatem et al., 2022). A p-value less than the level of significance of 0.05 also indicates non-normality of data (Kline, 2023). This parameter also determined whether parametric or non- parametric tests were used for descriptive analysis of the data. For the SEM, the bootstrapping technique was used on non-normal data to circumvent the assumption of normality (Collier, 2020).

4.4.5 Multicollinearity

The multicollinearity of data measured if linear relationships existed between the independent variables (perceived inclusion) in the structural model to prevent skewness of how well a model can predict a dependent variable (organisational commitment and retention) (Shrestha, 2020). Based on the big impacts of multicollinearity on the integrity of research findings determining this was important (Sekaran & Bougie, 2010). A test for multicollinearity was completed in SPSS and the tolerance and variation inflation factor (VIF) used to evaluate, with any values exceeding 10 showing issues with multicollinearity (Hair et al., 2018).

4.4.6 Homoscedasticity

The test for homoscedasticity or homogeneity of variance tests for whether the variance of a dependent variable has equal levels of variance across the whole of the independent variable and not concentrated in a limited range of the independent variable (Hair et al., 2018; Katsileros et al., 2024). Whilst the Levene test is a desired test for this, it is noted that multiple regression methods such as SEM cater for homoscedasticity within their analysis. Consequently, whilst it was important to understand if the data set had homoscedasticity, a negative result would not limit analysing this data through SEM (Kline, 2016).

4.5 Descriptive analysis

Due to the quantitative nature of the data collected, statistical analysis was used for analysis. Both descriptive and inferential statistics were used to draw the necessary relationships or lack thereof thereby testing the formulated hypotheses. Descriptive analysis carried out on the demographics of the sample received allowed for the frequencies of the gender, age and tenure of respondents to be analysed (Sekaran & Bougie, 2010).

4.5.1 Gender

Capturing the gender of the respondents allowed the testing of hypothesis H1 and H4 which tested for differences between men and women in their experience of perceived inclusion and the relationships between this construct and organisational commitment and retention (Daya & April, 2014; Hwang & Hopkins, 2015). Gender was controlled for in order to test for this and is discussed further in section 4.6.10. Descriptive statistics were used to understand the sample size and the split between men and women who completed the survey to ensure that a representative sample was obtained that could be used to generalise the inferred statistics to the larger population of employees within the manufacturing industry in South Africa (Marshall & Jonker, 2011).

4.5.2 Constructs

For the constructs of perceived inclusion (PI), organisational commitment (OC) and retention (RT) the descriptive statistics allowed for insights on the means and

standard deviations amongst the groups by comparing the retention, organisational commitment and perceived inclusion of the different genders to each other (Daya & April, 2014; Hair et al., 2018; Mousa et al., 2021). An average for each gender was obtained for each construct by calculating the average of the indicators of each question measuring the construct, for example RT_Average was generated by summing the responses for RT1 to RT8 and dividing by the total 8 indicators in the measurement scale for each respondent and thereafter each gender. The standard deviation of each construct measured the spread of the data points in the form of the variability of the data (Sekaran & Bougie, 2010).

4.6 Inferred statistical analysis

The inferred statistical analysis of the data allowed for the hypotheses of the research study to be tested and are discussed in the next sections.

4.6.1 Correlation between variables

First, the correlation between gender, age, tenure in company, perceived inclusion, organisational commitment and retention was tested using the Spearman's or Pearson correlation, depending on the normality of the data. These correlations measure the strength of a relationship between two variables through a coefficient (r or ρ) measured on a scale of -1 to +1 where 1 represents a perfect degree of association and the symbol -/+ represents the direction of the association (Hair et al., 2018; Kline, 2016; Sedgwick, 2012). It is seldom that a perfect degree of association is achieved, therefore Cohen (1988) provided a guidance in indicating the strengths of the correlations where a ρ of 0.1 to 0.29 represents a small correlation, 0.30 to 0.49 a medium strength of correlation and finally anything between 0.5 to 1.0 is considered a large correlation (J. Cohen, 1988). Cohen's (1988) guidelines for the strengths of the correlations are applicable to both the Spearman and Pearson tests. To determine which test to use would depend on the normality of the data where Pearson is used for normally distributed data and Spearman for non-normal data. (K. Ali & Al-Hameed, 2022). Based on the test used, the assumptions of normality, linearity, homoscedasticity and independence of the variables would be relevant. It was also important to note that whilst correlation would provide an indication the variables were related, it would not necessarily indicate causality (Pallant, 2007).

4.6.2 Test for differences

Hypothesis H1 sought to investigate if there are any significant differences between men and women and their perception of inclusion. An independent sample t- test or a Mann- Whitney U test was deemed a suitable test for this, depending on the normality of the data and based on similar studies completed of gender differences on perceived inclusion (Kline, 2023; Mousa et al., 2021). These tests are univariate tests that test for significant differences in the means between two groups (Hair et al., 2018; Sekaran & Bougie, 2010). The t-test assumes that the data set is normally distributed, has equal variances (homoscedasticity) and the two groups being tested are independent (Kim, 2015). For data that is not normally distributed the Mann-Whitney U could be used as an alternative (Sekaran & Bougie, 2010), where the values of interest would be the asymptotic significance (2-tailed) p value <0.05 and the median (Md) scores for each group for the Mann-Whitney test and mean (M) scores for the t-test if there is a significance to show the direction of the difference (Pallant, 2007). The size of the effect would also need to be calculated to understand the size of the effect of the difference (r) where Cohen's (1988) criteria stipulates 0.1= small effect, 0.3= medium effect and 0.5= large effect (J. Cohen, 1988).

4.6.3 Structural equation modelling

Structural equation modelling (SEM) is a statistical tool for analysing complex theoretical causal relationships between multiple variables including direct and indirect effects (Fan et al., 2016; Hair & Alamer, 2022). Whilst the covariance based structural equation modelling (CB-SEM) has been the most popular method used for multivariate regression and factor analysis, partial least squares structural equation modelling (PLS-SEM) has become a popular method over the years as it provides some advantages over CB-SEM and has been used often in business and social science studies (Hair et al., 2018; Hair & Alamer, 2022; Kock, 2014). The PLS-SEM is a variance based statistical model that uses total variance in two models- structural and measurement models in order to predict explained variances in dependent variables (Hair et al., 2018) The PLS-SEM method was therefore chosen as the SEM to test for hypotheses H2-H4 based on its suitability for smaller sample sizes, not assuming a normal distribution of data, handling more complex models with many observed variables and ultimately it's ability to study mediator impacts such as that of organisational commitment in hypothesis H2 (Hair et al., 2018; Hair & Alamer,

2022). Next, the measurement model (outer model) and structural model (inner model) are now discussed as adopted from the conceptual model of the study.

4.6.3.1 Measurement model

The measurement model used confirmatory factor analysis (CFA) to check the appropriateness of the questions asked in the survey questionnaire using factor loadings, validity and reliability and the model fit of the data. The measurement model for this study was derived from the conceptual model from Chapter 3 loaded into AMOS as depicted in Figure 4.

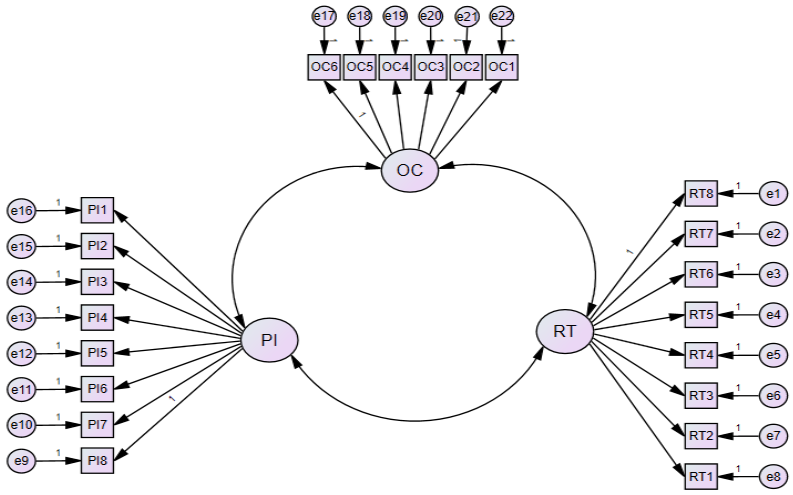

Figure 4: Measurement Model

Source: AMOS

4.6.3.2 Confirmatory factor analysis

Confirmatory factor analysis (CFA) in AMOS tested how well the chosen survey questions (indicators) measured the constructs of perceived inclusion, organisational commitment and retention (Hair et al., 2018). This method was chosen over exploratory factor analysis (EFA) as there were already existing indicators in the measurement scales such as those identified in section xxxx for PI, OC and RT (Suhr, 2004). The choice of the CFA method was also informed by the sample size, where CFA is best suited for sample sizes above 200 (Hair et al., 2018). The first step was to determine the factor loadings and their significance. Hair et al (2018) deemed acceptable standardised factor loadings of between 0.5, but ideally higher than 0.7 and should be significant with $p<0.05$. These results would confirm a strong

relationship between the indicators and their constructs. It was suggested that any indicators with factor loadings of below 0.5 should be removed in order to improve the validity of the model (Hair et al., 2018). Through this, the validity of the theoretical measurement model could be confirmed.

4.6.4 Convergent validity

The average variance error (AVE) is the mean variance extracted from indicators loading on a construct and measures how much indicators of a construct correlate positively and share a high degree of variance (Hair & Alamer, 2022). An AVE value of 0.5 or higher was deemed an appropriate result to provide evidence of convergent validity (Hair et al., 2018). Fornell and Lacker calculated AVE by adding the coefficient of determination (R^2) values for all the indicators in a construct and dividing by the total number of indicators. Acceptable values of 0.5 confirm convergent validity (Fornell & Larcker, 1981). Data from AMOS was used to compute this.

4.6.5 Discriminant validity

Discriminant validity measures that each of the constructs in SEM are measuring different concepts from the other constructs with only a small overlap in variances (Hair & Alamer, 2022; Kline, 2016). The recommended measure for this was the heterotrait-monotrait ratio (HTMT) of the correlations with a desired value of <0.85 indicating that a construct better explains the variance in its own indicators as opposed to others (Hair & Alamer, 2022).

4.6.6 Scale reliability

In order to ensure the integrity the reliability of the data was tested. Cronbach alpha is a consistently used measure that tests for interrelatedness of items in a scale with a value of between 0.7-0.95 deemed acceptable (Tavakol & Dennick, 2011). Sekaran and Bougie (2010) suggested that Cronbach alphas below 0.6 are considered poor and anything above 0.8 as good (Sekaran & Bougie, 2010). As previous surveys relevant to this current study were completed by Meyer and Allen (1990), Mor- Barak (2017), Mor Barak and Chen (1993) and Kyndt (2009), the Cronbach alpha values from these studies were used as a reference point. The measure was then

recalculated based on the changes made to scales in adapting to the current study using the relevant questions to ensure that they were scoring in the acceptable range. The Cronbach Alpha for each of the scales used for PI, OC and RT were tested using the Reliability Analysis tool in SPSS. The measure is usually calculated together with the composite reliability. Composite reliability supplements the Cronbach alpha in SEM as the Cronbach alpha has been noted to over and underestimate values (Collier, 2020; Hair et al., 2018; Yang & Green, 2011). To counter this the composite reliability uses the standardised factor loadings of the indicators from the CFA to calculate reliability with values between 0.7-0.95 reflecting good reliability levels (Hair & Alamer, 2022)

4.6.7 Model Fit

The model fit checks how close the specified model is to the representation of the data set (Collier, 2020). The goodness of fit index was used as the statistical measure to indicates if the specified model is able to predict the observed covariance matrix of the indicators in the model accurately and reliably. The model used six indices to indicate the goodness of fit as depicted in table 3 with recommended targets by Bentler and Bonett (1980) to assess the goodness of the model fit. These were used to measure the model depicted in Figure 4.

Table 3: Goodness of Fit Indices

Fit index	Target
Relative chi square test	<3
Comparative fit index (CFI)	>0.9
Tucker Lewis Fit (TLI)	>0.9
Incremental Fit Index (IFI)	>0.9
Root mean square error of approximation (RMSEA)	<0.08
Standardised root mean square residual (SRMR)	<0.09

Source: (Bentler & Bonett, 1980; Collier, 2020; Hair et al., 2018)

Model fits can also be improved when they do not meet the required threshold of the fit indices by reviewing the modification indices of the model. By accounting for covariances of indicators within the constructs the model fit could be improved by reducing the chi-square values between the error terms between indicators to below

10 (Collier, 2020). This consideration was made in improving the model fit for the measurement model for this study. The standardised residuals could also assist in improving the model fit by adding covariances to any indicators within the construct that have a standardised residual value of 2.58.

4.6.8 Structural model

Once the measurement model fit was confirmed, the full structural model was assessed. The full structural model analyses the relationships between the constructs in the inner model using path analysis whilst also considering the measurement error of the indicators (Collier, 2020). Using AMOS, the model fitted measurement model was converted to a structural model and pathways added to calculate the relationships between constructs as per the hypothesis identified. The structural model is presented in Figure 5 to test for hypotheses H2-H4. For confirmation or rejection of the hypotheses the standardised estimates (β), t-statistics, coefficient of determination (R^2), effect size (f^2) and significance level (p) were used. The model fit for the structural model was also reported on to evaluate the appropriateness of the model as a measure for either supporting or rejecting the hypothesis related to perceived inclusion, organisational commitment and retention (Hair et al., 2018).

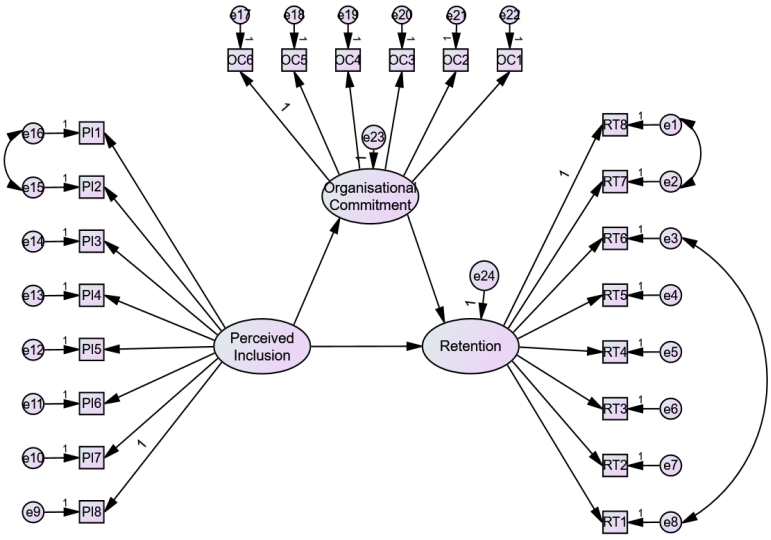

Figure 5: Full structural model

Source: AMOS

4.6.9 Mediation

Hypothesis H2 tested for the mediation effect of organisational commitment (OC) between perceived inclusion (PI) and retention (RT). A mediator is an intervening variable that explains the process by which an independent variable causes an dependent variable (Baron & Kenny, 1986; MacKinnon et al., 2012; Namazi & Namazi, 2016b). The effect of organisational commitment as a mediator was studied using the direct, indirect and total effect on the relationship. Mediation can also take the form of partial, full, competitive or complementary mediation based on whether there is a significant direct relationship between the independent and dependent variable and the direction of influence of the mediator (Collier, 2020). Baron and Kenny (1986) provided the guidance on testing for mediation effects and implored that for mediation to exist the independent and mediating variables need to have a significant relationship along with the mediating variable having a significant relationship with the dependent variable (Baron & Kenny, 1986). Modern techniques however rejected this method, and now use the product of the relationships between the dependent variable and the mediator and the mediator and the independent variable as the indirect path (Hayes, 2012). This was tested for this study in AMOS using the bootstrapping technique to determine the significance of the mediation effect with a bootstrap sample of 5000 and a confidence level of 95% (Collier, 2020). The unstandardised effect was used for indirect effects caused by organisational commitment as guided by Hair et al (2018). Full or partial mediation was determined by the significance of the relationship between PI and RT.

4.6.10 Gender differences in structural model

Hypothesis H4 tested for differences between men and women in their perceived inclusion and the overall strength of the relationship of the constructs of PI, OC and RT. In order to test for this a multiple group analysis was used in AMOS to see if differences existed in the relationships proposed in the structural model for men and women (Collier, 2020; Hair et al., 2018). The first test with the full structural weights model revealed if the group of men and women are significantly different as a whole whilst an additional test constraining the variables to test relationships one at a time helped to understand specifically which relationships between PI, OC and RT were significantly different between men and women. The p values in those models

determined the significance of the differences whilst the estimate values showed which group had a stronger or weaker effect on the relationship.

4.7 Ethical considerations

To protect the confidentiality, integrity and rights of participants of the survey, their organisations, the researcher and GIBS (Gordon Institute of Business Science, 2024) an ethical clearance was obtained from the Ethics Committee before commencing with issuing the survey questionnaire. The ethical approval attached in Appendix E was granted on 7 October 2024 and thereafter the pilot survey was administered before sending to a wider audience. To ensure the anonymity of the participants of the survey responses were treated confidentially with the personal details of the respondents such as name and company not requested. Ultimately participation in the study was voluntary and this was called out in the preamble to the survey and consent granted by way of informing the respondents that participating in the survey was an indication of their consent. All survey data collected was stored securely electronically on a password protected online cloud based system for retention for the next ten years.

4.8 Quality controls

The quality controls to ensure the integrity of this research was covered in previous sections detailing how the validity of the data collected, measurement instrument and the suitability of the research model would be obtained. The integrity of the data collected was ensured by using pre-existing scales that measured the constructs of perceived inclusion, organisational commitment and retention. The Cronbach alpha of these surveys was used as a measure of the reliability of the scales and this was further tested by recalculating the Cronbach alpha for this study. The final survey questionnaire included screening questions to ensure that the data collected and analysed would be relevant to the targeted subjects of study, that is, women and men in manufacturing in South Africa. A pilot survey tested for grammatical and spelling mistakes and confusing or misleading questions that could influence the validity of the responses obtained. Finally missing and outlier data was reviewed and dealt with accordingly to ensure the integrity of the data collected. To ensure the effectiveness and reliability of the chose statistical tools data checks were completed

to check for the normality, linearity and homogeneity of the data in order to apply the appropriate statistical tests. Ultimately, research model fit tests were used to reinforce the suitability of the chosen models and statistical analysis methods for explaining the relationship of perceived inclusion, organisational commitment and retention which allowed the data to infer conclusions that could be generalised to the larger manufacturing population in South Africa.

4.9 Limitations

Researchers emphasise the importance of understanding and sharing limitations to studies (Ross et al., 2019) as limitations acknowledge the potential weaknesses of the study design, statistical models and processes which are out of the researcher's control (Theofanidis & Fountouki, 2018). The first limitation of this study was that it was completed within a limited timeframe as per the requirements of the GIBS MBA program. This snapshot view may have inadvertently missed some nuances of other factors that may influence perceived inclusion, organisational commitment and retention that may not have been present at the moment the survey is taken. Another limitation arose from the use of non-probability sampling in the data collection where the data set has unknown chances and probabilities of the members of the population being selected (Saunders & Lewis, 2018; Vehovar et al., 2016) and the completion rate of the questionnaires cannot be determined. The chosen sampling method of purposive and snowball sampling also provided a limitation in constraining the reach of survey respondents to those within the network of the researcher which could provide limitations to generalisation of the findings (Saunders & Lewis, 2018). Because quantitative approaches can also constrain inquiry into phenomena by limiting the inputs of data through categories and theories that may not be appliable to the population being observed and measured, this was another limitation of the study that was noted (R. B. Johnson & Onwuegbuzie, 2004). Finally, other factors such as skill and organisational level, race, compensation and work-life balance of the participants may have an impact on perceptions of inclusion, organisational commitment and retention (Alfayad & Suriani, 2017; Holston-Okae & Mushi, 2018) this study did not include these factors, which may be a limiting factor.

4.10 Conclusion

This chapter detailed the research purpose, design and methodology that was used in conducting the collection, analysis and interpretation of data for the role of perceived inclusion on retention of women in manufacturing in South Africa and the mediating effect of organisational commitment. A positivist philosophy was chosen to deductively explain the constructs in a quantitative, cross sectional study that used an online questionnaire to collect data and statistical methods of descriptive analysis and inferential statistics through structural equation modelling to test the chosen hypotheses in order to achieve the research objectives derived from literature. The next chapter shares the results of this approach.

5 CHAPTER FIVE: Results

5.1 Introduction

This chapter provides the results of the data that was collected and analysed in line with the objectives of the research to investigate the relationships between perceived inclusion, organisational commitment and retention among women in manufacturing in South Africa. Through a positivist philosophy, a deductive approach was used to quantitatively collect data though an online survey questionnaire in order to test the hypotheses chosen in Chapter 3. The results are now presented using the methodology detailed in Chapter 4 in sections namely data preparation, descriptive analysis, inferential statistics, measurement model and structural model. All analysis was completed using Excel, SPSS30 and AMOS26 statistical analysis tools with a confidence interval of 95% (Collier, 2020).

5.2 Data analysis

5.2.1 Data preparation

Data from 345 respondents was collected between 8 October 2024 and 24 December 2024 through the survey questionnaire. The timestamp of responses received shown in Figure 6 was used to ensure that the survey was closed at an appropriate time when responses had tapered off. Despite a target for the minimum sample size of 240 being reached by 22 November 2024, the survey was left open to obtain the maximum number of responses in order to improve the robustness of the statistical tools used (Kline, 2023) whilst also obtaining representative sample sizes from both men and women. The results in Figure 6 show that after 7 December 2024 the number of survey respondents dropped to below 10, the survey was thereafter closed on 22 December 2024.

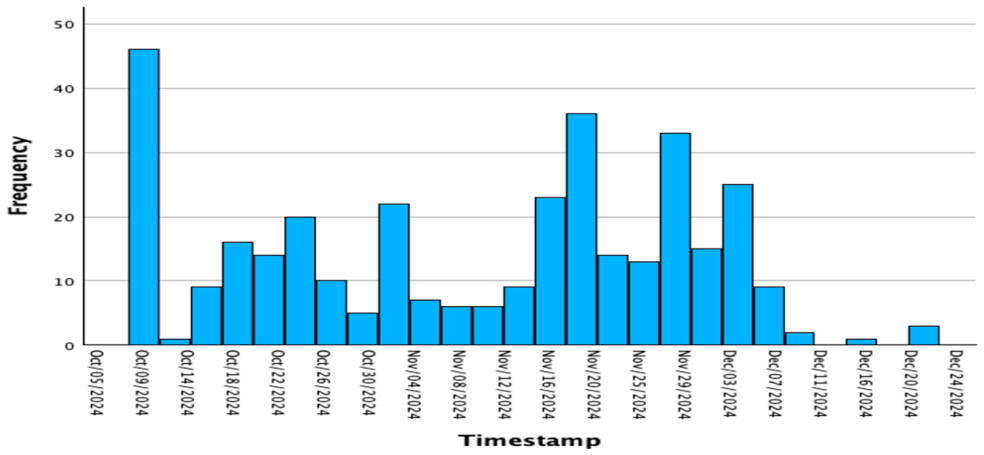

Figure 6: Timestamp of survey response collection

Source: SPSS

5.2.2 Data clean up

5.2.2.1 Missing data

The respondent data was then analysed to check for any missing entries. Five respondents were identified as not having completed questions RT3, RT4, RT6, OC3, OC4 and OC5. This amounted to 1.45% of the data set, which satisfied the acceptable level of missing data, recommended to be below 5.00% (Hair et al., 2018).

5.2.2.2 Qualifying criteria

86 respondents were not employed in the manufacturing industry and were thus removed from the sample, as a qualifying metric for inclusion in the study was men and women employed within the manufacturing industry. This showed the limitations of the snowball sampling method where the researcher does not have control of who the survey questionnaires are forwarded to, hence the inclusion of the qualifying question asking in which industry the respondents work in. One respondent identified as non-binary in the gender question. As this study was based on gender differences between men and women the decision was made to remove this respondent. Based on this clean-up of the data, 73.33% of the total respondents were included in the final sample set for the study. The final sample consisted of 253 respondents with a split of 121 women and 132 men which satisfied the minimum desired sample size of 120 men and 120 women. The final sample analysis is shown in Table 4. From this, the data was then coded to enable use in SPSS and AMOS.

Table 4: Final sample size analysis

Description	Number	Percentage
Total respondents	345	
Missing data respondents	5	1.45%
Non-manufacturing respondents	86	24.93%
Non male or female respondents	1	0.29%
Final sample size	**253**	**73.33%**

Source: Author's own

5.2.3 Data coding

The respondent data was coded in Excel. The main purpose was to convert questions answered with a Likert scale to interval data that could be processed in SPSS and AMOS. Negative questions such as PI4- *"I am usually among the last to know about important changes in the organisation"* required reverse coding in order to ensure the consistency in the meaning of the responses (Saunders & Lewis, 2018; Sekaran & Bougie, 2010). Questions PI4, RT1, RT5 and RT6 were all reverse coded as a result and the full data coding is captured in Appendix D.

5.2.4 Outliers

A box plot in SPSS was used to test for any outliers in the data set. The variables RT and OT showed no outliers however 3 respondents with the unique identifier numbers 24, 113 and 197 were identified as outliers in the PI construct, representing 1.19% of the sample. Based on this low percentage, the fact that outliers were present in only one variable and the robustness of SEM with dealing with outliers, the decision was made to retain these three outliers within the data set (Aguinis et al., 2013; Hair et al., 2018). The box plot showing the distribution of responses and the outliers across the three variables is shown in Figure 7.

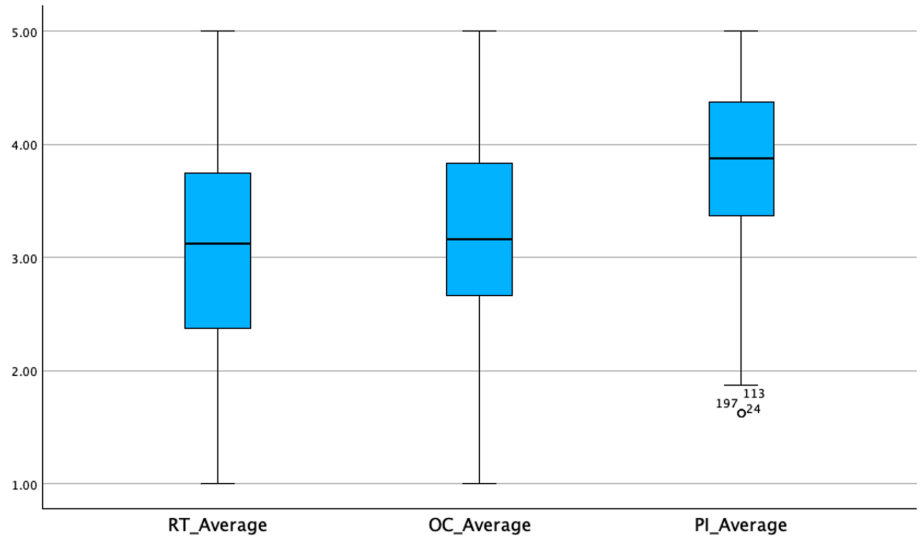

Figure 7: Test for outliers boxplot

Source: SPSS

5.2.5 Normality

The Shapiro- Wilk and Kolmogorov- Smirnov tests were used to check for a normal distribution of data to enable the use of subsequent parametric tests (Kim, 2015; Kline, 2016). Using the skewness and kurtosis values of the survey questions as indicators these factors were found to be within the threshold of -3 to + 3 and -10 to +10 respectively for all the questions (Kline, 2016). The results for skewness ranged between -1.21 and 0.94 whilst kurtosis was between -1.22 and 1.14, which was well within the range. The summarised results are shared in Table 5 with the full result set listed in Appendix F. The results of the Kolmogorov- Smirnov and Shapiro- Wilk tests however showed a significance for perceived inclusion ($p<0.001$), organisational commitment ($p=0.006$) and retention ($p=0.002$) variables, indicating that the data for these constructs was not normally distributed. A final review on the data was made using Q-Q plots to check for how non-normal the data was and the plots for perceived inclusion, organisational commitment and retention did not show big violations of normality as shown in Appendix F. As a result of these conflicting results, non-parametric tests were used for further statistical tests where applicable, with the mean used for descriptive analysis of the constructs.

Table 5: Normality test

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	**df**	**Sig.**	**Statistic**	**df**	**Sig.**
P1_Average	0.120	253	<.001	0.948	253	<.001
OC_Average	0.055	253	.062	0.984	253	.006
RT_Average	0.079	253	<.001	0.981	253	.002

Source: SPSS

5.2.6 Multicollinearity

The results for the test for multicollinearity between perceived inclusion, organisational commitment and retention are captured in Table 6. From the results in the table it was seen that all values for VIF were below the threshold of 10 showing no issues with multicollinearity (Hair et al., 2018).

Table 6: Multicollinearity results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	-.059	.171		-.343	.732		
	Perceived Inclusion	.343	.052	.297	6.550	<.001	.691	1.446
	Organisational Commitment	.574	.044	.598	13.166	<.001	.691	1.446

a. Dependent Variable: Retention

Source: SPSS

5.2.7 Homoscedasticity

The Levene test for equal variances was conducted on SPSS to assess the equality of the variances of the variables. A non-significant value for this test confirms equal variances across the groups. The results concluded that the variances between the gender groups in organisational commitment and retention were equal however they were not for perceived inclusion as the p value was <0.05. This is in line with one of the hypothesis (H1) being tested and this was discussed further in section 4.6.2. It was noted however that the PLS-SEM model deals with non- homogenous data through bootstrapping and the Spearman correlation could be used for such data sets hence statistical analysis of this data set could continue despite showing non-homoscedasticity. The results are shown in Table 7.

Table 7: Test for equal variances

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Perceived Inclusion	Based on Mean	4.610	1	251	.033
	Based on Median	3.963	1	251	.048
	Based on Median and with adjusted df	3.963	1	250.716	.048
	Based on trimmed mean	4.672	1	251	.032
Organisational Commitment	Based on Mean	.584	1	251	.446
	Based on Median	.629	1	251	.428
	Based on Median and with adjusted df	.629	1	250.690	.428
	Based on trimmed mean	.593	1	251	.442
Retention	Based on Mean	1.573	1	251	.211
	Based on Median	1.285	1	251	.258
	Based on Median and with adjusted df	1.285	1	250.589	.258
	Based on trimmed mean	1.562	1	251	.213

Source: SPSS

5.3 Descriptive analysis

Descriptive analysis of the gender, age and tenure of the respondents was provided to give an understanding of the frequencies, range and dispersion of these descriptive measures (Sekaran & Bougie, 2010).

5.3.1 Gender

Gender was an important descriptive measure given the focus of this study on the impact of gender on the perceptions of inclusion and the relationships between PI, OC and RT (Daya & April, 2014; Li et al., 2019). From the frequency table in Table 8 the gender split of male and female employees was found to be consisting of 47.83% (N=121) female employees and 52.17% (N=132) male employees.

Table 8: Frequency Distribution of Gender

Gender	Frequency	Percentage
Female	121	47.83
Male	132	52.17

Source: Source: Author's own analysis of raw data

5.3.2 Age

The age of the participants was analysed using a histogram and the majority of the respondents for both male and female categories were in the 31-40 year age group at 61.16% (N= 74) and 56.06% (N=74) for female and male employees respectively. The age distribution is shown in Table 9 with the frequencies displayed in Figure 8.

Table 9: Age distribution of respondents

Age Group	Female		Male	
	Frequency	Percentage	Frequency	Percentage
18-20 years	1	0.83%	0	0.00%
21-30years	26	21.49%	15	11.36%
31-40years	74	61.16%	74	56.06%
41-50years	19	15.70%	36	27.27%
above 50 years	1	0.83%	7	5.30%
Total	**121**	**100.00%**	**132**	**100.00%**

Source: Author's analysis of raw data

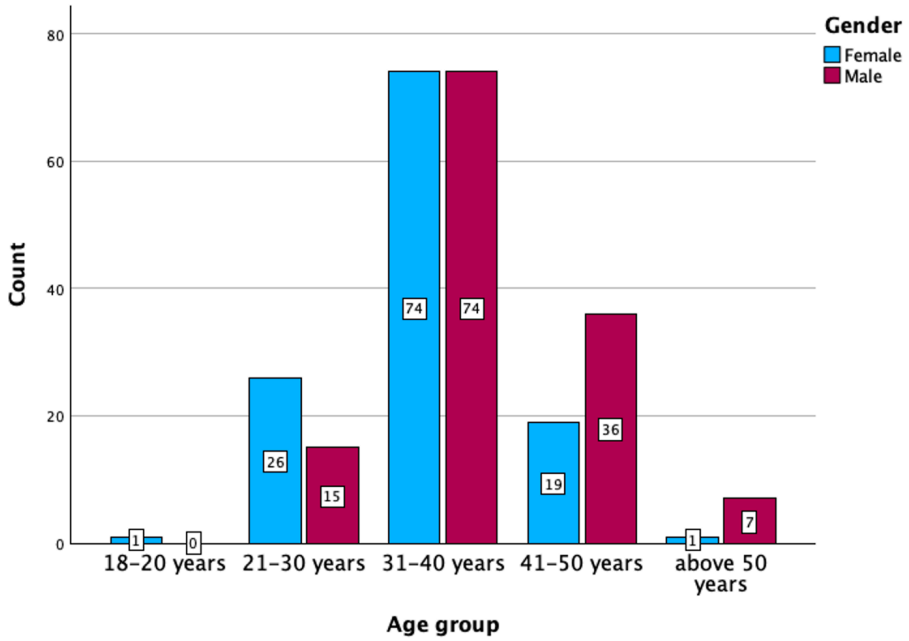

Figure 8: Age group distribution of respondents

Source: SPSS

5.3.3 Tenure in company

The average tenure of the male and female respondents can be seen in Table 10. The frequency of both the male and female respondents was highest in the 0-5 years tenure category at 61.16% for female employees and 61.36% for male employees, whilst none of the respondents had more than 26 years of tenure within their current companies. The tenure distribution is shown in Figure 9.

Table 10: Tenure in company distribution

Tenure	Female		Male	
	Frequency	Percentage	Frequency	Percentage
0-5 years	74	61.16%	81	61.36%
6-10 years	28	23.14%	30	22.73%
11-15 years	12	9.92%	15	11.36%
16-20 years	4	3.31%	3	2.27%
21-25 years	3	3.00%	3	2.27%

26 years and above	0	0.00%	0	0.00%
Total	**121**	**100.00%**	**132**	**100.00%**

Source: Author's own

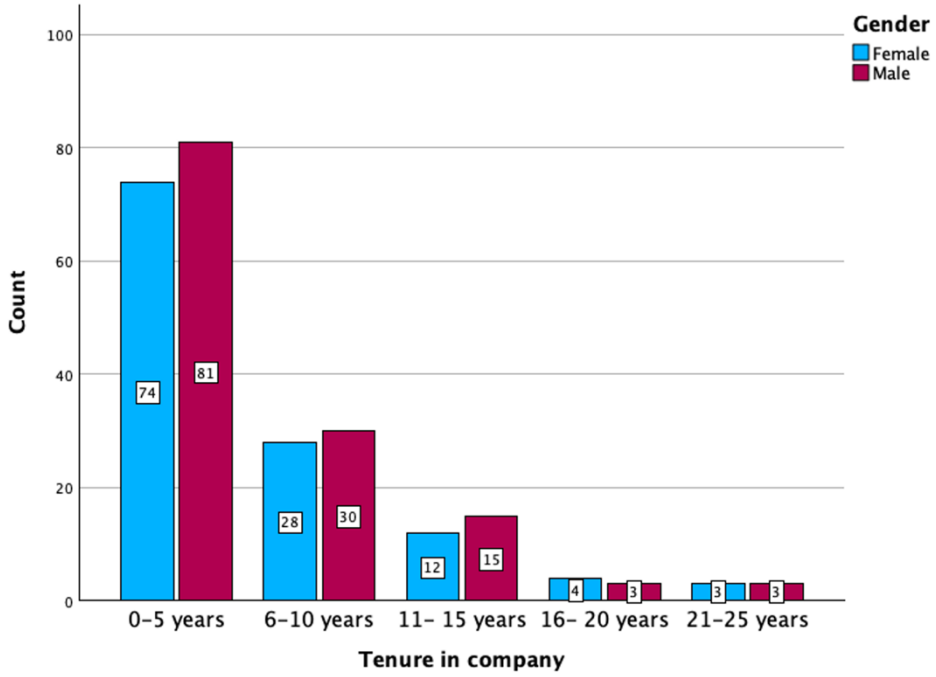

Figure 9: Tenure in company distribution

Source: SPSS

5.3.4 Constructs

The mean, standard deviation and standard error mean of perceived inclusion (PI), organisational commitment (OC) and retention (RT) were analysed and the results are now discussed. The descriptives from the constructs revealed that the mean of perceived inclusion (M=3.77, Std Deviation= 0.80, N=253), was higher compared to organisational commitment (M=3.20, Std Deviation= 0.96, N=253), and retention (M=3.07, Std Deviation= 0.92, N=253). With the Likert scales used in each of the measurement instruments to determine these constructs, these results translated into respondents being between "Neutral" (3) and in "Agreement" (4) of being included, committed to their organisations and their intentions to remain within their organisations. Retention intentions showed the lowest mean. Table 11 summarises these findings.

Table 11: Descriptive analysis for constructs at group level

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Perceived Inclusion	253	1.63	5.00	3.7742	.79672
Organisational Commitment	253	1.00	5.00	3.1996	.95640
Retention	253	1.00	5.00	3.0746	.91899
Valid N (listwise)	253				

Source: SPSS

5.3.4.1 Perceived inclusion

The mean, standard deviation and standard error of the perceived inclusion (PI) construct was compared for male and female respondents. Male respondents showed a higher means score of perceived inclusion (Mean= 3.92, Std Deviation =0.72) than female respondents (Mean 3.61, Std Deviation= 0.85) with a lower standard deviation. Furthermore males showed higher scores across all the indicators of perceived inclusion compared to their female counterparts with indicator PI2 exhibiting the highest mean score for both male and female respondents at (Mean= 4.31, Std Deviation=0.8) for males and (Mean= 3.94, Std Deviation= 1.03) for females. This indicator measured "*I am typically involved and invited to participate in work-related activities*". The lowest scoring indicator for females and males alike was PI4 "*I am usually amongst the last to know about important changes on the organisation*" (M= 3.34, Std Deviation= 1.16) and (M= 3.61, Std Deviation= 1.01) respectively. Of note this was a reverse coded question, measuring a negative impact. This was closely followed by PI8 *"I am always informed about informal social activities and company social events like after works drinks"* for both female (M= 3,38 N=121) and male respondents (M=3,62 N=132). Table 12 summarises these findings.

Table 12: Perceived inclusion descriptive statistics

	Gender	Mean	Std. Deviation	Std. Error Mean
PI1	Female	3.74	1.12	0.10
	Male	4.12	0.88	0.08
PI2	Female	3.94	1.03	0.09
	Male	4.31	0.80	0.07
PI3	Female	3.55	1.18	0.11
	Male	3.89	1.04	0.09
PI4	Female	3.34	1.16	0.11
	Male	3.61	1.01	0.09
PI5	Female	3.64	1.07	0.10
	Male	3.95	0.90	0.08
PI6	Female	3.45	1.22	0.11
	Male	3.68	1.07	0.09
PI7	Female	3.89	1.02	0.09
	Male	4.17	0.83	0.07
PI8	Female	3.38	1.21	0.11
	Male	3.62	1.03	0.09
PI_Average	**Female**	**3.61**	**0.85**	**0.08**
	Male	**3.92**	**0.72**	**0.06**

Source: SPSS

5.3.4.2 Organisational commitment

The mean, standard deviation and standard error of the organisational commitment (OC) construct was also compared between the two groups of employees. Male respondents illustrated a higher mean organisational commitment (Mean= 3.22 Std Deviation = 0.94) compared to their female counterparts (Mean=3.17 Std deviation= 0.98). The highest and lowest scoring indicators for female respondents were OC2 (Mean= 3.50 Std deviation = 1.14) and OC1 (Mean= 2.78 Std Deviation = 1.33) respectively. These indicators measured “I would be happy to spend the rest of my career with this organisation” and “I really feel like this organisation’s problems are my own”. Male respondents scored highest on OC2 (Mean= 3.42 Std Deviation =

1.16) as well and OC3 (Mean= 3.42 Std Deviation = 1.11) which measured *"I feel a strong sense of "belonging" to my organisation".* The lowest scoring indicator for male respondents was OC1 (Mean= 2.73 Std Deviation = 1.20), similar to female respondents. The summary of this is shared in table 13.

Table 13: Organisational commitment descriptive analysis

	Gender	**Mean**	**Std. Deviation**	**Std. Error Mean**
OC1	Female	2.78	1.33	0.12
	Male	2.73	1.20	0.11
OC2	Female	3.50	1.14	0.10
	Male	3.42	1.16	0.10
OC3	Female	3.35	1.22	0.11
	Male	3.42	1.11	0.10
OC4	Female	3.03	1.34	0.12
	Male	3.20	1.16	0.10
OC5	Female	3.11	1.26	0.11
	Male	3.20	1.10	0.10
OC6	Female	3.28	1.23	0.11
	Male	3.35	1.06	0.09
OC_Average	**Female**	**3.17**	**0.98**	**0.09**
	Male	**3.22**	**0.94**	**0.08**

Source: SPSS

5.3.4.3 Retention

The mean, standard deviation and standard error of the retention (RT) construct was compared for male and female respondents. Female respondents showed slightly higher mean scores for organisational commitment (Mean= 3.11, Std Deviation =0.94) than male respondents (Mean 3.04, Std Deviation= 0.90). The indicator RT6 had the lowest mean score for both male and female respondents, with (Mean= 1.82, Std Deviation= 0.93) for males and female respondents (Mean= 1.99, Std Deviation= 1.02). This indicator measured "*If I received an attractive job offer from another organisation, I would take the job*". This was also a reverse coded question. The

highest scoring indicator for both genders was RT2 which measured "*If I wanted to do another job or function, I would first look at possibilities within the this organisation*", (Mean = 3.74, Std Deviation= 1.17) and (Mean= 3.60, Std Deviation= 1.21) for female and male respondents respectively. It was noted that this construct scored the lowest for both male and female respondents These results are captured in Table 14.

Table 14: Retention descriptive statistics

	Gender	**Mean**	**Std. Deviation**	**Std. Error Mean**
RT1	Female	2.60	1.39	0.13
	Male	2.36	1.29	0.11
RT2	Female	3.74	1.17	0.11
	Male	3.60	1.21	0.11
RT3	Female	3.39	1.19	0.11
	Male	3.38	1.19	0.10
RT4	Female	3.40	1.34	0.12
	Male	3.41	1.31	0.11
RT5	Female	3.27	1.30	0.12
	Male	3.14	1.20	0.10
RT6	Female	1.99	1.02	0.09
	Male	1.82	0.93	0.08
RT7	Female	3.24	1.28	0.12
	Male	3.31	1.19	0.10
RT8	Female	3.23	1.26	0.12
	Male	3.34	1.22	0.11
RT_Average	**Female**	**3.11**	**0.94**	**0.09**
	Male	**3.04**	**0.90**	**0.08**

Source: SPSS

5.3.5 Correlation between variables

The correlation between age, tenure, gender, perceived inclusion, organisational commitment and retention was investigated using Spearman's correlation coefficient

(ρ) where a coefficient of +/-1 would represent a perfect correlation between variables at a significance level (p) of <0.05 (Hair et al., 2018; Kline, 2016; Sedgwick, 2012). This test was completed using the SPSS bi-variate correlate function. For the constructs the results showed that there was a significant positive correlation between gender and perceived inclusion (PI) (ρ= 0.184, p=0.03), age group and organisational commitment (ρ=0,15 p=0,017), organisational commitment (OC) and perceived inclusion (PI) (ρ=0.560, p<0.001), organisational commitment and retention (ρ=0,743, p<0,001) and perceived inclusion (PI) and retention (RT) (ρ=0.613, p<0.001). The full table of the Spearman results correlation is shown in Appendix G. According to Cohen (1988) the correlations between gender and PI, OC and PI, OC and RT and PI and RT were all strong positive correlations as the ρ was above 0.5 and the direction plus (+). The correlation between age group and organisational commitment was found to be weak with ρ<0.3 (J. Cohen, 1988). The results are shown in table 15.

Table 15: Spearman correlation of variables

	Gender	Tenure	Age Group	Perceived Inclusion	Organisational Commitment	Retention
Gender	1.000					
Tenure	-0.003	1.000				
Age Group	0.218**	0.135*	1.000			
Perceived Inclusion	0.84**	0.02	0.103	1.000		
Organisational Commitment	0.054	0.12	0.150*	0.560**	1.000	
Retention	-0.033	0.023	0.014	0.613**	0.743**	1.000

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: SPSS

The correlations between gender, perceived inclusion, organisational commitment and retention were analysed further as part of the main study in later sections

(Section 5.5). The correlation between age group and organisational commitment were of interest and necessitated a further analysis to understand if there are significant differences between the age groups and this is shown in Table 16. The Kruskal- Wallis H test was used to test for this as a non-parametric test. A significant result ($p<0.05$) shows a difference between the variances of groups (Vargha & Delaney, 1998). The results showed a non-significant difference between the age groups for organisational commitment hence whilst there is a correlation between age and organisational commitment, there was an equal variance amongst the different age groups.

Table 16: Test for differences between age groups on organisational commitment

Independent-Samples Kruskal-Wallis Test Summary

Total N	253
Test Statistic	8.261[a]
Degree Of Freedom	4
Asymptotic Sig.(2-sided test)	.082

a. The test statistic is adjusted for ties.
Source: SPSS

5.4 Inferential statistical analysis

The results for the inferential statistical analysis are shared in the following sections. The main purpose of this statistical analysis was to test the validity of the measurement scales used, the fit of the measurement and structural models and ultimately to test the hypotheses for the research study. Given the non-normality of the data set as shared in section 5.2.5, the bootstrapping technique was used for SEM analysis with a sample size of 5000.

5.4.1 Structural equation modelling

To test for hypothesis H2-H4 the structural equation modelling tool PLS-SEM was used. Some validation tests were completed before analysing the pathways between perceived inclusion, organisational commitment and retention. These tests were confirmatory factor analysis (CFA) of the outer model of the structural model,

convergent validity, divergent validity and model fit for both the measurement model and structural model.

5.4.1.1 Confirmatory factor analysis

Confirmatory factor analysis (CFA) was completed in AMOS to test the validity of the measurement models in the indicators, measuring each construct through factor loadings and significance. The factor loadings condition was found to be met and acceptable for all the indicators (factor loading >0.5, p<0.05) and the goodness of fit for the measurement model met all required parameters as per table 3 hence confirming that each indicator was loading on its relevant construct and provided a good model fit to the data for this study. The summary of the results is illustrated in table 17. The composite reliability is also included in the table.

Table 17: Confirmatory factor and reliability analysis

Constructs	Factor loading	t-value	P-value
Perceived inclusion (CR=0.90)			
PI1	0.69	7.52	<0.01
PI2	0.70	7.58	<0.01
PI3	0.80	8.09	<0.01
PI4	0.68	7.48	<0.01
PI5	0.78	8.03	<0.01
PI6	0.82	8.18	<0.01
PI7	0.81	8.10	<0.01
PI8	0.51	**	
Organisational commitment (CR= 0.89)			
OC1	0.71	12.66	<0.01
OC2	0.55	9.15	<0.01
OC3	0.83	16.07	<0.01
OC4	0.81	15.24	<0.01
OC5	0.81	15.40	<0.01
OC6	0.84	**	
Retention (CR=0.89)			
RT1	0.72	10.52	<0.01

RT2	0.67	9.52	<0.01
RT3	0.95	12.33	<0.01
RT4	0.78	10.86	<0.01
RT5	0.70	9.62	<0.01
RT6	0.55	8.12	<0.01
RT7	0.67	15.30	<0.01
RT8	0.64	**	
Model Fit Statistics (Relative chi-square= 2.512, df= 202, CFI= 0.915, TLI=0.903, IFI=0.916, RMSEA=0.077, SMRM=0.0691)			

**= Items constrained for identification purposes

CR=composite reliability

Source: AMOS

5.4.1.2 Convergent validity

The convergent validity of the indicators was also tested to ensure the indicators are measuring the same construct using the Average Variance Extracted (AVE). The results for each of the indicators is shown in table 18. All AVE values for the constructs were above 0.5, confirming convergent validity of the indicators or each construct.

Table 18: Convergent Validity of Indicators

Perceived inclusion		**Organisational commitment**		**Retention**	
	R^2		**R^2**		**R^2**
PI1	0.47	OC1	0.50	RT1	0.52
PI2	0.49	OC2	0.30	RT2	0.44
PI3	0.64	OC3	0.70	RT3	0.90
PI4	0.46	OC4	0.65	RT4	0.61
PI5	0.62	OC5	0.66	RT5	0.49
PI6	0.67	OC6	0.70	RT6	0.31
PI7	0.64			RT7	0.45
PI8	0.26			RT8	0.41
AVE	**0.53**	**AVE**	**0.58**	**AVE**	**0.52**

Source: AMOS

5.4.1.3 Discriminant validity

The divergent validity gave an indication of if the constructs had their own distinct identity and measured different concepts in the study. The Heterotrait-Monotrait Ratio of Correlations (HTMT) was used here to check if this value was below 0.85 (Hair & Alamer, 2022) and the results are shown in table 19. From the results the HTMT values between all the constructs were below the threshold of 0.85 hence confirming that discriminant validity was established.

Table 19: Divergent Validity

	PI	**OC**	**RT**
PI			
OC	0.635		
RT	0.632	0.821	

Source: Author's own

5.4.1.4 Scale Reliability

The reliability of the measurement scales used was tested using the Cronbach Alpha (α) and the composite reliability (CR) in SPSS and compared to the α for the original scales in Table 20. The full results from the scale reliability test is shown in Appendix H. The Cronbach Alpha and composite reliabilities for each of the constructs were all above the threshold of 0.7 (Hair & Alamer, 2022) and aligned to the Cronbach Alpha's of the original measurement instruments from previous studies (Kyndt et al., 2009; Meyer et al., 1993; Mor Barak, 2017; Mor Barak & Cherin, 1998).

Table 20: Measurement scale reliability

Construct	**Author**	**Survey Instrument**	**Cronbach Alpha**	**Calculated Cronbach Alpha**	**Composite reliability (ρ)**
Retention	(Kyndt et al., 2009)	Self developed	0.91	0.891	0.894
Organisational Commitment	(Meyer et al., 1993)	Organisational Commitment	0.85	0.890	0.893

		Questionnaire (OCQ)			
Perceived Inclusion	(Mor-Barak & Cherin, 1998) (Barak, 2017)	Inclusion-exclusion scale	0.81-0.9	0.898	0.899

Source: (Kyndt et al., 2009; Meyer et al., 1993; Mor Barak, 2017; Mor Barak & Cherin, 1998)

5.4.1.5 Model Fit

Once the reliability and validity of the measurement scales were confirmed the model fit of the measurement model could then be tested for goodness of fit to ensure that the chosen model was a good predictor of the dependent variables through the data collected (Collier, 2020). Using the six indices of goodness of fit from Bentler and Bonett (1980) the initial measurement model and goodness of fit are shown in Figure 10 and Table 21.

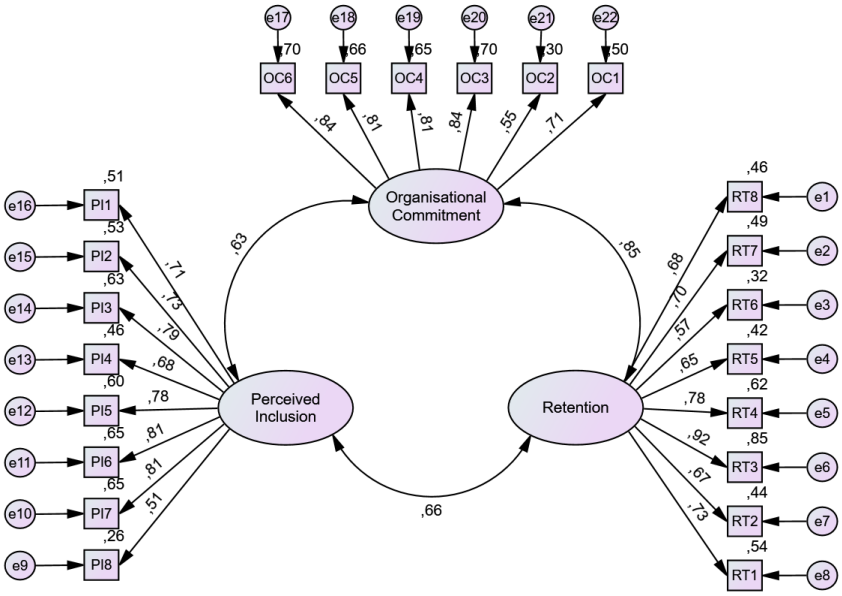

Figure 10: Initial Measurement Model

Source: AMOS

Table 21: Initial Goodness of Fit Indices

Fit index	Target	Actual
Relative chi square test	<3	3.416
Comparative fit index (CFI)	>0.9	0.862
Tucker Lewis Fit (TLI)	>0.9	0.845
Incremental Fit Index (IFI)	>0.9	0.863
Root mean square error of approximation (RMSEA)	<0.08	0.098
Standardised root mean square residual (SRMR)	<0.09	0.073

Source: AMOS

The initial model was not a good fit as the relative chi-square, CFI, NFI, TLI, RFI and RMSEA were all above or below the required threshold. The approach from Collier (2020) was applied to improve model indices of the model to below 10 between errors, to account for covariances of errors of indicators within the same constructs in order to improve the overall model. Through this exercise the errors of e1 and e2, e3 and e8, and e15 to e16 were covaried and the goodness of fit model run again. The final results are shown in Figure 11 and Table 22

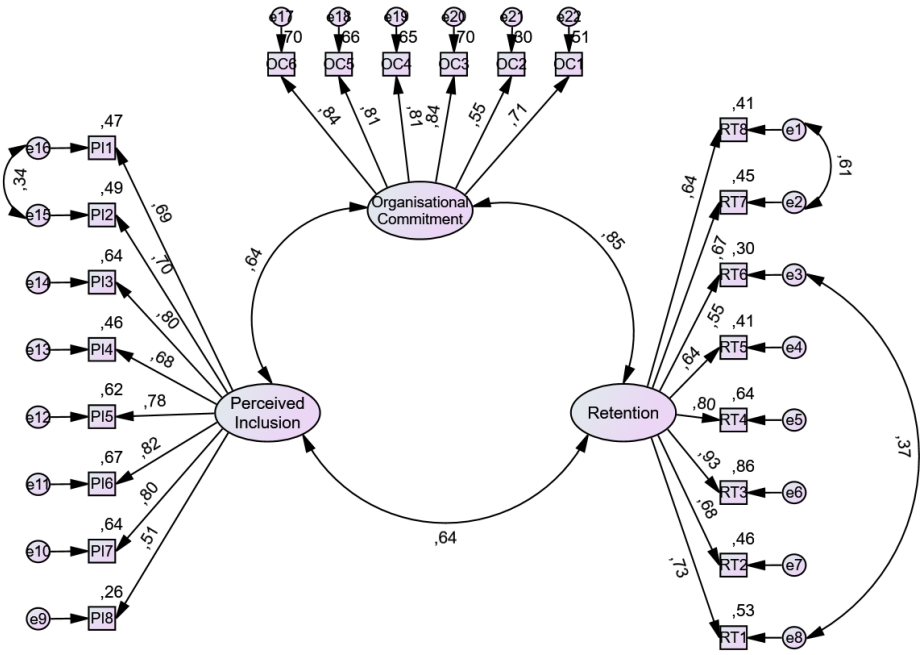

Figure 11: Final Measurement Model

Source: AMOS

Table 22: Rerun goodness of fit indices

Fit index	Target	Actual
Relative chi square test	<3	2.623
Comparative fit index (CFI)	>0.9	0.909
Tucker Lewis Fit (TLI)	>0.9	0.896
Incremental Fit Index (IFI)	>0.9	0.909
Root mean square error of approximation (RMSEA)	<0.08	0.0802
Standardised root mean square residual (SRMR)	<0.09	0.0712

Source: AMOS

The values for the updated model met the criteria for goodness of fit and hence this model was adopted as the final measurement model to be converted to the structural model for hypothesis testing.

5.4.1.6 Structural model

For the structural model the measurement model covariances between the latent variables were converted into pathways to test for hypotheses H2 to H4. This model is illustrated in Figure 12. The goodness of fit was rechecked to ensure all parameters were still within specification.

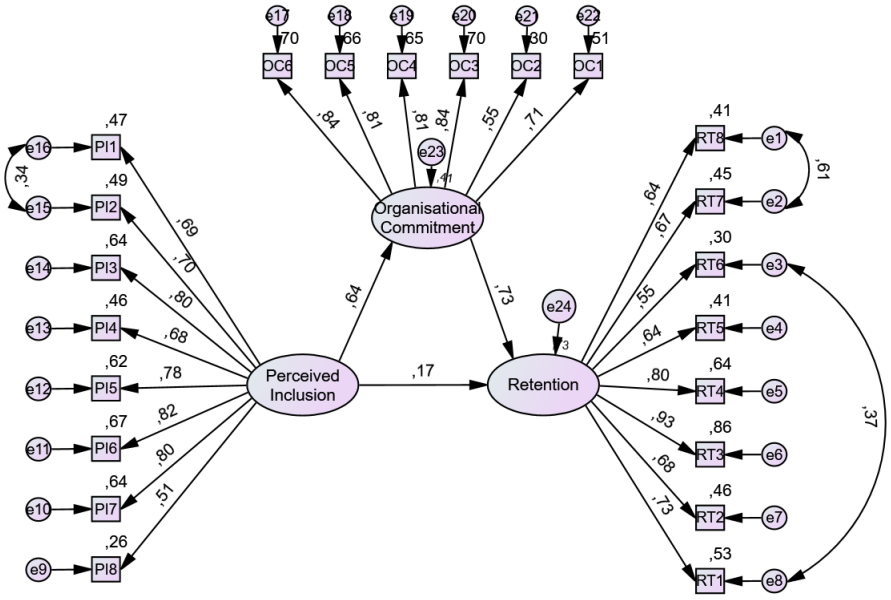

Figure 12: Structural Model

Source: AMOS

From the model, the standardised estimate (β) for the relationship between perceived inclusion and organisational commitment was found to be 0.637, t value= 6.786 and p<0.001. The relationship between perceived inclusion and organisational commitment was therefore found to be positive and significant. The R^2 for the relationship showed that perceived inclusion accounts for 40.62% of the variance of organisational commitment (R^2= 0.4062) (Collier, 2020).

The standardised estimate (β) for the relationship between organisational commitment and retention was 0.735, t value= 8.5185 and p<0.001. The relationship between organisational commitment and retention was therefore positive and significant. The standardised estimate (β) for the relationship between perceived inclusion and retention was 0.175, t value= 8.5185 and p<0.001. The relationship between perceived inclusion and retention was also therefore positive and significant. The relationship was however notably less strong as compared to that of perceived inclusion and organisational commitment and organisational commitment and retention. The R^2 value for retention showed that perceived inclusion and organisational commitment accounted for 73.38% of the variance of retention (R^2= 0.7338) (Collier, 2020). Table 23 shows the summary of the pathway relationships between the three constructs.

Table 23: Structural model pathway results

Relationship	**Standardised estimates (β)**	**t-value**	**p-value**
Perceived inclusion → Organisational Commitment	0.637	6.7855	<0.001
Organisational commitment →Retention	0.735	8.5185	<0.001
Perceived inclusion → Retention	0.175	2.774	0.0055
Squared Multiple Correlation (R^2)			
Organisational commitment	0.4062		
Retention	0.7338		
Model indices			
Chi-squared= 2.622, p<0.001, CFI=0.9087, IFI=0,9094, TLI=0,8961, RMSEA=0,0802 SMRM=0,0712			

Source: AMOS

5.5 Hypothesis testing

The results of each of the hypothesis that were tested using statistical means are shared in the sections below.

5.5.1 Hypothesis 1

H1. Women experience significantly lower levels of perceived inclusion than men in the manufacturing industry in South Africa

The Mann-Whitney U test was used to test for the differences between men and women on perceived inclusion (Cho & Mor Barak, 2008; Daya & April, 2014; Findler et al., 2007; Flaming Yeats, 2018; Hwang & Hopkins, 2015; Li et al., 2019; Mousa et al., 2021). The data set obtained satisfied the requirements of the Mann-Whitney U test and the results of the test run in SPSS are illustrated in table 24 and 25.

Table 24: Mann- Whitney U Test for Differences

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.[a,b]	Decision
1	The distribution of Perceived Inclusion is the same across categories of Gender.	Independent-Samples Mann-Whitney U Test	.004	Reject the null hypothesis.

a. The significance level is .050.

b. Asymptotic significance is displayed.

Independent-Samples Mann-Whitney U Test Summary

Total N	253
Mann-Whitney U	9681.000
Wilcoxon W	18459.000
Test Statistic	9681.000
Standard Error	580.536
Standardized Test Statistic	2.920
Asymptotic Sig.(2-sided test)	0.004

Source: SPSS

Table 25: Perceived Inclusion Median Values

Gender	N	Median
Female	121	3.75
Male	132	4.13
Total	253	3.88
U= 9681, z=2.96, p=0.004, r=0.19		

Source: SPSS

The results of the test showed an asymptotic significance value p = 0.004 which confirmed that the null hypothesis of there not being a significance between the differences between the gender groups of female and male should be rejected. The p value and median (Md) values in table 25 showed that male respondents have significantly higher perceived inclusion values (Md= 4.13, N=132) compared their female counterparts (Md= 3.75, N=121). The effect size of the difference was measured as 0.19 showing a medium effect of the differences.

In summary for H1, the Mann-Whitney U test revealed a significant difference in the perceived inclusion of females (Md= 3,57, N=121) and males (Md=4.13, N=132), with a small effect (r=0.19) and female employees showing a lower median of perceived inclusion than males. **H1 was therefore supported**.

5.5.2 Hypothesis 2

H2. Organisational commitment mediates the relationship between perceived inclusion and retention

AMOS was used to test for the direct and indirect relationship between perceived inclusion and retention in order to test for mediation. The bootstrap technique was used with a bootstrap sample of 5000. The results are shown in table 26.

Table 26: Mediation results

Relationships	Direct Effect	Indirect Effect	Confidence Interval		p-value	Significance of relationship	Conclusion
			Low	High			
Perceived inclusion → Retention	0.245 t=2.775				0.006	Significant	
Perceived inclusion → Organisational Commitment → Retention		0.655	0.441	0.988	0.0001	Significant	Partial mediation
Unstandardised coefficients reported							

Source: AMOS

The direct path of perceived inclusion → retention showed a significant, positive effect (β=0.245, t-statistic = 2.775, p= 0.006). The indirect path perceived inclusion → organisational commitment → retention also showed a significant positive effect (B= 0.655, p<0.0001). Both the direct and indirect paths between perceived inclusion and retention were significant therefore confirming that organisational commitment has a partial mediation effect on the relationship between perceived inclusion and retention. In order to test whether the partial mediation was complementary or competitive, the direction of the influence was investigated using the unstandardised coefficients. The direct and indirect effect coefficients were both positive, therefore confirming that the partial mediation effect of organisational commitment is complementary as well.

In summary, organisational commitment was found to have a significant complementary and partial mediation in the relationship between perceived inclusion and retention, therefore the null hypothesis was rejected and hypothesis **H2 was accepted.**

5.5.3 Hypothesis 3

H3. There is a significant, positive relationship between perceived inclusion and retention

The standardised estimate (β) for the relationship between perceived inclusion and retention was 0,175, t value= 82,774 and p= 0,0055. The relationship between perceived inclusion and retention was therefore positive and significant. The results are shown in Table 27. The null hypothesis was therefore rejected and **H3 accepted.**

Table 27: Perceived inclusion and retention analysis

Relationship	Standardised estimates (β)	t-value	p-value
Perceived inclusion → Retention	0.175	2.774	0.0055
Model indices Chi-squared= 2.622, p<0.001, CFI=0.9087, IFI=0.9094, TLI=0.8961, RMSEA=0.0802 SMRM=0.0712			

Source: AMOS

5.5.4 Hypothesis 4

H4. The relationships between perceived inclusion, organisational commitment and retention are significantly stronger for men compared to women in the manufacturing industry in South Africa

Hypothesis 4 sought to compare differences between women and men in the strength of the relationships between perceived inclusion, organisational commitment and retention within the groups. The AMOS group analysis feature was used to test for these differences between male and female respondents within the structural model for perceived inclusion, organisational commitment and retention.

The results did not show a significant difference between men and women in the relationship between perceived inclusion and organisational commitment (p= 0.2887)**.** The relationship between organisational commitment and retention also did not show a significant difference between men and women (p=0.1612). On the other hand however, the relationship between perceived inclusion and retention showed a significant difference between women and men (p=0.0268) with women showing a

higher standardised estimate (β= 0.3701) compared to men (β= 0.0368**)**. Since the relationships did not show significantly stronger relationships for men as compared to women **H4 was not supported**. The results are summarised are shared in Table 29. The full structural models for men and women are shared in Appendix I.

Table 28: Gender difference analysis

Hypothesised Relationship	**Female**			**Male**					
	Standardised estimates (β)	**t-values**	**p-value**	**Standardised estimates (β)**	**t-values**	**p-value**	**Group Differences**	**p-value**	**Hypothesis supported**
Perceived inclusion → Organisational Commitment	0.5729	4.3991	<0.0001	0.6851	4.8977	<0.0001	1.1255	0.2887	No
Organisational commitment → Retention	0.6040	5.6185	<0.0001	0.223	6.3694	<0.0001	1.9628	0.1612	No
Perceived inclusion → Retention	0.7010	3.5377	<0.0001	0.0368	0.4379	0.6615	4.9042	0.0268	No
Chi-squared= 739,569, p<0.0001, CFI=0,9090, IFI=0,9104, TLI=0,8965, RMSEA=0,0572 SMRM=0,0884									

Source: AMOS

5.6 Summary of findings

The findings from the statistical analysis to test for the hypothesis of the study are summarised in the table 30 below.

Table 29: Summary of findings

Hypothesised Relationship	Statistical Test	Hypothesis supported
H1: Significantly lower perceived inclusion for women compared to men	Mann- Whitney Test	**Yes**
H2: Significant mediation of organisational commitment mediation between perceived inclusion and retention	PLS-SEM	**Yes**
H3: Significant relationship between perceived inclusion and retention	PLS-SEM	**Yes**
H4: Significantly stronger relationships of PI, OC and RT for men compared to women	PLS-SEM	**No**

Source: Author's own

5.7 Conclusion

The findings for the current study were based on data collected from 121 women and 132 men within the manufacturing industry in South Africa between 8 October 2024 and 24 December 2024 through an anonymous online questionnaire with 27 questions. With the validity of the data and measurement scales confirmed three of the four hypotheses of the study. It was confirmed that men have a significantly higher perception of inclusion than women within manufacturing although the resulting strengths of the relationships between perceived inclusion and organisational commitment and retention are not significantly stronger for men compared to women. Organisational commitment was also found to mediate the

relationship between perceived inclusion and retention in manufacturing through a significant, complementary and partial effect. Finally it was revealed that as perceived inclusion has a significant direct positive relationship to retention. The results are discussed in Chapter 6.

6 Discussion of findings

6.1 Introduction

This chapter follows on from the results in Chapter 5, discussing the findings in depth whilst guided by the research objectives and hypotheses as identified from Chapter 3 which were informed by the problem statement and literature review. The discussion will compare the findings of this study to literature, noting any correlations and points of departure which will inform further query on the topic.

6.2 Data validity and reliability

Treatment of the data showed a data set that had 1.45% missing data and 1.19% of outliers on the retention construct. To improve this for future studies, a condition could have been added to the Google Form used to administer the online questionnaire to not allow respondents to submit the questionnaire without having completed all the questions. The measurement scales used to measure perceived inclusion, organisational commitment and retention were all found to be reliable and valid, hence the data collected would be relevant and appropriate for statistical testing and insights thereafter. The reliability measures of the Cronbach Alpha and Composite reliability for retention and perceived inclusion were on par with those of the original scales (Kyndt et al., 2009; Mor Barak, 2017; Mor Barak & Cherin, 1998) whilst the organisational commitment scale in the study showed a better reliability than the original scale from Meyer et al (1993). Consequently the measurement model for the study was adopted and showed a good model fit and indicated that the chosen indicators (survey questions) served as adequate indicators of perceived inclusion, organisational commitment and retention (Kline, 2023).

The data set was also not normally distributed and not homogenous across the three constructs which provided limitations in using parametric tests for statistical analysis. Non- parametric tests such as the Spearman correlation and Mann-Whitney U tests were therefore used to analyse the data, whilst the robustness of PLS-SEM through bootstrapping was used to overcome the challenges of non-normally distributed data which could otherwise cause issues in the integrity of the findings from the analysis and study (Collier, 2020; Hair et al., 2018). The resulting structural model developed from the conceptual model from Chapter 3 was shown to be a good fit in order to

explain the relationships between perceived inclusion, retention and organisational commitment and therefore was appropriate to test the chosen hypothesis for the study. The model closely aligned to that of Day and April (2014), Hwang and Hopkins (2015) and Innstrand and Grodal (2022) from their studies on the three constructs.

6.3 Sample demographics

6.3.1 Population sample set

Of the initial 345 respondents 87 respondents were removed from the study for not meeting the required criteria of male and female employees within the manufacturing sector. This was in line with the finding of Etikan et al (2016) on the disadvantages of the snowball sampling. Whist the minimum sample size of 240 was met with this sampling method, previous studies leant towards probability sampling methods instead (Daya & April, 2014; Hwang & Hopkins, 2015) to ensure that the surveys are distributed to only respondents who meet the required criteria to counter the issues incurred in this current study. Because this study intended to give a broader view of the constructs at hand within the manufacturing industry the survey was sent to employees across different organisations to enable generalisation of the findings from the study to the manufacturing industry in South Africa. The final number of respondents of 253 compared to other studies such as that of Daya and April (2014) with 259 participants and Mousa et al (2021) in Egypt with 370. The numbers however highlighted the time required to collect data. Mousa et al (2021) for example also used purposive sampling in collecting the 370 responses for their study on perceived inclusion however they took 7 months to complete this data collection, highlighting the difficulty of collecting data through non- probability sampling methods (Mousa et al., 2021). The 253 valid responses received in this survey therefore were found to be a sufficiently comparative sample size given the limited time frame to collect data.

6.3.2 Gender

A research objective of this study was to understand the differences between men and women and the strength of their relationships between perceived inclusion, organisational commitment and retention (Cho & Mor Barak, 2008; Daya & April, 2014; Findler et al., 2007; Flaming Yeats, 2018; Hwang & Hopkins, 2015; Innstrand

& Grødal, 2022; Li et al., 2019; Mousa et al., 2021). It was therefore important to understand the gender demographic profile of the sample of respondents being analysed. The sample was confirmed to have been 47.83% (N=121) women and 52.17% (N= 132) men from the manufacturing industry. This sample differed from the previous study of gender differences on perceived inclusion in manufacturing in South Africa (Daya & April, 2014) in that it provided a sample of men and women across different organisations within manufacturing industry as opposed to Daya and April (2014) that only focused on men and women from one multinational manufacturing organisation. The findings therefore on the hypothesis would take into consideration this difference. The gender differences between men and women were investigated as part of hypothesis 1 and 4 and these will be discussed further in later sections.

6.3.3 Age

The majority of the respondents for both men and women were between the ages of 31- 40 years. Additionally age showed a significant albeit weak correlation to organisational commitment (ρ= 0.150 p<0,05) (J. Cohen, 1988). This weak correlation was supported by the findings of Meyer et al (2002). Whilst age was not a focal point for this study, this finding was an important one, given that H2 showed organisational commitment partially mediates the relationship between perceived inclusion and retention (discussed later) therefore age may play a role in driving the retention of women in manufacturing. The test for differences however between the different age groups did not show any significance, showing that an equal focus should be placed on driving organisational commitment across all age groups of women within the organisations. Similar to Hwang and Hopkins (2015) age in this study did not show any significant correlation to perceived inclusion. As the results in this study were mostly representative of women between the ages of 31-40 as the majority of respondents, recommendations for DEI initiatives for organisations within the workplace will be given with this sample in mind in order to help manufacturing organisations, given the pressures that organisations are under to identify effective strategies as they grapple with women reporting lower levels of inclusion despite some efforts to close these gaps by accommodating women in the workplace (Kossek et al., 2017; McKinsey & Company, 2022; Piggot et al., 2017; World Economic Forum, 2023).

6.3.4 Tenure

The majority of the respondents of the survey had a tenure of 5 years and less within their companies for both women and men. This was a relatively low tenure of both men and women showing that the employees were relatively new within their organisations, having joined within the last 5 years. Comparison to literature and studies here was limited as this was not a focus demographic for the study. Tenure did not show any correlation to the three constructs, highlighting an insignificance of this demographic in driving the retention of women in the current context of the manufacturing industry.

6.3.5 Descriptive findings on constructs

Descriptive analysis of the three constructs perceived inclusion, organisational commitment and retention showed that the respondent group showed higher levels of perceived inclusion (M= 3,77 Std Deviation= 0.80) compared to organisational commitment (M= 3,20 Std Deviation= 0.96) and retention (M= 3,07 Std Deviation= 0.92). Men had higher means of perceived inclusion (M=3,92, Std deviation= 0,72) and organisational commitment (M= 3,22 Std Deviation= 0,94) whilst female employees had a higher mean for retention (M= 3,11 Std Deviation= 0,94) compared to their male counterparts. These results suggested that although women face lower levels of perceived inclusion and organisational commitment they have slightly lower turnover intentions than their male counterparts. Whilst the statistical significance of this was tested and discussed in later sections (Hypothesis 4), this descriptive result may suggest that women in manufacturing in South Africa adopt the social creativity or competition strategy of dealing with a lack of social identity within their organisations. Based on the social identity theory (SIT), instead of leaving their organisations (social mobility), women in this population might be choosing to stay in their organisations to reframe what inclusion looks like (social creativity) or actively looking to change the status quo by redefining the dynamics of inclusion within their organisations (social competition) (Becker & Tausch, 2014; W. B. Johnson & Smith, 2022; Kezar & Wheaton, 2017; Scheifele et al., 2021; van Veelen et al., 2020). Another thought may be that women do not have other options outside of their current organisations and therefore have no choice but to stay, therefore demonstrating a lack of individual mobility. Men on the other hand, whilst feeling more included and

committed to their organisations, showed lower retention levels and therefore higher turnover intents.

6.4 Hypothesis analysis

Four hypotheses were statistically tested in this study and the results are now discussed in the following sections.

6.4.1 Hypothesis 1- gender differences in perceived inclusion

H1. Women experience lower levels of perceived inclusion than men in the manufacturing industry in South Africa

Gender differences can either enhance or reduce the perceptions of inclusion based on individual feelings of being included in decision making, having access to information and being included in work activities both inside and outside of work (Mor Barak, 2017; Randel et al., 2016; Shore et al., 2018). Understanding these differences between men and women and where they stem from allows organisations to be more specific in their interventions and policies to improve inclusion in the workplace. The Mann- Whitney U test was used to test for these gender differences on perceived inclusion in manufacturing. A significant difference between the gender groups was found, with women showing lower levels of perceived inclusion compared to their male counterparts (Md=3.75 compared to Md=4.13). This is on par with the findings of Cho and Mor Barak (2008), Findler et al (2007), Li et al (2019) and Nishii (2013), therefore adding a view to the current debate in academic research on the role of gender on perceived inclusion. In South African manufacturing organisations, it is therefore clear that women still feel isolated and not included in workplace activities such as being given important information and invited to informal activities within their organisations, with these gender differences in the workplace reducing the perceptions of inclusion for this group of employees (Namazi & Namazi, 2016; Randel, 2023; Shore et al., 2018). Ultimately these results highlight that the manufacturing industry in South Africa is still a gendered industry, with the workplace culture and practices still very much tailored to men (Acker, 1990; Akbari et al., 2024; Cohen, 2013).

The findings on this hypothesis however differ from the other studies reviewed tha were carried out in an African context. Daya and April (2014) and Mousa et al (2021) both completed studies in South Africa and Egypt respectively on perceived inclusion and found no significant gender differences. In the South African manufacturing industry particularly, this finding is in contrast to the study completed by Daya and April (2014) that found no significant differences between men and women. Based on the limited studies on the topic within manufacturing in South Africa this study was the main comparable study that gives a view on the evolution of the inclusion of women in South Africa over the years. A reason however for the difference in results may be that Daya and April's study focused on one multinational manufacturing organisation (Daya & April, 2014) as compared to the current study that used a wider lens in focusing on the larger manufacturing industry as a whole. Additionally, the current results align more with the findings from the Western context on perceived inclusion (Shore et al., 2018) and perpetuates the complexity for manufacturing organisations who, despite putting DEI programs in place, still have women experiencing lower inclusion levels (Kossek et al., 2017; Piggot et al., 2017; World Economic Forum, 2023).

These findings emphasise two aspects about perceived inclusion that were highlighted in literature. Firstly perceived inclusion is not static but rather an ongoing process that needs to be constantly monitored and fostered at all times for employees (O'Donovan, 2018). Based on this, the continuous study on the perceived inclusion of women such as this one remains important. The second aspect refers to the role of cultural context. Whilst the role of national culture remains inconclusive given the differing results between the two studies now completed in manufacturing in South Africa, the role of organisational culture is an area this study has made clear as an avenue for future research. Unilever for example is a multinational company that was discussed in literature to have implemented several effective DEI initiatives to drive the inclusion of women (M. Ahmed, 2024; Moumita & Zaman, 2013; Unilever Sustainability Function, 2023). Understanding the perceptions of inclusion between genders at a company level can further work to explain the findings of this study by unpacking if multinational companies have better inclusive practices for women compared to local companies.

In summary, with the perceptions of inclusion of women confirmed to be lower than their male counterparts, the manufacturing industry is shown to still be a gendered workplace, where the organisational culture and policies are geared towards men (Acker, 1990; Akbari et al., 2024; Cohen, 2013). The findings therefore show that more work still needs to be done in manufacturing organisations on using their DEI initiatives as a strategic lever to dismantle the gendered workplace by focusing on including women in decision making processes, giving them access to information and including them in work group activities within and outside of the workplace (International Labour Organization, 2022).

6.4.2 Hypothesis 2- mediation effects of organisational commitment

H2. Organisational commitment mediates the relationship between perceived inclusion and retention

Organisational commitment has been shown to be enhanced by perceived inclusion whilst reducing the intent of employees to leave their organisations (Allen & Meyer, 1990; Chen & Tang, 2018; Cho & Mor Barak, 2008; Mehta et al., 2014). Structural equation modelling confirmed this, by showing a significant strong correlation between these constructs: Perceived Inclusion → Organisational Commitment (ρ= 0.637 p<0,01) and Organisational Commitment → Retention (ρ=0.735 p<0.01). This was supported by the studies completed by scholars (Bell & Sheridan, 2020; Chen & Tang, 2018; Li et al., 2019; Mousa & Puhakka, 2019; Nishii & Rich, 2014). These direct relationships provided insights and the basis for the role of how OC interacts as a mediator between perceived inclusion and retention.

A mediator is referenced as a link to create or enhance a relationship between two factors that otherwise may not be directly linked (Namazi & Namazi, 2016). Through affective commitment, this current study found that organisational commitment plays a significant complementary partial mediation role between perceived inclusion and retention (β= 0,655, p<0.001). The partial mediation, as opposed to full mediation, was explained by the significant relationship between perceived inclusion and retention (direct effect) (Collier, 2020). This supported hypothesis was in agreement with the findings of Hwang and Hopkins (2015), Lance (1991) and Meyer et al

(2002). Consequently as Hwang and Hopkins (2015) explained in their study, these findings show the importance of improving perceptions of inclusion and employee commitment within the organisation in order to retain employees (Hwang & Hopkins, 2015).

The practical implications of these findings are the need for organisations to focus on factors beyond hygiene factors such as compensation, working conditions and policies and ensure they are also using motivational factors such as perceived inclusion as well in order to drive organisational commitment with the intent of removing the barriers of the retention of women (Alfayad & Suriani, 2017; Alshmemri et al., 2017; Holston-Okae & Mushi, 2018). These findings on the interactions of the three constructs within this hypothesis also validated the theoretical grounding of Social Identity Theory (SIT) within the South African context, which posits that the outcomes of perceived inclusion through a social identity drive feelings of commitment of an employee to an organisation which ultimately leads to the retention of the employee through a social exchange that elicits an obligation from the employee (Brewer & Roccas, 2001; Emerson, 1976; H. Tajfel & Turner, 1978). Finally, this finding adds to the deficient body of academic literature by adapting the existing models on the social identity theory as applied to perceived inclusion, organisational commitment and retention to include the impact of cultural influences through an African context across manufacturing organisations in South Africa based on an industry wide view (Kulkarni et al., 2021; Tang et al., 2015).

In summary, improving employee motivational factors in the form of perceptions of inclusion for women in the manufacturing industry will translate into organisational commitment that will in turn drive the retention of women within the industry.

6.4.3 Hypothesis 3- relationship between perceived inclusion and retention

H3. There is a significant, positive relationship between perceived inclusion and retention

This pathway between these two constructs was the central focus for the research objectives as it sought to understand the role of perceived inclusion in driving retention of women in order to aid the problem statement of the high attrition rates of

women in manufacturing in South Africa. The test for chosen hypothesis showed a positive significant relationship between perceived inclusion and retention (β= 0.175, t=82.774 p=0.0055), in line with the findings in literature (Brunetto & Farr-Wharton, 2002; Cho & Mor Barak, 2008; Hwang & Hopkins, 2015; Kerich, 2024; Nwokocha & Iheriohanma, 2012; H. Tajfel & Turner, 1978). It therefore confirmed that perceived inclusion plays a vital role in driving retention within the manufacturing industry in South Africa. Given that hypothesis H1 showed male employees perceive their organisations to be more inclusive than their female counterparts, the role of male advocacy becomes an important point with reference to improving the inclusion of women. Johnson and Smith (2022) and Kezar and Wheaton (2017) advise that based on this, men, who are the majority group within manufacturing in South Africa, can act as allies to women, actively promoting gender inclusion and equality through sponsorship, mentorship and collaboration with women in order to improve and dismantle “gendered” organisational cultures (W. B. Johnson & Smith, 2022; Kezar & Wheaton, 2017).

As a result of the positive relationship between perceived inclusion and retention, lower levels of perceived inclusion would translate to lower levels of retention of women. That is, this hypothesis confirms that one of the factors of women not being retained in manufacturing in South Africa is as a result of their lower perceptions of being included within their companies. Industry practitioners should therefore pay attention to this. Kerich (2024) particularly recommended focusing on gender inclusive policies and decision-making processes to drive retention in manufacturing based on the studies they completed within manufacturing based multinational companies in Kenya (Kerich, 2024).

Of further interest in this study it was noted that the relationship between perceived inclusion and retention is relatively less stronger compared to when organisational mediates between the two. This was shown by the standardised estimate of the direct relationship being β= 0.245 p=0.006 compared to the standardised estimate of the mediated relationship of β= 0.655 p<0.0001. This confirmed that the relationship between perceived inclusion and retention is enhanced in the presence of organisational commitment. The importance of organisational commitment in driving

the relationship between perceived inclusion and retention of women cannot be underestimated as a result.

To summarise, a key research objective was answered here by providing the manufacturing industry with guidance on why they are not able to retain women within manufacturing, resulting in the higher attrition rates of women seen compared to men (Department of Labour, 2022; Fouad et al., 2017; J. Hunt, 2016). Furthermore by confirming this hypothesis it is clear that in focusing on improving the perceptions of inclusion of women, women can be better retained, thereby reducing the costs associated with employee turnover such as the cost of recruitment, training and development and loss of knowledge (Aman-Ullah et al., 2020). Finally men have a role to play in driving this retention as perceiving their workplaces to be more inclusive can act as allies in promoting gender inclusion to dismantle the gendered manufacturing industry.

6.4.4 Hypothesis 4- gender differences in strengths of relationships

H4. The relationships between perceived inclusion, organisational commitment and retention are significantly stronger for men compared to women in the manufacturing industry in South Africa

The final hypothesis in the study was to investigate differences in the strength of the relationships between perceived inclusion, organisational commitment and retention amongst men and women. This hypothesis was driven by the work of Innstrand and Grodal (2022) who sought to understand how gender differences impact the strengths of relationships of the constructs. The results in the current study identified insignificant stronger relationships for men compared to women between perceived inclusion and organisational commitment (β=0,6851 versus β=0,5729) and organisational commitment and retention (β=0,8223 versus β= 0,6040). These results were a point of departure to the findings of Innstrand and Grodal (2022) who reported strengths being significantly higher for men. The differences in the relationship between perceived inclusion and retention for men and women was noted as significant (p=0.0268) however the relationship was stronger for women (B=0.3701 p<0.001) compared to men (B= 0.0368, p=0.6615). This is another

difference from literature, which reported men experiencing stronger relationships (Innstrand & Grødal, 2022).

The results of this hypothesis were a surprising find, given that H1 confirmed lower levels of perceived inclusion of women compared to men. With this, it would be expected that men would relate perceived inclusion more strongly to organisational commitment and retention as a result compared to women (Innstrand & Grødal, 2022). This rejected hypothesis negates that, showing that statistically for both men and women, feelings of inclusion translate relatively in the same way to higher levels of organisational commitment, driving retention thereafter. In fact when looking directly at the relationship of perceived inclusion to retention, women significantly link perceived inclusion more strongly to retention compared to men. Based on the limited works on gender differences at an interrelation level between the constructs, an explanation of this finding is limited in literature. It can be posited however that perhaps there are other factors that may be influencing this relationship, specifically retention as a dependent variable. For example factors such as compensation, job characteristics, opportunities for career growth, learning and development, supervisor support, work-life balance, job performance and job satisfaction may also influence retention (Aman-Ullah et al., 2020; Brimhall & Mor Barak, 2018; Brunetto & Farr-Wharton, 2002; Goswami & Goswami, 2017; Van Dyk & Coetzee, 2012). This also leads to a possible future avenue for further research on these relationships and thereby highlights a limitation in this current study which will be discussed later in Chapter 7.

The rejected hypothesis however should not be lost. Based on these findings, it can be concluded that if included more within their organisations, women are more likely to be retained than their male counterparts within manufacturing due to the strength of this relationship. As this hypothesis also sought to give guidance for manufacturing organisations in making their DEI programs more effective for retaining women, the findings of hypothesis four show that statistically there aren't any differences in how women link perceived inclusion to organisational commitment and thereafter retention compared to men. However, women experience a significantly stronger relationship between perceived inclusion and retention. Resultingly, focusing on

improving the perceived inclusion of women will directly amplify their desire to stay within their organisations thereby reducing attrition.

6.5 Conclusion

With the data collected and measurement, structural model and statistical methods proven reliable, valid and appropriate for investigating the relationships between the constructs of perceived inclusion, organisational commitment and retention, three of the hypotheses tested (H1-H3) were supported whilst H4 was rejected. The conceptual model from Chapter 3 was therefore updated as per Figure 13 to provide the final model of the relationship between perceived inclusion, organisational commitment and retention for women within the manufacturing industry in South Africa .

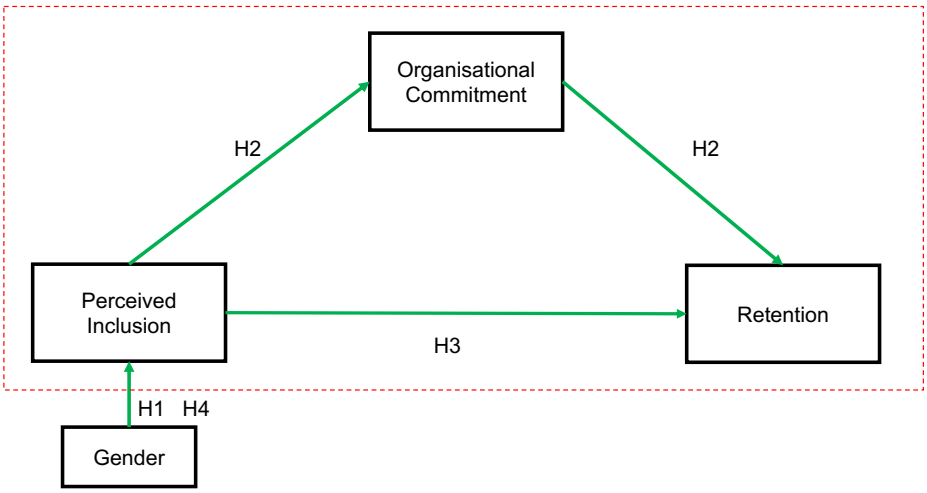

Figure 13: Final model for women retention in manufacturing in South Africa
Source: Author's own

From this it was concluded that gender differences on inclusion still exist, with women in manufacturing in South Africa experiencing lower levels of perceived inclusion compared to their male counterparts and thereby confirming that the manufacturing industry in South Africa is still gendered. Whilst men showed higher levels of perceived inclusion this did not translate into significantly stronger relationships between perceived inclusion, organisational commitment and retention. On the contrary women, showed a stronger relation between perceived inclusion and

retention than men, showing that any efforts to improve the perceived inclusion of women will directly translate into better retention of women within manufacturing.

The role of organisational commitment was also confirmed as a partial mediator, complementing the relationship between perceived inclusion and retention. Efforts by manufacturing organisations in retaining women through DEI programs would therefore need to focus on changing gendered organisational cultures through the involving women in decision making, giving them access to information and inclusion in both formal and informal activities within the workplace. Finally, given that men perceive their organisations as more inclusive than women, the role of men as advocates and allies for the inclusion of women through sponsorship, mentorship and advocates became clear. Some avenues for future research were also found in the study, including the role of multinational companies in driving the inclusion of women through organisational culture and further investigation into other factors affecting retention as a dependent variable.

7 Conclusion and Recommendations

7.1 Introduction

This chapter concludes the research study by reflecting on the key findings, it's implications and practical application to both academic literature and practice in the manufacturing industry. Starting with the main findings of the chapter, the key insights from the study of gender differences in perceived inclusion, the relationships between perceived inclusion, organisational commitment and retention and how gender impacts the strengths of these relations is shared. The contribution of these findings to existing literature and thereafter practical solutions for manufacturing industry practitioners in driving the retention of women through DEI programs will also be captured. As limitations caution other scholars of the potential weaknesses of the study which are not in control of the researcher (Theofanidis & Fountouki, 2018), the limitations within this study will be shared to give a wholistic picture of the findings of the study which may limit generalising of the findings. Finally, to close off the chapter recommendations for future research will be shared.

Diversity and inclusion in the workplace has become an important topic since the increase of women entering the labour market over the years (M. Ali et al., 2011; Coll, 2024; Daya, 2014; Seekings, 2008). Whilst literature is rich in the topic of diversity, perceived inclusion is a topic that is still in it's infancy, with conflicting findings from researchers on the role of gender on perceived inclusion and limited studies on how the three constructs of perceived inclusion, organisational commitment and retention interact for women within manufacturing at an industry level in South Africa (Daya, 2014; Hwang & Hopkins, 2015; Kulkarni et al., 2021; Li et al., 2019; Randel, 2023; Shore et al., 2018; N. Tang et al., 2015). The business need for the study was necessitated by the high attrition rates of women in manufacturing in South Africa despite organisations reporting have DEI programs in place (J. Hunt, 2016; Lubinski et al., 2014; Wilfred et al., 2023). With the South African manufacturing industry suffering a high attrition rate of women and a brain drain of critical STEM skills that should be contributing to the socio-economic development and growth of the stagnating economy (Arnoldi, 2023; Ngonyoza, 2023; Poorun, 2018; Zuccarini, 2023), the importance of this research study was further made clear. In providing an academic study for this, recommendations could

therefore be given to manufacturing practitioners on whether their DEI programs have been effective and how they can be improved.

7.2 Main findings

The main research objectives for this study were articulated focused on understanding whether women experience lower levels of perceived inclusion compared to their male counterparts and how this translated into the relationships between this construct, organisational commitment and retention. The objective also sought to understand the relationship between perceived inclusion and retention and how organisational commitment interacts with the two as a mediator. A quantitative study was carried out to answer the objectives, with a representative sample of 253 men and women from the manufacturing industry averaging 31-40 years and with 5 years and less tenure in their current organisations collected. Correlations were found between gender, age, perceived inclusion, organisational commitment and retention. Further statistical tests were used to investigate the formulated hypothesis.

The first hypothesis supported that women in manufacturing in South Africa do indeed perceive lower levels on inclusion than their male counterparts which was in line with previous studies completed by Cho and Mor Barak (2008), Findler et al (2007), Li et al (2019) and Nishii (2013). This confirmed that the manufacturing industry is still gendered, highlighting the importance of manufacturing organisations focusing their DEI efforts more on including women in decision making, giving them access to information and including them in both formal and informal work activities. it differed from findings within in an African context (Daya & April, 2014; Mousa et al., 2021). The departure of the findings from the previous study within the South African manufacturing context (Daya & April, 2014) highlighted that perceived inclusion is not static and needs to be continuously monitored, and that the organisational cultures created by multinational companies compared to local companies may need to be investigated further.

The second hypothesis confirmed as per literature that organisational commitment plays a complementary, partial mediatory role between perceived inclusion and retention, highlighting the importance of organisational commitment in driving the retention of women through affective commitment (Hwang & Hopkins, 2015; Lance,

1991; Meyer et al., 2002). It also confirmed the theoretical grounding of the retention of women in manufacturing in the Social Identity Theory (SIT) showing that feelings of inclusion for women directly translate into commitment which therefore drives the retention of women in manufacturing (Brewer & Roccas, 2001; Emerson, 1976; H. Tajfel & Turner, 1978). From this it implores manufacturing practitioners in looking beyond hygiene factors and focusing on other motivational factors such as perceived inclusion order to drive the commitment of women to drive retention (Alfayad & Suriani, 2017; Alshmemri et al., 2017; Holston-Okae & Mushi, 2018).

The key finding from hypothesis three which was the main grounding for this research confirmed relationship between perceived inclusion and retention (Brunetto & Farr-Wharton, 2002; Cho & Mor Barak, 2008; Hwang & Hopkins, 2015; H. Tajfel & Turner, 1978). This finding answered a question on why the manufacturing industry is seeing high attrition rates and not able to retain women. The low feelings of percieved inclusion within women translate directly into lower retention. The role of men, who see their organisations as more inclusive, was identified as that of allyship through mentorship, sponsorship and collaboration to improve the gendered workplace to make it more inclusive for women (W. B. Johnson & Smith, 2022; Kezar & Wheaton, 2017).

Surprisingly, the final finding showed that the relationships between perceived inclusion, organisational commitment and retention are not stronger for men compared to women as expected. This was at conflict with literature (Innstrand & Grødal, 2022) but gave a key insight that focusing on improving the perceived inclusion of women will amplify their organisational commitment and retention similar to their male counterparts. In fact for their retention, the role of perceived inclusion plays a bigger part for women compared to men. It also made clear that these relationships need to be studied further, as there may be other factors influencing the retention of women besides perceived inclusion and organisational commitment. This also highlighted a limitation to this current study.

7.3 Research contribution

The research study heeded the call from scholars to add to the body of literature on inclusion (Nguyen et al., 2024; Randel, 2023; Shore et al., 2018) by investigating the

impact of gender on perceived inclusion of women under the cultural context of the male dominated manufacturing industry in South Africa and its impact on organisational commitment and retention (Foley et al., 2022; Innstrand & Grødal, 2022; Shivhare & Gurunathan, 2024). Furthermore contributed to reducing reliance on works on inclusion and retention from western cultures, giving an African perspective on the topic. As the findings differed from the limited works on perceived inclusion and retention in South African manufacturing (Daya & April, 2014), it highlighted the importance of continuous studies on perceived inclusion as it is not a static topic (O'Donovan, 2018). The contribution of this research also made clear the need to expand inquiry of perceived inclusion as it relates to retention by studying the role of multinationals and local companies in shaping organisational culture to create more inclusive workplaces for women. Finally this research has contributed a model in manufacturing in South Africa, on how perceived inclusion can help drive the retention of women through organisational commitment, grounded in the social identity theory (SIT).

7.4 Recommendations for the manufacturing industry

With an alarming attrition rate of women in manufacturing (Department of Labour, 2022) and only 11% organisations fully understanding what inclusion is and it's impact on employees (Mondal, 2021), a few recommendations are made clear from the study for industry practitioners in South Africa in driving the retention of women. The study recommends that in order to reduce the high attrition rates of women, managers in the manufacturing industry need to ensure their DEI programs and policies are focused on women and driving inclusion through involvement in decision making, giving them access to information and involving them in informal and formal work activities (Innstrand & Grødal, 2022; Mor Barak, 2014, 2017). Manufacturing companies such as Unilever can be used as a case study in inclusive practices for women, leveraging on the organisational culture they have nurtured as a multinational company (M. Ahmed, 2024).

The industry also needs to use men as allies to help drive the inclusion of women through mentorship, sponsorship and collaboration in order to dismantle the gendered workplace that still exists in the male dominated industry whilst creating better perceptions of workplace inclusivity for men as opposed to women (Adisa et

al., 2020; W. B. Johnson & Smith, 2022; Kezar & Wheaton, 2017). Finally it is recommended that manufacturing organisations focus on perceived inclusion as a motivational factor for women to drive the retention of women as a complementary factor to hygiene factors such as compensation and working conditions in the form of work-life balance. The role of organisational commitment should not be overlooked as well, as a complementary factor for translating perceived inclusion into retention for women.

Finally policy makers in the South African government also have a role to play. In order to ensure the effectiveness of DEI programs, it is recommended that the government of South Africa put in place more robust monitoring and evaluation measures for the inclusion of women within the manufacturing industry in South Africa. To do this the government can take the example of Rwanda which has in place a Gender Monitoring Office to monitor the indicators of gender equality and inclusion to drive accountability not only at a national level but also within Non-Governmental Organisations (NGOs), the private sector and religious organisations (Debusscher & Ansoms, 2013). This will improve the sustainability of inclusion efforts within the manufacturing industry.

7.5 Study limitations

There are limitations in generalising the findings of this study to the greater population of manufacturing employees. The first limitation was the shortened time frame in which the data for the study was collected. Because there were time constraints to complete the research in order to meet the MBA requirements, the resulting cross sectional nature of the study could have resulted in some nuances of perceived inclusion, organisational commitment and retention that come with time being missed. It was aforementioned that perceived inclusion is not static but rather an ongoing process hence needs to be measured continuously (O'Donovan, 2018). The cross sectional view could not afford this. Longitudinal studies would allow for a more in depth study to understand the causal relationships between the constructs and how they influence each other over time, accounting for incidental occurrences such as strong or weak labour markets which could instantaneously influence turnover intentions of employees.

Related to the method of collecting data the purposive and snowball sampling methods used created a limitation of collecting data from respondents that are within the researchers network and therefore the findings may not represent a true picture of the general wider population within the manufacturing industry in South Africa. This limits the generalisation of the findings from this study (Saunders & Lewis, 2018). The sample size of 253, whilst representative and satisfactory given the limited time to collect data and meeting the criteria to provide statistically sound findings, represents only 0.016% of the manufacturing employee population in South Africa. A bigger sample size could provide much richer insights that are more representative of the manufacturing industry. Furthermore the sample size was skewed for both mean and women towards the age groups of 31-40 and a tenure of 5 years or less within the organisation which could have limited the insights found to these groups. Literature has shown that tenure and age can play a role in perceptions of inclusion and organisational commitment (Daya & April, 2014).

Another limitation of the study is through the quantitative research method that was chosen which categorises information through predetermined questions in the survey questionnaire. This may constrain the responses and thoughts of the respondents, leaving out unique insights and nuances that could have better explained the relationships between perceived inclusion, organisational commitment and retention. Resultingly these categories and theories as applied to the surveyed population may not have been applicable (R. B. Johnson & Onwuegbuzie, 2004). A mixed method approach could be used for future study to overcome this and provide richer data and insights (R. B. Johnson & Onwuegbuzie, 2004; Saunders & Lewis, 2018).

Finally the topics of inclusion, retention and employee commitment are wide ranging topics. Whilst this study focused particularly on the sub-constructs of perceived inclusion and organisational commitment in relation to retention, there are other factors such as organisational culture, skills and development, organisational level, race and compensation which may have an influence on that might have been missed (Alfayad & Suriani, 2017; Holston-Okae & Mushi, 2018).

7.6 Future research

Recommendations of future research on the topic of the retention of women within manufacturing takes learnings from the findings of this current study and the limitations which it provided. This study added to literature on inclusion which is still an under researched topic according to Shore et al (2018) and Randel (2023). There is more work to be done however on the topic as there are still contradictory results on the role of gender on the perceptions of inclusion and the strengths of relationships between perceived inclusion, organisational commitment and retention. Future studies can further add to this literature by completing more empirical studies on the topic. Furthermore, more studies within African cultural contexts are also still recommended in order to enrich the volume of published literature that does not rely on Western influence.

The role of cultural context within organisational cultures can also be expanded on. By comparing the results of the current study to a previous study within South African manufacturing, the results showed that there may be an impact of how organisational cultures may play a role in driving perceived inclusion. Investigating the role of organisational cultures within multinational companies compared to local companies and their influence on the views of perceived inclusion between men and women can further help the manufacturing industry understand how to improve their DEI efforts to drive inclusion and therefore retention of women.

The last area of future research that is recommended is exploring how other factors such as compensation, work life balance, job satisfaction, career development and tenure influence the relationship between percieved inclusion, organisational commitment and retention. This avenue of research will allow for further understanding of the role of hygiene factors compared to motivational factors as defined in Herzberg's two factor theory in driving the retention of women. Whilst this study touched on this by investigating perceived inclusion there are many other factors to be considered as shown.

7.7 Conclusion

In conclusion the findings of this research indicate the importance of driving the perceived inclusion and organisational commitment of women within manufacturing

in South Africa in order to drive their retention. As the attrition rates of women within this industry are significantly higher than their male counterparts, the recommendations provided in this study provide some clear strategic initiatives that practitioners in the manufacturing industry and policy makers can implement in order to reduce this attrition through effective DEI programs and policies. Academically this research has added to the literature on inclusion which is still limited, especially within the cultural context of South African and manufacturing. The guidance on future research ensures that the topic will continue to evolve by making sure the role of organisational culture within local and multinational companies on driving perceived inclusion and therefore retention is understood and other motivational factors affecting perceived inclusion and retention are also interrogated as the constructs are dynamic and therefore warrant consistent query.

8 References

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9 Appendices

9.1 Appendix A- Survey Questionnaire Compilation Approach

Construct	Author	Survey Instrument	Survey Questions	Number of Questions	Researcher Adaptation
Retention	(Kyndt et al., 2009)	Self developed	1. I'm planning on working for another company within a period of three years 2. Within this company my work gives me satisfaction 3. If I wanted to do another job or function, I would look first at the possibilities within this company 4. I see a future for myself within this company 5. It doesn't matter if I'm working for this company or another, as long as I have work 6. If it were up to me, I will definitely be working for this company for the next five years 7. If I could start over again, I would choose to work for another company 8. If I received an attractive job offer from another company, I would take the job 9. The work I'm doing is very important to me. 10. I love working for this company. 11. I have checked out a job in another company previously	11	1. I'm planning on working for another organisation and/or other industry within a period of three years 2. If I wanted to do another job or function, I would look first at the possibilities within this industry 3. I see a future for myself within this organisation and/or industry 4. If it were up to me, I will definitely be working for this organisation and industry for the next five years 5. If I could start over again, I would choose to work for another organisation and/or industry 6. If I received an attractive job offer from another company and/or industry, I would take the job
Organisational Commitment	(Meyer and Allen 1990) (Meyer et al., 1993)	Organisational Commitment Questionannaire (OCQ)	1. I would be happy to spent the rest of career with this organisation 2. I really feel as if this organisation's problems are my own 3. I do not feel a strong sense of "belonging" to my organisation 4. I do not feel "emotionally attached" to this organisation 5. I do not feel like "part of the family" at my organisation 6. This organisation has a great deal of personal meaning for me 7. I enjoy discussing my organisation with people outside of it 8. I think I that I could easily become attached to another organisation as I am to this one	8	1. I would be happy to spend the rest of career with this organisation 2. I really feel as if this organisation's problems are my own 3. I feel a strong sense of "belonging" to my organisation 4. I feel "emotionally attached" to this organisation 5. I feel like "part of the family" at my organisation 6. This organisation has a great deal of personal meaning for me
Perceived Inclusion	(Mor-Barak & Cherin, 1998) (Mor Barak, 2017)	Inclusion- exclusion scale	1. I have influence in decisions taken by my work group regarding our tasks. 2. My coworkers openly share work-related information with me. 3. I am typically involved and invited to actively participate in work-related activities of my work group. 4. I am able to influence decision that affect my organization. 5. I am usually among the last to know about important changes in the organization. 6. I am usually invited to important meetings in my organization. 7. My supervisor often asks for my opinions before making important decisions. 8. My supervisor does not share information with me. 9. I am invited to actively participate in review and evaluation meetings with my supervisor. 10. I am often invited to contribute my opinion in meetings with management higher than my immediate supervisor. 11. I frequently receive communication from management higher than my immediate supervisor (i.e. memos, emails). 12. I am often invited to participate in meetings with management higher than my immediate supervisor. 13. I am often asked to contribute in planning social activities and company social events. 14. I am always informed about informal social activities and company social events. 15. . I am rarely invited to join my coworkers when they go for lunch or drinks after work	15	1. My coworkers and supervisors openly share work-related information with me. B 2. I am typically involved and invited to actively participate in work-related activities B 3. I am able to influence decisions that affect my organisation U 4. I am usually among the last to know about important changes in the organisation B 5. I am usually invited to important meetings in my organisation B 6. My supervisor often asks for my opinions before making important decisions.U 7. I am invited to actively participate in meetings U 8. I am always informed about informal social activities and company social events like after works drinks B

9.2 Appendix B- Survey Questionnaire

Gordon Institute of Business Science
University of Pretoria

The Role of Inclusion on Retention of Women in Manufacturing

Consent Letter

I am currently a student at the University of Pretoria's Gordon Institute of Business Science and completing my research in partial fulfilment of an MBA. I am conducting research on the role of inclusion on retention of women within the manufacturing industry. I would therefore like to ask for your participation in sharing your experiences of inclusion and retention within the workplace. I am looking to get the perspectives of both men and women on inclusion and retention hence the survey is open for both men and women to complete. This survey will assist in giving insights and should take no more than 15 minutes of your time. There are 27 questions posed. Your participation is voluntary, and you can withdraw at any time without penalty. Your participation is anonymous and only aggregated data will be reported. By completing the survey attached, you indicate that you give consent to voluntarily participate in this research. If you have any concerns, please contact my supervisor or me. Our details are provided below.

Researcher name: Siphathisiwe Sibanda
Email: 23993562@mygibs.co.za
Phone: +27 0790223662

Research supervisor name: Sherin Ramparsad
Email: sherin.ramparsad@gmail.com
Phone: +27 064 908 0043

Demographics

Gender Male Female Non- Binary Transgender Prefer Not to Say Other

If other please state gender……..

Age group 18-20 21-30 31-40 41-50 Above 50

Confirmation of Current Industry Manufacturing Other

Current Occupation Operator Frontline Supervisor Manager Executive Other

Tenure in current company 0-5 6-10 11-15 16-20 21-25 26 years and above

Section 1: Perceived Inclusion

This section seeks to understand your experiences of inclusion in the work place. On a scale of Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree how would you rate the following items?

1. My coworkers and supervisors openly share work-related information with me.
2. I am typically involved and invited to actively participate in work-related activities
3. I am able to influence decisions that affect my organisation
4. I am usually among the last to know about important changes in the organisation
5. I am usually invited to important meetings in my organisation
6. My supervisor often asks for my opinions before making important decisions.
7. I am invited to actively participate in meetings
8. I am always informed about informal social activities and company social events like after works drinks

Section 2: Retention

This section seeks to understand your career intentions in the near future . On a scale of Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree how would you rate the following items?

1. I'm planning on working for another organisation and/or other industry within a period of three years
2. If I wanted to do another job or function, I would look first at the possibilities within this industry

3. I see a future for myself within this organisation and/or industry
4. If it were up to me, I will definitely be working for this organisation and industry for the next five years
5. If I could start over again, I would choose to work for another organisation and/or industry
6. If I received an attractive job offer from another company and/or industry, I would take the job
7. I have a career plan in the organisation that I work for
8. I have a development plan in the organisation that I work for

Section 3: Organisational Commitment

This section seeks to understand your emotional connection to your organisation . On a scale of Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree how would you rate the following items?

1. I would be happy to spend the rest of career with this organisation
2. I really feel as if this organisation's problems are my own
3. I feel a strong sense of "belonging" to my organisation
4. I feel "emotionally attached" to this organisation
5. I feel like "part of the family" at my organisation
6. This organisation has a great deal of personal meaning for me

Thank you for participating in this survey.

Survey link https://docs.google.com/forms/d/e/1FAIpQLScPcVXFkIgyxo1SeqeUEgNzkhtku_nZISJYCwFn8IN_rmT3iw/viewform

9.3 Appendix C- Sample Size Selection

Table 30: Sample Size Selection

Sample Size Method	Factors Used for Calculation	Sample Size	Source
G*Power	# independent variables	77	(Hair et al., 2018; Kock & Hadaya, 2018; Rahman, 2023)
Krejcie and Morgan	Population size	384	(S. K. Ahmed, 2024; Gill & Johnson, 2010; Krejcie & Morgan, 1970)
Sample to variable ratio	# of independent variables	40	(Hair et al., 2018; Rahman, 2023)
Sample to indicator ratio	# of indicators	460	(Forsberg & Rantala, 2020)
10 times rule	Maximum number of inner or outer model links pointing at any latent variables	20	(Hair et al., 2018)
Minimum R2	Maximum number of inner or outer model links pointing at any latent variables	26 - 110	(Ranatunga et al., 2020)
Inverse square method	SEM- Minimum path coefficient	160	(Kock & Hadaya, 2018)
Previous studies		51 - 325119	(Shore et al., 2018)

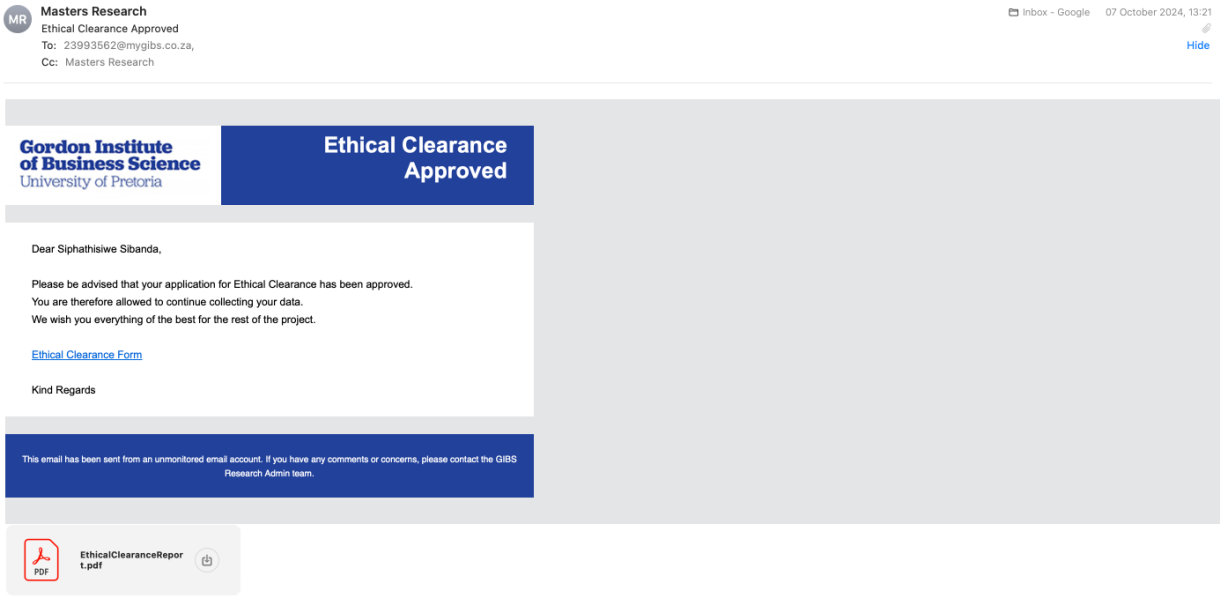
9.4 Appendix D- Data Coding for Questionnaire

Table 31: Data Coding for Questionnaire

Section	Original Descriptor	Coded Descriptor
Perceived Inclusion		PI
Organisational Commitment		OC
Retention		RT
Gender	Female	1000
	Male	2000
	Non-binary	3000
Which age group do you belong to?	18-20 years	10
	21-30years	20
	31-40years	30
	41-50years	40
	above 50 years	50
What industry do you currently work in?	Free text	
What is your tenure in your current company?	0-5years	100
	6-10years	200
	11-15years	300
	16-20years	400
	21-25years	500
	26 years and above	600
Likert Scale	Strongly agree	5
	Agree	4
	Neutral	3
	Disagree	2
	Strongly disagree	1

Likert Scale for reverse coded questions	Strongly agree	1
	Agree	2
	Neutral	3
	Disagree	4
	Strongly Disagree	5

9.5 Appendix E- Ethical Clearance



MR **Masters Research**
Ethical Clearance Approved
To: 23993562@mygibs.co.za,
Cc: Masters Research

Inbox - Google 07 October 2024, 13:21
Hide

Gordon Institute of Business Science
University of Pretoria

Ethical Clearance Approved

Dear Siphathisiwe Sibanda,

Please be advised that your application for Ethical Clearance has been approved.
You are therefore allowed to continue collecting your data.
We wish you everything of the best for the rest of the project.

Ethical Clearance Form

Kind Regards

This email has been sent from an unmonitored email account. If you have any comments or concerns, please contact the GIBS Research Admin team.

PDF **EthicalClearanceReport.pdf**

9.6 Appendix F- Normality Results

Assessment of normality (Group number 1)

Variable	min	max	skew	c.r.	kurtosis	c.r.
OC1	1,000000	5,000000	,302716	1,965710	-,993557	-3,225876
OC2	1,000000	5,000000	-,544349	-3,534777	-,623885	-2,025625
OC3	1,000000	5,000000	-,471439	-3,061333	-,675961	-2,194706
OC4	1,000000	5,000000	-,139178	-,903764	-1,069607	-3,472794
OC5	1,000000	5,000000	-,279388	-1,814231	-,881136	-2,860867
OC6	1,000000	5,000000	-,351812	-2,284520	-,731005	-2,373422
PI1	1,000000	5,000000	-1,118246	-7,261426	,835958	2,714184
PI2	1,000000	5,000000	-1,209071	-7,851207	1,145520	3,719267
PI3	1,000000	5,000000	-,710541	-4,613957	-,418472	-1,358694
PI4	1,000000	5,000000	-,618336	-4,015221	-,447651	-1,453431
PI5	1,000000	5,000000	-,754978	-4,902512	-,166751	-,541405
PI6	1,000000	5,000000	-,552309	-3,586466	-,682119	-2,214699
PI7	1,000000	5,000000	-,926424	-6,015816	,386709	1,255564
PI8	1,000000	5,000000	-,411741	-2,673678	-,812400	-2,637696
RT1	1,000000	5,000000	,356740	2,316521	-1,221289	-3,965271
RT2	1,000000	5,000000	-,729098	-4,734461	-,461719	-1,499108
RT3	1,000000	5,000000	-,473730	-3,076205	-,709211	-2,302662
RT4	1,000000	5,000000	-,398312	-2,586474	-1,079860	-3,506084
RT5	1,000000	5,000000	-,472362	-3,067326	-,934627	-3,034542
RT6	1,000000	5,000000	,940393	6,106521	,218806	,710419
RT7	1,000000	5,000000	-,242676	-1,575835	-1,112155	-3,610938
RT8	1,000000	5,000000	-,334905	-2,174738	-,997546	-3,238825
Multivariate					113,581693	27,797558

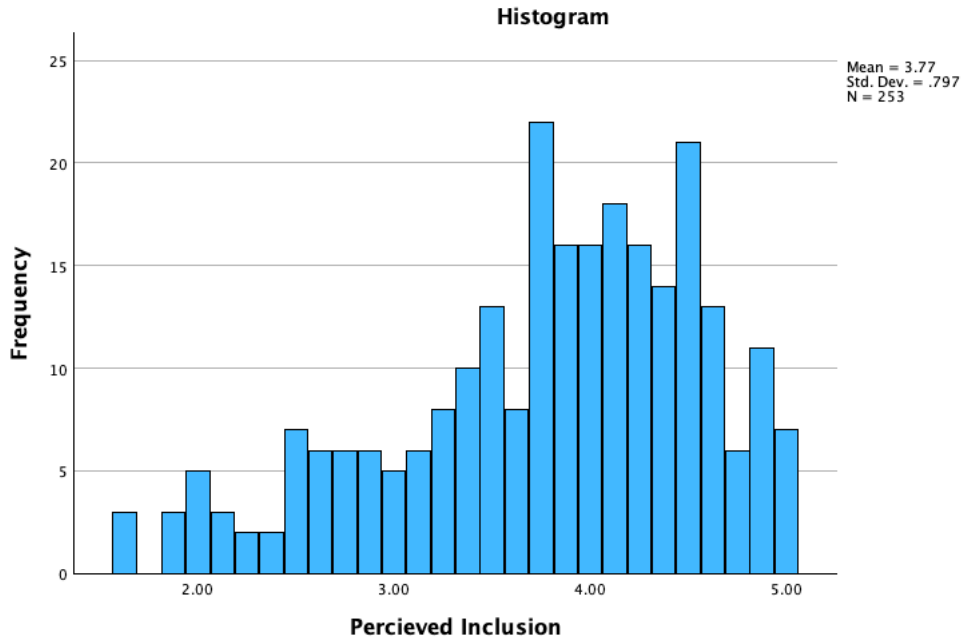
-	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
-	Statistic	df	Sig.	Statistic	df	Sig.
PI1	0.315	253	<.001	0.802	253	<.001
PI2	0.285	253	<.001	0.777	253	<.001
PI3	0.280	253	<.001	0.852	253	<.001
PI4	0.295	253	<.001	0.863	253	<.001
PI5	0.310	253	<.001	0.832	253	<.001
PI6	0.275	253	<.001	0.868	253	<.001
PI7	0.275	253	<.001	0.819	253	<.001

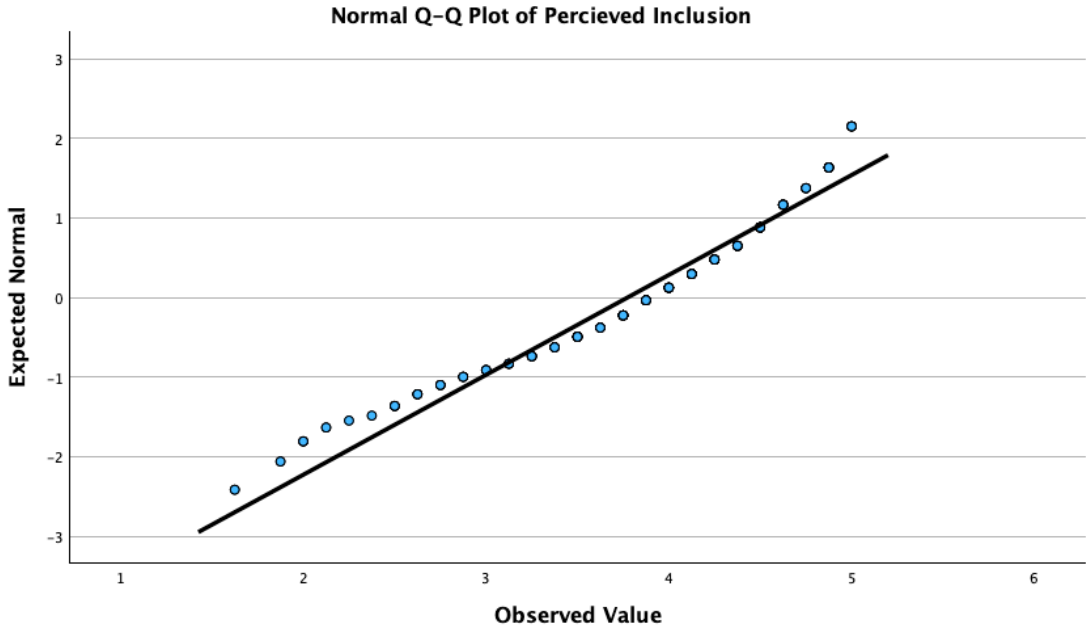
PI8	0.255	253	<.001	0.882	253	<.001
RT1	0.200	253	<.001	0.858	253	<.001
RT2	0.282	253	<.001	0.851	253	<.001
RT3	0.248	253	<.001	0.889	253	<.001
RT4	0.235	253	<.001	0.876	253	<.001
RT5	0.273	253	<.001	0.867	253	<.001
RT6	0.249	253	<.001	0.813	253	<.001
RT7	0.244	253	<.001	0.885	253	<.001
RT8	0.243	253	<.001	0.890	253	<.001
OC1	0.219	253	<.001	0.897	253	<.001
OC2	0.273	253	<.001	0.876	253	<.001
OC3	0.250	253	<.001	0.889	253	<.001
OC4	0.203	253	<.001	0.904	253	<.001
OC5	0.221	253	<.001	0.902	253	<.001
OC6	0.227	253	<.001	0.901	253	<.001
PI_Average	**0.120**	**253**	**<.001**	**0.948**	**253**	**<.001**
OC_Average	**0.055**	**253**	**.062**	**0.984**	**253**	**.006**
RT_Average	**0.079**	**253**	**<.001**	**0.981**	**253**	**.002**

Q-Q Plots

Perceived Inclusion

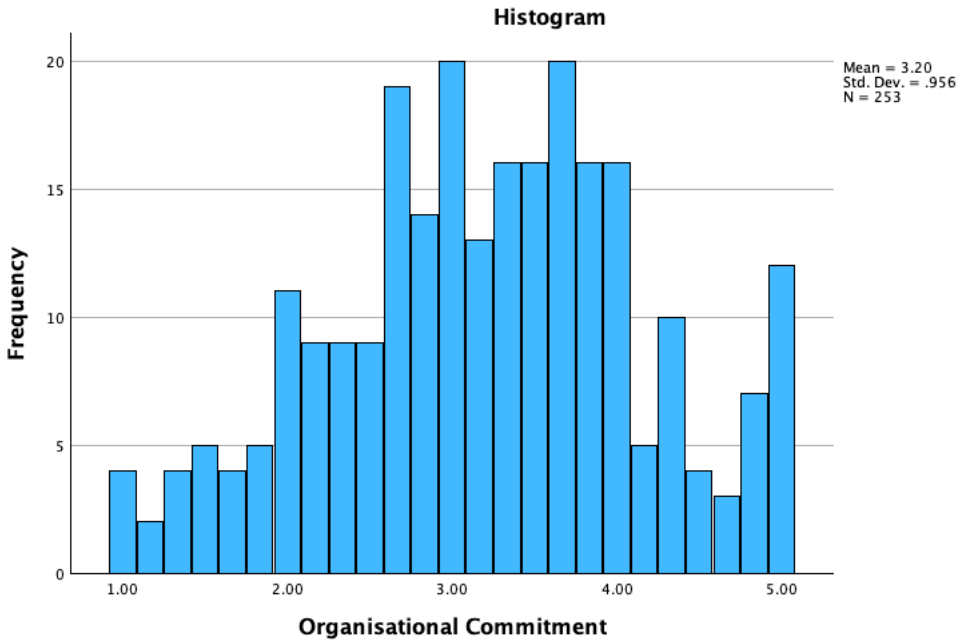
P1_Average

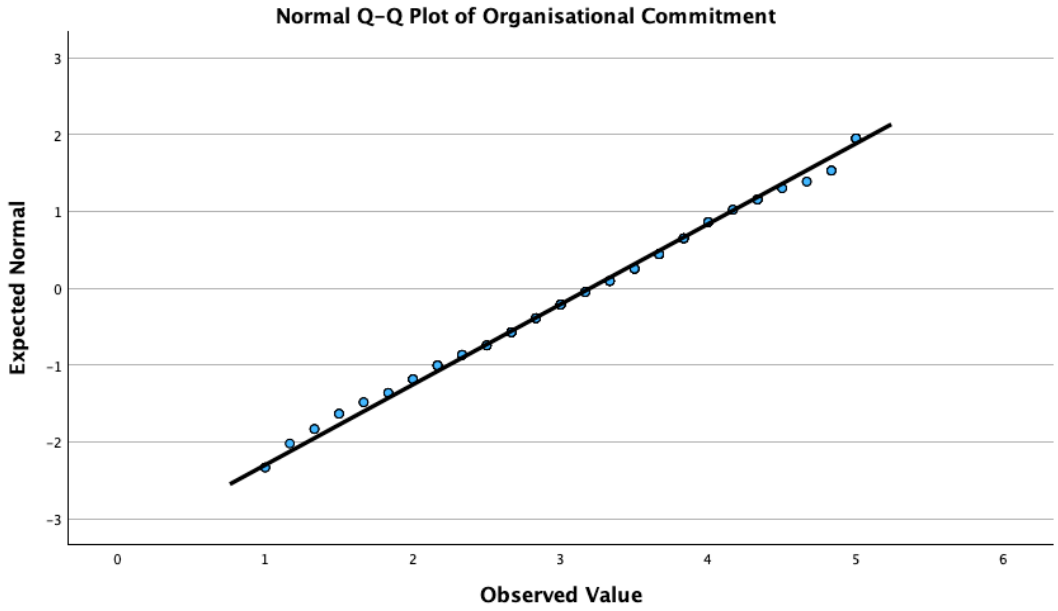

Histogram
Mean = 3.77
Std. Dev. = .797
N = 253
Frequency
Percieved Inclusion
0
5
10
15
20
25
2.00
3.00
4.00
5.00


Normal Q-Q Plot of Percieved Inclusion
Expected Normal
Observed Value
3
2
1
0
-1
-2
-3
1
2
3
4
5
6

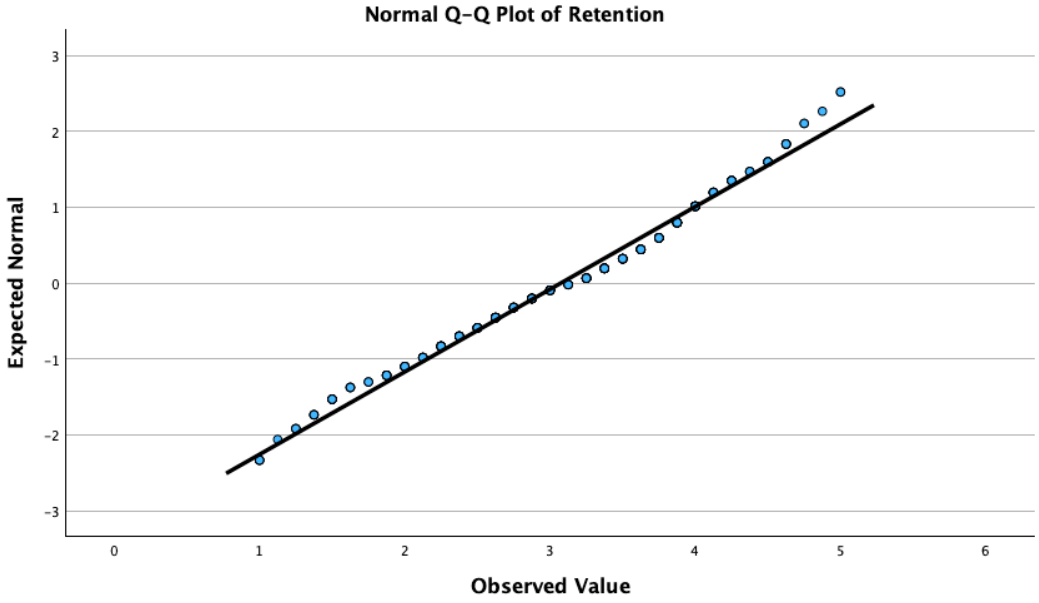
Organisational commitment

OC_Average

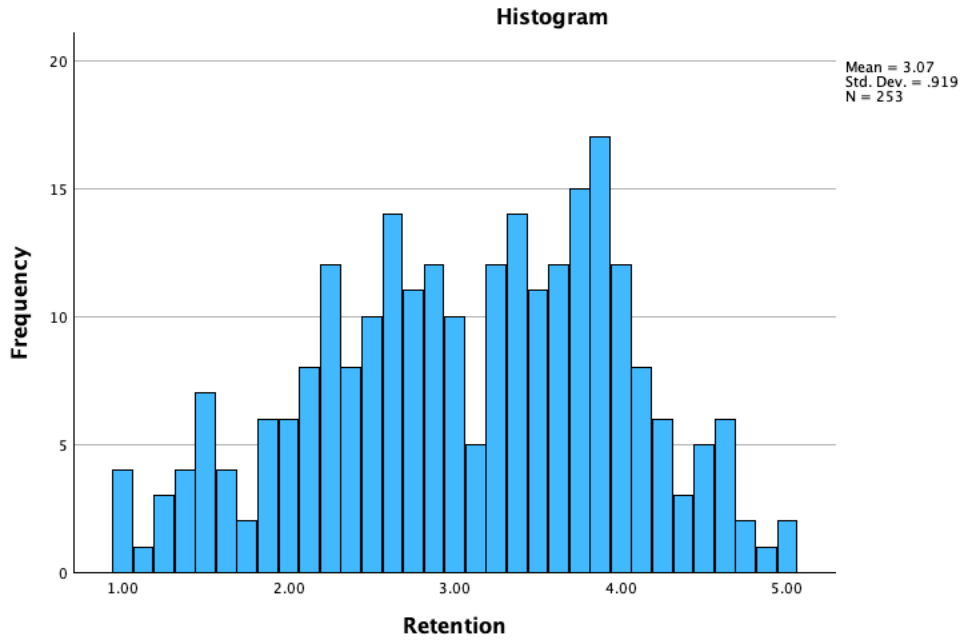




Retention



RT_Average



9.7 Appendix G- Spearman Correlation

Confidence Intervals of Spearman's rho

	Spearman's rho	Significance (2-tailed)	95% Confidence Intervals (2-tailed)[a,b] Lower	Upper
Gender - Tenure	-.003	.965	-.130	.124
Gender - Age Group	.218	<.001	.093	.335
Gender - Percieved Inclusion	.184	.003	.058	.304
Gender - Organisational Commitment	.054	.394	-.074	.180
Gender - Retention	-.033	.602	-.159	.094
Tenure - Age Group	.135	.032	.008	.257
Tenure - Percieved Inclusion	.020	.746	-.107	.147
Tenure - Organisational Commitment	.120	.057	-.007	.243
Tenure - Retention	.023	.718	-.104	.149
Age Group - Percieved Inclusion	.103	.103	-.025	.227
Age Group - Organisational Commitment	.150	.017	.023	.272
Age Group - Retention	.014	.825	-.113	.141
Percieved Inclusion - Organisational Commitment	.560	<.001	.466	.641
Percieved Inclusion - Retention	.613	<.001	.527	.686
Organisational Commitment - Retention	.743	<.001	.680	.795

a. Estimation is based on Fisher's r-to-z transformation.

b. Estimation of standard error is based on the formula proposed by Fieller, Hartley, and Pearson.

9.8 Appendix H- Reliability

	Factor loading	Composite Reliability (ρ)
RT8	0,642	
RT7	0,671	
RT6	0,555	
RT5	0,702	
RT4	0,783	
RT3	0,950	
RT2	0,666	
RT1	0,721	
RT		0,894
PI8	0,506	
PI7	0,811	
PI6	0,818	
PI5	0,784	
PI4	0,679	
PI3	0,798	
PI2	0,698	
PI1	0,687	
PI		0,899
OC6	0,838	
OC5	0,811	
OC4	0,806	
OC3	0,834	
OC2	0,549	
OC1	0,708	
OC		0,893

Perceived inclusion

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.896	.898	8

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
PI1	26.26	31.747	.684	.552	.882
PI2	26.06	32.437	.688	.546	.882
PI3	26.47	30.290	.734	.593	.877
PI4	26.71	31.706	.630	.444	.887
PI5	26.39	31.557	.722	.591	.879
PI6	26.62	29.862	.756	.624	.875
PI7	26.16	31.681	.770	.645	.875
PI8	26.69	33.255	.472	.255	.903

Retention

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.891	.891	8

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
RT1	22.12	40.330	.700	.591	.874
RT2	20.93	43.328	.595	.440	.884
RT3	21.21	39.780	.861	.791	.858
RT4	21.19	40.490	.702	.621	.874
RT5	21.40	42.375	.625	.399	.881
RT6	22.70	45.657	.563	.425	.886
RT7	21.32	42.187	.649	.677	.879
RT8	21.31	42.079	.648	.644	.879

Organisational commitment

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.890	.890	6

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
OC1	16.44	23.335	.655	.452	.879
OC2	15.74	25.441	.532	.299	.896
OC3	15.81	23.258	.743	.587	.865
OC4	16.08	22.152	.785	.650	.857
OC5	16.04	23.165	.739	.621	.865
OC6	15.88	22.883	.800	.652	.856

9.9 Appendix I- Gender differences in structural model for constructs

Women structural model

Table 32: Women Structural Model Estimates

Hypothesised Relationship	Female		
	Standardised estimates	t-values	p-value
Perceived inclusion → Organisational Commitment	0,5729	4,3991	<0.0001
Organisational commitment → Retention	0,6040	5,6185	<0.0001
Perceived inclusion → Retention	0,3701	3,5377	<0.0001

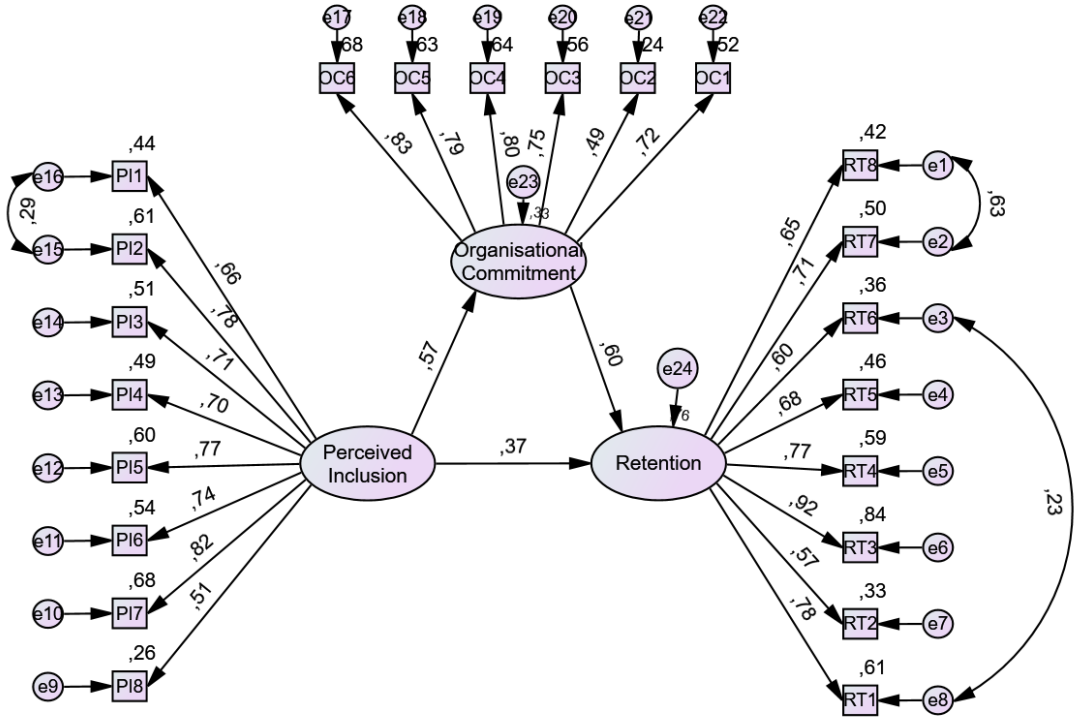


Figure 14: Women structural model

Men structural model

Table 33: Men Structural Model Estimates

Hypothesised Relationship	Male		
	Standardised estimates	t-values	p-value
Perceived inclusion → Organisational Commitment	0,6851	4,8977	<0.0001
Organisational commitment → Retention	0,8223	6,3694	<0.0001
Perceived inclusion → Retention	0,0368	0,4379	0,6615

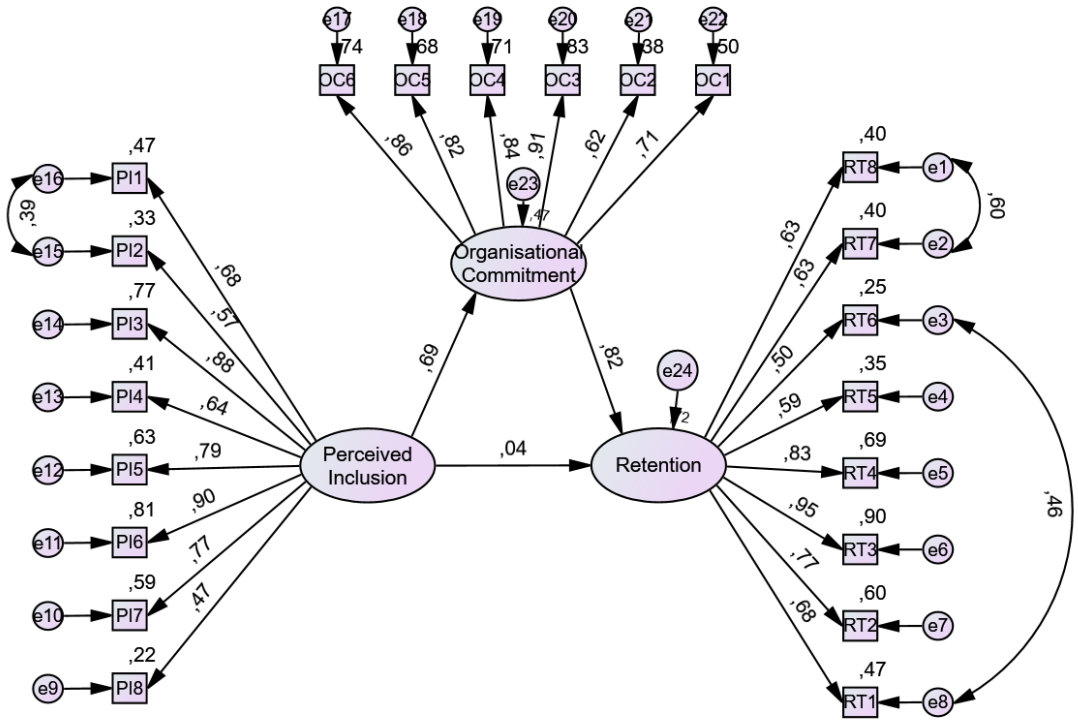


Figure 15: Men structural model