

**EXAMINING THE RELATIONSHIP BETWEEN THE PSYCHOLOGICAL CONTRACT,
ORGANISATIONAL COMMITMENT AND EMPLOYEE RETENTION IN THE WATER
CONTROL SECTOR OF SOUTH AFRICA**

by

Israel Setlhogo Ngakantsi

Submitted in accordance with the requirements for the degree of

MASTER OF COMMERCE IN BUSINESS MANAGEMENT

In the subject

HUMAN RESOURCE MANAGEMENT

at the

UNIVERSITY OF SOUTH AFRICA

SUPERVISOR: DR A. J. DEAS

January 2022

DECLARATION

I, Israel Setlhogo Ngakantsi, student number 6076602, declare that this dissertation entitled **“Examining the relationship between psychological contract, organisational commitment, and employee retention”** is my effort. In conducting this study, I have quoted all sources used and acknowledged all sources by means of referencing.

Ethical clearance for conducting research was attained from the Department of Human Resource Management at the University of South Africa. During the phases of the research process, I have ensured that the study is conducted in accordance to the ethical principles and obligations as set by the University of South Africa’s Code of Ethics and Conduct.



31 January 2022

Israel Setlhogo Ngakantsi

Date

ACKNOWLEDGMENTS

First and foremost, this dissertation would not have been possible had it not been for the guidance from my Lord God. I express my thankfulness to the following people for their assistance in the writing of this dissertation:

- My supervisor, Dr A. J. Deas, thank you for the opportunity to have you as my supervisor, and for challenging me to be the best that I can be. Thank you for your encouragement, support, and valuable guidance throughout this whole process.
- The University of South Africa, thank you for giving me permission to conduct the study.
- I would like to thank the management of the three water boards and employees who participated in this research study. Without your willingness to participate, this study would not have been possible.
- Thanks to the gatekeeper, Mr. K. Choane for his patience in distributing questionnaires to the potential participants.
- My statistician, thank you for the statistical analysis.
- My wife and family, thank you for the emotional support and encouragement throughout the completion of my dissertation.

ABSTRACT

EXAMINING THE RELATIONSHIP BETWEEN THE PSYCHOLOGICAL CONTRACT, ORGANISATIONAL COMMITMENT, AND EMPLOYEE RETENTION IN THE WATER CONTROL SECTOR OF SOUTH AFRICA

by

Israel Setlhogo Ngakantsi

SUPERVISOR: Dr AJ Deas
DEPARTMENT: Human Resource Management
DEGREE: MCom

The objectives of the study were: (1) to determine the relationship between psychological contract (measured by the Psychological Contract Questionnaire), organisational commitment (measured by the Organisational Commitment Questionnaire), and satisfaction with retention factors (measured by the Retention Factor Measurement Scale); (2) to determine whether employees representing different demographical variables (age, gender and race) differ significantly in terms of their levels of the psychological contract, organisational commitment, and satisfaction with retention factors; and, lastly, (3) to investigate whether age, gender, race, psychological contract, and organisational commitment significantly and positively predict employees' satisfaction with retention factors. A quantitative survey was conducted on a purposive sample of permanent employees (N = 172) from the water control sector.

Descriptive, correlational, and inferential statistical analyses revealed significant relationships between the psychological contract, organisational commitment, satisfaction with retention factors and demographical variables. The research findings confirmed a relationship between age, gender, race, psychological contract, organisational commitment and satisfaction with retention factors, and that psychological contract and organisational commitment predicted satisfaction with retention factors. Employee retention strategies were formulated based on accurate and deep understanding with regard to core significant research findings. The findings contribute valuable insight and knowledge to the field of psychological contract and organisational commitment that can be applied in the retention of employees in the water control sector.

KEY TERMS

Employee retention, psychological contract, organisational commitment, retention factors, age, gender, race, industry 4.0, water control sector

OPSOMMING

ONDERSOEK NA DIE VERHOUDING TUSSEN DIE PSIGOLOGIESE KONTRAK, ORGANISATORIESE TOEWYDING EN WERKNEMERBEHOUD IN DIE WATERBEHEERSEKTOR IN SUID-AFRIKA

deur

Israel Setlhogo Ngakantsi

TOESIGHOUER: Dr AJ Deas
DEPARTEMENT: Menslikehulpbronbestuur
GRAAD: MCom

Die doelwitte van die studie was: (1) om die verhouding tussen die psigologiese kontrak (gemeet deur die vraelys vir psigologiese kontrak), organisatoriese toewyding (gemeet deur die vraelys vir organisatoriese toewyding) en die tevredenheid met behoudfaktore (gemeet deur die metingskaal vir behoudfaktore) te bepaal; (2) om vas te stel of werknemers wat verskillende demografiese veranderlikes (ouderdom, geslag en ras) verteenwoordig, noemenswaardig verskil ten opsigte van hul vlakke van die psigologiese kontrak, organisatoriese toewyding en tevredenheid met behoudfaktore; en laastens (3) om ondersoek in te stel na of ouderdom, geslag, ras, psigologiese kontrak en organisatoriese toewyding werknemers se tevredenheid van behoudfaktore noemenswaardig en positief beïnvloed. 'n Kwantitatiewe opname is onder 'n doelbewuste steekproef van permanente werknemers (N = 172) in die waterbeheersektor gedoen.

Beskrywende, korrelasie- en afgeleide statistiese ontledings het beduidende verwantskappe tussen die psigologiese kontrak, organisatoriese toewyding, tevredenheid van behoudfaktore en demografiese veranderlikes getoon. Die navorsingsbevindings het 'n verwantskap tussen ouderdom, geslag, ras, psigologiese kontrak, organisatoriese toewyding en tevredenheid met die behoudfaktore bevestig asook dat psigologiese kontrak en organisatoriese toewyding tevredenheid met die behoudfaktore voorspel. Werknemerbehoudstrategieë is geformuleer, wat op akkurate en grondige begrip ten opsigte van belangrike en betekenisvolle navorsingsbevindings gebaseer is. Die bevindings dra waardevolle insig en kennis by op die terrein van psigologiese kontrak en organisatoriese toewyding wat in die behoud van werknemers in die waterbeheersektor toegepas kan word.

SLEUTELTERME

Werknemerbehoud, psigologiese kontrak, organisatoriese toewyding, behoudfaktore, ouderdom, geslag, ras, vierde industriële revolusie, waterbeheersektor

OKUCASHUNIWE

UKUHLOLA UBUDLELWANO PHAKATHI KWESIVUMELWANO SENGGONDO, UKUZIBOPHEZELA KWENHLANGANO, NOKULONDOLOZWA KWABASEBENZI EMKHAKHENI WOKULAWULWA KWAMANZI ENINGIZIMU AFRIKA.

ngu

Israel Setlhogo Ngakantsi

UMPHATHI: Dkt AJ Deas

UMNYANGO: UKUPHATHWA KWABASEBENZI

IZIQU: MCom

Izinjongo zocwaningo kwakuyilezi: (1) ukunquma ubudlelwano phakathi kwesivumelwano sezengqondo (kulinganiswa Uhlu Lwemibuzo Lwesivumelwano Sengqondo), ukuzibophezela kwenhlangano (kulinganiswa Uhlu Lwemibuzo Lokuzibophezela Kwenhlangano), kanye nokwaneliseka ngezici zokulondolozwa (kulinganiswa Ngesikali Sokulinganiswa Kwesici Sokulondolozwa); (2) ukuze kunqunywe ukuthi abasebenzi abamelela ukuhlukahluka kwezibalo zabantu (iminyaka yobudala, ubulili nohlanga) zihluke kakhulu ngokwamazinga azo esivumelwano sengqondo, ukuzibophezela kwenhlangano, nokwaneliseka ngezici zokulondolozwa; futhi, okokugcina, (3) ukuphenya ukuthi ubudala, ubulili, uhlanga, isivumelwano sengqondo, nokuzibophezela kwenhlangano kubikezela ngokuphawulekayo nangokuqinisekile ukwaneliseka kwabasebenzi ngezici zokulondolozwa. Inhlolovo yokuqoqa nokuhlaziya imininingwane yezinombolo yenziwa ngesampula yenhloso yabasebenzi abasebenza ngokugcwele (N = 172) abavela emkhakheni wokulawula amanzi.

Ukuhlaziywa kwezibalo okuchazayo, okuhlobanayo, nokunganaki kwembula ubudlelwano obubalulekile phakathi kwesivumelwano sezengqondo, ukuzibophezela kwenhlangano, ukwaneliseka ngezici zokulondolozwa nokuhlukahluka kwezibalo zabantu. Imiphumela yocwaningo iqinisekise ubudlelwano phakathi kweminyaka yobudala, ubulili, uhlanga, isivumelwano sengqondo, ukuzibophezela kwenhlangano nokwaneliseka ngezici zokulondolozwa, nokuthi isivumelwano sengqondo nokuzibophezela kwenhlangano kwabikezela ukwaneliseka ngezici zokulondolozwa. Amasu okulondolozwa kwabasebenzi akhiwe ngokusekelwe ekuqondeni okunembile nokujulile emithonjeni eyinhloko yocwaningo ebalulekile. Okutholakele kunomthelela omkhulu wokuqonda nolwazi emkhakheni wesivumelwano sezengqondo nokuzibophezela kwenhlangano okungasetshenziswa ekuqondolozweni kwabasebenzi emkhakheni wokulawula amanzi.

AMAGAMA ASEMQOKA

Ukulondolozwa kwabasebenzi, isivumelwano sezengqondo, ukuzibophezelela kwenhlangano, ukulondolozwa kwezici, ubudala, ubulili, uhlanga, Imboni 4.0, umkhakha wokulawulwa kwamanzi

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CHAPTER 1: SCIENTIFIC OVERVIEW OF THE RESEARCH

The primary focus of the study was to investigate the relationship amongst the psychological contract, organisational commitment and satisfaction with retention factors of employees in the water control industry. The objective of this chapter is to provide background to and motivation for the study, which resulted in the formulation of the problem statement and research questions. This chapter presents a discussion of the aims of the research, the research paradigm, research methods and design, and thereafter, provides the outline of the rest of the chapters.

1.1 BACKGROUND TO AND MOTIVATION FOR THE STUDY

The current research study took place within the context of employee retention in the water control sector. More specifically, this research focused on the study of the psychological contract, organisational commitment and satisfaction with retention factors, in relation to employee retention. It was anticipated that the results of this research would potentially provide significant information of the three constructs in order to inform the retention practices concerned with retaining employees in the water control sector.

According to Muller (2019), the Department of Water and Sanitation has an oversight responsibility for water security until 2040 and beyond. There is good reason for concern on paper plans that need to be translated into infrastructure and into changed behaviour among water users. Falling dam levels are not a problem (Muller, 2019). Dams are built to store water in wet periods to draw on when it's needed. What people should be checking is whether the authorities are monitoring the situation. Water security requires changing people's behaviour, building new infrastructure and operating it properly. And this will only be achieved if political heads take the lead and avoid further delays (Muller, 2019). South Africa is a constitutional multiparty democracy with three spheres of government, namely, local, provincial and national spheres. The acts of parliament that are currently in force are the National Water Act 1998 and the Water Services Act 1997 which guide the water sector.

Job Demands-Resource (JD-R) theory explains how the workplace environment impacts employee safety, prosperity and job performance and suggests that employees who experience commitment will strive to optimize their job demands and resources through job creation (Tims et al., 2012). The JD-R model became popular in the past decade following its establishment, inspiring hundreds of empirical studies and being used within many

organisations (Demerouti et al., 2019). As a result, it has been found to be applicable across a range of diverse workplaces including Industry 4.0 (Demerouti et al., 2019).

Shekhawat and Sandhu (2016) explained that the 21st century skills are based on primarily “deeper thinking” and the world of work is complex and competitive. Shekhawat and Sandhu (2016) maintained that employee retention has become extremely inspiring for organisations around the world. Similarly, Kossivi et al. (2016) posited that the toughest challenges organisations encountered were not only how to manage employees but also how to retain them on the job.

According to Heerwagen et al. (2016), the structure, content, and process of work have changed in today’s world of work. They further explained that the employees of today work in workplace environments that are completely different from those of two decades ago. Organisations are now expected to increase their level of digitalisation, working together in digital ecosystems with all stakeholders, including customers, suppliers, employers and employees, as they switch from one industrial environment to another (Tupa et al., 2017). Heerwagen et al. (2016) further explained that work is now more cognitively complex, team-based, dependent on social skills and technological competences. A factor contributing to the changing working environment is the onset of Industry 4.0. The term ‘Industry 4.0’ was first introduced by the German government when they were promoting the computerisation of the manufacturing industry and named this project Industry 4.0 (BMBF-Internetredaktion, 2016).

Consequently, Industry 4.0 refers to the current trend of automation, data exchange in manufacturing technologies, cyber-physical systems, the Internet of things (IoT), cloud computing and cognitive computing (Hermann et al., 2016). The World Economic Forum’s (WEF) Future of Jobs Report (2018) asserted that Industry 4.0 has impacted human resource management. According to the report, organisations are likely to automate work in response to the growing skills gap, and to acquire qualified employees to work with new technology. Additionally, new job roles will continue emerging such as data analysis, operations managers, and network professionals within the manufacturing industry. Taliaferro et al.’s (2018) study on the future of work verified the impact of Industry 4.0 on the manufacturing industries in the United States of America (US). The results of this study highlighted a widening gap between the jobs that need to be filled and the skills capable of filling them.

According to Eberhard et al. (2017), the impact of technology on Industry 4.0, the ageing workforce of the industrial economies, and the shift of economic activities to emerging markets will transform the labour market and the skill requirements of the manufacturing workforce. Eberhard et al. (2017) further postulated that most production workers are at a high risk of

displacement and will need to acquire value-added skills for the new economy. The manual-intensive labour force will ultimately be replaced by digital workplace machinery.

According to Ndabeni-Abrahams (2020), the South African Government has been preparing for Industry 4.0 for years across the different sectors of government. For example, the government provided a new and unique opportunity to address youth unemployment by adapting the education models to inspire innovation and to upskill the next generation in digital transformation (Ndabeni-Abrahams, 2020). Product ranges such as food and beverages, commodity producers (metals, agriculture) and precision-driven (pharmaceuticals and electronic components) are most likely to invest in Industry 4.0, which is crucial for the South African economy. Government and business in South Africa should work together to assist workers and communities to adapt to the changes required by Industry 4.0 by, for example, providing learners at public schools with tablet devices to assist with e-learning (Ndabeni-Abrahams, 2020).

Dewa et al. (2018) investigated how prepared South African companies were to embrace and implement Industry 4.0. The results of their study showed that there is a lack of awareness concerning Industry 4.0, both in academia and industry, and they concluded that there is a great need to educate organisations on the concept of Industry 4.0, and to formulate implementation strategies relevant to the South African work environment. For example, future studies could focus on the development of a decision-making framework for the implementation of Industry 4.0 in South Africa (Dewa et al., 2018). Although the National Economic Development and Labour Council (NEDLAC) indicated that the South African Government has a strong innovation culture, and that entrepreneurship is supported by the financial sector, Bell et al. (2018) suggested that South Africa is not prepared for Industry 4.0.

Although Industry 4.0 provides opportunities for a country to develop economically and to provide its citizens with a better income and lifestyle, some countries are more equal than others, when it comes to equality of opportunities in terms of Industry 4.0 (Siau et al., 2019). While the opportunities arising from Industry 4.0 are appealing, the challenges that the countries may face should not be ignored as countries try to ride the Industry 4.0 wave (Siau et al., 2019). For example, one of the main challenges being experienced due to the implementation of Industry 4.0 is the retention of employees. Retention is regarded as a human resource management policies and practices that retain skilled employees in the right occupations (Mamahit et al., 2019). It is an act of continuing keeping an employee in employment. According to Dickson (2017), employee retention is one of the biggest challenges being experienced globally.

Umamaheswari and Krishman (2016) arrived at a similar conclusion, noting that due to the current ever-increasing competition, many organisations find it challenging to retain suitably skilled employees.

Subsequently, the release of the Europe, the Middle East and Africa (EMEA) survey found that the retention of skilled employees is the top human resource issue across the region (Businesstech, 2018a).

Businesstech (2018a) reported that in South African companies, the failure to retain skilled employees has increased from 40% in 2016 to 50% in 2018. Ndlovu (2018) also proclaimed that South African companies are failing to retain employees and the reason is not job security and salary but a mismatch of expectations in career development and the ability to do meaningful and creative work. Ndlovu (2018) stated that 47% of 22 000 young professionals said they were ready to leave their current employers because the employers were not doing enough to align their expectations with their potential.

One way in which organisations can manage their employees' expectations is through the psychological contract. The psychological contract is explained as the expectations of an employee relating to the mutual obligations present between an employee and an employer (Shen et al., 2019). Unmet expectations are brought by breach or violation of the psychological contract. Coyle-Shapiro et al. (2019) explained breach of psychological contract as a situation where a human resource perceives the employer has failed to their expectations, whereas violation of psychological contract is an employee's intense reaction, or emotional and affective responses.

The psychological contract is the implicit expectations and mutual obligations held between an employee and employer, and a breach of that contract leads to a strong negative emotional response (Collins & Beauregard, 2020). Organisational commitment is another factor that has an influence on the employee's goal to stay with or leave an organisation (George, 2015). Idris and Manganaro (2017) defined organisational commitment as the extent to which individuals psychologically identify with their work organisations. Commitment to an organisation is a mindset where employee and employer have the same organisational objectives (Amdan et al., 2016). In Meyer and Allen's (1991) theoretical model, the researchers adopted a multidimensional approach by creating three distinct dimensions, namely, affective (employee feels emotionally connected), normative (employees feel obligated) and continuance commitment (employee considers monetary value).

The high and low ranges in each level of the three different forms of organisational commitment assisted researchers to determine the intention of an employee to remain in the organisation or resign (Simo et al., 2014). Sporadically, committed employees are reluctant to pursue other job opportunities and would thus prefer to stay with the organisation (Umamaheswari & Krishnan, 2016).

Organisational commitment develops naturally through social exchange (Döckel, 2003). Potgieter et al. (2016) highlighted the importance of retaining skilled employees, while Mathieu et al. (2015), encouraged organisations to prioritise the retention of skilled employees due to the high replacement costs.

Döckel (2003) uncovered seven retention factors that might retain employees in the organisation. The seven retention factors that organisations need to consider when developing a retention strategy are an establishment of challenging work, opportunities to learn and develop, positive collegial relationships, recognition of strengths and good work performance, performance contributions, work-life balance, and strong communication within the organisation (Walker, 2001). Erasmus et al. (2017) concur with the factors and state that employees' intention to remain with their organisation is influenced by the way in which employees perceive their work, supervisor support and compensation.

Factors that contributed to a significant effect on retention are compensation, employees' perceptions of their work, leadership in their working environment and supervisor support. In summary, there are definite factors that contribute more to the retention of employees. In this regard, Radford et al. (2015) identified job satisfaction, work environment, compensation, career opportunities and job security as important retention factors. In a South African study which was led by Döckel (2003), only six crucial retention factors were identified which organisations need to consider in relation to the retention of employees with high technology skills (Döckel et al., 2006). Compensation, job characteristics, opportunities for training and development, supervisor support, career opportunities and work-life balance policies were deemed to be the most relevant and comprehensive for the purposes of this research study as they enabled the researcher to formulate retention strategies to retain skilled employees in the water control sector.

The current study being reported on in this dissertation will make use of the first six factors (compensation, job characteristics, training and development opportunities, career development opportunities, supervisor support, and work-life balance). Osibanjo et al. (2014) defined compensation as the sum of monetary and non-monetary remuneration that employers offer to employees for the provision of their valuable services. According to Hong

(2017), a scientific and appropriate compensation system could assist organisations to build core competencies and achieve the common development of employees as well as employers. However, the design of the compensation system should not only focus on the methods used to reward employees' performance, such as the combination of short-term and long-term incentives and attaching importance to the degree of team effort, but also focus on how it will be integrated with the organisation's business strategies, through for instance, the employee retention strategy (Hong, 2017). According to Döckel (2003), job characteristics comprises of different tasks that include solutions to the existing challenging problems and opportunities to work with dedicated colleagues, and being able to pursue interesting assignments (Döckel, 2003).

Johanim and Yahya (2016) cited the dimensions in the job characteristics construct and included skill variety, task identity, task significance, autonomy and feedback as dimensions of job characteristics. Döckel (2003) stated that satisfactory job attributes will upsurge employee retention, where capability and significance of task work may enhance organisational commitment. The provision of training and development opportunities will make employees feel that their organisation values them, which in turn will increase their attachment to the organisation (Döckel, 2003). The employees' skillset is a crucial factor for most organisations and allows them to compete favourably with their business rivals (Döckel, 2003).

Organisational support theory states that supervisors' beneficial behaviour will result in employees being willing to help the organisation, increase their commitment, and decrease their tendency to leave their job (Burns, 2016). According to Burns (2016), supervisory support increases the rate of job satisfaction. Perceived supervisor support refers to an employee's overall perception regarding their value to, and role in, the prosperity of the organisation (Burns, 2016). Morrow (2011) explained that in the long term, perceived organisational support increases the affective commitment of employees.

Research has shown that career development and training is important for increasing employees' affective commitment to their organisations and for reducing their intentions to leave (Weng et al., 2010). João (2010) also found that the need for career growth and opportunities for advancement as significant factors that encourage skilled employees to stay within their organisations. According to a survey of the American Psychological Association (2017), employees reported feeling more supported by their supervisor when they were provided with opportunities to develop their technical, management and leadership skills, particularly when employees believe they will need these skills in future.

An employee may view the balance between the individual's personal life and work schedule as work-life balance and that a minimum conflict being experienced between the various roles the individual must fulfil in terms of their personal and work-life (Presbitero et al., 2016). Furthermore, organisations that practise work-life balance policies are able to retain their skilled employees (Presbitero et al., 2016). Sinha and Sinha (2012) supported the idea that jobs that offer work-life balance advance employee retention levels by offering opportunities for employees to fulfil their family and other responsibilities.

From the above literature, the constructs of the psychological contract and organisational commitment are imperative in the management of employee retention. Determining the relationship amongst psychological contract, organisational commitment and satisfaction with retention factors may assist by informing retention management practices.

However, retention management practices should not only consider the changing nature of the workforce in the workplace, but also changes to the demographical variables. Demographical variables are reviewed in employee retention studies as they have a strong influence on the intention to leave or stay in the organisation (Hayes, 2015). Furthermore, the demographical factors cannot be ignored, as age, gender and race have been found to influence employee retention (Nishii et al. (2015).

Rani and Samuel (2016) asserted that managing the dynamics of a multigenerational workforce (Generation Y, Generation X and Baby Boomers) is a crucial challenge for today's managers. Rani and Samuel (2016) held the view that employees between 35 and 55 were relatively stable, focused and loyal to their organisations, and also noted that younger employees (35 years and under) were more likely to move to new jobs than employees aged 35 to 55. Older employees will find it difficult to find new jobs because they are ageing, and therefore, they prefer to stay with the organisation (Ng et al., 2014).

According to Chin and Hung (2013), gender is explained as the behaviour, characteristics, action and roles that a community deems appropriate for females and males. Stamarski and Son Hing (2015) explained gender inequality as a complex phenomenon that can be experienced in structures, processes, and practices within an organisation. For women, some of the harmful gender inequalities are enacted within human resource practices. This is because human resource practices (in the shape of, policies, decision-making, and their enactment) affect the training, compensation, career development, and promotion of women (Stamarski & Son Hing, 2015).

Muleya (2017) postulated that females placed a higher emphasis on intrinsic values such as development opportunities, challenging work and autonomy, and those female employees working in male-dominated occupations were likely to have more difficulty moving up the organisational hierarchy. As a result, for example, female employees working in male-dominated occupations may have less access to career development opportunities. Different genders appeared to respond differently to the management practices of the human resources (Chin & Hung, 2013). However, studies have shown that retention and development of females still regress in most organisations (Walsh et al., 2016).

Racial differences and similarities can be regarded as a form of diversity that has been neglected in many studies, and without inclusion, it has become a basis for the poor management of human resources, and subsequent, poor organisational commitment (Amah & Oyetunde, 2019). According to Sikora et al. (2015), racial differences and similarities indicate to an employee how human resource management practices are interpreted and implemented in the organisation.

This will affect the employee's perception of the usefulness of human resource management practices, and will also affect their work attitudes, which will be reflected in job satisfaction and organisational commitment (Sikora et al., 2015). However, Lumley (2010) stated that black employees in the service industry who are provided with the opportunity to show their dedication to customers, are more committed to the employer. According to Maree (2015), South African professionals particularly Blacks, encounter career difficulties in their tenure in the workplace, hence, there is a necessity for further research into the individual career development programs. Furthermore, research into valuable components of the psychological contract for individual employees from different race groups, is also a necessity (Pant & Vijaya, 2015).

1.2 PROBLEM STATEMENT

The challenge facing human resource practitioners is the transfer of retention strategies to successfully manage the retention of employees in the era of Industry 4.0. It is beneficial for this study to focus specifically on employees working within the water sector to identify challenges the employees and employers experience in South Africa, understand the problem, and strive to formulate strategies to be used to retain skilled employees.

This study aims to extend the current body of knowledge by examining the relationship between the investigating correlation regarding psychological contract, organisational commitment and employee retention in a sample of employees in the water control sector.

According to the Global Risks Report of the WEF (2021), weather and human environmental damage have been ranked among the top ten global risks. According to this report, the global risks perceived to have both the highest likelihood of manifesting and that would have the highest impact on the world in the next decade were linked to water. Regarding access to water, sanitation, and hygiene (WASH) services, most people on earth are still living in water-scarce regions, in places without access to safe drinking water and basic sanitation. Furthermore, the WEF's Global Risks Report (2021) stipulated that COVID-19 has accelerated and broadened the impact of Industry 4.0, with the rapid expansion of e-commerce, online education, digital health, and remote work.

These shifts will continue to dramatically transform human interactions and livelihoods long after the pandemic is over. While these changes can provide huge benefits to societies, these developments also risk exacerbating and creating inequalities. According to an earlier WEF Global Risks Report (2018), factors such as population growth, urbanisation, climate change and rising economic activities threaten the capacity of the existing WASH (water, sanitation and hygiene) services, hence, there is a need in today's context to improve the WASH services. For example, introducing technological devices for the early detection and repair of water leaks by utilising remote sensors and the Internet of things (IoT) monitoring systems.

Other examples of WASH services in urban areas include water supply utilities, solid waste management systems, liquid waste collection and disposal systems. These systems are intended to protect the environment, as well as to ensure that the community needs regarding water, sanitation and personal hygiene are met. According to the United Nations International Children's Emergency Fund (UNICEF, 2017), WASH is a necessity and a right for all South African residents, and the country has already committed to meeting Sustainable Development Goal 6 to provide safely managed water, sanitation and hygiene to all by 2030.

Therefore, the future studies will focus more on the retention of skilled employees by exploring the relationship between the individual's psychological contract (in the form of the relational expectations, transactional expectations and employee obligations), organisational commitment (in the form of affective commitment, continuous commitment and normative commitment) and satisfaction with retention factors (in the form of work-life, career development opportunities, supervisor support, training and development opportunities, job characteristics and compensation).

Statistical analysis on relationship among psychological contract, organisational commitment and satisfaction with retention factors may assist with development in retention management strategies to retain employees in the era of Industry 4.0, specifically within the water control

sector. This research can be considered as a point of entrance towards exploring correlation amongst the three constructs mentioned above and how demographical variables (age, gender and race) contribute to the interplay between these variables.

Literature review on the psychological contract, organisational commitment and satisfaction with retention factors stipulates the succeeding research problems:

- Theoretical models do not comprehensively explain the relationship amongst the psychological contract, organisational commitment and satisfaction of retention factors.
- The context of retention management in Industry 4.0, human resource managers necessitate comprehension regarding the nature and direction of the theoretically and empirically correlation amongst variables, as the results of this study may provide new knowledge on management of retention strategies for employees in Industry 4.0.
- It appears that there is lack of research investigating the individual's psychological contract, organisational commitment, and satisfaction with retention factors and how the demographical variables (age, gender and race) contribute to the active relationship between these variables, particularly in the water control sector.

The statements of the problem lead to the subsequent general research question:

What are the relationship dynamics between an individual's psychological contract, commitment to the organisation, and satisfaction with retention factors, and does age, gender and race impact on these constructs in terms of employees in the water control sector?

Specific research questions were established for literature review and the empirical study founded on the above general research question:

1.2.1 Research questions

The specific research questions follow below (literature review):

Research question 1: How is retention of employees conceptualised in the Industry 4.0 workplace?

Research question 2: How are the constructs of psychological contract, organisational commitment, and factors affecting employee retention conceptualised and explained by theoretical models?

Research question 3: Does a theoretical relationship exist between the psychological contract, organisational commitment and satisfaction with retention factors?

- **Sub-question 3.1:** *What is the theoretical relationship between the psychological contract and organisational commitment?*
- **Sub-question 3.2:** *What is the theoretical relationship between psychological contract and satisfaction with retention factors?*
- **Sub-question 3.3:** *What is the theoretical relationship between organisational commitment and satisfaction with retention factors?*

Research question 4: What is the effect of demographical variables (age, gender and race) on the relationship between the psychological contract, organisational commitment and satisfaction with retention factors?

1.2.2 Research questions (empirical study)

The specific research questions follow below:

Research question 1: What is the statistical nature of the relationship between the demographical variables (age, gender and race), the psychological contract, organisational commitment and satisfaction with retention factors, as manifested in a sample of employees in the water control sector?

Research question 2: Does age, gender, race, psychological contract and organisational commitment significantly and positively predict employees' satisfaction with retention factors?

Research question 3: What differences exist in the psychological contract, organisational commitment and satisfaction with retention factors in terms of the demographical variables (age, gender and race)?

Research question 4: What recommendations can be formulated for the development of retention strategies, as well as possible future research in the field of Human Resource Management?

1.3 AIMS OF THE RESEARCH

Grounded on the above research questions, general and specific aims were formulated for the literature review and the empirical study:

1.3.1 General aims of the research

The general aim of this research was to determine whether a relationship exists amongst the psychological contract (independent variable), organisational commitment (independent

variable) and satisfaction with retention factors (dependent variable). The secondary aim of this study was to ascertain if human resources on various age, gender and race factions vary knowingly regarding the psychological contract, organisational commitment and satisfaction with retention factors

1.3.2 Specific aims of the research (literature review)

The following specific aims were outlined:

Research aim 1: To conceptualise and explain employee retention in the Industry 4.0 workplace.

Research aim 2: To conceptualise and explain theoretical models of the constructs psychological contract, organisational commitment, and satisfaction with retention factors.

Research aim 3: To conceptualise the theoretical relationship amongst psychological contract, organisational commitment, and satisfaction with retention factors.

- **Sub-aim 3.1:** *To conceptualise the relationship between the psychological contract and organisational commitment.*
- **Sub-aim 3.2:** *To conceptualise the relationship between the psychological contract and satisfaction with retention factors.*
- **Sub-aim 3.3:** *To conceptualise the relationship between organisational commitment and satisfaction with retention factors.*

Research aim 4: To conceptualise the effect of demographical variables (age, gender and race) on the relationship between the psychological contract, organisational commitment and satisfaction with retention factors.

1.3.3 Specific aims of the research (empirical study)

The following specific aims were outlined:

Research aim 1: To empirically investigate the statistical relationship between the demographical variables (age, gender and race), psychological contract, organisational commitment, and satisfaction with retention factors, as manifested in a sample of the water control sector. (This research aim relates to research hypothesis 1).

Research aim 2: To investigate whether age, gender and race, as demographical variables, and the psychological contract and organisational commitment, significantly and positively

predict employees' satisfaction with retention factors. (This research aim relates to research hypothesis 2).

Research aim 3: To empirically investigate whether individuals from the various age, gender and race groups differ significantly regarding the psychological contract, organisational commitment, and satisfaction with the retention factor variables. (This research aim relates to research hypothesis 3).

Research aim 4: To formulate recommendations for further research in the development of retention strategies, as well as possible future research in the field of human resource management regarding retention.

1.4 HYPOTHESES

Punch (2014) defined a hypothesis as an anticipated answer to a research question. Davis (2012) stated that in research studies, hypotheses are founded provided there has been acceptable preceding research on the topic to allow the study to make projections. Research hypotheses were formulated for the relationship of the psychological contract, organisational commitment and satisfaction with retention factors in the water sector to acknowledge the practical examination of the relationship between these variables. Based on literature review, the following hypotheses were devised:

Ha 1: There is a statistically significant and positive relationship between the demographical variables (age, gender and race), the psychological contract, organisational commitment and satisfaction with retention factors.

Ha 2: Age, gender and race, as demographical variables, and the psychological contract and organisational commitment, as a composite set of independent variables, significantly and positively predict satisfaction with the retention factor variables, as a composite set of dependent variables.

Ha 3: Employees from different age, gender and race differ significantly relating to the psychological contract, organisational commitment, and satisfaction with retention factors.

1.5 POTENTIAL VALUE ADDED

It was projected that this study would add to the knowledge base by recommending retention strategies founded in the relationship amongst the psychological contract, organisational commitment and satisfaction of retention factors in the water control sector. This study may

be useful as a result of the relationships found between the concepts, and may serve as an instrument in determining the psychological aspects that contributed to increasing organisational commitment, and enhancing the retention of skilled employees. The findings may also be useful to future researchers interested in studying these variables. According to Gani (2017), the concept of satisfaction with retention factors received adequate research in the past decades and is being recognised as a researchable topic. The research outcomes will donate to the body of knowledge concerned with the psychological aspects that could impact organisational commitment.

1.5.1 Empirical level

On theory and practical levels, the study will be useful because of the potential relationships that exist amongst the psychological agreement, organisational obligations and satisfaction with retention variables. If knowing relationships are found, the discoveries should prove valuable in increasing the satisfaction of retention factors of employees and subsequently retaining employees in the organisation. At a theoretical level, future literature review may be broadened by critically evaluating the three constructs. On this basis, the research will add valuable new knowledge that could be used in transforming human resource management exercises and developing policy to retain skilled employees.

1.5.2 Practical level

The potential contribution at a practical level involves the development of effective strategies and practices that will augment the psychological contract and organisational commitment, thus retaining employees. The research is useful because it will indicate if differences exist in the psychological contract, organisational commitment and satisfaction with retention factors in relation to demographical variables (age, gender and race). The demographical variables will indicate which age, gender or race group are more satisfied or less satisfied with retention factors, and which are likely to affect employees either to stay or leave the organisation.

The employer should engage employees and identify retention factors that are favourable and genuinely cost-effective with regard to the employees, and implement them. Furthermore, should the empirical study provide knowing relationship amongst the constructs, the findings might prove worthwhile for researchers desiring to study the impact of psychological contract on the link between their organisational commitment and their satisfaction with retention factors. This study may inform human resource managers about retention strategies that the employer could implement to build psychological agreement of individuals and improving organisational commitment. Furthermore, the employer may utilise the research findings to enhance the psychological contract, build organisational commitment, and formulate retention

strategies within the human resource management discipline. In practice, the study is expected to provide new solutions to achieving organisational commitment and retaining skilled employees.

1.6 RESEARCH DESIGN

Kirumbi (2018) defined a research design as the set of methods and procedures used in the collection and analysis of the variables specified in the research problem. Research design is a pattern to follow (methodology) in conducting study (Mackey & Gass, 2016).

Research is valid when a conclusion is accurate or true, and the research design is the conceptual blueprint within which research is conducted (Akhtar, 2016). Quantitative research was opted to explore the relationship amongst the psychological contract, organisational commitment and satisfaction with retention factors, and to determine how individuals from different demographical variables (age, gender and race) differ regarding these variables. In this study, the independent variables are the psychological contract and organisational commitment, and the dependent variable is satisfaction with retention factors. Responses obtained from the cross-sectional survey formed the data that was used to interpret the results of the survey.

Kumar (2011) explains quantitative research design as another approach to research and the design explore relationships, endorse theories and quantify problems. Furthermore, survey research has become the number one tool that researchers use to gather data (Surveymethods, 2017). Steber (2017) adds to this by stating that online surveys have become the default tool for many researchers. Online survey tools have led to the widespread use of quantitative surveys to collect, analyse and use data that can contribute to a more effective business model and better marketing strategies (Surveymethods, 2017). According to Surveymethods (2017), the advantages of using surveys are:

- Cost: online surveys have a small cost per participant if compared to other methods;
- Data collection: it is easier to collect, compile and analyse data;
- Sample size: surveys allow the researcher to reach thousands of potential participants which insures a more accurate sample from which to draw conclusions; and
- Candid responses: the anonymity of surveys allows people to be more sincere with their responses.

Surveymethods (2017) also mentioned that surveys have the following disadvantages:

- Sample choice: surveys are prone to errors and assumptions made by researchers about the sample being inaccurate. For example, if you are researching low-income communities, many may not have access to e-mails, so their voice would not be heard in your data.
- Rigidity: if the researcher fails to account for all possible answers, it is deemed that some data may be lost. For example, if the participant wants to elaborate on a question asked, but does not have space to do so, data will be lost.

The following discussion relates to the types of research design relevant to the current study.

1.6.1 Exploratory research

Exploratory research is the best approach to use when a researcher initiates a partly known field of study (Mackey & Gass, 2016). Similarly, Grinnell and Unrau (2011) explain that exploratory research befalls when information about the topic is unknown and the researcher want to explore the topic through the gathering of data. The major purpose of exploratory research is to acquire new acumen, assume initial investigations, formulate fundamental concepts, and to ascertain precedence for future research (Henry, 1190).

An exploratory method was used in the current study because it compared the different theoretical constructs.

1.6.2 Descriptive research

Descriptive research refers to the account of the features of an existing phenomenon (Salkind, 2018). The aim of descriptive research is to categorise methodically the relationships between different factors in an explicit research space (Saunders et al., 2012). A descriptive study was used in the literature review to form a concept or idea of the three constructs of the psychological contract, organisational commitment and satisfaction with retention factors. For the purpose of the study, a descriptive research design was employed for the sample profile, standard deviations, and internal consistency reliability coefficients in terms of the constructs (psychological contract, organisational commitment, and satisfaction with retention factors).

1.6.3 Explanatory research

Babbie (2016) described explanatory research as a method to prove that a relation between different variables and there is more to this relationship. The major objective of explanatory research is to demonstrate the degree of relationship amongst variables. Saunders et al. (2012) mentioned the major objective of an explanatory study is the demonstration of the extent of relationship amongst variables.

This research applied explanatory research in the empirical phase to investigate the relationship amongst the psychological contract, organisational commitment and satisfaction of retention factors, and the influence of that relationship on the human resource exercises that have an impact on retention. The aim of this research was not to examine the cause-effect relationship, but merely finding a relationship between the variable and indicating the direction of the relationship (Phophalia, 2010).

1.6.4 Research variables

The context within which this research study took place was the retention of skilled employees in the water control sector. The aim of this research is to evaluate the three constructs, namely, psychological contract, organisational commitment and satisfaction with retention factors. The research focused on determining whether a statistically significant relationship existed amongst the independent and dependent variables, and to determine whether demographical variables (age, gender and race) differed in terms of those variables.

This study's main purpose therefore was to evaluate the two independent variables (psychological contract and organisational commitment) regarding one dependent variable (satisfaction with retention factors). In this study, the criterion data of the Psychological Contract Questionnaire (PCQ) (Adams et al., 2014) and Organisational Commitment Scale (OCS) (Meyer & Allen, 1997) comprised the independent variables. The criterion data of the Retention Factor Measurement Scale (RFMS) (Döckel, 2003) comprised the dependent variable.

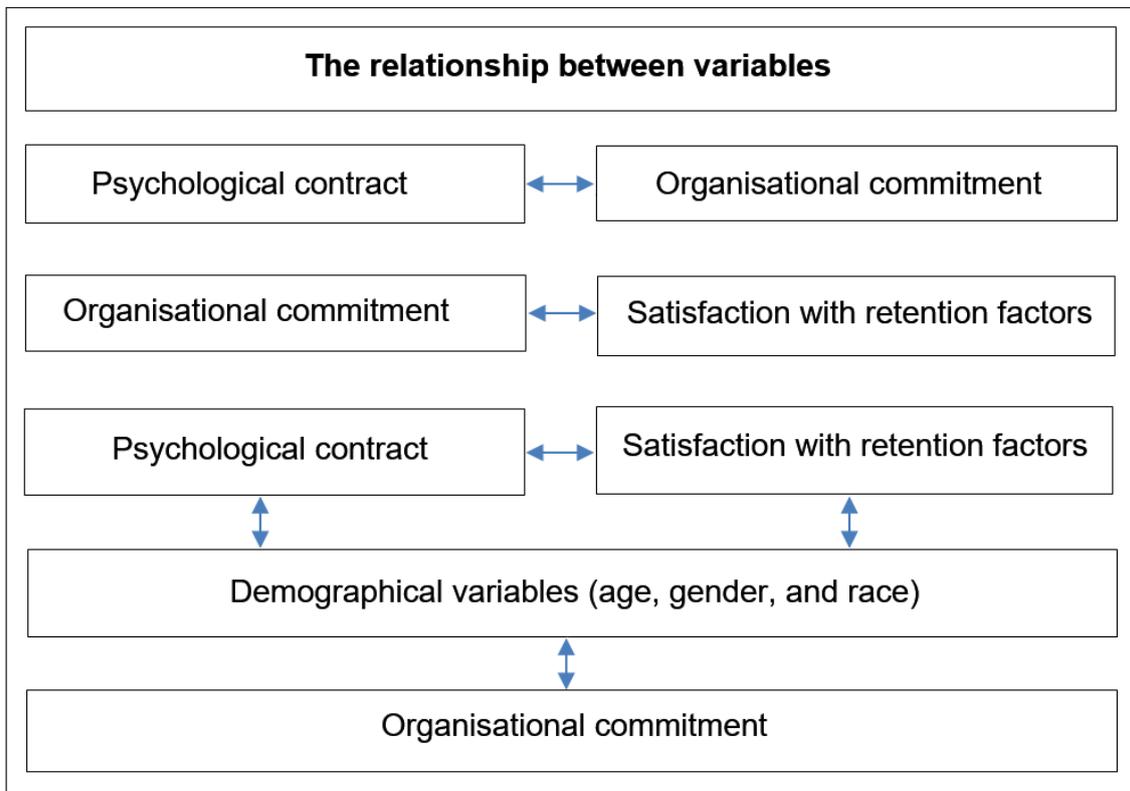
The research was interested in:

- Assessing the relationship among the psychological contract and satisfaction with retention factors.
- Assessing the relationship among organisational commitment and satisfaction with retention factors.
- Assessing the relationship among the psychological contract and organisational commitment.
- Measuring the relationship among the psychological contract, organisational commitment and satisfaction with retention factors.
- Measuring the relationship amongst age, gender, race, the psychological contract, organisational commitment and satisfaction with retention factors.

Figure 1.1 show theoretical relationship between the psychological contract, organisational commitment, satisfaction with retention factors, and demographical variables (age, gender and race).

Figure 1.1:

Theoretical relationship between the psychological contract, organisational commitment, satisfaction with retention factors and demographical variables



Source: Author's own compilation

1.6.5 Methods to ensure reliability and validity

1.6.5.1 Reliability

Reliability refers to the consistency, dependency, or stability of a measuring instrument (Cherry, 2014). Reliability can also be described as the scope of collecting data from a survey where similar observations are noticed, and researchers are able to draw conclusions on consistent results (Punch, 2014).

For the purpose of the current study reliability was guaranteed by using literature sources, proven theories and models (Cherry, 2014), and ensuring that recent and seminal literature was used. A sample of the population was used to ensure reliability of the empirical study. When the scores of the items in the instruments were consistent over a period of time, consistent in test administration and transparency, then the reliability of the research was achieved (Saunders et al., 2019). The Cronbach's alpha coefficient is the most widely used method to measure reliability. Therefore, the coefficient was employed in this research to establish the internal consistency reliability of the three instruments (PCQ, OCS, and RFMS).

1.6.5.2 *Validity*

According to Erasmus et al. (2010), a measuring instrument is valid when it measures what it is supposed to measure, or the extent to which an instrument fulfils the purpose for which it was intended. In turn, Saunders et al. (2019) stated that validity was represented when scores on the instruments drew meaningful and useful conclusions from the research. Validity has two essential parts, namely, internal (credibility) and external (transferability) validity. McLeod (2017) defined internal validity as the way the experimental design was structured, and external validity was defined as the process of examining the results and questioning whether there was a possible relationship.

To ensure research is internally valid, measuring instruments should be reliable and used in a well-founded methodology (Saunders et al., 2012). Salkind (2018) explain external validity as the degree whereby consistent outcomes are generalised from the new sample to the population from which the sample was taken. Valid and standardised measuring instruments were used to ensure validity of the empirical study (De Vos et al., 2011).

Validity requires a research instrument (questionnaire) to correctly measure the concept under study (Pallant, 2011). To ensure the validity of a research study, the following points need to be measurable (Mohajan, 2017):

- An appropriate time scale for the study must be selected.
- An appropriate methodology must be chosen.
- The most suitable method for the study must be selected.
- The respondents must not be pressured in any way to select specific choices among the answer sets.
- The assessment measures need to match the goals and objectives of the research.

1.6.6 **Unit of analysis**

Analysis unit is a major aspect of a research study (Trochim, 2020). The analysis unit is the entity that is being examined in the sample, such as individuals, groups, artifacts, geographical units and social interactions. In terms of the current study, the focus was on the perceived relationship between employee and employer. At subgroup level, age, gender and race were taken into consideration. The unit of analysis for the study was individuals focusing on the psychological contract, organisational commitment and satisfaction with retention factors.

1.6.7 Delimitations

The cause and effect of the correlation between three constructs of psychological contract, organisational commitment and satisfactions of the retention factors was not established, but only to investigate whether such a relationship existed. The control variables used to determine the factors that could influence the three constructs were limited to age, gender and race. This study was also limited to employees in the water control sector.

1.6.8 Methods to ensure adherence to ethical research principles

Ethical considerations emphasise whether the research procedures, code of principles, code of conduct, the responsibility of the researcher and the standards of conduct of a given profession were followed (De Vos et al., 2011). To safeguard confidentiality, the participants were required to keep all information to themselves and not compromise their identity. The following ethical principles were put in place to make sure the researcher obey the ethical requirements:

- Research was conducted within recognised parameters.
- Approval for the research was obtained from the University of South Africa.
- All sources were cited.
- Permission was obtained from the participating organisation.
- An informed agreement entered with the participants.
- All participants remained anonymous and participated on a voluntary basis.

All participants in the research were informed and briefed about the purpose of the research. The researcher explained the roles and responsibilities of all parties involved, and the participants signed a consent form to give assurance that information obtained via this research study would be used for research purposes only.

1.7 RESEARCH METHODOLOGY

The research study was conducted in three phases, namely, the literature review (Phase 1), empirical study (Phase 2), and integration and conclusion (Phase 3). Figure 1.2 outlines the phases of the research study, and thereafter the phases will be briefly described.

Figure 1.2:

Phases of the research study

Phase 1: Literature review			
Step 1: Conceptualisation of the psychological contract	Step 2: Conceptualisation of organisational commitment	Step 3: Conceptualisation of retention	Step 4: Integration: Theoretical link between the psychological contract, organisational commitment, and satisfaction with retention factors
Phase 2: Empirical results			
Step 1: Determination and description of the sample	Step 2: Choosing a measuring instrument	Step 3: Collection of data	Step 4: Scoring the results
Step 5: Formulate hypothesis	Step 6: Data processing	Step 7: Report and interpret results	
Phase 3: Integration and conclusion			
Step 1: Integration of research	Step 2: Conclusions, limitations, and recommendations		

1.7.1 Phase 1: The literature review

Step 1: Psychological contract

Conceptualisation of the psychological contract construct from a theoretical perspective followed by the theoretical model and its sub-variables were discussed.

Step 2: Organisational commitment

Organisational commitment was conceptualised from a theoretical perspective, and thereafter, the theoretical model and its sub-variables were discussed. The three components of the multidimensional approach to organisational commitment and the variables influencing organisational commitment were discussed.

Step 3: Employee retention

Employee retention was conceptualised from a theoretical perspective. Thereafter, the theoretical model of satisfaction with retention factors and the variables influencing employee retention were discussed.

Step 4: Theoretical integration: Linking the psychological contract, organisational commitment and satisfaction with retention factors

Step 4 of the literature review will be addressed by the integration of the theoretical link between the psychological contract, organisational commitment and satisfaction with retention factors in order to conceptualise a theoretical relationship among these variables.

1.7.2 Phase 2: The empirical results

Results are presented in Chapter 4 and 5. The empirical research study employed research methods to investigate the relationship amongst the variables of the psychological construct, organisational commitment, satisfaction of retention factors, and the demographical variables (age, gender and race). This phase included the following seven steps:

Step 1: Description and determination of the sample

Unit of analysis was the single permanent employee within the water control sector. A detailed discussion is provided in Chapter 5.

Step 2: Choosing an instrument

Apart from three research questionnaires, a demographical questionnaire containing questions regarding age, gender and race was used. The instruments that were used were the Psychological Contract Questionnaire (PCQ) (Adams et al., 2014), Organisational Commitment Scale (OCS) (Meyer & Allen, 1997) and the Retention Factor Measurement Scale (RFMS) (Döckel, 2003). These measuring instruments have been tested in South Africa for reliability and validity. A detailed discussion is provided in Chapter 4.

Step 3: Administration of the measuring instrument

The measuring instruments were administered to the participants by making use of an online survey. A detailed discussion is provided in Chapter 4.

Step 4: Scoring the results

The responses of participants to each of the items of the questionnaires were captured in an electronic spreadsheet format. All the data were statistically analysed using the IBM SPSS version 26 (2019). A detailed discussion is provided in Chapter 5.

Step 5: Formulate hypotheses

Chapter 4 presents hypotheses that determine the appropriate statistical analyses.

Step 6: Statistical analysis

Statistical procedures, such as descriptive statistics, correlational statistics and inferential statistics, were used to analyse the data. Correlation analysis was employed to examine the relationship amongst the psychological contract, organisational commitment and satisfaction with retention factors. A detailed discussion is provided in Chapter 5.

Step 7: Interpret and report results

The results are presented in Chapter 5 in tables and figures. The deliberations of the results is presented in a logical structure to confirm that the interpretation of the results is transmitted in a clear and articulate manner.

1.7.3 Phase 3: Integration of literature review and empirical study

Step 1: Integration of research

In Chapter 6, the outcomes of the literature review and empirical study are fused to provide the overall results of the research. Based on the overall findings, conclusions were drawn. Limitations are deliberated, recommendations made in relation to the psychological contract, organisational commitment and satisfaction with retention factors as constructs utilised to notify effective retention strategies.

Step 2: Conclusions, limitations, and recommendations

Chapter 6 presents conclusions that were made on the integration of literature review and empirical study. Recommendations are made with reference to the psychological contract, organisational commitment and satisfaction with retention factors, focusing on employee retention.

1.8 CHAPTER LAYOUT

Chapter 1: Scientific overview of the research

Chapter 2: Meta-theoretical context of the study: Retention of employees within the Industry 4.0 workplace

Chapter 3: The psychological contract, organisational commitment and satisfaction with retention factors

Chapter 4: Research methodology

Chapter 5: Research results

Chapter 6: Conclusions, limitations, and recommendations

1.9 CHAPTER SUMMARY

Chapter 1 introduced the background to the research, research problem, objectives of the study, research model, theoretical research, research design and methodology of the study. The motivation for this study was founded on the investigation of the relationship between the psychological contract, organisational commitment and satisfaction with retention factors in context employee retention in Industry 4.0, and the research may donate to employee retention in the water control sector. Chapter 2 addresses retention of employees in the Industry 4.0 workplace.

CHAPTER 2: META-THEORETICAL CONTEXT OF THE STUDY: RETENTION OF EMPLOYEES WITHIN THE INDUSTRY 4.0 WORKPLACE

This chapter conceptualises the concept of retention of employees within the Industry 4.0 workplace, and the impact of Industry 4.0 on the workplace and employees. Furthermore, the challenges of employee retention in Industry 4.0 workplaces, and specifically, in the water control sector are discussed. The intent of this chapter is to assess and define the meta-theoretical framework that limits its definitive boundaries.

2.1 INDUSTRY 4.0

This section focuses on the conceptualisation of Industry 4.0 and its impact on the current workplace. The term Industry 4.0 was first introduced publicly in 2011 as 'Industrie 4.0' by a team of representatives from different fields (such as government, business, and academia) under an initiative to enhance German competitiveness in the manufacturing industry (Rajashree, 2019). Industry 4.0 emerged as a high technology-themed project that encompassed the automated approach to production (Soylu, 2018). Industry 4.0 was consequently based on technologies and devices that communicate autonomously with each other along the value chain.

The German initiative proposed intelligent manufacturing environments through the development and full industrial implementation of Cyber Physical Production Systems (CPPS) (EBSO, 2015). The CPPS, which consists of independent and cooperative elements, creates smart factories when the systems are integrated with IoT monitoring systems (Cruz Salazar et al., 2019). Cruz Salazar et al. (2019) described a smart factory as a highly digitised and connected production facility that relies on smart manufacturing.

According to the research conducted by Zhong et al. (2017), three distinct manufacturing systems exist in Industry 4.0, each characterised by distinct challenges and opportunities. The systems are (1) intelligent manufacturing systems (IMS), (2) IoT, and (3) cloud manufacturing systems. Zhong et al. (2017) contended that IoT was the primary device in the implementation of Industry 4.0, as it allowed for the interconnectivity and integration of a collection of manufacturing sensors, actuators, controllers and devices to exchange data in order to optimise production on the manufacturing floor. The employment of IoT technologies occurred on the framework provided by the CPPS. The CPPS integrates cyber and physical spaces in manufacturing and employs sensing technologies that are integrated through communication systems to enable autonomous technology on the shop floor (Zhong et al., 2017).

The increasing presence of IoT and CPPS in manufacturing led to increases in the amount of data generated by the industry, which gave rise to big data analytics. The impact of big data analytics can be seen in the application of real-time data analysis on the production line. Real-time data analysis allows operators to make quick decisions to optimise processes, and to analyse process failures and quality defects (Zhong et al., 2017).

Although Industry 4.0 does not have a formally accepted definition, the concepts frequently associated with it include the IoT, digitalisation of data, remote monitoring, multi-disciplinary engineering, automation of controls through machine learning, and predictive analytics (Hermann et al., 2016). The matter is further complicated because universities and academics also differ in terms of the definition of Industry 4.0. For example, in Germany, the US, and the United Kingdom, the concept is known as Industry 4.0, Connected Enterprise, and Fourth Industrial Revolution, respectively (Morrar et al., 2017).

Schwab (2016) asserted that there have been four distinct periods of industrial revolution that the world has experienced, and is still continuing to experience, even today. Human civilisation underwent three industrial revolutions in the past (Darwish, 2018) and Industry 4.0 was built on those three preceding industrial revolutions (Cordes & Stacey, 2017), namely, the first, second and third industrial revolutions. Shivdasani (2019) defined Industry 4.0, using the first three industrial revolutions as context. Figure 2.1 provides a figure of different types of industrial revolutions.

Figure 2.1:

Different types of industrial revolutions

Industry 1.0	Industry 2.0	Industry 3.0	Industry 4.0
The use of water and steam power to mechanise production	The introduction of electricity which enabled mass production	The use of IT and the internet to digitise production, distribution, and services	The application of Artificial Intelligence, ubiquitous digital networks, and cyber physical systems
1765	1870	1969	Today

Source: Adapted from iED (2019)

According to Schwab (2016), an industrial revolution can be described as the appearance of new technologies and novel ways of perceiving the world that trigger a profound change in economic and social structures.

The first industrial revolution began in England, where production evolved from hand and muscle to machine use, and the use of coal instead of wood (Pezzey & Lu, 2017). Chen (2019) referred to the first Industrial Revolution as the period of industrialisation and innovation that took place during the late 1700s and early 1800s. According to Schwab (2016), the society was largely agrarian; life used to centre on farming, and the world began to rely on steam power and machine tools, while steamships and rail roads revolutionised how people got from point A to B. This revolution included the use of coal, water, and steam, bringing with it the steam engine and innovations that enabled the large-scale manufacturing of goods and products, such as textiles (Khan & Isreb, 2018). The manufacturing industry triggered the mechanisation and establishment of factories. Subsequently, Siemens (2015) defined the first industrial revolution as the mechanisation of production, moving from animal and human effort to the use of fuel for mechanical power. After the first revolution and the mechanisation of production, the foundations of the second revolution began to emerge.

The second industrial revolution came with the invention of electricity which enabled mass production and the onset of production lines (Khan & Isreb, 2018). This industrial revolution discarded the energy sources used in the first industrial revolution, and introduced the use of electricity and chemical material in the production and manufacturing process (Alçin, 2016). The inventions and introduction of steel, and the use of electricity helped the world to go faster and to become more productive (Schwab, 2016). By the middle of the 19th century, an extremely important development took place when electrical technologies were being used for the first time in factories (Alcin, 2016).

Manufacturers began incorporating computers and more technology into the factories, and that resulted in the emergence of the third industrial revolution. From the 1950s onwards, computers and digital systems enabled new ways of processing and sharing information (Khan & Isreb, 2018). The invention and manufacturing of electronic devices, such as the transistor and integrated circuit chips, made it possible to further automate individual machines to supplement or replace operators (Jeeritha & Ramya, 2018).

During the third industrial revolution, computers, telecommunication, and biotechnology influenced the direction and development of production (ESO, 2015). Programmable machines were developed for the first time in the early 1970s (Soylu, 2018). According to Jeeritha and Ramya (2018), this period led to the development of software systems to capitalise on the electronic hardware and to integrate systems by which enterprise resources enabled humans to plan, schedule and track product flows throughout the factory. The third industrial revolution was therefore grounded in new information technology (IT) that transformed most institutions and the way they function (Dosi & Galambos, 2013).

The fourth industrial revolution, or Industry 4.0, as it is more commonly referred to, was based on the third industrial revolution, and evolved exponentially rather than at a linear pace, which was characterised by the fusion of technologies that was blurring the lines between the physical, digital, and biological spheres (Schwab, 2016). Industry 4.0 refers to the period in which interrelated processes and objects are connected to each other via the Internet and communication, gathering data and completely changing the production process (Bayraktar & Ataç, 2018).

Industry 4.0 can be explained by the following three fundamental aspects:

- The digitisation and increased integration of vertical and horizontal value chains: development of custom products, customer's digital orders, automatic data transfer, and integrated customer service systems;
- The digitalisation of product and service offerings: complete descriptions of the product and its related services through intelligent networks; and
- The introduction of innovative digital business models: the high level of interaction between systems and technology opportunities led to the development of new and integrated digital solutions; the basis of industrial internet is the integrated and real-time availability and control of systems across the enterprise (Jeeritha & Ramya, 2018).

Jeeritha and Ramya (2018) also defined Industry 4.0 as characterised by the increasing digitisation and interrelationship of products, value chains and business models of the industrial sector. Furthermore, Industry 4.0 is a global development that shows no signs of slowing down. Therefore, Johannessen (2019) contested that Industry 4.0 is basically different and is characterised by a range of new technologies that are fusing the physical, digital and biological worlds, impacting all disciplines, economies and industries, and even challenging ideas about what it means to be human.

To better understand the concept of Industry 4.0 from an academic point of view, Hermann et al. (2016) conducted a comprehensive investigation into the fundamental design principles of Industry 4.0 and found that there are four fundamental design principles of Industry 4.0, namely, interrelationship, information transparency, decentralised decision-making and technical assistance. Vuksanović et al. (2016) further explained the concept of Industry 4.0 as the smart factory in which smart digital devices are networked and communicate with raw materials, semi-finished products, products, machines, tools and employees. The concept of Industry 4.0 could be described as an increase in the amount of digitisation throughout the entire value chain and a possible structuring of data transfer between people and objects in real time (Vuksanović et al., 2016).

Rajashree (2019) referred to Industry 4.0 as the integration of advanced manufacturing techniques with the IoT that created manufacturing systems that are not only interconnected but communicate, analyse, and use the information to drive further intelligent action back into the physical world.

The next section discusses how Industry 4.0 impacted the workplace and employees in this new digital era.

2.1.1 Impact of Industry 4.0 on the workplace

Johannessen (2019) set a chilling vision of how robots and artificial intelligence completely disrupted and transformed working life. Irrespective of whether people knew of Industry 4.0 or not, Keywell (2017) articulated that Industry 4.0 was upsetting humanity, automation, computation, and artificial intelligence. These concepts are no longer futuristic concepts but are the realities of today (Öztuna, 2017). According to Manyika et al. (2015), manufacturers had to adapt to the rapidly changing markets to remain competitive and to capture a market share in Industry 4.0. Kessler (2017) also reported that jobs are changing rapidly, and warned that in the future, many people might not find jobs even though they may be educated.

Adding to that chilling vision set by Johannessen (2019), Schwab (2016) indicated some concerns that (1) organisations might be unable to adapt to Industry 4.0, (2) governments could fail to employ and regulate new technologies to capture their reimbursements, and (3) the shifting of power to the decision-makers, will create important new security concerns, and unfairness may grow at the workplace. Furthermore, according to the WEF (2018), Industry 4.0 is accompanied by the development of new techniques and business models, transforming production processes, governmental decisions, and the entire society, through a new set of challenges and uncertainties.

Similarly, Mocan (2015) posited that Industry 4.0 is changing the current workplace environment together with the production processes. Mocan (2015) further proposed three reasons why organisations should digitalise, which include (1) inefficiency of governments to deliver basic services, (2) an increasing digital skills gap between modern and developing industries, and (3) an increase in corruption. In a study conducted by Wolter et al. (2015) for the German Institute of the Federal Agency of Employment, they predicted that as demand increases for digital technologies, there will be a need to invest more in education and training in new technology. Wolter et al. (2015) also predicted that in Germany 1 540 000 jobs will be lost by 2025, while 1 510 000 jobs will be created.

The closure of coalmines in Germany meant the loss of 30 000 jobs, however, this proved to be insignificant as those jobs were easily absorbed into the Industry 4.0 workplaces (Wolter et al., 2015). Therefore, it is evident that Industry 4.0 can destroy as well as create jobs.

On a more positive note, Roblek et al. (2016). the creation and optimisation of the value chain across the supply chain has been a key benefit of technological innovations in all industries. A study by Roblek et al. (2016) on the influence of Industry 4.0 on the current workforce indicated that the digitisation of production processes, with the specific optimisation of manufacturing information systems, has accelerated rapid advances in big data and connectivity within manufacturing sites. Automation would not only change how the product was built, but also has become more integrated with the deployment of CPPS (Roblek et al., 2016). Advances in ICT and network performance allow the interchange of data between manufacturing sites and suppliers, which connect operators to the entire supply chain in real time, and thus, create a new value chain (Roblek et al., 2016).

Corfe (2018) was of the opinion that Industry 4.0 could address productivity problems in several ways, such as:

- increased use of big data and data analytics;
- use of artificial intelligence and machine learning;
- robot-related productivity;
- autonomous vehicle-related productivity gains (automated commercial vehicles have the scope to be more efficient and productive than manually-driven vehicles);
- a return to real pay rises;
- leisure time; and
- safer and healthier working conditions.

While there are broad uncertainties about what Industry 4.0 might bring to the world of work, Heinrich (2019) categorised the views related to Industry 4.0 into optimistic and pessimistic views. The optimistic view presents a positive perspective on Industry 4.0, for example, while it is challenging for employees to compete with CPPS, it does not necessarily mean that employees will lose their jobs. In fact, Industry 4.0 has created jobs. Conversely, the pessimistic view presents the negative perspective that all jobs that can be handled by CPPS will be irretrievably replaced. In order to remain competitive organisations, need to manage the knowledge that will enable them to transition from employees performing routine tasks to employees enabling thoughtful exercises in the development of products (Krachtt, 2019).

As Industry 4.0 advances, the manual performance of employers will be replaced by generated and acquired Smart Manufacturing Objects (SMO) that are analysed in the cloud system. Schwab (2016) maintained that Industry 4.0 has forced companies to re-examine the way they do business, particularly due to key trends in the development of technology-enabling platforms that combine supply and demand to disrupt existing organisational structures. According to Nick and Pongrácz (2016), it was inevitable that information technology would transform the working conditions and efficiency of the workplace. Chauke (2018) agreed that new technology transformed the workplace.

According to Sima et al. (2020), the world is currently entering what is called the 'post-work' era. Conventional wisdom predicted that the working class would be the biggest job losers, and that the working professionals would need to be re-skilled to fit properly in Industry 4.0 organisations. Production systems have gradually been supplemented by information technology support instruments; mass production occurs at multi-site production areas, and the tasks become increasingly complex. Therefore, Industry 4.0 has become necessary to improve the workplace environment in terms of automation, operational efficiency, as well as effectiveness (Sima et al., 2020).

With the help of the Internet, the supplier, the manufacturer and the customer have created a single digital ecosystem where all relevant data and information can be accessed immediately in the cloud in order to coordinate activities as efficiently as possible (Ehret & Wirtz, 2017). With cloud computing, production has been completely transformed, and isolated production units have been merged into a fully integrated, highly efficient production process, resulting in a change in the relationship between manufacturers, suppliers and customers (Ehret & Wirtz, 2017).

However, for the manufacturing industry to capitalise on the capital and labour productivity opportunities, a corresponding transformation within the workforce is required to ensure that the emerging skills needs are met. In addition, manufacturers will need to employ updated training and workforce development strategies to match the evolving industry trends (Longo et al., 2017). Those training and workforce development strategies would have an impact on the employees' well-being. The following section examines the impact of Industry 4.0 on employees, specifically.

2.1.2 Impact of Industry 4.0 on employees

The human factor has continued to play a crucial role in Industry 4.0 because automation is unlikely to completely replace human abilities (Miller, 2017).

Human capital remains the key information processor, trouble-shooter, equipment monitors and decision-maker, who is required to perform higher cognitive demands and mental tasks to control production processes, evolving from simple (with mechanisation) to sophisticated cognitive (with computers) systems (Waschull et al., 2017).

In an organisational context, the term 'human capital' refers to the encompassing set of education, experience, knowledge and skills that employees utilise to generate value that contributes to the organisation's success (Agolla, 2018). According to Miller (2017), technology cannot replace the human touch. For example, the automatic teller machine where an individual withdraws or deposits cash is a service completely without human assistance, but when a client enters the bank and is assisted by a financial advisor, this is a completely different experience and the client feels that human touch by just talking to a professional.

Menon (2019) maintains that operations in organisations consist of a bundle of tasks, and if it is not possible to technically and economically automate one of the multiple tasks, then that job is probably safe. This ideology was shared by the researcher, Professor Tshilidzi Marwala who was cited by Chauke (2018) in his article "Jobs and Skills in the Fourth Industrial Revolution". The Prof Marwala based his argument on the Moravec dilemma. Moravec believed that the skills that human beings acquired a long time ago were much more difficult to automate than skills that were acquired more recently. Jobs that require the human touch are the jobs that will survive Industry 4.0 (Chauke, 2018).

According to a report by the Industrial Global Union (2017), today's employees do not necessarily lack skills, but the new Industry 4.0 workplaces require skills that they do not have. The WEF (2018) also postulated that new industries have created fewer jobs, but which require advanced skills that most individuals do not have. Adding to that, Flynn et al. (2017) mentioned that unskilled employees and lower creativity jobs would be mostly affected by Industry 4.0. It was therefore important for employees to equip themselves with the relevant knowledge and skills to ensure their survival and retention in the organisation. Similarly, Kolesnichenko et al. (2019) argued that employees should have unique abilities, not only to reproduce and transform knowledge, but also to create new knowledge. A review of the research on Industry 4.0 revealed that the curricula of many higher educational institutions did not effectively prepare students for the technology and processes they will be exposed to in future manufacturing (Maresova et al., 2018).

Up to the present moment, the focus has been on the development of learning factories in which operators communicate with digital resources, and the communicated information is then integrated within a smart factory (Sjödén et al., 2018).

For example, Bayraktar and Ataç (2018) explained that the introduction of robots into the workplace has changed the structure of the workforce in the short run and brought along a high rise in technological unemployment, while in the long run, the workforce will increase in quantity and highly qualified individuals.

Maresova et al. (2018) found that Industry 4.0 created new business models that changed entire value chains, including the way goods were being produced. Maresova et al. (2018) anticipated that organisations with work-life balance policies or practices would adapt quickly to the new Industry 4.0 workplace, since their employees are able to work effectively from home or remote places, particularly employees who are effective in communicating with each other through social media. However, Maresova et al. (2018) cautioned organisations against making training and upskilling obligatory because employees might be hostile to the displacement brought by Industry 4.0. Furthermore, Maresova et al. called for further research into the upskilling of the current workers. Alayoğlu (2010) supported the idea of upskilling employees and appealed to organisations to redefine its mission, job definitions and responsibilities. According to Maresova et al. (2018), Industry 4.0 requires employees who are already engaged in repetitive and routine tasks, but who are likely to easily adapt to new skills and engage in continued learning.

Menon (2019) explained that jobs in Industry 4.0 have been transformed (conversion of industrial and manufacturing processes into digital transformation) and that employees need a better understanding of how work has been transformed and what employees require to stay employable. Ahmad et al. (2018) agreed that employees should equip themselves with the relevant knowledge and skills to survive and be retained in their positions in the organisation.

2.2 RETENTION OF EMPLOYEES IN THE INDUSTRY 4.0 WORKPLACE

The review of the literature on Industry 4.0 and employee retention proposed a few future research opportunities. Future research could be promoted by looking into how to foster the right knowledge at educational level (Ahmad et al. (2018)). Being open-minded means the person is not afraid of change and is willing to try new things, which is the start of accepting the new working methods and business logistics that Industry 4.0 has brought to the organisation (Feng, 2016).

The way in which the Industry 4.0 workplace has influenced and will continue influencing the retention of employees in the future is still unclear for most organisations across the world (Schwab, 2016). Certain positions or skills that currently exist may become redundant in the future, and some professions may become obsolete due to technological advancements.

The biggest problem in the manufacturing industry before the emergence of Industry 4.0 was productivity and retention (Nick & Pongrácz, 2016). In today's workplaces, organisations fail to retain skilled employees because of high competition within the industry (Shekhawat & Sandhu, 2016). Consequently, employers should concentrate on retaining skilled employees rather than on recruitment (Mathieu et al., 2015).

De Vos and Cambré (2016) suggested that retention of skilled employees would financially benefit most organisations. Employers should make the retention of skilled employees a priority (Mathieu et al., 2015). Nwokocho and Iheriohanma (2012) researched strategies of employee retention, contemplate that with the continuing movement of people across the borders, employee retention would continue to increase at a fast pace.

Increasing global competition has caused organisations to experience difficulties with retention, as most employees are attracted to organisations that offer better compensation (Muleya, 2017). Pink-Harper and Rauhaus (2017) further emphasised that employee retention remained a huge challenge to organisations if the retention factors were not appreciated by employees. For their part, Ahammad et al. (2016) argued that the retention of employees had an important bearing on knowledge transfer. Employees with special knowledge were decisive in maintaining competitive advantage of the organisation, especially at the onset of Industry 4.0. Therefore, employee retention is necessary, not only because the skills of experienced employees are lost when they leave the organisation, but also the networks and knowledge they hold (Makhubela & Ngoepe, 2018).

2.3 EMPLOYEE RETENTION WITHIN THE WATER CONTROL SECTOR

Hatler (2020) alerted the water control sector that Industry 4.0 was important for several reasons that addressed challenges being faced by the organisation, such as the ageing workforce and asset management. Many older employees have retired and others are approaching retirement period, while younger employees have left the organisation for better work opportunities (Hatler, 2020). In this way, the employees' departure depleted the entire workforce and resulted in the loss of skilled employees, who sometimes were replaced by semi-skilled employees or the vacancies were left unfilled (Hatler, 2020).

Currently, investors are reluctant to finance the water control sector, especially where refurbishments are required or old and dilapidated infrastructure needs to be replaced because the assets were not properly managed, In addition, operating costs have also skyrocketed because machinery and equipment are not properly maintained (Hatler, 2020).

According to the National Treasury report (2020), the 2019 budget review on water infrastructure projects has been allocated R90.4 billion between 2019/20 and 2021/22. However, this budget is insufficient and will not enable the South Africa Government to support inclusive growth and economic transformation if water supplies are severely constrained.

While water remain an essential commodity for human life, business and the economies of countries around the world, its usage and services has grown at more than twice the rate of population growth in the last century (Raju & Manasi, 2017). There is a need to embrace the new innovative technologies of Industry 4.0 to assist countries facing diverse water challenges (Omotayo & Telukdarie, 2019). The water control sector generates significant volumes of water, and this has caused the sector to be recognised as a data-driven industry. According to Renze (2019), the water sector has become an artificial intelligence industry, which when implemented usefully, would assist the water control sector to minimise costs and maximise revenue.

Table 2.1 identifies the benefits that an IoT-based system would hold for the water utilities industry.

Table 2.1:

Benefits of IoT-based system to the water utilities industry

Application of IoT to water sector	Description of how IoT-based technology has empowered the water industry
Water leak detection	IoT technologies provide smart ways of running of water facilities and operations, makes it easier to detect water leaks more precisely, and increases the rate at which leaks are being detected.
Water quality monitoring	With IoT devices, smart water monitoring equipment can be deployed to collect and monitor pH, turbidity, flow rate, and to dispatch it to the water management network that allows utility companies to view and analyse the water quality in real time.
Real-time water control	IoT provides real-time access and control to allow the water industry to monitor and configure various aspects of water management and operations remotely which allows the field technicians to work from any location and thereby save travel cost and time.
Predictive maintenance of water infrastructure	Use of IoT technology combined with other technologies and tools such as computer vision, machine learning, big data and analytics, can assist the water sector to monitor and determine when scheduled maintenance is needed for the water infrastructure.

Source: Adapted from Radhakrishnan & Wu (2018)

The United Nations World Water Development Report 2021, titled “Water drives job creation and economic growth”, published by the United Nations Educational, Scientific and Cultural Organisation (UNESCO, 2021), revealed that in recent decades, the number of people employed in the water control sector has consistently decreased. The reasons were lack of interest from new graduates in jobs in the water sector, lack of resources to retain skilled employees, especially in the public sector, and an ageing workforce. Added to these challenges were the difficulty in retaining skilled employees to live and work in rural areas, and the stigma associated with the water sector. In some regions, such as West Africa, it was particularly difficult to attract skilled workers to what was considered a degrading occupation (UNESCO, 2021).

Primus (2017) described liquid utility field employees as people who work on wastewater purification plants. According to Primus, these employees are professionally disconnected because of the negative connotation towards the term ‘wastewater’, and their on-the-job experience with an entry level of a high school qualification. These liquid workers were at a higher risk of injury and illness due to poor safety measures. Primus (2017) referred to this unsafe workplace environment as a ‘hidden key to employee retention’ because employees feared to raise the issue.

Carey (2020) further welcomed the measures announced by some governments to mitigate the impact of the loss of jobs in the water control sector, and called for policies to ensure the continuous access to quality water. In South Africa, the Engineering Council of South Africa (ECSA) (2020) revealed in its 2019-2020 annual report that the total number of registered professional engineers in South Africa increased from 17 226 to 19 523. The core focus of ECSA is to provide and implement a framework for the assurance of quality engineering standards in education, training, and professional practices in South Africa. As such, engineers are the designers of water purification plants in South Africa and manage most of the water plants in municipalities and water boards. Table 2.2 shows the dominant age group of the professional engineers in South Africa.

Table 2.2:

Dominant age groups of professional engineers

Age group	Black	Coloured	Indian	White
30-39 years	3 264	219	748	2 342
40-49 years	2 521	290	701	2 853

Source: ECSA (2020, p. 90)

The age group 30-39 years was dominated by black engineers, followed by whites, whereas the age group 40-49 years had the highest number of white engineers. Chapter 5 of this study shows that black participants dominated in both participant age groups, 30-39 and 40-49 years. The empirical study supports the dominant age groups, as revealed by the ECSA report (2020). Table 2.3 shows the categories of professional engineers based on gender in South Africa.

Table 2.3:
Categories of professional engineers based on gender

	Male	Female	Total
Professional engineer	18 385	1 138	19 523
Professional technologist	5 923	489	6 412
Professional certificated engineer	1 057	6	1 063
Professional engineering technician	3 081	767	3 848

Source: ECSA (2020, p. 82)

The above statistics prove that the water control sector in South Africa remains a male-dominated workplace. Table 2.4 below shows the categories of professional engineers in South Africa, based on race.

Table 2.4:
Categories of professional engineers based on race

	Blacks	White	Indian	Coloured
Professional engineer	2 176	15 966	1 149	232
Professional technologist	2 011	3 660	493	248
Professional certificated engineer	76	940	35	12
Professional engineering technician	2 521	950	189	188

Source: ECSA (2020, p. 83)

In summary, ECSA's (2020) report coincided with the sample profile of this study, that is, the demographical variables related to age, gender and race in the water control sector. South Africa lags behind other developing countries on the international benchmark in terms of the average population per engineer.

For example, one engineer in South Africa services an estimated 3 166 people, compared to Brazil's 227 and Malaysia's 543 people per engineer (Raidani, 2019). The total number of engineers increased by 566, if compared to the total number of 2 600 engineers in 2018 (ECSA, 2018). It is evident from these figures that South Africa has a severe shortage of engineering practitioners. Research has showed that shortage of skills remains a key obstacle to economic growth, job creation and business expansion. South Africa therefore needs to drastically increase the number of engineering graduates in the next few years to respond to the challenges of Industry 4.0 in the water control sector. Therefore, the retention of these skilled employees is also important.

A review of the literature on employee retention in science, technology, engineering, and mathematics (STEM) showed that women left the STEM disciplines in disproportionate rates compared to men throughout their career cycles in the water industry (UNESCO, 2021). The retention gender gap among employees in the water control sector can be attributed to the plethora of barriers that often confront women in the workplace (World Bank, 2019). These barriers are mostly related to the retention factors, as identified by Döckel (2003).

One of the main reasons why women who worked in the STEM disciplines left their jobs was the inflexibility of the working hours (Corbett & Hill, 2015). This often made it difficult for women to balance their work and family obligations (Fouad et al., 2017). The International Labour Organisation (ILO) (2019) estimated that women were paid 20% less than men globally. Recent World Bank water projects aimed at enhancing gender diversity in the water control sector encouraged the water control sector to review their human resources policies (World Bank, 2018).

While South Africa is a water-scarce country, Kapa (2015) identified the problem of low employee retention at a water works organisation as due to a shortage of skilled water managers, scientists and engineers. According to Kapa (2015), the employee turnover was caused mainly by unsafe and unhealthy working conditions and non-competitive salaries. Kapa (2015) further recommended development and implementation of human resource policies aimed at the promotion of work-life balances as a strategy to maximise retention. Msweli's (2018) presentation at a seminar of South African Local Government Association on staff retention highlighted that rural municipalities experience high levels of poverty, a lack of economic activity, poor infrastructure, and lack of social activities, all of which contributed to staff turnover. There was also evidence that employees left their organisation for reasons that could be avoided. Although Industry 4.0 has various challenges and perceived threats for businesses and organisations, its intention was to create more effective opportunities for both the employee and employers (Hecklauer et al., 2016).

2.4 CHAPTER SUMMARY

Chapter 2 addressed the literature aimed at the explanation of the concept of Industry 4.0, its impact on the workplace and on employees, the retention of employees in the Industry 4.0 era, and within the water control sector.

Chapter 3 aims to conceptualise and explain the main concepts of the research by conducting an in-depth literature review. The emphasis is on the three constructs (psychological contract, organisational commitment, and satisfaction with retention factors), together with their theoretical models including a discussion on the variables influencing the quoted constructs.

CHAPTER 3: PSYCHOLOGICAL CONTRACT, ORGANISATIONAL COMMITMENT AND EMPLOYEE RETENTION

Chapter 2 discussed retention of employees within the Industry 4.0 workplaces in the water control sector. This chapter, Chapter 3, addresses the research aims linking to the literature review. The focus of this chapter is therefore to conceptualise and explain the three constructs (psychological contract, organisational commitment and satisfaction with retention factors) and their related theoretical models. Age, gender and race including other variables influencing the psychological contract, organisational commitment and satisfaction with retention factors will be discussed. Finally, the practical implications of the theoretical relationship between these constructs will also be explained.

3.1 PSYCHOLOGICAL CONTRACT

This section deals with the conceptualisation of the psychological contract and its sub-variables (relational expectations, transactional expectations, and employee obligations). Thereafter the theoretical model will be discussed.

3.1.1 Conceptualisation of psychological contract

A psychological contract is the belief an employee held in the exchange agreement that is reciprocal in nature that exists between the employee and employer (Alcover et al., 2017). Professor et al. (2017) defined psychological contract based on actual and unwritten reciprocal expectations, implicit contract, perceptions and beliefs and further refers psychological contract as an institutional term that interprets the fulfillment and non-fulfillment of workplace relationships between employees and employer in terms of mutual obligations, expectations and promises.

Karagonlar et al. (2016) described the psychological contract as the faith between two parties (employee and employer) on the reciprocal agreement in which some responsibilities must be accomplished, some contributions made, and organisational goals attained (Low et al., 2016). The psychological contract could also be referred to as the unwritten beliefs and assumptions that employers have about the commitment and organisational outcomes that are generated through the efforts of employees. Conversely, the psychological contract also refers to the unwritten beliefs and assumptions that employees have about their roles, support, conditions of employment, and the opportunities for growth and development they would receive from their employer (Naidoo et al., 2019).

Briefly, the construct of the psychological contract signifies an employee’s vision about the reciprocal obligations due by both parties (employee and employer) to each other (Guo, 2017; Karagonlar et al., 2016). Disparity between formal and psychological contracts is that the latter contract tends to be implicit, while a formal contract is explicit (Karagonlar et al., 2016). Li et al. (2016) explained that the disparity between the two contracts is based on the opinions of individuals and not on written and legal agreement (O’Meara et al., 2016). For more simplicity, Conway and Briner (2005) narrowed beliefs to the promises, obligations and expectations of the parties to the contract, as represented in Table 3.1.

Table 3.1:

Tapering of the beliefs

Belief	Definition	Examples
Promise	A commitment to do or not to do something (Rousseau & Parks, 1993).	I will get the reward because that was the deal.
Obligation	The constraining power of a law, percept, duty, contract (Concise Oxford Dictionary, 1996).	I should get the reward because I worked hard.
Expectation	The act or instance of expecting of looking forward; the probability of an event (Concise Oxford Dictionary, 1996).	I am likely to get the reward as that has happened occasionally in the past.

Source: Conway & Briner (2005)

For the purpose of this study, psychological contract refers to the opinion that an employee holds in terms of his or her employment relationship, and the perception the employee may have of the implicit agreement between the employee and employer.

3.1.2 The psychological contract models

The concept of the psychological contract is rooted in the social exchange theory (Blau, 1964). According to Blau (1964), fulfilment of obligations and failure to fulfil obligations by both employee and employer within the social exchange relationship will normally result in positive and negative consequences respectively. A psychological contract is the manifestation of the exchange agreement accomplished of the promises (Garder et al., 2020).

The theories and explanations of the psychological contract arose by the work of organisational and behavioural theorists, Chris Argyris and Edgar Schein around the 1960s, (Subramanian, 2017).

Restubog et al. (2015) reported that Rousseau (1989) tested the assumptions of the psychological contract by redefining the construct. During this time, several researchers emphasised the crucial constructs, opportunities, beliefs and descriptions of the psychological contract. Subsequently, Rousseau (1995) redefined the psychological contract as a vision of the worker that was formed by the employer, on the circumstances of an interchange arrangement between the two parties.

The social exchange theory and psychological contract construct have the same assumption that the employee and employer in an interchange arrangement will intensely respond to those obligations that are useful to them (Rayton et al., 2015). The social exchange theory refers to the delivery of the content of the interchange arrangement, whereas the psychological contract construct is concerned with whether the delivered interchange arrangement meets the expectations of both parties (Rayton et al., 2015). The relationships between individuals and their organisations can be understood using the framework of social exchange theory. Social exchange theory can be described as a conceptual paradigm that has application across several social science disciplines such as anthropology, psychology, and management (Cropanzano et al., 2017).

A psychological contract is formed as early as the recruitment stage of an employee's work life and continues through to retirement or resignation (Robinson & Rousseau, 1994). Conway and Briner (2005) confirmed that during the recruitment stage, employers and employees make offers to each other in terms of the prospective relationship, and if an agreement is reached, the initial statements may later be remembered as promises and result in expectations that form the basis of the psychological contract. The exchange of what was given relative to what was expected to be received is termed the 'mutuality of expectations and obligations' (Savarimuthu & Jerena Rachel, 2017). Whether the parties agree on specific contract terms (mutuality) and on reciprocal contributions (reciprocity), it has been postulated that these terms play a fundamental role in shaping the operation of an employment relationship (Rousseau, 2001). Furthermore, the psychological contract has been categorised into to four contracts. They are transactional, relational, transitional, and balance contracts (O'Meara et al., 2016). These concepts are discussed below.

3.1.2.1 Transactional contract

The transactional contract is established on circumstances of the employment relationship that is clear and understandable and includes specified obligations (Rousseau, 2004). This type of contract refers achievable objectives, such as experiences and actuals (Seopa et al., 2015).

According to Seopa et al. (2015), loyalty and organisational commitment are non-existence from a transactional contract because transactional contracts are established in terms of monetary exchange which is based on job performance. A transactional contract revolves around short term financial items, for example, performance bonus and encompasses fulfilment of obligations from both the employee or employer (Agarwal, 2015). Gardner et al. (2015) argued that this type of contract is based on a *quid pro quo* transaction that translates into employer money in exchange for employee productivity. around

3.1.2.2 *Relational contract*

Relational contract is not time bound as compared to transactional contract. The contract includes monetary and non-monetary compensations (Persson & Wasieleski, 2015). The compass of the relational contract affects the employees' work-life balance and entails extensive investments from the employee and the employer, including training and career development opportunities. The development of the relational contract depend on the employment relationship has the capacity to grow over time (Persson & Wasieleski, 2015).

According to Persson and Wasieleski (2015), a historical relationship between employee and employer has grown over time, and this assisted with the formation of beliefs and expectations amongst the participants. Incentives are part of relational contract, for example, training and development opportunities, compensation and joint decision-making in the workplace (Gardner et al., 2015). A relational contract is branded by aspects of trustworthiness, where the employee and employer interchange each other's needs and expectations (Manxhari, 2015). Gardner et al. (2015) argued that optimistic relational contracts related to cheerful employee responses, such as improved commitment to the organisation.

3.1.2.3 *Balanced contract*

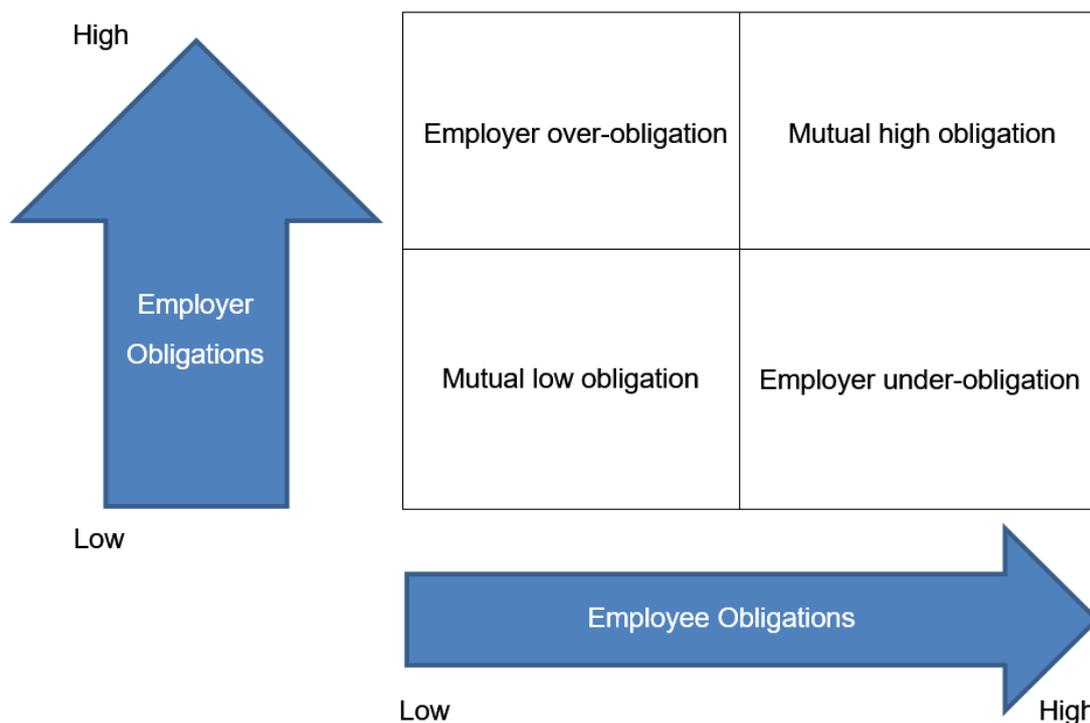
According to Alcover et al. (2017), balanced contracts are a combination of the relational and transactional psychological contracts. These contracts are characterised by the long-term prospect of the relational contract but with the flexibility to change the performance terms of the contract over time due to changing circumstances. (Alcover et al., 2017).

The balanced psychological contract is a multifaceted combination of transactional and relational perceptions where the focal point is on a long-term employment relationship and are related to performance expectations (Lin & Tang, 2016). Nevertheless, the contract comprises of both specific and open-ended employment perceptions that are based on the economic condition of the employer organisation (Mayes et al., 2016). Again, the balanced psychological contract comprised of perceptions that have open-ended timeframes (Mayes et al., 2017).

A balanced psychological contract is identified by the expectations that are impartial to both the employee and the employer, where neither is expecting more or less of the other (Morrice, 2022). For an employment relationship to grow well, a balanced contract must exist for both parties and where a balanced psychological contract exists, the employee is more likely to be more committed (Morrice, 2022).

According to Vantilborgh et al. (2014), many organisations are faced by an ageing workforce, and have had to examine how older employees can be optimally motivated and retained. It is essential to understand what older employees expect from their organisation. Vantilborgh et al. (2014) introduced the psychological contract describing the mutual obligations between employee and employer. Figure 3.1 illustrates the mutual obligations between employee and employer.

Figure 3.1:
Mutual obligation between employee and employer



Source: Adapted from Vantilborgh et al. (2014, p.122)

According to Vantilborgh et al. (2014), a balanced low obligation is a period when both employee and employer have low mutual obligations, which may, in turn, result in unbalanced low obligation. which Rousseau (2000) described as a transitional psychological contract.

An employer may perceive an over-obligation, while an employee may perceive an under-obligation, both of which are unbalanced obligations (Van de Ven, 2011). Table 3.2 displays a summary of the different types of psychological contract, where the transitional and transactional contracts are short-term contracts with low mutual obligations, while the balanced and relational contract applies to an open-ended period with balanced low mutual obligations (Van de Ven, 2011).

3.1.2.4 Transitional contract

Rousseau and Ho (2000) explained that the transitional contract emerges when the employer alone, exclusively changes the terms of the contract in response to a crisis. This led to a violation of the psychological contract, and ultimately, lead to employee-employer mistrust. The commitment of the employee to the employer will also decline.

According to Maguire (2002), changes in transactional terms of the contract will influence the kind of relational rewards expected or obligations perceived by the employee (loyalty and commitment). Negative transactional terms will lead to employees withdrawing some or all their contributions in terms of the relational component of the psychological contract. A negative transactional contract will reduce commitment and loyalty in management, which has also been referred to as unbalanced mutual or low mutual obligations (Maguire, 2002), which leads to a transitional psychological contract or unbalanced low employee obligations. Table 3.2 below summarises the different types of psychological contract.

Table 3.2:

Summary of different types of psychological contract

		Contract requirements	
		Specific	Weak
Time	Short term	Transactional	Transitional
	Open-ended	Balanced	Relational

Source: Adapted from Rousseau & Wade-Benzoni (1994)

Lu et al. (2016) suggested that organisations should explore the different kinds of contracts so that they can achieve a better understanding of their employees' interests and be able to offer the most suitable psychological contract content that will result in the organisational commitment of employees to the organisation.

The nature of the psychological contract compels employees to develop the perception that the organisation has certain obligations towards the employees, and in return employees have certain obligations towards the employer (Persson & Wasieleski, 2015). Psychological contract contains promises made by both employee and employer (Bordia et al., 2015). The employers' expectations regarding the mutual exchange are that the employees are expected to be loyal to the organisation, while the expectations of the employees include promotions, job security and earnings (Milanović et al., 2018). While the psychological contract is operationalised in terms of the employer's obligations (career development, remuneration, training, concern for employees' well-being and support) and the employee's obligations (in-role and extra-role performance, loyalty, and flexibility), its application in an employment relations context is mainly related to employee perceptions of employer obligations (Alcover et al., 2017).

Payne et al. (2015) contended that loyalty, trust, and commitment could be referred to as employee obligations, whereas employer obligations include compensation, job characteristics, training and development opportunities and supervisor support. According to Tshoose (2011), the employer has various obligations, such as the duty to provide work and pay for work done, and to provide a safe work environment, whereas the employee has a duty of obedience, attendance, competence, good faith and fidelity. Table 3.3 summarise employer's obligations.

Table 3.3:
Summary of employer obligations

Content area	Source
Opportunity to learn and develop employee's professional capabilities.	Chaubey et al. (2015)
Provide employees with job assignments, promotion opportunities that would help in enhancing employee's career development and develop marketable skills.	Klongerbo (2019)
Job content.	Freese & Schalk (2008)
Financial rewards.	Freese & Schalk (2008)
Benefits.	Chaubey et al. (2015)
High level of trust and fairness.	Rahman & Basit (2017)
Creation of a safe working environment.	Chaubey et al. (2015)
Work-life balance.	Freese & Schalk (2008)
Humanity to employees.	Chaubey et al. (2015)

Training and career development of employee.	Low et al. (2016)
Provide employees with opportunities to grow in the organisation.	Klongerbo (2019)
Consultation and communication with the employee.	Chaubey et al. (2015)

Source: Author's own compilation

Table 3.4 summarise employee's obligations.

Table 3.4:

Summary of employee obligations

Content area	Source
Employee works contractual hours and is available in emergencies.	Chaubey et al. (2015)
Employee's satisfaction with psychological contract.	Van Dyk et al. (2018)
Employee's feelings of self-worth rest on the psychological contract.	Gail (2016)
Honesty	Chaubey et al. (2015)
Competence and quality job by the employee.	Chaubey et al. (2015)
Embark on job assignments that enhance employee's career.	Klongerbo (2019)
Increased employee participation in decision-making.	Klongerbo (2019)
Employee's loyalty to the contemporary organisation.	Chaubey et al. (2015)
Personal sacrifice of employees to the employer.	Harold (2008)
Employee's responsibility for safety and health at the workplace.	Tshoose (2011)
Employee takes care of the employer's property and uses it.	Chaubey et al. (2015)
Proud to be part of the organisation.	Harold (2008)
Loyalty.	Chaubey et al. (2015)

Source: Author's own compilation

According to Bordia et al. (2015), employees start to evaluate the operation of their psychological contract immediately at the beginning of the employment relationship. This assessment is based on the fulfilment of the employer's obligations. The belief of both employee and employer to the exchange relationship is boosted when the psychological contract is achieved (Li et al., 2016). However, if one party feels that the other party has failed to deliver on promises made, then the psychological contract breach has occurred (Rayton et al., 2015).

Again, the psychological contract breach befalls when one of the parties fails to deliver on the assured obligations (Li et al., 2016). Psychological contract breach denotes the awareness of an employee that his or her contributions were not reciprocated by the employer (Persson & Wasieleski, 2015). De Ruiter et al. (2016) identified three causes that alert an employee that the psychological contract has been breached. The causes are deliberate renegeing, unintentional renegeing, and incongruence.

Deliberate renegeing happens when the employer default on a promised expectation. Unintentional renegeing happens when an employer is willing to fulfil its obligation but is failing to do that. Incongruence happens when the employer is persuaded that it has fulfil its obligation, while the employee feels that the employer organisation has failed to do so. If the employee perceives an imbalance in a psychological contract breach, he or she develops feelings of frustration, betrayal, anger, resentment, a sense of injustice and wrongful harm (Griep et al., 2016). The employee feels disadvantaged as he or she perceives that the organisation has failed to fulfil its obligations, irrespective of the fact that the individual has fulfilled his or her obligations towards the organisation (Bal & Kooij, 2011). Although psychological contract breach is positively related to feelings of violation (Sharif et al., 2017), it does not always result in violation.

The term psychological contract breach has been exchanged with psychological contract violation; however, psychological contract breach differs from violation (Rayton et al., 2015). Psychological contract violation is defined as a sensitive practice which is branded by hatred, emotive experience, characterised by hatred and resentment, which might be the perception that promises were not fulfilled (De Ruiter et al., 2016). According to Wang and Hsieh (2014), violation of the psychological contract is the aftermath of the infringed psychological contract.

Persson and Wasieleski (2015) referred to psychological contract violation as an emotional state that supplements psychological contract breach. In addition, the perceived violation of the psychological contract relates to an employee's affective reaction to the perception that her or his employer has failed to meet its obligations in terms of the exchange relationship (in other words, breached the psychological contract), even though this perception may neither be accurate nor valid (Schmidt, 2016). While psychological contract breach occurs when an employee perceives that an employer has not met its implicit or explicit undertakings in the exchange relationship (a cognitive perception), violation entails the emotional reaction (negative and relatively intense) to a perceived breach (Alcover et al., 2017). It is important to note that psychological contract violation is conditional upon the perception of psychological contract breach, that is, feelings of violation cannot exist without a preceding breach (Griep et al., 2016).

There has been a surge in interest in how and why employees respond differently when perceiving that their employer has failed to meet its obligations (Van Dijke et al., 2018). There are various factors that might impact on the employee's psychological agreement and how the variables of these contracts differ. Therefore, the section below discusses the effect of demographical variables (age, gender and race) on the psychological contract.

3.1.3 Variables influencing the psychological contract

Research conducted by Adams et al. (2014) decided that age, gender and race are critical determinants of the psychological contract, and that employers should consider these demographical variables to attain a more effective appreciation of the expectations of employees. According to Adams et al. (2014), there are significant differences in the psychological contract between old and young employees, female and male employees, and employees from different race groups. Therefore, the following section discusses in detail how these variables (age, gender and race) influence the psychological contract of employees.

3.1.3.1 Age

The content of the psychological contract could be affected by employees' age (Bal, 2017). Bal (2017) explained that as people grow older, their knowledge and work experience would generally increase, whereas their health and biological abilities generally decrease. Lub et al. (2015) suggest that the environment in which the individual employee was brought up and the situation in which the individual was groomed and developed in the workplace, had an influence on his psychological contract.

Bal (2017) further argued that it was likely that the psychological contract and the process that motivated how the psychological contract influenced attitudes and behaviour differed with age. Different age groups reacted differently with regards to perceived employer obligations (Bal, 2017).

Older employees were found to be more sensitive about the aspects of their psychological contract than younger employees, and older employees had many expectations of the employer because of the number years of service and the value of their experience to the employer (Bal, 2017). According to Bal (2017), older employees who have accumulated skills and expertise, feel more entitled to employer obligations, are more focused on emotional goals and the maintenance of emotional well-being, therefore, when they are confronted with a negative emotional experience such as a breach, they focus on maintaining their existing relationships.

It is thus evident that age groups do differ, and age does have varying effects on the promises employees swap with their supervisors. For example, age have the capacity to influence relational and transactional contract that employees have with their employers. Employees from different age groups have dissimilar anticipations regarding psychological contract breach (Garcia et al., 2017)

Several studies have shown that employees' satisfaction with their remuneration is negatively correlated with age (Malik & Subramanian, 2015). According to Takase et al. (2016) fulfilment of the psychological contract reduces youth's turnover intentions. Again, age correlate with the fulfilment of psychological contract.

3.1.3.2 Gender

Gender is described as the conduct, actions and features that people believe are suitable for men and women (Chin & Hung, 2013). Gender might have influenced the perceptions of an organisation's employees, while females and males appeared to respond differently to the human resource management practices (Chin and Hung (2013). Numerous studies revealed that females and males have diverse expectations with regards to their psychological contracts (Snyman et al., 2015; Walsh et al., 2016). The employers that contribute to the psychological contract concept of their employees by providing intrinsic and extrinsic job factors, enhance the perceptions that individual employees have towards the employer, and by this action, the employees realise their value and role in the organisation (Bellou, 2009).

The variable gender is a factor that is not created as result of the employment relationship; therefore, gender create expectations from factors that are external to the employment relationship (Alcover et al., 2017). This research gender as a factor that is independent of the employment relationship and not within the scope of the psychological contract. Peltokorpi et al.'s (2015) study found that females and males weakened the correlation among the psychological agreement and the intentions to resign. Males have experienced psychological contract breach far along than their female colleagues (Kakarika et al., 2017). However, research studies about the psychological contracts of women, their development and advancement of women is still lacking in most organisations (Walsh et al., 2016; Kakarika et al., 2017).

3.1.3.3 Race

Psychological contracts of employees from unlike race groups vary significantly (Maree, 2016; Mishra & Thomas et al., 2016; Kumar, 2017). Minority groups at the workplaces possess dissimilar expectancies of the psychological contract (Pant & Vijaya, 2015).

As a result, black professionals experience several career challenges (Maree, 2016). There is lack of research procedures to speak to the professional anxieties of black employees in South Africa at different levels (Maree, 2016). Furthermore, there is a need for further research into the important elements of the psychological contract for individuals from different race groups (Pant & Vijava, 2015).

Thomas et al. (2016) made assumptions about employees from dissimilar races vary in the founding of their psychological agreements and their replies to psychological contract infringements. Similarly, Snyman et al. (2015) comprehended that substantial dissimilarity continue living among designated and non-designated teams perceiving their psychological contract opinions. Furthermore, Mishra and Kumar (2017) discovered that employees from dissimilar racial groups vary with regard to opinions concerning the psychological agreement. Thomas et al. (2016), concluded that employees from different races displayed varying preferences in their psychological contract formation and fulfilment.

3.1.3.4 Other variables influencing the psychological contract

Data from the study by Jiang et al. (2016) indicated that self-efficacy mediated the correlation between rude management and career happiness. Inappropriate supervision may have a negative influence on an employee's psychological contract. A supervisor who does not support his or her subordinates and appreciate their inputs, demotivates employees and decreases their morale, to the extent that some employees may decide to abandon their career and their organisation and join organisations where they would receive job satisfaction (Jiang et al., 2016).

Penfold and Ronnie (2015) stated that peer relationships impact the psychological contract of employees.

According to Penfold and Ronnie (2015), employees are influenced by two sets of social references. The first group is termed 'relational others', these are those persons with whom an employee has direct contact and social proximity, and the second group is called 'positively similar others', this group is used as a benchmark for the employee to make judgements around fairness, contract fulfilment and job-specific entitlements (Penfold & Ronnie, 2015). The implication is that employees will continually re-assess their psychological contract to moderate it relative to the cues of their social references, making it more like theirs over time.

3.2 ORGANISATIONAL COMMITMENT

This section deals with the conceptualisation of organisational commitment. Thereafter, the theoretical model of this construct will be discussed, followed by the variables influencing organisational commitment.

3.2.1 Conceptualisation of organisational commitment

Organisational commitment is defined as an emotional relationship between employees and their employer, which is characterised by a strong relationship with the employer and a wish to contribute to the achievement of organisational objectives (Meyer & Allen (1997). Amdan et al. (2016) defined organisational commitment as a behaviour where the goals of the employee and the employer are similar. Organisational commitment has further been defined as an emotional relationship to an organisation that is branded by mutual standards, a wish to remain within the organisation and a will to put in energy towards remaining with the organisation (Sahi & Mahajan, 2014). Meyer and Allen (1991) further explained organisational commitment as an individual's strong feelings about the organisation and their association and identification with the organisation. Robbins et al. (2016) described organisational commitment as a state in which an employee identifies herself or himself with her or his organisation and its goals and wishes to remain with the organisation. In support of the explanation above, Geldenhuys et al. (2014) associated organisational commitment with a strong belief in and acceptance of the organisation's goals and values, a willingness to do extraordinary activities for the organisation. Organisational commitment indicates the willingness of the employee to remain loyal and trustworthy to the employer (Potgieter et al., 2016).

Dhlahla (2011) postulated that few researchers mention organisational commitment as an expressive relationship that has formed a relationship between employee and employer, many researchers classify it as an opinion. According to Yucel and Bektas (2012), the definition and description of organisational commitment includes (1) employees with a greater sense of acceptance and belonging; (2) trustworthy employees; and (3) employees offering their best efforts for overall organisational success. This study defines organisational commitment as an employee's psychological relation to the employer that includes the willingness and wish to remain in the organisation while sharing organisational goals. Geldenhuys et al. (2014) noted that organisational commitment is of strategic importance due to the potential financial returns in the long term, and therefore, organisations need to establish commitment strategies that would align the psychological relationships and the goals of employees with those of the organisation to achieve positive future returns. The theoretical model of Meyer and Allen (1990) will be deliberated in the section below.

3.2.2 Theoretical models of organisational commitment

Organisational commitment of employees to an organisation has been studied over time, and several theories have been used to explain it, including a behavioural approach, the social exchange theory, and a multidimensional approach (Muleya, 2017). Meyer and Allen (1990) approved a multidimensional approach to conceptualising organisational commitment. Through the integration of relating to a person's manner to commitment, Meyer and Allen (1991) created distinct dimensions. The dimensions are affective, continuance and normative commitments. Meyer and Allen (1991) explained the dimensions as follows:

- Affective commitment (the desire mind-set) is identified as an emotional attachment and involvement in the organisation.
- Continuance commitment (the perceived cost mind-set) refers to the feeling the employee perceive in relation to the high cost of leaving the organisation; and
- Normative commitment (the obligation mind-set) reflects a feeling of obligation to remain in an organisation.

The affective and normative components show attitudinal organisational commitment, whereas the continuance component shows behavioural organisational commitment (Meyer & Allen, 1991).

A review by Meyer and Allen (1997) of the definition of organisational commitment they had previously developed in 1991 led them to acknowledge that there are significant correlations between affective commitment and normative commitment. Meyer and Allen (1997) also acknowledged that using only the affective and normative dimensions is not enough to be able to predict organisational commitment. Therefore, the three-dimensional model of affective, normative and continuance commitment included a mental state linking the employee to the employer (Singh & Gupta, 2015).

The three dimensions represent the different psychological states of an individual employee, and it is possible to develop independent measures for each dimension (Meyer & Allen, 1997). The degree to which an employee is committed to the goals of an organisation, whether affective, normative, and continuance commitment, is found to be a predictor of the decision of the employee to either stay in the organisation or resign (Meyer & Allen, 1997). The three-component model of organisational commitment has had the most influence on organisational commitment studies, as various researchers have argued that employee organisational commitment could not be studied without considering its multidimensional nature (Simons & Buitendach, 2013).

Meyer and Allen (1991) were of the view that by taking all aspects of organisational commitment into consideration, it is possible to gain an improved understanding of an employee's psychological attachment to the organisation. The multidimensional approach posited that an individual might join an organisation due to attitudinal commitment but might continue to stay because of side-bets that would have accumulated (Simons & Buitendach, 2013). Meyer and Allen's (1997) model was used as a basis for measuring organisational commitment. The three components of the multidimensional approach to organisational commitment are discussed below.

3.2.2.1 Affective commitment

Affective commitment was defined as an emotional relationship to the organisation, such that the strongly committed individual identified with, was involved in, and enjoyed membership within the organisation (Allen & Meyer, 1990).

Affective commitment is the core component of organisational commitment because this is the component that is strongly associated with other organisational outcomes (Chen et al., 2012). Affective commitment inspires employees to stay in the organisation because they want to achieve the goals of the organisation as they perceive those goals as their own (Chen et al., 2012).

Affective commitment is largely influenced by several factors, such as the job challenges facing the employee, clarity of the role provided by the employer, receptiveness by the supervisor for constructive feedback, equity of job opportunities, and compensation (Meyer & Allen, 1997). Employees who have a significant affective commitment, mostly remain with the organisation they like (Meyer & Allen, 1990).

Affective commitment is influenced by factors such as role clarity, clear understanding of the goal, receptiveness of management, and feedback given to subordinates (Simons & Buitendach, 2013). Furthermore, affectively committed employees are strongly engaged in their work, engaged with their colleagues and are also loyal (Simons & Buitendach, 2013). Loyal employers place a higher value on the work of their employees, while the employees in turn view their work as important. Moreover, affective commitment was classified as the primary predictor of absenteeism (Mercurio, 2015). According to Mowday et al. (2013), higher affective commitment lowers absenteeism in the workplace resulting in higher organisational commitment.

3.2.2.2 *Continuance commitment*

The second dimension of organisational commitment, as developed by Meyer and Allen (1991), is related to a cost-benefit analysis of the employee, such as the loss of economic investments and difficulties in finding a new job. Lumley et al. (2011) described continuance commitment as a situation where an employee chooses to stay due to a sense of economic necessity or the perceived cost of leaving the organisation. According to Gunlu et al. (2010), employees in the continuance commitment component, are committed to the organisation for their own minor interests, and not because of a general positive feeling toward the organisation. In support of that opinion, Cho and Huang (2012) concluded that the definition of continuance commitment refers to the employee's attachment that is based on the financial and non-financial investments that an employee would sacrifice by leaving the organisation.

Continuance commitment develops when an employee recognises that he or she might lose investments and perceives that there are no alternatives other than to pursue the current job (Döckel, 2003). The decision whether to remain with an organisation is evaluated in terms of the perceived costs of leaving, and the length of service. Employees choose to remain committed because they feel they have too much to lose by leaving (Singh & Gupta, 2015).

Meyer et al. (1993) claimed that due to fear of losing benefits from the organisation, employees would decide to remain within the organisation at a cost or an expense associated with leaving. Poor employment alternatives may force individual employees to maintain their jobs and remain in the organisations because they have no other choice (Meyer & Allen, 1997). That means that those employees would stay in the organisation because they do not want to lose accumulated investments, such as seniority and pension funds. A fair remuneration and reward system would enhance the continuance commitment to an organisation (Coetzee et al., 2014).

3.2.2.3 *Normative commitment*

The third dimension of the organisational commitment model proposed by Meyer and Allen (1991), reflects an employee's sense of commitment due to a feeling of obligation. That is less a personal commitment, but rather a perceived societal expectation, in which an employee remains loyal to the employer who has provided compensation for services rendered (Singh & Gupta, 2015). According to Meyer and Allen (1991), the moral obligation that employees have towards the organisation stems from the process of socialising within the organisation. Meyer and Allen (1991) classified normative commitment into two forms: before and after entry into the organisation. However, employees who stay because of normative commitment are likely to do what is right for the organisation and perform better (Jung & Yoon, 2016).

Normative commitment is an employee's commitment to remain in the same employer as a moral duty (Aladwan et al. (2013). Similarly, Davenport, 2010) argues that in terms of the normative commitment component, employees stay with the organisation because they feel they ought to (Davenport, 2010). This belief represents a mindset of obligation toward remaining in the organisation to reciprocate organisational investments or as a result of maintaining loyalty to an employer (Meyer & Parfyonova, 2010).

Coetzee et al. (2015) averred that those employees who were normatively committed to the organisation possessed satisfaction with the retention factors that influenced them to remain in the organisation. Employers who support their skilled employees will be able to retain them (Zacher & Schmitt, 2016). Highly normative committed employees are usually concerned about the thoughts of their colleagues if they intent leaving the organisation, especially if they want to sustain their relationship (Naik, 2012). According to Vandenberghe et al. (2015), normative commitment associate with positive results when amalgamated with affective commitment (Vandenberghe et al., 2015).

Figure 3.2 provides the Meyer and Allen's (1997) three-dimensional model for organisational commitment.

Figure 3.2:

Meyer and Allen's (1997) Three-Dimensional Model for organisational commitment



Source: Adapted from Li et al. (2013)

Previous studies on organisational commitment were studied in the psychological sciences, which were in relation to the employees' psychological attachment and employment relationship (Van der Voet & Vermeeren, 2016). Srivastava (2013) disagreed and asserted that research on organisational commitment has currently become a researchable topic which is confronted with the tough challenge of retaining employees.

According to Meyer and Allen (1990), workers with intense affective commitment remain in employment because it is their choice; those with strong continuance commitment remain in employment because there is no alternative; and those with normative commitment remain in employment because they feel compelled to do so.

The three-component model by Meyer and Allen (1990) was extended by Mercurio (2015) by reviewing the empirical and theoretical studies on organisational commitment, and Mercurio (2015) also speculated that affective commitment is central to the organisational commitment. After reviewing the existing organisational commitment theories, Ghosh and Swamy (2014) concluded that a multidimensional approach towards organisational commitment needs to be adopted.

3.2.3 Variables influencing organisational commitment

According to Meyer and Allen (1991), the variables influencing organisational commitment have been divided into four categories, namely, personal characteristics, role-related characteristics, work experience and structural characteristics. Personal characteristics include demographical attributes and individual dispositions (Meyer & Allen, 1991). Individual dispositions include emotional stability, openness to work experience, personal work ethic and the need for achievement (Vandenberghe et al., 2015).

It has been well established that individuals have various reasons for being involved in and remaining with their employing organisations (Meyer & Allen, 1997). It is thus to be expected that the weight that individuals place on reasons for remaining in an organisation and engaging in positive work behaviour would be impacted by their individual characteristics (Maia et al., 2016). Therefore, the following individual characteristics and their impact on organisational commitment are discussed below.

3.2.3.1 Age

Ferreira and Coetzee (2010) posit that age is related to both affective and normative commitments and that older employees are committed more than young employees in relation to affective and normative commitments. Mensah and Adjei (2015) stated that age plays a significant task in grasping organisational commitment. For example, older employees seek more stability in their workplace, and will not look for opportunities outside the organisation. The important reason why age matters in terms of growing organisational commitment, is that the organisation is comparatively more important to older employees than to younger employees (Maia et al., 2016).

Maia et al. (2016) argued that as an employee gets older, the employee's propensity to stay within the organisation also increases. (Maia et al. (2016) further commented that older employees are comparatively more loyal and attached to the organisation than younger employee, and older employees also react more strongly to positive organisational actions and positive work experiences than younger employees do. A study by Affum-Osei et al. (2015), also revealed that older employees have invested more with the employer, hence employee's intention to leave is limited, as it may reduce their years of job tenure, whereas younger employees can leave the organisation opting for job opportunities outside their organisation.

3.2.3.2 *Gender*

Gender has often been used as a control variable in organisational commitment studies owing to the different behavioural tendencies ascribed to men and women (Jayasingam et al., 2016). Although Khalili and Asmawi (2012) found that men and women have the same level of affective and continuance commitment to their employing organisations, women showed higher levels of normative commitment. Furthermore, the potential impact of gender on organisational commitment varied in different cultures, based on a comparison of supervisory practices between men and women in the workplace (McLaggan et al., 2013) which resulted in less loyalty to women because they were being undermined.

Mensah and Adjei (2015) stated that gender plays a significant task in understanding the employees' commitment to the organisation. More recent research on how gender influences organisational commitment has shown a shift away from earlier research findings. For example, Sehunoe et al. (2015) found no significant differences in the experience of organisational commitment based on gender in a South African sample. However, a study conducted by Faisal and Al-Esmael (2014) in the service industry establish that male employees were more committed to the organisation than female employees. Those males were more committed to the organisation because they could do their jobs with less supervision. Kumasey et al. (2014) observed that men were more committed, if compared to women, especially in an organisation with a masculine orientation. In the same vein, Jena (2015) found that men have stronger organisational commitment than women.

3.2.3.3 *Race*

Mensah and Adjei (2015) stated that race played a significant task in task in grasping organisational commitment. Ragins et al.'s (2017) study on the "mentor buffer effect" in the US found that employees who were exposed to racial discrimination in the workplace had lower organisational commitment than those not exposed to racial discrimination.

Coetzee and Botha (2012) also discovered that white managers have a knowing high level of obligation than black managers. The study by Lumley et al. (2011) discovered dissimilarities between commitment and race. Coetzee and Botha (2012) questioned if contradictory findings on race influence commitment or not, whether the findings emanate from conceptualisation of organisational commitment.

3.3 EMPLOYEE RETENTION

This section deals with the conceptualisation of employee retention. Thereafter, the theoretical model of employee retention will be discussed, followed by variables influencing employee retention.

3.3.1 Conceptualisation of employee retention

Various scholars, such as Balakrishnan and Vijayalakshmi (2014), Snyman et al. (2015) and Idris (2014), have defined employee retention as the wide-ranging set of human resource rules and plans adopted by an organisation, to certify that the best skilled employee retained for the largest period. Employee retention is a method in which employees are satisfied to stay with an organisation during their tenure, or pending the achievement of a project in the organisation (Sudhamathi, 2020).

Retention can also be defined as a productive and efficient advance towards employee management, which can be viewed as the organisation's greatest asset (Mehta et al., 2014). For their part, Mita et al. (2014) described employee retention as a technique adopted by organisations which met operational requirements. Iqbal and Hashmi (2015), furthermore, described retention as those actions undertaken by an organisation in the form of human resources practices and policies, which enhance the possibility that employees would remain with the organisation for the maximum period or until a specific task has been accomplished.

Maheswari and Krishnan (2014) explained employee retention as the capability of the employer to retain skilled employees for a maximum period or until withdrawal from employment. Therefore, this study defined employee retention as an organisation's strategy, technique and set of human resource policies intended to retain employees who have the capacity to meet operational requirements and assist with the achievement of organisational goals. Various organisations have different descriptions of employee retention (George, 2015), in the sense that few employers see employee retention as a diminution of turnover rate, while others view it as the greatest number of employees being retained. Therefore, it is important to clarify the primary purpose of retaining employees.

According to Naris and Ukpere (2010), the purpose of employee retention is to retain skilled employees, especially those who have gained new knowledge and skills. It is therefore imperative for human resource practitioners to concentrate on keeping employees in their workplaces for business competitiveness (Mehta et al., 2014). Employee retention practices help in retaining the most important resource of the organisation, which is the employees (Rajan & Radhesham, 2018). The retention of skilled employees plays a crucial role in any organisation, since the knowledge and skills of employees are essential to the organisations' ability to be economically competitive (Kumar & Mathimaran, 2017). Successful employee retention is essential to an organisation's strength, growth and revenue (Cloutier et al., 2015).

The Workforce Planning for Wisconsin State Government (2005) defined retention management as a systematic effort by employers to build and take care of a situation that motivates employees to stay at their employer that has policies and practices in place to address the employees' diverse needs. Retention management focuses on measures that lead to the retention of skilled employees (Yousuf & Siddiqui, 2018). Furthermore, retention management includes activities that systematically influence the binding, performance, and degree of loyalty to employers (Yousuf & Siddiqui, 2018).

In summary, this segment conceptualised retention management as an important human resource plan in an organisation and it enhances competitive benefit to the employer (Yousuf & Siddiqui, 2018). In the absence of its implementation, organisations might withstand high turnover rates, and consequently face financial ruin (Theron et al., 2014).

Retention management strategies include, but are not limited to, improving employees' compensation packages, explaining clear job characteristics and introducing work-life balance in the workplace (Yousuf & Siddiqui, 2018). These strategies are serious in an international market where there is dearth of skilled employees, and the water control sector is faced with a growing problem of high turnover intentions (Terera & Ngirande, 2014). According to Fahim (2018), employment of the best human resource management practices has been deemed a remarkable strategic tool in the retention of skilled employees and contributes to employee retention. Döckel's (2003) retention management framework will be discussed below.

3.3.2 Theoretical model of employee retention

Döckel (2003) identified six retention factors that should be considered by organisations in their attempts to retain employees with superior technological skills (Coetzee & Stolts, 2015). The retention factors include compensation, job characteristics, training and development opportunities, supervisor support, career development opportunities, and work-life balance.

These retention factors are viewed as main human resource exercises affecting both employee retention and turnover intentions (Coetzee & Stolts, 2015). According to Coetzee and Stolts (2015), these retention factors lowered turnover intentions, increased organisational commitment and higher work performance.

The focus of the present study is on factors that management can control and that may influence employees to stay in the organisation. Döckel's (2003) framework of retention factors are of relevance to the present study as it has been researched in the South African context. Each of these factors is discussed below:

3.3.2.1 Compensation

Osibanjo et al. (2014) defined compensation as the sum of the financial and non-financial remuneration that employers offer to employees for the provision of their valuable services. Compensation refers to salaries, bonuses, incentives, and other benefits such as company vehicles and medical schemes (Patnaik & Padhi, 2012). Furthermore, compensation is the perceived remuneration by the employees to be reasonable for the task they are performing for the employer, and it is competitive (Coetzee et al., 2014).

Compensation contributes towards increased retention of employees as it provides satisfaction for those which employees are being rewarded for their efforts (Mubarak et al., 2012). In support of this statement, Ibidunni et al. (2016) asserted that compensation is the most significant factor in the retention of employees. Compensation satisfaction is a key element in retention policies because it helps to strengthen employees' relationship with the organisation and helps to retain skilled employees for a long time (Bhattacharyya, 2015). Miryala (2015) opined that offering an attractive and competitive compensation package that includes components such as life insurance, disability insurance and a pension fund, will motivate employees' performance and guarantees that they will remain committed and loyal to the organisation. However, some researchers believed money should not be a long-term strategy for retaining skilled employees (Miryala, 2015).

Kossivi et al.'s (2016) study that aimed to determine the factors of employee retention concluded that improved compensation could boost retention over the short term. However, organisations wishing to be more effective in retaining their employees for a longer period, need to couple improved compensation with considerations for the quality of work-life balance. It is clear that compensation alone is not enough to retain employees, whether for a long or a short period, therefore, further research on compensation is necessary to determine whether compensation is a major retention factor if compared to the other retention factors that Döckel (2003) identified.

Based on compensation research, organisations should pay their employees appropriately and fairly, using market-related averages (Ibidunni et al., 2016). It is important for the employer to pay their employees adequate compensation that matches or exceeds the market standards to be able to retain skilled employees.

Many researchers have found a positive relationship between compensation and organisational commitment (Ibidunni et al., 2016). A study by the CIPD (2019), suggested that organisations should make it clear to their employees what the possible incentives are, what employees need to do to achieve the goals, and thereafter, reward them fairly. This will help employees to see the benefits of their efforts, and this in turn, will strengthen the employment relationship.

Accountability and the marketplace levels in the industry evaluate compensation package for the employees (Bhattacharyya, 2015). Döckel et al. (2006) asserted that while money acts as the major retention factor, it is inadequate to retain employees. Mohlala et al. (2012) found remuneration as a strong retention factor only when it is competitive, suggesting that salary increments and promotions would increase commitment towards the employer, thus encouraging employees to stay in employment. Maloa and Mahamed (2012) reflected a similar finding that employee compensation was among the strongest retention determinants in the organisation and has the potential to cause satisfaction in employees and cause them to remain with the organisation.

Bussin and Van Rooy's (2014) study revealed that non-monetary bonuses were increasingly becoming significant among all peer groups. Compensation strategies in organic and mechanistic organisations have a significant effect on the dimensions of economic motivation and entrepreneurship orientation in the employer's psychological contract (Lee & Lin, 2014). According to Lee and Lin (2014), salary satisfaction has significant effects on the psychological contract, and the psychological contract has mediating effects between salary satisfaction and job enthusiasm. A fairness-based salary was partially significantly correlated to the psychological contract, and when employees sensed their salary was lower than the market average, they would have unsatisfactory feelings, feel tired and want to leave the job (Lee & Lin, 2014). Therefore, employers should conduct salary surveys regularly, understand the average salary in the market, and adjust salary mechanisms based on the organisation's financial status (Lee & Lin, 2014). As such, many organisations are currently developing holistic strategies that encompass both monetary incentives and non-monetary benefits (Sindhvani & Mamgain, 2013).

3.3.2.2 *Job characteristics*

Job characteristics comprises of the features of the job, such as diverse tasks, solutions to the glitches, committed colleagues, flexible working hours, and the possibility to pursue interesting assignments (Shakeel, 2015).

Job characteristics, such as variety and autonomy, are well-established retention strategies and are known to encourage employees to stay with the organisation for a long time (Deery & Jago, 2015).

Job autonomy is defined as the degree to which the job provides substantial freedom, independence, flexibility, and discretion to the individual employee, who is allowed to schedule the work and to determine the procedures and rules on how to do the work (Jansink, 2015). Employee job autonomy, both at the organisational level and at the individual level, is related to higher employee work performance and lower intentions to leave, thereby enhancing the employee's organisational commitment (Musah & Nkuah, 2013).

Job characteristics increase employee retention if employees felt competent (Döckel, 2003). This in turn, develops into greater loyalty and commitment towards the organisation. According to Oldham and Hackman (2010), job characteristics, such as skill variety influence employees' psychological contract relative to task significance and responsibility for to achieve organisational objectives. Employees' feelings and attitudes are strongly influenced by the treatment they experience at the workplace (Williams et al., 2017). Those feelings and attitudes strongly influence how employees see themselves and their relationship with the employer, and their behaviour towards the employer (an aspect of the psychological contract) (Williams et al., 2017).

A research report by the Society for Human Resource Management (SHRM) (2016) on employee job satisfaction and engagement revealed that 64% of participants were completely satisfied, 26% somewhat satisfied, 6% somewhat dissatisfied, 3% completely dissatisfied, and 1% was without an opinion.

3.3.2.3 *Training and development opportunities*

Presbitero et al. (2016) described training and development opportunities as the magnitude to which adequate programmes to grow, teach and guide employees are available within an organisation. Those training and development programmes send important messages to employees that their organisation is investing in them, and that their organisations regard their employees as valuable resources (Kraimer et al., 2011).

Furthermore, organisations that empower their employees with skills through training and development programmes, are preparing a valued workforce for qualifications and skills (Coetzee et al., 2014). According to Döckel (2003) training and development programs is an investment in the development of an employee for the future.

Dhar (2015) specified that a number of researchers agreed training and development opportunities have a positive impact on an employee's level of commitment. It is clear that employees perceive training and development as the organisation's way of showing that they value the employees and thereby they are building a stronger affective commitment (Meyer & Allen, 1997). Döckel (2003) concurs with this statement by saying the provision of training and development opportunities make employees feel that their organisation values them and this increases their attachment towards the organisation,

The skills of the workforce are credential factors that allow organisations to compete favourably with their business rivals, and the provision of up-skilling programs that are positively related to organisational commitment (Döckel, 2003).

With Industry 4.0 at the forefront, it is vital for organisations to keep the skills of the workforce current, and to allow them to remain updated with new technologies and new systems through training and development (Ejaz & Akbar, 2015). Training and development are critical investments in human capital. Institutions that possess useful training and development programmes contributed towards an extreme employee satisfaction (Presbitero et al., 2016).

3.3.2.4 Supervisor support

Supervisor support refers to the assistance given by supervisors to the employees so that employees were able to demonstrate their skills, knowledge, and attitudes acquired from training programmes (Qureshi & Abhamid, 2017). According to Bhati and Kumar (2013), a supervisor plays an important role in training effectiveness. It is vital for supervisors support their subordinates and to enable them to try out new skills and to participate in decision-making (Morrow, 2011). Participation in decision-making boosts the employees' morale, and ultimately, leads to affective commitment (Morrow, 2011). Employers should make sure that experienced managers and supervisors guide, train, develop and support subordinates in the workplace (Van Dyk & Coetzee, 2012).

Employees who feel valued, recognised and honoured, and have a sense of belonging to the organisation will be actively engaged in achieving the goals and objectives of the organisation, which will lead to increased productivity, all the while increasing retention rates (Mathis & Jackson, 2010).

For example, Ibdunni et al. (2016) found that where teams and individual employees are honoured and given continual responses, spirits of faithfulness and commitment to the employer develop. Studies has also shown that an employee's relationship with her or his supervisor is a noteworthy component in elevating the level of employee satisfaction and the probability of them remaining in the organisation (Ibdunni et al., 2016).

According to Bhatti and Kumar (2013), supervisors influences the effectiveness of training and development programmes. Without that support, the transfer of training processes might not be successful because employees tend to lose focus when they are not supervised. As the support of the supervisor could be emotional and influential, Putter (2013) suggested that the supervisor should identify areas or tasks where the employees require improvement or re-training, and the supervisor should then evaluate the newly acquired skills upon completion of the tasks.

Although many researchers have highlighted the importance of supervisor support, Petersitzke (2009) indicated that supervisor behaviour contributes towards facilitating a positive psychological contract. In support of that declaration, Baccili (2001) identified the roles of line managers in employees' psychological contract. For example, the respondents in Baccili's (2001) study reported that when the organisation provided resources for performance-related pay, it was the line manager's obligation to administer that pay to employees based on objective criteria.

Furthermore, for the organisation to be efficient, effective, and productive, the supervisor, as the leader, should organise programmes systematically to achieve the set goals by monitoring, evaluating, and reviewing the programmes. Further support from the supervisor contribute towards organisational commitment (Döckel, 2003).

Fisk (2018) explained that in the era of Industry 4.0, supervisors could conceptualise tasks for their subordinates to apply critical thinking when communicating their decisions and attending to operational activities while in office or at remote areas. According to Satria and Mustiningsih (2019), the role of a supervisor in the workplace is to reconstruct the professionalism of employees in accordance with technological advances, to create competitiveness in the global market, and to develop an IT-based supervision programme to improve the competence of employees.

3.3.2.5 Career development opportunities

Career development opportunities entail a series of activities and an ongoing lifelong process of skills development (Appireddi & Hariharan, 2016).

It has also been referred to as a planned determination of achieving a balance between the individual employee's career needs and the organisation's workforce requirements (Schlechter et al., 2015; Ahuja & Chaudhary, 2016). Career development opportunities include different options that employees have within and outside the organisation (João, 2010). Internal career opportunities lay in the employees' current organisations, such as promotion, training, skills development or moves to different positions. External career opportunities could mean moving to other organisations (João, 2010). Research has shown that career growth is important for increasing employees' affective commitment to their organisations and for reducing their intentions to leave (Weng et al., 2010).

According to Mlinar (2012), organisations should develop a desirable career path that helps employees to see a bright future in their current employment. Employees should be provided with guidance, development opportunities, challenging work, career advancement and career opportunities for the organisation to be able to retain skilled employees (Yadav & Saxena, 2015; Cascio & Boudreau, 2016). João (2010) also found that the need for career growth among employees and opportunities for advancement, as well as challenging work, were significant factors that prevented skilled employees from leaving their organisations. It is important for employers to assist their employees to acquire the skills they need to remain in the organisation, otherwise employees might leave their jobs and meet new challenges in a new organisation where they would be given the opportunities they need (Bhati & Kumar, 2013).

A study by Gerber et al. (2012) revealed that career development opportunities pose new challenges to organisations and the organisation's career management practices. Gerber et al. (2012) confirmed that a differential relationship existed between breach of contract contents and individual career orientations. Thus, career orientation related to the magnitude and the type of employee response after breach of particular contract contents (Gerber et al., 2012). So, organisations should, when managing employment relationships, also consider the employee's individual career development opportunities and orientation.

3.3.2.6 *Work-life balance*

Van Dyk et al. (2013) described the term 'work-life balance' as the ability of employees to create a balance between their personal lives and their work schedules, taking care to create minimal conflict between the multiple roles they need to achieve regarding their personal and work lives. Work-life balance could be explained as the degree to which an organisation provides opportunities for its employees to become actively involved in both job-related and non-job-related activities (Presbitero et al., 2015; Schlechter et al., 2015).

Similarly, Van Dyk et al. (2013) described the term work-life balance as the ability of employees to balance work with personal responsibilities. According to Coetzee and Pauw (2013), the balance contracts should comprise elastic work timetables, vacation leave policies and child-care assistance.

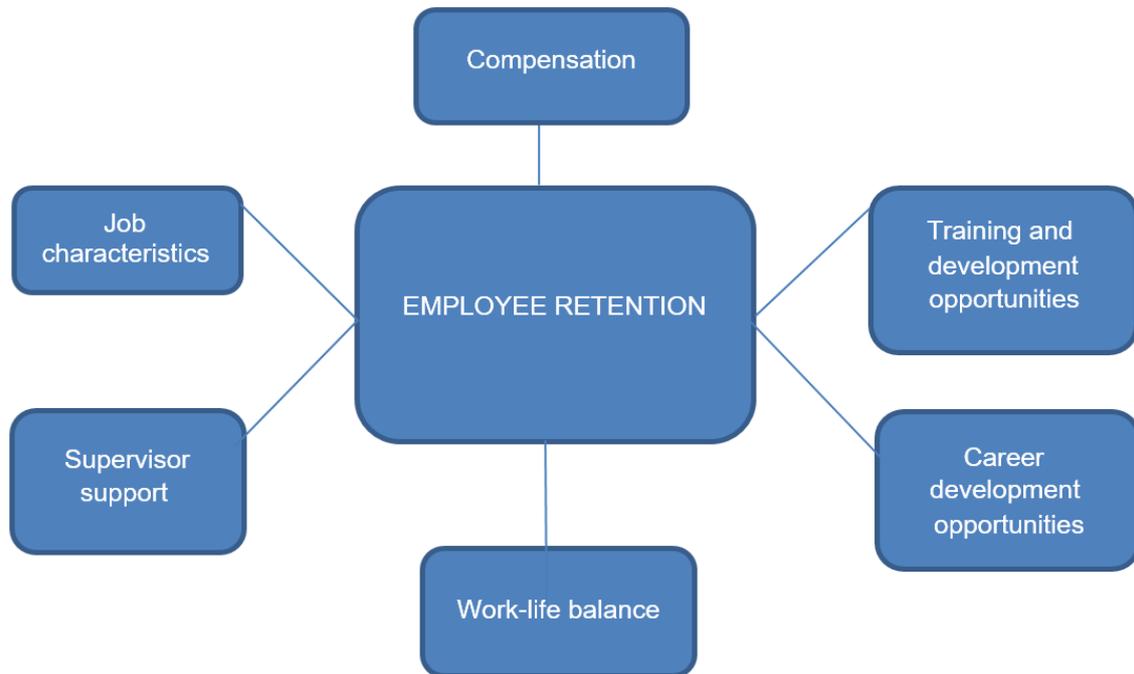
Flexible work included working from home, part-time working, a compressed working week, job-splitting, job-sharing, and special-leave schemes that provided the employees with the freedom to respond to a domestic crisis, or to take a career-break without jeopardising their employment status (Amiani, 2014). Employees tend to feel emotionally attached to an organisation due to the work-life balance benefits available to them (Coetzee & Pauw, 2013). Employees want to know and feel that they are cared for in order for them to commit to an organisation (Du Plessis & Sukumaran, 2015).

Sinha and Sinha (2012) argued that jobs offering work-life balance boost employee retention levels by offering opportunities for employees to fulfil their family and other responsibilities. Employees who experience work-life balance benefits are more dedicated to their employers and express higher intention to stay in the organisation. Osman (2013) found that offering emotional support to employees through work-life balance reduces their intention to quit the job. Mita et al. (2014) observed a direct relation between employees' decision to stay and work-life balance.

Figure 3.3 provides an overview of the Retention Factor Measurement Framework of Döckel (2003).

Figure 3.3:

Overview of the Retention Factor Measurement Framework



Source: Döckel (2003).

3.3.3 Variables influencing employee retention

Van Dyk (2011) maintains that the following variables influence an employees' satisfaction with retention factors: age, gender, race, trust, job levels, economic conditions, career success and career mobility. For the purpose of this study, only age, gender and race will be considered and are discussed below.

3.3.3.1 Age

An employee's age has an influence on whether he or she stay or leave the employer (De Cuyper et al., 2011). While younger employees were satisfied primarily by monetary rewards, older employees were satisfied primarily by their task contributions (Kollmann et al., 2019). Being proportionally over-rewarded (that is, receiving high monetary rewards for low task contributions) reduced older (but not younger) employees' job satisfaction. By contrast, under-reward inequity (that is, receiving low monetary rewards for high task contributions) decreased younger (but not older) employees' job satisfaction. According to Schalk et al. (2010), there is a lack of research into the development of age-differentiated human resource management solutions. Stone and Deadrick (2015) suggested that employers should consider the enhancement and maintenance of younger as well as older employees if the organisation wanted to harness the benefit of an age-diverse workforce.

There is evidence that age group moderated the relationship between job characteristics and work motivation; that older employees needed more intrinsically challenging and fulfilling jobs to remain motivated; and that the relationship between career development opportunities and motivation decreased as employees age (Boumans et al., 2011).

Ng'ethe et al. (2012) discovered young employees to be optimistic by training and career programs more than older colleagues. Again, young employees were less satisfied with balancing personal life with work life while older employees were managing work-life balance well. Bal (2017) postulated that younger employees have a long and unknown future, hence they focus more on maximising their employability status, while older employees focus on the prevention of personal losses and decide to stay with the organisation. According to Okun et al. (2014), older employees believed they were valued because of their services and experience to their employer, and they chose to stay within the organisation.

Wolfson et al. (2014) declared that older workers transferred their experience to the younger employees. However, younger employees seeking a variety of tasks, career opportunities and job mobility in the workplace were more likely to leave their organisations when their expectations were not fulfilled (Stoltz, 2014). Furthermore, according to Rani and Samuel (2016), there were three generations of employees in an organisation, that is, Baby Boomers (born between 1943-1960); Generation X (born between 1961-1981); and Generation Y (Millennials, born between 1982-2001). Workplaces need to acknowledge that Millennials are now entering the workforce with their own set of expectations.

3.3.3.2 *Gender*

Pololi et al. (2012) asserted that employees' intentions to leave their organisation were related to failure of employer to recognise the efforts including balancing personal and professional responsibilities. Moreover, this mostly applied to females because they were exposed to conscious and unconscious bias (Pololi et al., 2012). As a result, female employees who work in male-dominated occupations have less access to career development opportunities.

According to Richter (2018), research by PricewaterhouseCoopers (PwC) in 2018 found that female representation at executive and senior management level in South Africa was at only 20% on average (Richter, 2018). The study included 550 organisations and just over 4 000 executives and senior management participated in the survey. The results indicated that 61% of the females were remunerated below the median of the sample, in comparison to 39% of males. In contrast, 63% of males were remunerated above the median, in comparison to 37% of females in the sample.

From that data, corporate South Africa needs to focus on ensuring that female numbers are increased at executive and senior management levels, and that gender pay inequalities are also addressed.

Gender differences in the labour market are classified into two domains, namely, job quality and job satisfaction (Burchell et al., 2014). Job quality has evolved into a multidimensional concept that includes the main components, such as training programs, working conditions, promotion and work-life balance policies. Gender differences are reflected in many aspects of job quality such as wages, type of contract, working hours, working condition, skills and training opportunities, and relationship with colleagues (Burchell et al., 2014). Female employees are more likely to be associated with employment that has low salaries, part-time positions, temporary contracts, and limited social protection; while in comparison, males are more likely to hold higher salaries, have more chances of training and development opportunities, and upper category positions (Storrie et al., 2008).

Job satisfaction describes the level of contentment that employees feel about their jobs (Lorber & Skela-Savič, 2012). Job satisfaction also refers to a job that matches the employee's ability and interests, provides increased employee's engagement and more opportunities for promotion. Numerous studies have reported that females showed greater job satisfaction than their male counterparts (Zou, 2015). When a female achieves a successful work-life balance, she becomes highly committed and succeeds in her career (Agarwal, 2015). However, in some cases women are unable to succeed due to an inability to balance work and personal life. For example, a female employee was unable to set her priorities, and as a result, she resigned from her work due to simple reasons such as taking care of her children and other family pressures (Agarwal, 2015).

The study by Agarwal (2015) in India showed that many women were unwilling or unable to put in as many hours as their male counterparts in the workplace, for several reasons. Married women were mostly unable to stay in the office till late at night, unless there was a pressing need, because they might face objections from their spouses or in-laws or social disapproval. However, unmarried women usually accepted onsite assignments eagerly, and the employers found quite a few women working abroad along with their male colleagues without much difficulty (Agarwal, 2015). In contrast, married women preferred not to take up these assignments due to domestic or other pressures (Agarwal, 2015). Although work-life balance is a challenge for many employers, the findings of Watanabe and Falci (2016) indicated that females employees displayed a stronger intention to resign than male employees. The most significant factor that affected turnover intention was the relationship between male employees with female supervisors (Jepsen & Rodwell, 2012).

3.3.3.3 Race

The retention of skilled employees from different racial colleagues is of huge task to organisations, considering possible financial earnings from those long serving employees, together with damaging effects of resignations. (Ferreira & Coetzee, 2010). According to Nkanjeni (2019), Statistics South Africa's latest report of October 2019 confirmed that the country was still one of the most unequal in the world. Inequality trends in South Africa showed that, on average, white people earned three times more than black people. Whites also had the highest annual median expenditure. The report also found that Black households had the highest unemployment and earned the lowest wages.

Table 3.5 below shows the mean (average) and the median (the midpoint in the wage distribution) salaries across the racial groups in South Africa, and how they have changed between 2003 and 2012.

Table 3.5:

Mean and median monthly earnings by race

Mean and median monthly earnings by race: 2003 – 2012						
Race	Median			Mean		
	2003	2012	Increase	2003	2012	Increase
White	14 468	16 581	15%	11 249	11 991	7%
Asian/Indian	7 825	11 701	50%	5 264	8 993	60%
Coloured	4 241	7 058	66%	2 437	3 897	60%
Black	4 059	5 445	34%	2 437	2 998	23%

Source: Adapted from Businesstech (2018b)

With the promulgation of the employment equity legislation in South Africa, black employees started to engage in training and career development programmes because those factors influenced their trustworthiness to the employer (João & Coetzee, 2012).

João and Coetzee's (2012) findings indicated that Black professionals regarded training and development opportunities as a principal factor for development. Black employees considered training and development programs, personal growth, and supervisor support as more important factors as in comparison with other races (Pauw, 2011). João and Coetzee (2012) further mentioned that employment legislation in South Africa gave Black professionals the opportunity to experience enhanced career opportunities.

According to Van Dyk et al. (2013), Black employees were less satisfied with their compensation and job characteristics than other four factors identified by Döckel (2003), again white employees were least satisfied by their work-life balance, and that those displeasures resulted in staff renewal rate.

3.4 THEORETICAL INTEGRATION: LINKING THE PSYCHOLOGICAL CONTRACT, ORGANISATIONAL COMMITMENT AND SATISFACTION WITH RETENTION FACTORS

This section addresses Step 4 of the literature review by integrating the theoretical link of the three constructs (psychological contract, organisational commitment and satisfaction with retention factors). The literature review in the previous sections of this chapter provided an overview of research related to the above quoted constructs relevant to this study. The objective was to determine whether a relationship existed between the three constructs, and to determine if the demographical variables (age, gender and race) influenced employees' satisfaction with the retention factors. This review is important because most organisations face great challenges to succeed in business and retain their position in the current highly competitive and dynamic business environment (Rajan & Radhesham, 2018).

Retention management is an imperative resource of viable benefit in the modern business world, and involves a continuing study of the nature and motives for employee retention, as well as the development of a suitable set of retention strategies (James & Mathew, 2012). The literature on the psychological agreement broadly agreed that construct impacted employee retention (Mensah, 2018). A stronger psychological contract between the supervisor and subordinate, enhance satisfaction of the employee in the organisation (Mensah, 2018).

Two of the reasons why organisations fail to reduce their employees' intentions to leave could be attributed to the fact that employers do not always deliver the expectations promised, and human resource managers do not focus on the inducements that are important to employees when developing retention policies (Naidoo et al., 2019).

While organisations devote much time to financial inducements, Naidoo et al. (2019) suggested that employers should focus on factors that employees deem important, such as job characteristics, rather than focusing on extrinsic factors such as financial rewards. In other words, employers should consider the psychological contract rather than the actual employment contract alone. George (2015) partly agreed that satisfaction with retention factors is important to employees.

Furthermore, George (2015) found that turnover intention factors for employees at the organisational level, such as management style, pleasant working experience, adequate resources, a degree of flexibility, being part of the team, and opportunities to learn new skills are important. At the job level, a degree of autonomy, flexibility in workload decisions, transparent and fair pay decisions, opportunity for employees to craft their jobs, and suitable work-life balance are important.

Those factors that were found to be important in the retention of skilled employees were also commonly mentioned in relation to psychological contract breach, suggesting that a relationship existed between turnover intention and psychological contract breach (George, 2015).

Gail (2013) asserted that an employee's feeling of self-worth relied heavily on the psychological contract between the employee and employer. Gail (2013) noted that if an organisation breached the psychological contract with an employee, the employee felt disappointed, which caused her or him to quit the organisation. Hassan et al. (2017) concluded that a psychological contract, consisting of high level of trust in the employer, did not necessarily prove that employees would be willing to stay with the organisation. For example, employees who perceived their employers to be inconsistent in the way they maintained their obligations, chose not to leave the organisation immediately, but rather explored the best decision whether to stay or leave the organisation, and also deliberated on the repercussions accompanying the specific decision (Hassan et al., 2017).

Many studies have acknowledged a strong relationship amongst organisational commitment and employee retention (João, 2010; Meyer et al., 2006). According to Qureshi et al. (2019), highly committed employees tend to remain with their current employer because they are satisfied with their retention factors and are more likely to undertake demanding work activities. Employees who are committed to their organisation show better performance, as well as low intentions to leave, thus, employee commitment influences employee retention (Yucel, 2012).

In the highly competitive business environment, employee retention has become a challenge for organisations, as most employees will be attracted to organisations that offer better compensation packages (Muleya, 2017). Döckel et al. (2006) and Talukder (2019) found that the most relevant factors influencing organisational commitment are remuneration, supervisor's support, job characteristics, and work-life balance. Hence, an organisation will benefit from offering Döckel's (2003) six retention factors which in turn, will result in employees revealing a commitment to achieving organisational goals (João, 2010).

Döckel's (2003) study confirmed that retention was closely connected to organisational commitment, and has a significant impact on the development of organisational commitment among employees.

The link between the three dimensions of organisational commitment, namely, affective, continuous, and normative commitment affirmed that organisational commitment is a psychological condition characterised by an employee's relationship with the employer and how organisational commitment affects the decision of the employee to stay or leave the organisation (Al-Jabati & Ghazzwi, 2019). Döckel et al. (2006) concluded that employees' organisational commitment was related to retention factors that aimed to retain skilled employees. Research by Meyer and Allen (1997) indicated that transactional contracts were related to continuance commitment. In other words, there was a link between the employees' expectations of what they felt they owed the organisation, and what was owed to them by the organisation (the contents of the psychological contract).

According to Theron et al. (2011), adequate human resource management practices reduce psychological contract breaches and violations, making the context more relational and facilitating commitment of the employees. Thus, enhancing employee retention. Within the scope of continuance commitment, there are several sacrifices when the employee decides to vacate the organisation (Vandenberghe et al., 2015). Vandenberghe et al. (2015) indicated that among those sacrifices, some are instrumental like bonuses, while others psychologically rewarding like profound features of the position.

Zhou et al. (2014) found in their research that the psychological contract of satisfied employees increased organisational commitment, and enhanced psychological contract fulfilment that led to further satisfaction of the psychological contract. Behery et al. (2012) conducted their research on the psychological contract and organisational commitment. Their research results showed that relational expectations had an impact on organisational commitment, whereas no meaningful relationship existed between transactional expectations and organisational commitment. McDermott et al. (2013) confirmed Behery's (2012) findings that the level of perceived obligations in the psychological contract impacted differently on the three sub-dimensions of organisational commitment.

Table 3.6 integrates the theoretical link between the psychological contract, organisational commitment and satisfaction with retention factors.

Table 3.6:

Theoretical integration: Linking the psychological contract, organisational commitment, and satisfaction with retention factors

Construct	Psychological contract	Organisational commitment	Satisfaction with retention factors
Conceptualisation	Psychological contract is described as the trust between employee and employer on the reciprocal agreement in which responsibilities must be accomplished, contributions made, and organisational goals attained (Low et al. (2016); Karagonlar et al.,2016)	Organisational commitment is defined as a psychological relationship between individuals and their organisation which is characterised by a strong association with the employer and a desire to achieve organisational goals (Meyer & Allen (1997)	Retention is the capability of the employer to retain skilled employees to meet organisational objectives (Govaerts et al., 2011). Retention factors are institutional practices that influence decision of employees to leave or stay in employment (Döckel et al., 2006).
Theoretical model for this study	Rousseau's Psychological Contract Theory (1995).	Meyer and Allen's (1990) OC model	Döckel's (2003) The Retention Factor Measurement Scale.
Core sub-dimension of the construct	Relational expectations Transactional expectations Employee obligations	Affective commitment Continuance commitment Normative commitment	Compensation, Job characteristics Training and development, Supervisor support, Career opportunities, Work-life balance
Variables influencing the construct	Age Gender Race	Age Gender Race	Age Gender Race
Implications for retention in Industry 4.0 organisations	Fulfilled psychological contract will result in employees being more satisfied with retention factors.	Committed employees approve retention factors of organisations.	Employees satisfied with retention factors will be more likely to stay with that organisation. This will be beneficial to organisations facing Industry 4.0 in order to keep skilled employees.

Source: Author's own compilation

3.5 SYNTHESIS AND EVALUATION

The aim of the theoretical integration was to meet the research objectives by answering the following research questions:

- How is the retention of employees conceptualised in the Industry 4.0 workplace?
- How are the constructs (psychological contract, organisational commitment, and satisfaction with retention factors) conceptualised and explained by theoretical models in the literature?
- Does a theoretical relationship exist between constructs psychological contract, organisational commitment, and satisfaction with retention factors?
- What is the effect of demographical variables (age, gender and race) on the relationship between psychological contract, organisational commitment, and satisfaction with retention factors?
- What are the practical implications for organisational retention practices?

The study aimed to investigate whether a theoretical relationship existed amongst the psychological contract, organisational commitment and satisfaction with retention factors. The theoretical link between the three constructs suggested that employee and employer should take cognisance of their obligations to each other relating to enhancing the commitment, retention, and satisfaction with retention factors. Culpepper (2011) elaborate Meyer and Allen's (1991) definition of organisational commitment in relation to employee retention. Meyer and Allen (1990) believed that commitment was related to retention, and that committed employees were less likely to leave their organisation.

The literature showed that organisational commitment was a foremost challenge in employee retention (Peters et al., 2014) and in the Industry 4.0 era, Sahi and Mahajan (2014) described organisational commitment as a predicted attribute that should be encouraged, as committed employees does not have the intentions to leave an organisation than uncommitted employees. Organisations that have implemented retention strategies in their workplaces, enjoyed enhancements in the employee's psychological contract, increased commitment, and more approval of retention factors (Maia & Bastos, 2015).

Individual employees differed in relation to what they expected from their employer, the employee who was displeased with her or his psychological contract would not be easy to retain (Kraak et al., 2017). Such disappointment led to the psychological contract violation, which impact negatively on employee commitment (Kraak et al., 2017).

Therefore, organisations should certify that employees were satisfied with their psychological contract to enable the empirical link between psychological contract, commitment, and approval of retention factors. Bednarska (2016) postulated that employees whose values and needs aligned with those of the organisation were unlikely to quit and they demonstrated higher levels of commitment. Employers are no more assuring lifelong employment and regular promotions to employees, while conversely, employees are no more obligated remain loyal to single employer (Maree, 2016). This broader perspective suggested a potential fruitful direction for future research.

Recent studies indicated that the retention of skilled employees became a challenging task for most organisations (Shekhawat & Sandhu, 2016). Whilst organisations were working hard to retain skilled employees by using different retention strategies, Shekhawat and Sandhu (2016) indicated that employees continued to leave their organisations. According to Van Dyk et al. (2013), it was not enough just to introduce effective retention strategies but it was also necessary to induce a healthy working relationship between employee and employer.

Satisfied employees were committed to the employer and were taking their work seriously, stay with an organisation and perform well to the advantage of the organisation (Rahman & Iqbal, 2013). Ferreira and Coetzee (2013) agreed that organisational commitment contributed informative vision to the body of knowledgewith regards to employee retention. Therefore, it was important to keep employees committed, and retaining their skills was precedence for many modern organisations (Neininger et al., 2010).

Furthermore, the psychological contract nurtured the training and upskilling of skilled employees to ensure improved performance, the state of being comfortable for both employees and employers, an increase in organisational commitment and decrease in turnover (Van Dyk et al., 2013). There were various drivers, such as satisfaction with retention factors, that might made employees decide not to leave the organisation and minimise employee retention. Robertson (2013) made recommendations for retaining employees which included (1) creating effectiveness and confidence to advance career flexibility, (2) giving a caring relation to assist with emotions and difficulties, (3) giving work-life balance policies, and (4) designing an individual development plan that consider age, gender and race.

Forward-thinking organisations provide their employees with the opportunity to develop and learn to enhance their employability, and to improve their chance of being retained with their current organisation (Botha, 2014). It is important for organisations to continue practising and implementing human resource strategies throughout an employee's career (Echols, 2016).

This continuous learning and development emphasise the development of career competencies, including career-oriented attitudes and values (Osman-Gani & Paik, 2016). Those characteristics improve the commitment of employees towards their obligations and the employer (Coetzee & Pauw, 2013).

Industry 4.0 have broadly affected the relationship between the employers and employees on how transformation from traditional workplaces changed to technological workplaces (Sharf, 2010). Employers should initiate developmental programs that exceed ordinarily on-the-job training to unleash the potential of skilled employees (Khatri & Gupta, 2015). Employers should also improve the reward system and feedback processes (Kim et al., 2016). It is important for industrial psychologists, human resource practitioners and human resource managers to assist employees to manage their satisfaction with these retention factors, thus becoming adaptable and committed employees (Stauffer et al., 2014).

3.6 SOUTH AFRICAN FINDINGS AND RELATIONSHIPS OF CONCEPTS

Age, gender and race were not significant in predicting the satisfaction with retention factors. The counter-intuitive findings were that there were no significant differences between Blacks and other races in the scale and subscales of OCS and RFMS. These findings help to build a good picture on the kind of relationship for the sake of formulating the hypotheses.

3.7 CHAPTER SUMMARY

This chapter conceptualised the psychological contract, organisational commitment, satisfaction with retention factors and their related theoretical models. The various factors that influenced the psychological contract, organisational commitment, satisfaction with retention factors and their practical inferences for retention practices were also discussed.

The following research aims were attained:

Research aim 2: To conceptualise the constructs psychological contract, organisational commitment, and satisfaction with retention factors and explain theoretical models.

Research aim 3: To conceptualise the theoretical relationship between psychological contract, organisational commitment, and satisfaction with retention factors.

- *Sub-aim 3.1: To conceptualise the relationship amongst the psychological contract and organisational commitment from a theoretical perspective.*

- *Sub-aim 3.2: To conceptualise the relationship amongst the psychological contract and satisfaction with retention factors from a theoretical perspective.*
- *Sub-aim 3.3: To conceptualise the relationship amongst organisational commitment and satisfaction with retention factors from a theoretical perspective.*

Research aim 4: To conceptualise the effect of demographical variables (age, gender and race) on the relationship between psychological contract, organisational commitment and satisfaction with retention factors.

Chapter 4 deals with research methodology. Discussions are on the empirical investigations that were employed to investigate the changing aspects of the relationship between the variables of the psychological contract, organisational commitment and satisfaction with retention factors, as displayed in the sample of permanent employees of the water control sector.

CHAPTER 4: RESEARCH METHODOLOGY

Chapter 4 deals with statistical strategies undertaken in the study with the specific aim to examine the relationship amongst the psychological contract, organisational commitment, and satisfaction with retention factors. Firstly, an overview of the study population and sample is presented. The measuring instruments are discussed and the choice of each justified, followed by a description of the data gathering and processing. The research hypotheses are stated and the chapter concludes with a summary.

The empirical research phase consisted of nine steps, as outlined below:

Step 1: Determination and description of the sample.

Step 2: Choice and substantiation of the measurement instruments.

Step 3: Administration of measurement instruments.

Step 4: Capture of the criterion data.

Step 5: Formulation of the research hypotheses.

Step 6: Statistical processing of the data.

Step 7: Reporting of the interpretation of the data.

Step 8: Integration of the research.

Step 9: Drawing research conclusions, highlighting limitations, and making recommendations.

Steps 1 to 6 are addressed in this chapter, and Steps 7 to 9 are addressed in Chapters 5 and 6.

4.1 RESEARCH APPROACH

The three common approaches to conducting research are the quantitative, qualitative, and mixed methods approaches (Grover, 2015). According to Grover (2015), the researcher anticipates the type of data needed to respond to the research questions. There are criteria to be taken into consideration in selecting a suitable approach to apply in research, for example, the nature of the research problem, purpose of the research, availability of resources such as time and finance, discipline of study, and the researcher's personal experience, skills, interest and attitudes, to list a few (Grover, 2015).

A quantitative approach is concerned with numbers and measurements (Grover, 2015) and involves two associated inquiry strategies, which are surveys and experiments. A qualitative approach, on the other hand, is related to images and words. This study selected a quantitative approach, and a cross-section survey approach was adopted in collecting data.

Allen (2017) explained that cross-sectional designs are used by empirical researchers at one point in time to describe the population of interest. In cross-sectional designs, researchers record information but do not manipulate variables (Allen, 2017). The research approach was further classified by Bryman and Bell (2015) into three types, namely deductive, inductive, and abductive. If the researcher formulated a set of hypotheses for a particular study that needed to be confirmed or rejected during the research process, the researcher was following a deductive approach (Bryman & Bell, 2015). According to Mitchell (2018) a deductive approach begins with a theory, followed by specific hypothesis that can be tested. It is then narrowed down when observations are collected to address the hypotheses. That process ultimately enables the hypotheses to be tested with specific data that provide confirmation of the original theories.

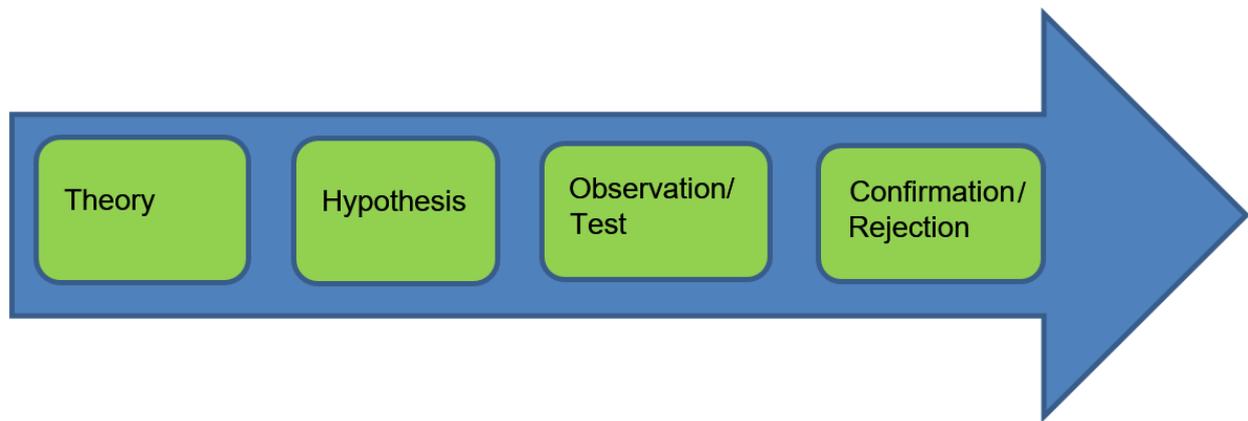
While an inductive approach is common, it is less effective than a deductive approach (Malhotra, 2017). According to Mitchell (2018), an inductive approach works from specific observations to broader generalisations and theories. The approach begins with specific observations and measures, then detects patterns and regularities, formulates tentative observations that can be explored, and finally, ends up developing some general conclusions or theories. The more observations that the inductive approach demonstrates in a relationship with a phenomenon, the higher the probability that the general statement is true, and observations appear to support that particular phenomenon (Malhotra, 2017).

The abduction approach is the intermediation between the deductive and induction approaches. According to Mitchell (2018), the abductive approach follows a pragmatist perspective, taking incomplete observations from experience and reality that lead to a best prediction of the truth, and perhaps even to a new theory. At the same time, Bryman and Bell (2015) clarified that the abductive approach is similar to the deductive and inductive approaches in the way it is applied to make logical inferences and to construct theories. The abduction approach involves constructing theories that are derived from social actors' language and meanings in the context of everyday activities and a strategy on how best to move from lay language to technical language (Malhotra, 2017). The relevance of hypotheses to the study is the main distinctive point between the deductive and inductive approaches. A deductive approach tests the validity of assumptions (theories, hypotheses) in hand, whereas an inductive approach contributes to the emergence of new theories and generalisations.

A deductive research approach was employed in the current survey. Figure 4.1 shows graphically the deductive research approach path.

Figure 4.1:

Deductive research approach path



Source: Adapted Snieder & Lerner (2009, p. 16)

The use of the correct research method for the study is the same as choosing the right key to unlock a box, where the research methods determine the procedures used for data collection, data analysis, and interpretation of results (Grover, 2015).

4.2 DETERMINATION AND DESCRIPTION OF THE SAMPLE

Kumar (2013) defined a population as the total number of items, people, or objects under study, while Salkind (2012) defined population as the entire populace from which the sample was drawn. Hair et al. (2016) referred a population to a huge number of individuals or constituents with similar features that are relevant for research purposes. Clow and James (2014) defined a sample as a unit of people selected to take part in a research study, while Bordens and Abbott (2014) described the sample as a subgroup chosen from a population. A sample is a fraction of a population represented for observations and investigation to respond to research questions (Salkind, 2018). Sampling is applied when the population volume is huge.

There are two methods of sampling (Cohen et al., 2013). A non-probability sampling design is used when the number of elements is unknown or cannot be identified individually (Kumar, 2013). Cohen et al. (2013) furthermore referred to a non-probability sampling as a state where the likelihood of being selected for the sample is unidentified. Probability sampling is a sampling technique in which a sample from a larger population is chosen using a method based on the theory of probability (Bhat, 2015).

Henry (1990) explained probability sampling as a state where all persons have the same possibility of being sampled. For example, if a researcher is dealing with a population of 100 people, each person in the population would have the odds of 1 out of 100 for being chosen. This differs from non-probability sampling, in which each member of the population would not have the same odds of being selected.

For the purpose of the current study, a simple random sampling technique was used. Simple random sampling is a type of probability sampling in which the researcher randomly selects a subset of participants from a population. Each member of the population has an equal chance of being selected. The sample size of this study consisted of approximately 172 (N = 172) female and male permanent employees from the technical, administration, human resources and scientific services sections in the water control sector, and within an age range of 18 to 65 years. The summary of the sample comprises of age, gender and race. The literature review showed the influence of these variables on the psychological contract, organisational commitment, and satisfaction of the retention factors.

4.2.1 Composition of age groups in the sample

Table 4.1 indicates the allocation of the age groups. The ages range from 18 to 65 years.

Table 4.1:
Age allocation of the sample (n = 172)

Age				
Age group	Frequency	Percentage	Valid percent	Cumulative percent
Missing	16	9.3	9.3	9.3
18-29 years	8	4.7	4.7	14.0
30-39 years	57	33.1	33.1	47.1
40-49 years	58	33.7	33.7	80.8
50-59 years	24	14.0	14.0	94.8
60-65 years	9	5.2	5.2	100.0
Total	172	100.0	100.0	

Source: Author's own compilation

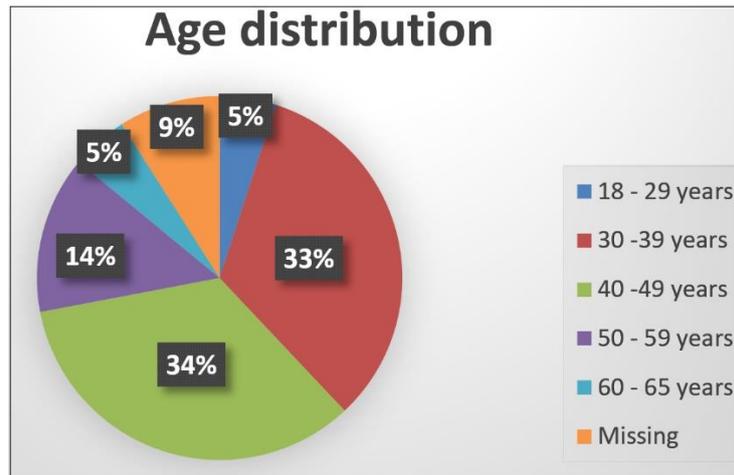
The results presented in Table 4.1 show that the frequencies were strong over the 40 to 49-year age group (33.7%) and the 31-to-39-year age group (33.1%). Participants aged 50 to 59 years made up 14.0% of the sample; and those between 60 to 65 years made up 5.2%.

Participants aged 18 to 30 years made up 4.7% of the sample (n = 172). Overall, participants from the age group of 40 to 49 years (33.7%) made up the majority of the sample. The 16 participants (9.3%) who did not indicate their age, were therefore referred to as missing.

Figure 4.2 show sample distribution by age:

Figure 4.2:

Sample distributions by age (n=172)



Source: Author's own compilation

4.2.2 Composition of gender allocation in the sample

Table 4.2 indicates the allocation of gender groups.

Table 4.2:

Gender allocation of the sample (n = 172)

Gender				
Gender	Frequency	Percentage	Valid percentage	Cumulative percent
Missing	11	6.4	6.4	6.4
Female	71	41.3	41.3	47.7
Male	90	52.3	52.3	100.0
Total	172	100.0	100.0	

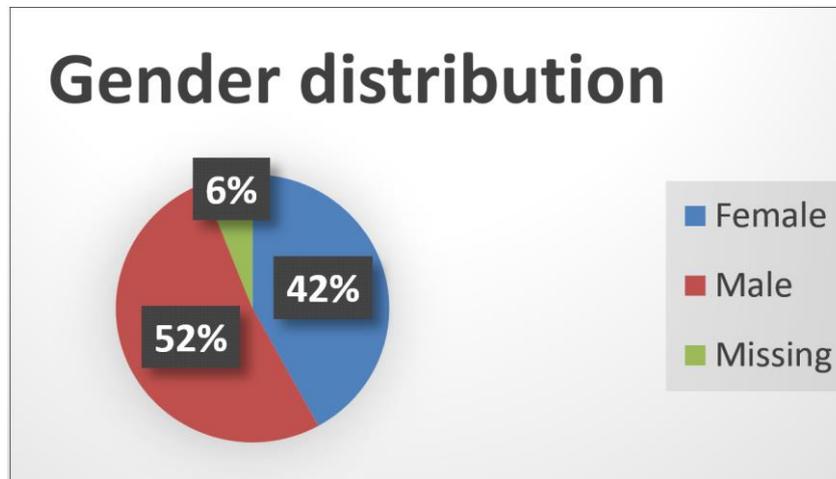
Source: Author's own compilation

In Table 4.2, males comprised 52.3% and females comprised 41.3% of the total sample. The 11 participants (6.4%) who did not indicate their gender, were therefore referred to as missing.

Figure 4.3 show sample distribution by gender:

Figure 4.3:

Sample distribution by gender (n = 172)



Source: Author's own compilation

4.2.3 Composition of race groups in the sample

Table 4.3 depicts the racial distribution.

Table 4.3:

Race distribution in the sample (n = 172)

Race				
Race	Frequency	Percentage	Valid percentage	Cumulative percentage
Missing	2	1.2	1.2	1.2
Asian	1	0.6	0.6	1.8
Blacks	141	82.0	82.0	83.8
Coloured	6	3.5	3.5	87.3
Other	1	0.6	0.6	87.9
White	21	12.2	12.2	100.0
Total	172	100.0	100.0	

Source: Author's own compilation

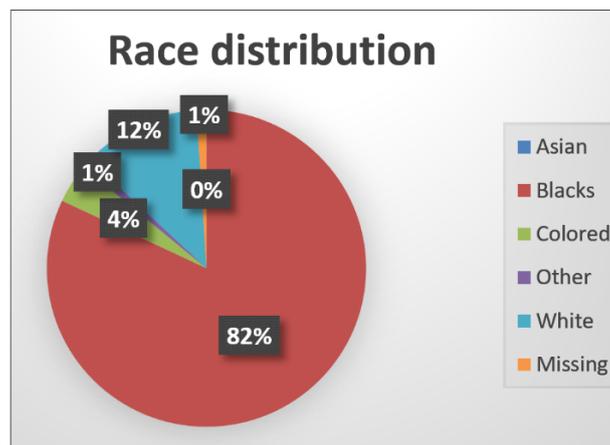
In Table 4.3, Blacks comprised 82.3%, Whites comprised 12.2%, Coloured comprised 3.5%, Asians comprised 0.5%, and other race groups 0.5% of the total sample (n = 172). Overall,

participants from the Black racial group were predominant in the sample. Two participants (1%) did not indicate their race, hence referred to as missing.

Figure 4.4 show sample distribution by race:

Figure 4.4:

Sample distribution by race (n = 172)



Source: Author's own compilation

4.2.4 Demographical sample profile

The demographical profile of the sample presented the significant characteristics of age, gender and race to be considered in the clarification of the empirical results.

Black males aged between 40 and 49 years, and 31 and 49 years were predominated in the sample. Table 4.4 reflects the main characteristics of the sample profile.

Table 4.4:

Main characteristics of the sample profile

Demographical variable	Predominant characteristics	Percentage
Age	Between 40 and 49 years	34%
	Between 30 and 39 years	33%
Gender	Males	52%
Race	Blacks	82%

Note. N = 172

Source: Author's own compilation

4.3 CHOOSING AND MOTIVATING THE MEASURING INSTRUMENTS

The choice of measuring instruments was based on literature review. A demographical survey that includes data on age, gender and race was applied. The measuring instruments that were used were the Psychological Contract Questionnaire (PCQ) (Adams et al., 2014), the Organisational Commitment Scale (OCS) (Meyer & Allen, 1997), and the Retention Factor Measurement Scale (RFMS) (Döckel, 2003). Instruments chosen were based on relevant models and theories of the research and on their validity and reliability in evaluating the three constructs. The researcher in the current study obtained approval from the original developers to use the three questionnaires.

The chosen measuring instruments are discussed below.

4.3.1 The demographical survey

A demographical questionnaire was used to obtain the personal information of the sample, namely, the age, gender and race of the participants.

4.3.2 Psychological Contract Questionnaire (PCQ)

Discussions below deal with the rationale, purpose, dimensions, administration, interpretation, validity, reliability, and motivation for selecting the PCQ (Adams et al., 2014).

4.3.2.1 *Rationale and purpose of the PCQ*

The Psychological Contract Questionnaire was developed by Adams et al. (2014). The questionnaire was developed based on employee obligations (Rousseau, 2000) and the employee expectations developed by Adams et al. (2014). The purpose was to determine employees' expectations (both relational and transactional) and their obligations toward their organisation.

4.3.2.2 *Dimensions of the Psychological Contract Questionnaire (PCQ)*

The questionnaire is comprised of 30 items, divided into three subscales, namely, relational expectations, transactional expectations, and employee obligations, as discussed below.

- **Relational expectations:** The relational expectations subscale is related to an employees' perception of the relational contract, and consists of 10 items, including items such as "*I expect a good interpersonal relationship between myself and my organisation*" and "*I expect to grow in this organisation*".

- **Transactional expectations:** The transactional expectations subscale is related to an employees' perception of the transactional contract, and consists of 10 items, including items such as *"My organisation assists me to develop my external marketability"* and *"I work only the hours set in my contract and no more"*.
- **Employee obligations:** The subscale of employee obligations is related to an opinion of the employee about her or his obligations promised to the employer, and comprises of ten items, including items such as *"Quit whenever I want"*, and *"I have no future obligations"*.

4.3.2.3 Administration of the Psychological Contract Questionnaire (PCQ)

The PCQ is a self-managed survey. Clear instructions were ordered to participants on how to provide answers to the questions. The opinion poll took from 10 to 15 minutes to complete. Participants were asked to indicate their level of agreement with each of the 30 items on a five-point Likert-type scale. The scale made use of designations such as 1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, and 5=strongly agree.

4.3.2.4 Interpretation of the Psychological Contract Questionnaire (PCQ)

Each subscale (relational expectations, transactional expectations, and employee obligations) was measured separately and reflected participants' perceptions regarding those dimensions. The scale measured participants' content of their psychological contract, and whether they have a relational or transactional psychological contract, as well as the employee obligations that participants perceived as important.

4.3.2.5 Reliability and validity of the Psychological Contract Questionnaire (PCQ)

Cramer and Howitt (2011) mentioned that the most appropriate test for reliability is the Cronbach's alpha coefficient, and the result should range from 0 to 1, 1 specifying perfect consistency. Higher alpha coefficient will indicate a higher level of reliability. The reliability coefficient obtained by Adams et al. (2014) was within the generally acceptable limits of .70 and higher. The results of transactional and relational expectations, including employee obligations, indicated that both construct validity and reliability were in conformance with the recommended values ($\alpha \geq .70$) (Hair et al., 2010).

4.3.2.6 Motivation for using the Psychological Contract Questionnaire (PCQ)

The PCQ was planned for the measurement of employee's psychological contract. The objective of this research study was to explore different tendencies and relationships between variables but not to make individual predictions based on the PCQ. Therefore, the PCQ had the ability to give immense visions into the psychological contract.

4.3.3 Organisational Commitment Scale (OCS)

Discussions below deal with the rationale, purpose, dimensions, administration, interpretation, validity, reliability, and motivation for selecting the Organisational Commitment Scale (OCS) (Meyer & Allen, 1997).

4.3.3.1 Rationale and purpose of the Organisational Commitment Scale (OCS)

The development of the three components was founded on the explanations of the three constructs that we employed to establish a set of items that were directed to a sample of females and males in different organisations (Meyer & Allen, 1997).

The multidimensional approach of organisational commitment postulated that an individual may join an organisation due to attitudinal commitment but may continue to stay because of side bets that would have accumulated (Simon & Buitendach, 2013).

4.3.3.2 Dimensions of the Organisational Commitment Scale (OCS)

The latest version by Meyer and Allen's (1997) scale consisted of 18 items, separated into three subscales, that is, affective, continuance and normative commitments.

- **Affective commitment:** The affective commitment subscale is related to the period an employee wants to stay with an organisation, and consisted of six items, including items such as *"I would be very happy to spend the rest of my career with the organisation"* and *"I would turn down another job with more pay in order to stay with this organisation"*.
- **Continuous commitment:** The continuous commitment subscale is related to how much an employee feels the need to stay at their organisation, and consisted of six items, including items such as *"I feel very loyal to this organisation"* and *"This organisation has a great deal of personal meaning for me"*.
- **Normative commitment:** The normative commitment subscale is related to how much employees feel they should stay with their employer since they have to, and consisted of six items, including items such as *"If I got another offer for a job elsewhere, I would not feel it right to leave my organisation"* and *"I am loyal to this organisation because my values are largely its values"*.

4.3.3.3 Administration of the Organisational Commitment Scale (OCS)

The OCS is a self-scoring questionnaire that took from 10 to 15 minutes to complete. Participants were asked to indicate their level of agreement with each of the 18 items related to organisational commitment on a five-point Likert-type scale.

The scale made use of designations such as 1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, and 5=strongly agree.

4.3.3.4 Interpretation of the Organisational Commitment Scale (OCS)

Individual commitment (affective, continuance and normative commitments) was measured individually. The higher the score, the more committed an employee is toward the employer (Gani, 2017).

4.3.3.5 Reliability and validity for using the Organisational Commitment Scale (OCS)

The study supported the trustworthiness and authenticity of the three subscales of organisational commitment. The internal consistencies of the OCS subscales are different, for affective commitment is .85; for continuance commitment is .79 and for normative commitment is .73 (Meyer & Allen, 1997). A study conducted by Bushe (2012) found the acceptable Cronbach's alpha values of .87, .75 and .79 for affective, .79 for continuance and normative commitments, respectively.

4.3.3.6 Motivation for using the Organisational Commitment Scale (OCS)

The OCS (Meyer & Allen, 1997) was selected because the scale acknowledges the specific character of organisational commitment to be measured. The OCS (Meyer & Allen, 1997) was used in this study because of its high degree of reliability and validity, and the fact that it is affordable and easy to administer. In addition, the three dimensions and the contents pertaining to the affective, normative and continuance commitment scales are applicable to this study.

4.3.4 Retention Factor Measurement Scale (RFMS)

Discussions below deal with the rationale, purpose, dimensions, administration, interpretation, validity, reliability, and motivation for selecting the Retention Factor Measurement Scale (RFMS) (Döckel, 2003).

4.3.4.1 Rationale and purpose of the RFMS

Employees' satisfaction with six retention factors include compensation, job characteristics, training and development opportunities, supervisor support, career development opportunities and work-life balance.

4.3.4.2 Dimensions of the RFMS

RFMS consists of 24 items, divided into six subscales.

- **Compensation:** The remuneration dimension measures participants' view about the prominence of compensation, and consisted of six items, including items such as "*I am likely to stay because of my recent salary scale*" and "*I may not leave this organisation because of my competitive total salary package*".
- **Job characteristics:** The job characteristics subscale measured participants' opinion about the importance of job characteristics, and consisted of three items, including items such as "*I am likely to leave this organisation because my job denies me any chance to use my personal initiative or judgement in carrying out the work*" and "*I am likely to leave because my job is quite simple and repetitive*".
- **Training and development opportunities:** This dimension measured employees' opinion on the prominence of training and development opportunities and consisted of four items, including items such as "*I am not going to leave this organisation because there are enough development opportunities for me in this organisation*" and "*I may not leave because I can apply the training, I receive in this organisation*".
- **Supervisor support:** The supervisor support dimension measured employees' opinion about the prominence of supervisor support, and consisted of five items, including items such as "*I am likely to leave because I feel undervalued by my supervisor*" and "*My supervisor seldom recognises an employee for work done well*".
- **Career development opportunities:** The career development subscale measured participants' opinion on the importance of career development, and consisted of three items, such as "*I will be staying in this organisation because my chances for being promoted are good*" and "*I am going to stay in this organisation because an employee's career development is important to this organisation*".
- **Work-life balance:** This dimension measured employees' opinion on the prominence of work-life balance. The work-life balance subscale is made up of four items such as "*I may not leave this organisation even if I often feel there is too much work to do*" and "*I may not stay in this organisation because my job has negative effect on my personal life*".

4.3.4.3 Administration of the RFMS

The RFMS is an administered questionnaire and It takes between 10 and 15 minutes to complete. Participants were asked to indicate their level of agreement with each of the 24 items concerning the degree to which they feel satisfied with retention factors on a five-point Likert-type scale. The scale made use of designations such as 1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, and 5=strongly agree.

4.3.4.4 *Interpretation of the RFMS*

Each subscale of compensation, job characteristics, training and development opportunities, supervisor support, career opportunities, and work-life balance was measured separately, and revealed whether the employees were satisfied with retention factors. The highest score indicates the highest level of satisfaction with that retention factor.

4.3.4.5 *Reliability and validity of the RFMS*

Validity of the RFMS was done by factor analysis (Döckel, 2003). Internal consistency reliability through the Cronbach's Alpha coefficients for each of the subscales are: compensation ($\alpha = .90$), job characteristics ($\alpha = .41$), training and development opportunities ($\alpha = .83$), career development opportunities ($\alpha = .76$), supervisor support ($\alpha = .90$), and work-life balance ($\alpha = .87$).

4.3.4.6 *Motivation for using Retention Factor Measurement Scale (RFMS)*

The RFMS (Döckel, 2003) was selected because it is the only known instrument designed and verified in the South African framework. The RFMS is consequently appropriate for this study.

4.3.5 Limitations of the study

According to Olufowote (2017), the researcher needs to think critically about the limitations of the study, and to write about the implications of the study's limitations for future research studies, such as on the retention of employees in the water control sector.

The survey conducted in this study did not, for the most part of the study, receive the anticipated or probable number of responses that would yield statistically significant results. Rather, the survey led the research to a compromised sample size from which conclusions were drawn. There was limited access to data and lack of previous research studies on RFMS.

Self-reporting instruments were used in this study to examine employee's understanding of her or his conduct through the survey (Kormos & Gifford, 2014). The disadvantages of these instruments are that they are inclined to overstatement (Kormos & Gifford, 2014). Stangor (2014) argued these instruments undertake those employees are proficient to response questions precisely. However, participants might respond differently to the questions (Stangor, 2014). After careful consideration, three instruments were selected, and the limitations considered when interpreting of the results. Participants remained anonymous.

4.4 DATA COLLECTION

The questionnaire method was selected because it is an inexpensive method for data collection (Muleya, 2017). The main advantages of using self-administered questionnaires are that they are cheaper to administer, are a quick and efficient way to obtain information from a large number of participants, and the use of questionnaires secures participant anonymity (Bless et al., 2013).

The study adopted an online survey. According to Lin and Van Ryzin (2011), an online survey is economical and can be managed easily. Other advantages of online surveys include confidentiality. The following data-collection process was followed:

- Permission was requested from the employers to allow conduct of the survey.
- The survey was designed and consisted of four sections; demographical questionnaire (age, gender and race), Psychological Contract Questionnaire (Adams et al., 2014), Organisational Commitment Scale (Meyer & Allen, 1997), and Retention Factor Measurement Scale (Döckel, 2003).
- Permission letter was received from the gatekeeper agreeing that the information provided by the researcher will be used for research purposes only.
- A cover letter explaining the background of the study, the purpose and benefits of the research was compiled, including confidentiality and anonymity of the responses.
- An approved research ethics clearance was obtained from Unisa HRM Ethics Review Committee that allowed the researcher to proceed with the research (Ethical Review Committee reference 2019_ HRM_ 015 – refer to Appendix A).
- The survey link was created and included instructions for completing the questionnaire.
- The gatekeeper distributed the survey link to the potential participants.
- Respondents completed the questionnaires online and their responses were linked directly to the statistician at UNISA.
- After completing and submitting the questionnaire, the employee obtained a notification to inform him or her that the survey is complete and a gratitude for participating.

4.5 ETHICAL CONSIDERATIONS

Department of Research and Ethics Committee issued the ethical clearance to the researcher. The researcher obeyed to the ethical doctrines as delineated in the UNISA Research Ethics Policy, which included the following (UNISA, 2013):

- Autonomy (the research respected the autonomy, rights and dignity of the participants).
- Beneficence (the research made a positive contribution towards the welfare of people).
- Non-maleficence (the research caused no harm to the participants specifically or to people in general).
- Justice (the benefits and risks of research were fairly distributed among people).
- The study was administered within acceptable boundaries.
- Each source was explicitly referenced.
- All participation in this study was completely voluntary.
- Informed consent was obtained from all participants.
- Permission was obtained from original developers of questionnaires.
- Participants who were interested in the results of the study were informed to contact the researcher.
- Information obtained from the participants was completely confidential.
- All participants remained anonymous.
- Original data will be kept with the researcher for a period of five years.
- The research process and findings were documented in the form of a dissertation to provide opportunities for obtaining accurate information.

4.6 FORMULATION OF RESEARCH HYPOTHESES

McLeod (2018) defined a hypothesis as a precise, testable statement of what the researcher predicts will be the outcome of the study. The central research hypothesis was formulated to establish whether a relationship subsist amongst the psychological contract, organisational commitment and satisfaction with retention factors. Table 4.5 below displays the research hypotheses that were formulated with a view to achieving the empirical objectives of the study.

Table 4.5:
Research hypotheses

Aim	Research hypothesis	Statistical procedure
Research aim 1		
To empirically investigate the statistical relationship between the demographical variables (age, gender and race) psychological contract, organisational commitment and satisfaction with retention factors conceptualised in a sample of employees in the water control sector.	Ha 1: Statistically, there is significant and positive relationship between the demographical variables (age, gender and race), the psychological contract, organisational commitment and satisfaction with retention factors.	Correlational analysis.
Research aim 2		
To investigate whether age, gender and race, and the psychological contract, and organisational commitment significantly and positively predict employees' satisfaction with retention factors.	Ha 2: Age, gender and race, as demographical variables, and the psychological contract and, organisational commitment as a set of independent variables, significantly and positively predict satisfaction with the retention factor variables as a set of dependent variables.	Stepwise hierarchical regression analysis.
Research aim 3		
To empirically investigate whether employees from different age, gender and race differ significantly in relation to the psychological contract, organisational commitment, and satisfaction with retention factor variables.	Ha 3: Individuals from different age, gender and race groups vary significantly in terms of their psychological contract, organisational commitment, and satisfaction with retention factors.	Test for significant mean differences.

Source: Author's own compilation

4.7 STATISTICAL PROCESSING OF THE DATA

In this study, statistical procedures followed included preliminary statistical analysis (common method bias and internal consistency reliabilities); descriptive statistical analysis (means, standard deviations, skewness, kurtosis, and tests for assumptions); bi-variate correlation analysis (Spearman's correlation); and inferential and multivariate statistics (stepwise

hierarchical regression analysis and tests for significant mean differences). Table 4.6 presents data analysis process and statistical procedure.

Table 4.6:

Summary of the data analysis process and statistical procedures

Stage 1	Stage 2	Stage 3	Stage 4
Preliminary statistical analysis	Descriptive statistics	Bi-variate correlation analysis	Inferential and multivariate analysis
Common method bias	Means	Spearman's correlation	Stepwise hierarchical regression analysis
Internal consistency reliability	Standard deviations		Tests for significant mean differences
	Skewness		
	Kurtosis		
	Test for assumptions		

Source: Author's own compilation

4.7.1 Stage 1: Preliminary statistical analysis

Preliminary statistical analysis was used to determine the common method bias and the internal consistency reliability.

4.7.1.1 Step 1: Testing for common method bias

Common method bias refers to inconsistencies in the answers, arising from the collection technique implied in its place of the relationships amongst the constructs (Garger et al., 2019). Simmering et al. (2015) referred to 'common method bias' as a logical inconsistency arising from the particular data-collection technique, such as self-coverage questionnaire. Common method bias is viewed as a confounding variable that systematically influences both the dependent and independent variables (Spector et al., 2019). The bias happens when one component emerges from the investigation, or if this component illustrates most of the (Kiazad, 2010). Spector et al. (2019) explained that common method bias is prevalent in studies where data for both dependent and independent variables are obtained from the same survey respondent in the same measurement context, using the same item context and similar item characteristics.

Conventional methods for diagnosing the presence of collinearity in regression analysis comprise of two approaches, namely, the variance inflation factor (VIF) and condition indexes. VIF and condition indexes evaluate the impact of collinearity and determine which variables are involved (Liao, 2010). Collinearity statistics coefficients and collinearity diagnostics were used to assess the common method bias in the current study as the same instruments were used to collect data for both dependent and independent variables. In this study, eigenvalues, condition index, variance proportions, VIF, and tolerance levels were used to test for common method bias for each of the measuring instruments.

Collinearity statistics coefficients and collinearity diagnostics followed that procedure to test for common method bias. The eigenvalue should not be less than 1, 0, or more than 1, preferably when an eigenvalue is close to 0, the researcher should continue to the next step to check the condition index (Girden, 2001). An acceptable range of the condition index should be between 15 and 30 (IBM, 2019). When the result is within this range, the researcher is free to proceed to the variance proportions step (Hair et al., 2010). Here, there should not be two or more variance proportions of the values $> .90$ in one row. The limits for VIF were between 1 and 10 (IBM, 2019), and an acceptable VIF is ≤ 3.3 (Kock, 2015). An acceptable range of tolerance level is between 0 and 1.

4.7.1.2 Step 2: Testing for internal consistency reliability

In statistical research, internal consistency refers to a measure based on the correlations between different items on the same subscale or test, measuring whether items which are supposed to measure the same construct, produce similar results. Internal consistency reliability alludes to the consistent delivery of results for the measurement instruments for each research study conducted (Prince, 2018). Rose et al. (2014) refers internal consistency reliability to an extent of interrelationship amongst elements of a measuring meter that aiming the same variable. For example, if a complex construct problem is directed to employees, the degree of responses in a similar way is a sign of internal consistency (Rose et al., 2014).

The current study used Cronbach's alpha coefficient to measure the internal consistency reliabilities of the three constructs of PCQ, OCS and RFMS (Rose et al., 2014). The coefficient of Cronbach's score range from 1 to 0, where 1 indicates a more reliable scale (Rose et al., 2014). Cronbach's alpha coefficient (α) ranges from $\alpha \geq .90$ (an excellent internal consistency) to $\leq .50$ (an unacceptable internal consistency) (Prince, 2018; Grove & Gray, 2019).

4.7.2 Stage 2: Descriptive statistics

Descriptive statistics is a summary of information taken from the sample (Holcomb, 2016). Descriptive statistics are used to attend the special examination undertaken by a study, and are used to assist in finding essential information that may get rid of the problems that the study needs to resolve (Grigsby, 2015). Descriptive statistics describe the relationships between the variables. Two different measures, namely, measures of central tendency (the mean) and measures of variability (standard deviations, kurtosis and skewness) are generally used for the descriptive statistics (Kenton, 2019), and these are calculated before the inferential statistical comparisons are made.

The purpose of descriptive statistics is to summarise and present information taken from samples in a considerable technique (Nestor & Schutt, 2014; Holcomb, 2016). This study used descriptive statistics to describe those features of information that correlate with the research constructs (psychological contract, organisational commitment and satisfaction with retention factors). Descriptive statistics stage consisted of the following two steps:

Step 1: Determining the means, standard deviations, skewness and kurtosis.

Step 2: Test for assumptions.

These two steps are described in more detail below.

4.7.2.1 Step 1: Means, standard deviations, skewness and kurtosis

This section reports on the means, standard deviations, kurtosis and skewness for Psychological Contract Questionnaire (PCQ) (Adams et al. (2014), Organisational Commitment Scale (OCS) (Meyer & Allen, 1997), and the RFMS (Döckel, 2003).

The score of the mean is the sum of all single scores for each subscale, and then divide the total score by the number of scores in each subscale (Trafimow et al., 2018). The mean score indicated the normality of the data. The standard deviation displayed dispersion of a set of values close to the mean (Ho & Yu, 2015). The standard deviation is more or less the sum of each single score and differs from the mean of the set of scores (Salkind, 2018). The larger the standard deviation indicate that the set of scores differ significantly (Salkind, 2018).

Hans-Vaughn and Lomax (2013) described skewness as the extent of dissemination scores from a perfect symmetry. Skewness is the degree of distortion from the symmetrical bell curve or the normal distribution (Dugar, 2018).

Skewness indicates disparity of information (Trafimow et al., 2018). Skewness measures the lack of symmetry in data distribution and a symmetrical distribution will have a skewness of zero (Dugar, 2018).

According to Dugar (2018), there are two types of skewness: positive and negative. Positive skewness is when the right-side tail of distribution is longer or fatter. Negative skewness is when the left-tail of the distribution is longer or fatter than the tail on the right side. Gravetter et al. (2020), similarly explain that distributions that are skewed to the left are called negatively skewed distributions, while those skewed to the right are called positively skewed distributions. The rule of thumb of skewness (Dugar, 2018) is as follows:

- Between -0.5 and 0.5 , the data are symmetrical.
- Between -1 and -0.5 , the data are negatively skewed.
- Between 0.5 and 1 , the data are positively skewed.
- Between < -1 and > 1 , the data are highly skewed.

Kurtosis is a statistical measure used to describe the extent whose scores group in the tails or the apex of a frequency dispersion (McLeod, 2019). The peak is at the tallest part of the distribution, and the tails are the ends of the distribution (McLeod, 2019). Similarly, Dugar (2018) explains that kurtosis is all about the tails of the distribution, and is used to describe the extreme values in one versus the other tail.

Kurtosis also indicates if the distribution contains voluminous outliers (Ho & Yu, 2015). Kurtosis is the measure of outliers present in the distribution and has three types, namely, mesokurtic (when kurtosis is equal to 3), leptokurtic (when kurtosis is greater than 3), and platykurtic (when kurtosis is less than 3) (Dugar, 2018).

4.7.2.2 Step 2: Test for assumptions

According to Snyman (2021), the overall objective of research is to draw legally or officially acceptable closure from a representative sample derive from a population. Samples from huge population become a potential risk when utilised to supply special standards that are relevant to the total populace (Snyman, 2021).

In this research, statistical methods were used to determine the degree to which certain closures could be extracted from the examination results. Data assumptions that are usually found in statistical research, and are briefly discussed below:

(a) Outliers

- (b) Normality
- (c) Homogeneity of variance
- (d) Linearity
- (e) Multicollinearity and singularity

(a) Outliers

An outlier is when a single value differs significantly to the rest of the dataset (Gravetter & Wallnau, 2013). Although there is no solid mathematical definition, there are guidelines and statistical tests that can be used to find outliers (Frost, 2020). A Z-score is typically used to find the outliers. Z-scores are the number of standard deviations above and below the mean that each value falls in. For example, a Z-score of 2 indicates that an observation is two standard deviations above the average, while a Z-score of -2 signifies it as two standard deviations below the mean (Frost, 2020).

According to Frost (2020), hypothesis tests can also be used to find the outlier. If the p -value for the test is less than the significant level, the null test is rejected and one of the values becomes an outlier.

(b) Normality

The assumption of normality is grounded on the idea that each particular variable must be normally distributed for the variables to adhere to a multidimensional normal distribution (Pituch & Stevens, 2016). In this research, normality was used to assess the mean differences (t-tests and analysis of variances, ANOVA). According to Tabachnick and Fidell (2001), statistical inferences become weaker as distributions depart from normality. Normality of variables was assessed by means of various methods, such as skewness and kurtosis.

(c) Linearity

Linearity occurs when all pairs of dependent variables and all covariate pairs across all groups can be graphically represented as a straight line (Salkind, 2010). If the assumption of linearity is not met, then predictions may be inaccurate. Again, when testing for linearity, the assumption is tested that there is a straight-line relationship between two variables, when a line is fitted to the X and Y-values on a bivariate scatterplot (Tabachnick & Fidell, 2001).

(d) Homogeneity of variance

Homogeneity of variance refers to equal variances across different groups or samples. Equality of variance is used to assess the mean differences of an independent variable (PCQ and OCS) by using t-tests and analyses of variance (ANOVAs). Furthermore, equality of variance is assessed by Levene's test for the dependent variable (RFMS). Levene's test utilises the F-test, and if the corresponding p -value is less than .05 (statistical significance), then the assumption of equality of variance is not met.

(e) Multicollinearity and singularity

Multiple regression happens if two or more independent variables are extremely correlating to each other (Frost, 2020). Multicollinearity means that the variables of interest are highly correlated, and high correlations should not be present among the variables of interest. A value of VIF >10 indicates multicollinearity is present and the assumption is violated.

Singularity exists when variables correlate perfectly to each other ($r = 1.00$) (Salkind, 2010). The variance inflation factor (VIF), tolerance, eigen-values and condition indices were used to test for multicollinearity and singularity.

4.7.3 Stage 3: Bivariate correlation

There were two ranked variables in this study, and therefore, Spearman's rank correlation was used to test whether, as one variable increases, the other variable tends to increase or decrease. Rovai et al. (2013) referred to correlation analysis as the numerical approaches utilised to quantify and describe the relationship that lives among variables. Hair et al. (2010) indicated that the correlation coefficient (r) is the concentration of a relationship around variables. A relationship happens when a change in one variable is escorted by a constant and predictable change in another variable.

In this study, bi-variate correlation methods were used to test the strength and direction of the relationship between the demographical variables (age, gender and race), the psychological contract (relational expectations, transactional expectations and employee obligations), organisational commitment (affective commitment, continuous commitment and normative commitment), and satisfaction with retention factors (training and development opportunities, supervisor support, career development opportunities compensation, job characteristics,, and work-life balance).

Research hypothesis 1:

Ha:1. There is a statistically significant and positive relationship between the demographical variables (age, gender and race), the psychological contract, organisational commitment and satisfaction with retention factors

Spearman's rank correlation computes degree of association between two variables and can be clarified through a monotonic relationship function (Prion & Haerling, 2014). Spearman's correlation determines the strength and direction of the monotonic relationship between two variables rather than the strength and direction of the linear relationship between two variables (Glen, 2017). Glen (2017) described a monotonic relationship as a relationship that does one of the following: (1) as the value of one variable increases, so does the value of the other variable; or (2) as the value of one variable increases, the other variable value decreases.

The Spearman's rank correlation coefficient (r_s) is the nonparametric version (ρ) of the Pearson correlation coefficient (Clef, 2013). Data must be ordinal, interval or rational. Values for Spearman's correlations range from -1 to 1 (Clef, 2013).

+1= a perfect positive correlation between ranks;

-1= a perfect negative correlation between ranks;

0= no correlation between ranks.

Glen (2017) states that correlation is a measure of association, and further evaluates correlation in terms of effect size:

$r = .00$ to $.19$; very weak;

$r = .20$ to $.39$; weak;

$r = .40$ to $.59$; moderate;

$r = .60$ to $.79$; strong;

$r = .80$ to 1.0 ; very strong.

4.7.4 Stage 4: Inferential statistical analysis

Inferential statistics is statistical methods that deduce the characteristics of a bigger population from a small but representative sample (Glen, 2017).

The current study used inferential statistical analysis to establish if the age, gender, race, the psychological contract (relational expectations, transactional expectations and employee obligations), and organisational commitment (affective commitment, continuous commitment, and normative commitment), significantly and positively predict satisfaction with retention factors (training and development opportunities, supervisor support, career development opportunities, compensation, job characteristics and work-life balance). This stage entailed the following two steps:

- (1) Stepwise hierarchical regression analysis
- (2) Tests for significant mean differences

The two steps are described below.

4.7.4.1 Step 1: Stepwise hierarchical regression analysis

Inferential statistical analysis step 1 (Stepwise hierarchical regression analysis) was utilised to test if age, gender, race, the psychological contract and organisational commitment knowingly and optimistically predict satisfaction with retention factors. Research hypothesis 2 was examined with the stepwise hierarchical regression analysis.

Ha 2: Age, gender and race, as demographical variables, and the psychological contract and organisational commitment, as a set of independent variables, significantly and positively predict satisfaction with the retention factor variables as a set of dependent variables.

Stepwise regression is a popular data-mining tool that uses statistical significance to select the explanatory variables to be used in a multiple-regression model (Smith, 2018). On addition, hierarchical regression is used to add or remove variables from the model in multiple steps.

The main objective of the stepwise regression is to examine the most desirable independent construct variables that foresee the dependent construct variables (Li et al., 2020). Stepwise regression employs the F-tests and T-tests to find the independent variables that knowingly predict dependent variables (Kenton, 2019).

In this study age, gender, race, psychological contract, and organisational commitment are independent variables, while training and development opportunities, supervisor support, career development opportunities compensation, job characteristics and work-life balance are dependent variables.

Stepwise hierarchical regression analysis has the capability to achieve immense amounts of feasible forecaster variables and to adjust the concept with the purpose of selecting the best forecaster variables from available choices (Tabachnick & Fidell, 2019).

4.7.4.2 Tests for significant mean differences

The purpose of the current study is to examine significant mean differences utilised to ascertain if employees of different ages, gender and races vary knowingly concerning constructs of the psychological contract, organisational commitment, and satisfaction with retention factors. Significant mean differences were employed to evaluate whether research findings support research hypothesis 3.

Ha 3: Individuals from different age, gender and race groups differ significantly in terms of their psychological contract, organisational commitment, and satisfaction with retention factors.

One-way analysis of variance (ANOVAs) and post hoc analysis were performed to examine significant mean differences between various demographical groups (age, gender and race) relating to the psychological contract, organisational commitment and satisfaction with retention factors.

T-tests were used to assess significant differences amongst the means of the gender groups' psychological contract, organisational commitment and satisfaction with retention factors. ANOVAs evaluate differences between the means of age and race groups' psychological contract, organisational commitment and satisfaction with retention factors. In addition, ANOVA and post-hoc analysis were employed to ascertain significant differences amongst age, gender and race, because those variables comprised more than two variables (Lee & Lee, 2018).

The p -value was used to ascertain the effect size of variations amongst the connected variables (Cohen et al., 2013). The p -value for the equal variances, assumed and not assumed, was used to test significant difference between females and males in terms of the measuring instruments (PCQ, OCS, and RFMS).

4.7.5 Level of significance

Two types of errors exist in testing the level of significance. A type I error is the rebuff of a true null hypothesis, whereas a Type II constitutes the failure to reject a false null hypothesis (Gravetter & Wallnau, 2013).

For this study, the statistically significant level of $p \leq .05$ was selected. Statistical differences are founded on $p \leq .05$ as a rule of thumb, therefore affording 95% confidence in the results (Gravetter et al., 2020). Table 4.7 indicates the different levels of statistical significance.

Table 4.7:

Different levels of statistical significance

Probability	Level	Significance
p	.10	Less significant
p	.01 to .05	Significant
p	.001 to .01	Very significant
p	.001	Extremely significant

Source: Author's own compilation

If $p \geq .05$, then the results are not statistically significant (Rovia et al., 2013). When a test reveals a p -value $\leq .05$, then, the null hypothesis is rebuffed, and the results are statistically significant (Gravetter et al., 2020).

4.7.5.1 Level of significance: correlational statistical analysis

The Spearman's Correlation Coefficient (r_s) ascertain the effect size (Cohen et al., 2013). Correlation coefficients between .10 and .29 represent a small effect, coefficients between .30 and .49 represent a medium effect, and coefficients of $\geq .50$ represent a large effect. Table 4.8 indicates the various effect sizes (Cohen et al., 2013).

Table 4.8:

Effect size of the Spearman's correlations

Practical effect size (r_s)	Significance at $p \leq .05$
Small practical effect	$r_s \geq .10 \leq .29$
Medium practical effect	$r_s \geq .30 \leq .49$
Large practical effect	$r_s \geq .50$

Source: Author's own compilation

4.7.5.2 Level of significance: hierarchical regression analysis

The adjusted R^2 value stipulates the extent the independent variable explains the differences of dependent variable (Hair et al., 2016).

The range of the adjusted R^2 is from 0% to 100% (Hair et al., 2016). The hierarchical model calls for a determination of R^2 and the partial coefficients of each variable at the point at which it is added to the equation. As a result, when a forecaster value is $p \leq .05$, the dependent variable is significantly predicted.

4.7.5.3 Level of significance: test for significant mean differences

A significance level of $p \leq .05$ indicate that mean variations are knowingly and accurate. Cohen's d is used to measure the effect size of the mean differences.

Table 4.9 indicates the effect sizes the Cohen's d .

Table 4.9:

Effect sizes the Cohen's d

Practical effect size	Significance at $p \leq .05$
Small effect	$d < .02$
Medium effect	$d < .05$
Large effect	$d < .08$

Source: Author's own compilation

4.8 CHAPTER SUMMARY

The goal of this chapter was to debate the practical examination. Included in the examination were the population, sample, choice and inspiration of the measuring instruments, data-collection process, ethical considerations, and the data analysis process. This chapter included the conceptualisation of the research hypotheses and statistical processing of the data collected during the practical examination. The statistical significance levels which interpreted the results were presented.

Chapter 5 deal with the following research aims.

Research aim 1: To empirically investigate the statistical relationship between the demographical variables (age, gender and race), psychological contract, organisational commitment, and satisfaction with retention factors in a sample of the water control sector.

Research aim 2: To empirically investigate whether age, gender and race, as demographical variables, and the psychological contract and organisational commitment, significantly and positively predict employees' satisfaction with retention factors.

Research aim 3: To empirically investigate whether individuals from the various age, gender and race groups differ significantly with regard to the psychological contract, organisational commitment, and satisfaction with the retention factor variables.

CHAPTER 5: RESEARCH RESULTS

The objective of this chapter is to deliberate on the statistical results of the practical examination and report correlational and inferential statistical analysis, together with descriptive analysis. The statistical results are presented in tables and graphically illustrated in figures, followed by an integrated discussion of the results, and concludes with a summary of Chapter 5.

This chapter reports on the statistical results concerning the following research aims:

Research aim 1: To empirically investigate the statistical relationship between the demographical variables (age, gender and race), psychological contract, organisational commitment, and satisfaction with retention factors, as manifested in a sample of the water control sector. (The aim relates to research hypothesis 1).

Research aim 2: To probe whether age, gender, race, psychological contract and organisational commitment significantly and positively predict employees' satisfaction with retention factors. (The aim relates to research hypothesis 2).

Research aim 3: To empirically investigate employees from the different age, gender and race groups vary knowingly relating to the psychological contract, organisational commitment, and satisfaction with the retention factor variables (The aim relates to research hypothesis 3).

5.1 PRELIMINARY DESCRIPTIVE STATISTICS

This section reports on the common method bias and internal consistency reliabilities of the three constructs (Psychological Contract Questionnaire (PCQ), Organisational Commitment Scale (OCS), and Retention Factor Measurement Scale (RFMS). Owing to the research design and the measuring instruments explored in this research, it was crucial to do the preliminary descriptive analysis (Aguirre-Urreta & Hu, 2019).

5.1.1 Reporting on common method bias

Podsakoff et al. (2012) said previous studies have demonstrated that relationships influenced by common method bias are not always upwardly biased, but the common method may inflate, deflate, or have no impact on the relationship between two constructs (Podsakoff et al., 2012). This is concerning as it will potentially lead to researchers drawing inaccurate conclusions (Podsakoff et al., 2012).

The bias generated by common method bias (CMV), appears when the estimated relationship between one construct and another might be inflated; put differently, CMV produces a systematic covariation above the true relationship between the scale items (Malhotra et al., 2016).

The common method bias for the measuring instruments was established using eigenvalues, condition indexes, and variance proportions on the collinearity diagnostic analysis table. A further analysis was done on VIF and tolerance levels. Table 5.1 presents these collinearity diagnostic and collinearity statistical coefficients for the measuring instruments.

Table 5.1:

Collinearity statistics coefficients and collinearity diagnostic of the measuring instruments

Model	Variance proportions					Collinearity statistics	
	Eigenvalue	Condition index	Constant	Psychological contract	Organisational commitment	Tolerance	VIF
1	2.984	1.000	.00	.00	.00		
2	.012	15.659	.15	.05	.94	.798	1.253
3	.004	28.488	.84	.95	.06	.798	1.253

Dependent variable: Retention Factor Measurement Scale

Predictors: (Constant): Organisational Commitment and Psychological Contract

Source: Author's own compilation

Table 5.1 specifies that the PCQ has an eigenvalue close to zero at .012. The eigenvalue close to zero indicates multicollinearity (IBM, 2019). Since the closeness to zero is imprecise, it was advisable to use the condition index (IBM, 2019). The condition index between 15 and 30 are deemed multicollinearity (IBM, 2019). Because the condition index of PCQ is above 15 at 15.659, Hair et al. (2013) proposed the use of variance proportions. Hair et al. (2013) further recommended that if there were two or more variance proportions of the values > .90 in a row that, then indicated multicollinearity. In the case of the PCQ, the variance proportion is .95 and it only appears once in the row, meaning no collinearity existed. The absence of multicollinearity implies the absence of common method bias (Ringle et al., 2015).

Noncollinearity was also verified by the values of VIF of less than 5 in Table 5.1 under collinearity statistics (Ringle et al. (2015). The limit of VIF should be between 1 and 10 (IBM, 2019). The occurrence of a VIF greater than 3.3 was proposed as an indication of pathological collinearity and was an indication that a model may be contaminated by common method bias (Kock, 2015).

Therefore, if a VIF resulting from a full collinearity test is equal to, or lower than 3.3, the model can be considered free of common method bias. For the PCQ analysis, the VIF is 1.253, indicating that the model is free of common method bias. Lastly, tolerance is associated with each independent variable and ranges from 0 to 1 (IBM, 2019). For the PCQ, the tolerance level is .798, meaning that the model is free of common method bias.

Table 5.1 furthermore indicates that the OCS has an eigenvalue close to zero at .004. The eigenvalue close to zero indicates multicollinearity (IBM, 2019). Since the closeness to zero is imprecise, the condition index was applied (IBM, 2019). Because the condition index of OCS was above 15, Hair et al. (2013) proposed the use of variance proportion. Hair et al. (2013) further recommended that if there were two or more variance proportions of the values $> .90$ in a row that then indicated multicollinearity. In case of this OCS, the variance proportion is .94 and it only appears once in the row, meaning no collinearity existed. The absence of multicollinearity implies the absence of common method bias (Ringle et al. (2015).

If the resulting VIF from a full collinearity test is equal to or lower than 3.3, the model can be considered free of common method bias. In case of the OCS analysis, the VIF is 1.253, indicating that the model is free of common method bias. Lastly, tolerance is associated with each independent variable and ranges from 0 to 1 (IBM, 2019). For the OCS, the tolerance level is .798, meaning that the model is free of common method bias.

In summary, it is apparent that the collinearity coefficients and diagnostics results for the PCQ and OCS are stable (Podsakoff et al., 2003).

5.1.2 Reporting on internal consistency reliability

Hogan (2015) defined internal consistency reliability as a measure that focuses on how well a test addresses different constructs and delivers reliable scores. A Cronbach Alpha coefficient of $\geq .75$ is regarded as internally consistent (Cramer & Howitt, 2011). Hair et al. (2010) agreed that a Cronbach's alpha score of .70 is set as the limit to determine reliability. The reliability analysis assessed the internal consistency reliabilities of the PCQ, OCS and RFMS.

5.1.2.1 Assessing internal consistency reliability of the PCQ

Table 5.2 indicates the Cronbach's Alpha scores of each of the subscales of the PCQ. The internal consistency coefficients ranged from .72 (high) (relational expectations), followed by .69 (employee obligations), and to .53 (low) (transactional expectations) for the total sample (N = 172).

According to Pallant (2011), an item's total correlation should be greater than .30, if not, then it would suggest that the item is measuring a different thing entirely. In case of the PCQ scale and subscales, all the Cronbach's alpha coefficients were above .30, which means that the items were reliable. The overall the PCQ obtained an acceptable Cronbach's alpha coefficient of .71 (high). Table 5.2 below shows the internal consistency reliability of the PCQ.

Table 5.2:
Internal consistency reliability: PCQ

Dimension	Cronbach's alpha coefficient
Relational expectations	.72
Transactional expectations	.53
Employee obligations	.69
Overall PCQ	.71

Source: Author's own compilation

5.1.2.2 *Assessing internal consistency reliability of the OCS*

Table 5.3 presents the Cronbach's Alpha scores of each of subscales of the OCS. The internal consistency coefficients ranged from .73 (high) (affective commitment), followed by .71 (normative commitment) to .62 (low) (continuous commitment). The highest Cronbach's alpha coefficient of .83, indicate a very good internal consistency reliability of the OCS for this sample. The OCS has adequate internal consistency reliability in terms of the purposefulness of this study. Table 5.3 below shows internal consistency reliability of OCS.

Table 5.3:
Internal consistency reliability: OCS

Dimension	Cronbach's alpha coefficient
Affective commitment	.73
Continuous commitment	.62
Normative commitment	.71
Overall OCS	.83

Source: Author's own compilation

5.1.2.3 Assessing internal consistency reliability of the RFMS

Table 5.4 indicates the Cronbach's Alpha scores of each of subscales of RFMS. The internal consistency coefficients ranged from .89 (high) (career development opportunities), followed by .87 (training and development opportunities), .84 (supervisor support), .68 (job characteristics), and .67 (compensation) to .60 (low) (work-life balance) for the sample (N = 172). The highest Cronbach's Alpha score of .91, indicate a very good internal consistency reliability of the OCS for this sample. The results show that the RFMS has adequate internal consistency reliability for the purpose of this study. Table 5.4 below shows the internal consistency reliability of RFMS.

Table 5.4:

Internal consistency reliability: RFMS

Dimension	Cronbach's alpha coefficient
Compensation	.67
Job characteristics	.68
Training and development opportunities	.87
Supervisor support	.84
Career development opportunities	.89
Work-life balance	.60
Overall OCS	.91

Source: Author's own compilation

PCQ, OCS and RFMS were considered to have an acceptable internal consistency reliability.

5.2 DESCRIPTIVE STATISTICS

This section presents the means, standard deviations, skewness and kurtosis achieved on the subscales and scales of PCQ, OCS and RFMS.

5.2.1 Means, standard deviations, skewness, and kurtosis of the PCQ

Table 5.5 provides the descriptive statistics related to the PCQ scale and subscales.

Table 5.5:

Descriptive statistics: Means, standard deviations, skewness and kurtosis for the PCQ

Construct	Minimum	Maximum	Mean	SD	Skewness	Kurtosis
Relational expectations	2.00	4.00	3.99	.53	-.51	.65
Transactional expectations	2.00	5.00	3.44	.43	-.05	-.16
Employee obligations	3.00	5.00	3.89	.52	.06	-.52
Overall PCQ	3.00	5.00	3.71	.33	.11	.54

Notes. N=172

Source: Author's own compilation

The mean scores range from 3.44 to 3.99. Table 5.5 shows the highest mean on relational expectations (M = 3.99; SD = .53), and the lowest mean on transactional expectations (M = 3.44; SD=.43). The standard deviations for the subscales ranged from .43 to .53 and the deviations were almost the same. The overall mean for the PCQ scale was (M = 3.71; SD = .33). The score for employee obligations (M = 3.89; SD= .52) confirmed an opinion that employees had fulfilled their obligations toward the employer.

The skewness values of the PCQ subscale ranged from -.51 to .06. The distributions of the relational expectations' subscale (-.51) is negatively skewed and the data is highly skewed. The distribution of the transactional subscale (-.05) is negatively and moderately skewed. The employee obligations subscale (.06) and the overall PCQ scale (.11) are positively and moderately skewed.

The kurtosis values for the PCQ ranged from -.52 to .65. The kurtosis values of relational expectations (.65), transactional expectations (-.16), and employee obligations (-.52) have a platykurtic distribution, that is, the distribution is shorter and the tails are thinner than a normal distribution. This means that the data lack outliers (Dugar, 2018). The overall PCQ (.54) also has a platykurtic distribution.

5.2.2 Means, standard deviation, skewness, and kurtosis of the OCS

Table 5.6 presents the descriptive statistics of the OCS scale and subscales.

Table 5.6:

Descriptive statistics: Means, standard deviations, skewness and kurtosis for the OCS

Construct	Minimum	Maximum	Mean	SD	Skewness	Kurtosis
Affective commitment	1.00	5.00	3.24	.68	-.66	.90
Continuous commitment	1.00	5.00	3.69	.67	-.76	.90
Normative commitment	1.00	5.00	3.50	.56	-.93	1.75
Overall commitment	2.00	4.00	3.56	.51	-1.02	1.60

Note. N=172

Source: Author's own compilation

The mean scores ranged from 3.24 to 3.69. Table 5.6 shows the highest score for the subscale, continuance commitment (M = 3.69; SD = .67), and the lowest score for the subscale, affective commitment (M = 3.24; SD = .68).

The standard deviations for the subscales, affective and continuous commitments, were similar, in the range .67 to .68; and normative commitment at .56. The overall mean for the OCS was (M = 3.56; SD =.51).

Continuance commitment, bearing the highest score, indicated the extent to which participants felt loyal to their employer as a result of the costs associated with leaving the organisation (Meyer & Allen, 1997). Employees whose primary link to the organisation was based on continuance commitment remained with the employer because it is the right choice (Meyer & Allen, 1991).

The skewness values for the subscales of OCS ranged from -.93 to -.66. The distributions of the three subscales (affective, continuance and normative commitments) were all negative, thus pushing the distributions to become longer and to veer the left. Such distributions are called negatively skewed distributions (Hahs-Vaughn & Lomax, 2012). Affective, continuance and normative commitments were moderately skewed because their skewness values were between -1 to -.5 (Dugar, 2018). The overall skewness value of OCS was -1.02, and the distribution is highly skewed because the value is less than -1.

The kurtosis values for OCS ranged from .90 to 1.75. The kurtosis statistic of the overall OCS (1.60), normative commitment (1.75), affective commitment (.90), and continuance commitment (.90) has platykurtic distributions, that is, the distribution is shorter and the tails are thinner than normal distribution, which means that the data lacked outliers (Dugar, 2018).

Positive values of kurtosis indicate that a distribution is peaked and possesses thick tails (McLeod, 2019). A good kurtosis value is the value often compared to the kurtosis of the normal distribution which is equal to 3 (Marguello, 2020).

5.2.3 Means, standard deviation, skewness, and kurtosis of the RFMS

Table 5.7 presents the descriptive statistics of the RFMS and its subscales.

Table 5.7:

Descriptive statistics: Means, standard deviations, skewness and kurtosis of the RFMS

Construct	Minimum	Maximum	Mean	SD	Skewness	Kurtosis
Compensation	1.00	5.00	3.05	.69	-.16	.56
Training and development opportunities	1.00	5.00	3.21	.95	-.60	-.45
Job characteristics	1.00	5.00	3.56	.81	-.76	.38
Supervisor support	1.00	5.00	3.16	.89	-.37	-.27
Career development opportunities	1.00	5.00	2.93	1.00	-.24	-.70
Work-life balance	1.00	5.00	3.21	.78	-.50	.26
Overall RFMS	2.00	5.00	3.19	.61	-.42	-.07

Note. N=172

Source: Author's own compilation

The means scores ranged from 2.93 to 3.56. Table 5.7 shows the highest score for the subscale, job characteristics (M = 3.56; SD = .81), while the lowest for the subscale, career development opportunities (M = 2.93; SD = 1.00). Again Table 5.7 shows the score for training and development opportunities (M = 3.21; SD = .95) and and work-life balance (M = 3.21; SD = .78). Job characteristics subscale has the highest level of satisfaction with the retention factors. The overall RFMS scale showed a score of (M = 3.19; SD = .61). The standard deviations of the subscales of RFMS were in the range of .69 to 1.00.

The skewness values for the subscales of RFMS ranged from -.76 to -.16. Distributions of the six subscales (training and development opportunities, supervisor support, career opportunities, compensation, job characteristics and work-life balance) are negatively skewed, thus pushing the distributions to become longer and to veer the left.

Training and development opportunities (-.60), work-life balance (-.50), and job characteristics (-.76), can be referred to as moderately skewed because their skewness values are between -1 to -.5 (Dugar, 2018). Compensation (-.16), supervisor support (-.37), career development opportunities (-.246), and the overall RFMS scale (-.42) are symmetrical, that is, within a range of -.5 and .5 (Dugar, 2018).

The kurtosis values for the RFMS subscales ranged from -.70 to .56. The kurtosis statistic of the overall RFMS was -.07 which is negative, and has a value closer to zero (normal distribution). All the subscales and the overall RFMS scale showed a platykurtic type of distribution, that is, distributions that are shorter and the tails are thinner than normal distribution, which means that the data lack outliers (Dugar, 2018). However, a negative kurtosis value for training and development opportunities (-.45), supervisor support (-.27), career development opportunities (-.70), and the overall RFMS (-.07) mean that the outlier character of the data is less extreme than expected had the data come from a normal distribution (Marguello, 2020). A positive kurtosis value of compensation (.56), job characteristics (.38), and work-life balance (.26) means that the outlier character of the data is more extreme than expected had the data come from a normal distribution (Marguello, 2020).

The core conclusions are discussed below:

The subscale score of PCQ (Adams et al., 2014) was for relational expectations (3.99), indicating loyalty and commitment. Employees were rewarded based on their performance and participation in the organisation, and employees were satisfied with incentives, such as career and training development opportunities and work-life balance. The overall PCQ score (3.71) indicated that employees were satisfied with their psychological contract. The lowest score, transactional expectations (3.44), indicated that employees were indecisive with the psychological contract.

The subscale score of OCS (Meyer & Allen, 1997) was for continuous commitment, indicating the need to continue with employment due to the benefits offered by the organisation. Continuance commitment was the strongest of the dimensions among employees, indicating that employees were psychologically attached to the organisation due to the high costs of leaving. The score of normative commitment (3.50) indicated that employees were slightly commitment to the organisation and chose to stay with their employer. Generally, employees want to remain in the organisation if they feel appreciated by the organisation as shown by the satisfaction with retention factors.

In the current study, affective commitment (3.24) scored the lowest among employees, which indicates that they felt less obligated to stay with the organisation. Employees were not happy to remain with the organisation, and employees were less committed to the organisation, which resulted in increased turnover intentions.

It can be concluded that the overall organisational commitment mean score of 3.56 indicated that employees were slightly commitment to the organisation. The score reflected acknowledgement and positive organisational commitment within the organisation.

The participating employees contributed reasonable scores on the majority of the subscales of the Retention Factor Measurement Scale (RFMS) (Döckel, 2003). There is evidence that employees were mostly satisfied with the subscale of characteristics (3.56), while employees were partly satisfied with the subscales of training and development opportunities (3.21), supervisor support (3.16) and work-life balance (3.21). Career development opportunities (2.93) scored the lowest, suggesting that employees felt rather dissatisfied with career development opportunities. The scores for compensation (3.05) show uncertainty of employees about the retention factor.

5.3 BIVARIATE CORRELATION ANALYSIS

This study used the Spearman's correlation coefficient to assess the muscle and route of the relationship amongst the psychological contract variables (relational expectations, transactional expectations and employee obligations), organisational commitment variables (affective, continuance and normative commitments), and satisfaction with the retention factor variables (compensation, job characteristics, training and development opportunities, supervisor support, career development opportunities and work-life balance). The Spearman's correlation coefficients were assessed to determine if the results delivered noteworthy testimony in favour of research hypothesis Ha 1:

Ha:1. There is a statistically significant and positive relationship between the demographical variables (age, gender and race), the psychological contract, organisational commitment and satisfaction with retention factors.

The Spearman's correlation ascertains the strength and direction of association between two ranked variables. The descriptive statistics had to be translated into correlational statistics to assess whether the results delivered sufficient testimony in favour of research hypothesis Ha 1.

5.3.1 Relationship between the demographical variables, psychological contract, organisational commitment, and satisfaction with retention factors

Table 5.8 tabulate bivariate correlations between the demographical variables, psychological contract, organisational commitment and satisfaction with retention factors. A number of significant relationships were observed between the variables.

Table 5.8:

Bivariate correlations between the demographical variables, psychological contract, organisational commitment, and satisfaction with retention factors

Variables	Age	Gender	Race
Compensation	-.06	-.12	-.03
Supervisor support	-.03	-.07	.12
Career opportunities	.01	-.05	.11
Job characteristics	.06	-.00	.12
Training and development opportunities	-.02	-.06	.11
Work-life balance	.08	-.09	.06
Overall RFMS	-.03	-.11	.14
Relational expectations	-.22**	.03	.01
Employee obligations	-.30**	.10	-.14
Transactional expectations	-.19*	.01	-.11
Overall PCQ	-.32	.01	-.09
Affective commitment	.09	-.04	.19*
Continuance commitment	.04	-.03	.07
Normative commitment	.19*	-.09	.14
Overall OCS	.11	-.08	.18*

Note. N = 172;

** . Correlation is significant at the .01 level (2-tailed).

* . Correlation is significant at the .05 level (2-tailed).

Source: Author's own compilation.

5.3.1.1 Age

Table 5.8 indicate significant negative bivariate correlations between age and relational expectations ($r = -.22$; small practical effect, $p \leq .001$), transactional expectations ($r = -.19$; small practical effect, $p \leq .005$), and employee obligations ($r = -.30$; small practical effect, $p \leq .001$). In the case of the subscales of the OCS, age showed a significant positive bivariate correlation with normative commitment ($r = .19$; small practical effect, $p \leq .005$). However, no significant bivariate correlations were observed with regard to the affective commitment ($r = .09$) and continuance commitment ($r = .04$), including the overall OCS ($r = .11$).

There were no significant bivariate correlations on the overall RFMS scale and its subscales.

5.3.1.2 Gender

No significant bivariate correlations were observed in Table 5.8 between gender and any of the scales and subscales of the PCQ, OCS and RFMS.

5.3.1.3 Race

Table 5.8 indicate significant and positive bivariate correlations between affective commitment and race ($r = .19$; small practical effect, $p \leq .005$), and the overall OCS ($r = .18$; small practical effect, $p \leq .005$). No significant bivariate correlations were observed between race scales and subscales of the PCQ and RFMS.

The overall results show significant correlations between demographical variables (age and race) and the subscales of the PCQ, OCS and RFMS. There is partial evidence in favour of research hypothesis Ha 1.

5.3.2 Relationship between the psychological contract, organisational commitment and satisfaction with retention factors

Spearman's correlations were performed to determine the association among the dependent and independent research variables. Table 5.9 (on the next page) present bivariate correlations of the dependent and independent variables.

Table 5.9:

Bivariate correlations of the dependent and independent variables

Variables	1	2	3	4	5	6	7	8	9	10	11
1 Relational expectations											
2 Employee obligations	.39**										
3 Transactional expectations	.39**	.24**									
4 Affective commitment	.38**	-.05	.18*								
5 Continuance commitment	.33**	.14	.19*	.44**							
6 Normative commitment	.39**	-.13	.27**	.55**	.52**						
7 Compensation	.32**	.19*	.21**	.16*	.27**	.32**					
8 Job characteristics	.50**	.08	.29**	.43**	.32**	.46**	.29**				
9 Training and development opportunities	.49**	-.02	.34**	.60**	.27**	.55**	.30**	.57**			
10 Supervisor support	.44**	.08	.26**	.37**	.25**	.35**	.28**	.52**	.53**		
11 Career development opportunities	.48**	.00	.39**	.46**	.19*	.51**	.30**	.46**	.70**	.55**	
12 Work-life balance	.22**	.13	.23**	.20*	.28**	.33**	.28**	.33**	.32**	.27**	.37**

Notes: N = 172

** . Correlation is significant at the .01 level (2-tailed).

* . Correlation is significant at the .05 level (2-tailed).

Source: Author's own compilation.

5.3.2.1 *Bivariate correlations among the scale variables*

Table 5.9 show significant bivariate correlations of the three subscales of the PCQ ranging from $r \geq .24$ to $\leq .39$ (small to medium practical effect, $p \leq .001$). There is a significant correlation between relational expectations and employee obligations ($r = .39$; medium practical effect, $p \leq .001$), and relational expectations and transactional expectations ($r = .39$; medium practical effect, $p \leq .001$), and between employee obligations and transactional expectations ($r = .24$; medium practical effect, $p \leq .001$).

Significant bivariate correlations of the three subscales of OCS ranging from $r \geq .18$ to $\leq .55$ (small to large practical effect, $p \leq .001$). A significant positive correlation exists between affective commitment and normative commitment ($r = .55$; large practical effect, $p \leq .001$), and between affective commitment and continuance commitment ($r = .44$; medium practical effect, $p \leq .001$), and between continuous and normative commitments ($r = .52$; large practical effect, $p \leq .01$).

Significant bivariate correlations of the six subscales of the RFMS ranging from $r \geq .28$ to $\leq .70$ (small to large practical effect, $p = .001$).

A positive correlation occur among supervisor support and work-life balance ($r = .27$; small practical effect, $p \leq .001$), career development opportunities and work-life balance ($r = .37$; medium practical effect, $p \leq .001$), work-life balance and training and development opportunities ($r = .32$; medium practical effect, $p \leq .001$), work-life balance and job characteristics ($r = .33$; medium practical effect, $p \leq .001$), compensation and job characteristics ($r = .29$; small practical effect, $p \leq .001$), training and development opportunities and compensation ($r = .30$; medium practical effect, $p = \leq .001$), supervisor support and compensation ($r = .28$; small practical effect, $p \leq .001$), career development opportunities and compensation ($r = .30$; medium practical effect, $p \leq .001$), and compensation and work-life balance ($r = .28$; small practical effect, $p \leq .001$).

There is a significant positive relationship between career development opportunities and job characteristics ($r = .46$; small practical effect, $p \leq .001$), training and development opportunities and job characteristics ($r = .53$; large practical effect, $p \leq .001$), career development opportunities and supervisor support ($r = .55$; large practical effect, $p \leq .001$), job characteristics and supervisor support ($r = .52$; large practical effect, $p \leq .001$), and training and development opportunities and job characteristics ($r = .57$; large practical effect, $p \leq .001$).

A strong positive relationship exists between career development opportunities and training and development opportunities ($r = .70$; large practical effect, $p \leq .001$).

5.3.2.2 *Bivariate correlations between the three scale variables*

(a) Bivariate correlation between RFMS and PCQ subscales

Table 5.9 shows a significant positive bivariate correlation between compensation and the subscales of the PCQ, relational expectations ($r = .32$; medium practical effect, $p \leq .001$), transactional expectations ($r = .21$; small practical effect, $p \leq .001$), and employee obligations ($r = .19$; small practical effect, $p \leq .005$).

In the case of job characteristics, the results indicate a significant positive bivariate correlation with relational expectations ($r = .50$; large practical effect, $p \leq .001$), and transactional expectations ($r = .29$; small practical effect, $p \leq .001$).

The results for training and development opportunities indicate a knowing positive bivariate correlation with relational expectations ($r = .49$; medium practical effect, $p \leq .001$), and transactional expectations ($r = .34$; small practical effect, $p \leq .001$).

The results for the supervisor support subscale indicate a significant positive bivariate correlation with relational expectations ($r = .44$; medium practical effect, $p \leq .001$), and transactional expectations ($r = .26$; small practical effect, $p \leq .001$).

The results for career development opportunities indicate significant positive bivariate correlations with two subscales of the PCQ, relational expectations ($r = .48$; medium practical effect, $p \leq .001$) and transactional expectations ($r = .39$; medium practical effect, $p \leq .001$).

The four subscales of the RFMS (supervisor support, career development opportunities, job characteristics and training and development opportunities) have a moderate positive relationship with the subscale of PCQ (relational expectations), while the last two subscales of the RFMS (compensation and work-life balance) indicate a weak positive relationship with the subscales of the PCQ (employee obligations and transactional expectations), respectively.

(b) Bivariate correlation between RFMS and OCS subscales

Table 5.9 shows significant positive bivariate correlations between compensation and the three subscales of the OCS, continuance commitment ($r = .27$; small practical effect, $p \leq .001$), normative commitment ($r = .315$; medium practical effect, $p \leq .001$), and affective commitment ($r = .16$; small practical effect, $p \leq .005$),

Job characteristics indicate a significant positive correlation with the subscales of the OCS, affective commitment ($r = .43$; medium practical effect, $p \leq .001$), and normative commitment ($r = .46$; medium practical effect, $p \leq .001$). Job characteristics indicate a significant positive correlation with continuance commitment ($r = .32$; medium practical effect, $p \leq .001$).

The subscale of training and development opportunities has a knowing positive correlation with affective commitment ($r = .60$; large practical effect, $p \leq .001$), and normative commitment ($r = .55$; large practical effect, $p \leq .001$). Training and development opportunities has a significant positive correlation with continuous commitment ($r = .27$; small practical effect, $p \leq .001$).

Supervisor support has a significant positive correlation with the three subscales of the OCS, continuous commitment ($r = .25$; small practical effect, $p \leq .005$), normative commitment ($r = .35$; small practical effect, $p \leq .001$), and affective commitment ($r = .37$; small practical effect, $p \leq .001$).

The subscale of career development opportunities has a significant positive correlation with two subscales of the OCS, affective commitment ($r = .46$; medium practical effect, $p \leq .001$), and normative commitment ($r = .51$; large practical effect, $p \leq .001$). Career development opportunities has a significant positive correlation with continuous commitment ($r = .19$; small practical effect, $p \leq .005$).

Lastly, work-life balance has a significant positive correlation with affective commitment ($r = .20$; small practical effect, $p \leq .005$), and a significant positive correlation with continuous commitment ($r = .28$; small practical effect, $p \leq .001$) and normative commitment ($r = .33$; medium practical effect, $p \leq .001$).

(c) Bivariate correlation between the OCS and PCQ subscales

Table 5.9 shows significant positive correlations between affective commitment and two subscales of the OCS, relational expectations ($r = .38$; medium practical effect, $p \leq .001$) and transactional expectations ($r = .18$; small practical effect, $p \leq .005$).

In the case of the continuance commitment subscale, the results show significant positive correlations with relational expectations ($r = .33$; small practical effect, $p \leq .001$), and transactional expectations ($r = .19$; small practical effect, $p \leq .005$).

In the case of the normative commitment subscale, the results show significant positive correlations with the relational expectations ($r = .39$; small practical effect, $p \leq .001$) and the transactional expectations subscale ($r = .27$; small practical effect, $p \leq .001$).

There is no significant correlation between employee obligations and any of the three subscales of the OCS (affective commitment, continuous commitment, and normative commitment). Preceding research verified that psychological contract achievement may escalate positive insights of the organisational commitment (Nimmo, 2018).

There were significant correlations between RFMS, OCS and PCQ scales. Correlation analysis results show evidence in favour of research hypothesis Ha 1.

5.4 INFERENCE AND MULTIVARIATE ANALYSIS

This section presents a discussion of the steps in the hierarchical regression analysis and test for mean differences.

5.4.1 Stepwise hierarchical regression analysis

A stepwise hierarchical regression analysis assessed whether the results present testimony in favour of research hypothesis 2 (Ha 2).

Ha 2: Age, gender and race, as demographical variables, and the psychological contract, and organisational commitment as a set of independent variables, significantly and positively predict satisfaction with the retention factor variables, as a set of dependent variables.

A stepwise regression analysis using the weed-out method was used to find variables able to foresee the RFMS (Kenton, 2019). The final step results of the regression analysis are summarised in Table 5.10.

The stepwise regression model was significant at: $F = 15.165$; $p = .000$; $R^2 = .522$; $\Delta R^2 = .487$. The adjusted R^2 value is the percentage of the response variable variation of .487, indicating that the model predicted approximately 49% of the variance in the dependent variable (satisfaction with retention factors). R-squared is a statistical measure of how close the data were to the fitted regression line (Frost, 2020).

Table 5.10:

Final step results of the stepwise hierarchical regression analysis: Demographical variables, psychological contract and organisational commitment

Model variables	<u>Unstandardised coefficients</u>		<u>Standardised coefficients</u>	t	Sig.	R	R-square	F	<u>Collinearity statistics</u>	
	Beta	Std. error	Beta						Tolerance	VIF
(Constant)	- .66	.45		-1.45	.00	.70	.49	15.17		
Age = 30 – 39 years	.00	.11	.01	.08	.94				.47	2.15
Age = 40 – 49 years	.05	.10	.04	.45	.65				.49	2.02
Gender	-.03	.08	-.03	-.44	.66				.93	1.07
Race	.10	.10	.06	.98	.33				.88	1.14
Relational expectations	.28	.10	.24	3.01	.00				.54	1.86
Transactional expectations	.24	.08	.19	2.89	.00				.80	1.25
Employee obligations	.01	.09	.01	.12	.90				.59	1.70
Affective commitment	.24	.07	.27	3.36	.00				.52	1.90
Continuance commitment	.00	.08	.00	.01	.99				.50	2.02
Normative commitment	.28	.01	.26	2.82	.01				.39	2.55

a. Dependent variable: Retention Factor Measurement Scale

b. Variables excluded: Age = 18-29 years, Age = 50–59 years, Age = 60–65 years

c. Notes: N = 172

* Predictors: (Constant), Relational expectations, transactional expectations, affective commitment, and normative commitment

The results presented in Table 5.10 indicate that the regression model was significant for affective commitment ($\beta = .27$; $p \leq .000$) and contributed most towards explaining the variance.

Table 5.10 further indicates that relational expectations ($\beta = .24$; $p \leq .000$) and transactional expectations ($\beta = .190$; $p \leq .000$), followed by normative commitment ($\beta = .26$; $p \leq .01$), significantly and positively predict satisfaction with retention factors.

The collinearity statistics presented in Table 5.10 indicate that all tolerance values were close to 1, ranging from .39 to .93, and VIF was < 2.5 .

In conclusion, the psychological contract and organisational commitment significantly and positively predicted satisfaction with retention factors. Furthermore, the results showed that the demographical variables (age, gender and race) did not significantly and positively predict satisfaction with retention factors. The stepwise hierarchical regression analysis show evidence in favour of research hypothesis 2 (Ha 2).

5.4.2 Tests for significant mean differences

The empirical study investigated whether there were differences between demographical variables (age, gender and race) relating to the psychological contract, organisational commitment and satisfaction with retention factors. The independent t-tests and ANOVAs were employed to test for significant mean differences. The t-tests were performed for variables with two groups, and ANOVA for variables with more than two groups. A probability value (p) of $\leq .05$ was considered acceptable, with the purpose of determining the statistically significant differences

Ha 3: Individuals from different age, gender and race groups differ significantly in terms of their psychological contract, organisational commitment, and satisfaction with retention factors.

5.4.2.1 Age

Significant variances were viewed among the age group for the overall Psychological Contract Questionnaire ($F = 5.745$, $df = 2.152$, $p = .004$).

Having found statistically very significant evidence that the mean of psychological contracts is not the same for all age groups, the next step was to carry out Post Hoc Tests (Bonferroni) to see where differences between age groups occurred.

Table 5.11 indicates that significant mean differences were discovered for age. Relational expectations displayed knowing mean difference between the 30-39 years' and 50-60 years' age groups (30-39 years: $M = .30$; $SD = .11$ $p = .02$; medium effect: 50-60 years; $M = -.30$; $SD = .11$; $p = .02$; medium effect).

In the case of employee obligations, significant mean differences were witnessed between the 30-39 years', 40-49 years' and 50-60 years' age groups (30-39 years: $M = .28$; $SD = .09$; $p = .01$; small effect: 40-49 years $M = -.28$; $SD = .09$; $p = .09$; large effect; 50-60 years: $M = -.33$; $SD = .11$; $p = .01$; small effect).

The overall PCQ displayed significant mean difference between the 30-39 years' and 50-60 years' age groups (30-39 years: $M = .21$; $SD = .07$; $p = .01$; small effect 50-60 years: $M = -.21$; $SD = .07$ $p = .01$; small effect). The mean difference is significance at the $p < .05$ level.

Table 5.11 indicates the significant mean differences for the demographical variable age. No significant mean differences were observed for transactional expectations with any of the demographical variables.

Table 5.11:

Tests for significant mean differences for age

Dependent variable	Age group	Age group	Mean difference			95% Confidence level	
			(I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Relational expectations	30-39 years	40-49	.06	.09	1.00	-.16	.28
		50-60	.30*	.11	.02	.04	.56
	40-49 years	30-39	-.06	.09	1.00	-.28	.16
		50-60	.24	.11	.09	-.02	.51
	50-60 years	30-39	-.30*	.11	.02	-.56	-.04
		40-49	-.24	.11	.09	-.51	.02
Employee obligations	30-39 years	40-49	.281*	.089	.006	.07	.50
		50-60	.329*	.105	.006	.08	.58
	40-49 years	30-39	-.281*	.089	.006	-.50	-.07
		50-60	.048	.107	1.000	-.21	.31
	50-60 years	30-39	-.329*	.105	.006	-.58	-.08
		40-49	-.048	.107	1.000	-.31	.21
Transactional expectations	30-39 years	40 -49	.184	.086	.103	-.02	.39
		50 -60	.186	.101	.203	-.06	.43
	40-49 years	30 -39	-.184	.086	.103	-.39	.02
		50 -60	.003	.104	1.000	-.25	.25
	50-60 years	30 – 39	-.186	.101	.203	-.43	.06
		40 - 49	-.003	.104	1.000	-.25	.25
Psychological contract	30-39 years	40-49	.128	.056	.071	-.01	.26
		50-60	.211*	.066	.005	.05	.37
	40-49 years	30-39	-.128	.056	.071	-.26	.01
		50-60	.083	.067	.653	-.08	.25
	50-60 years	30-39	-.211*	.066	.005	-.37	-.05
		40-49	-.083	.067	.653	-.25	.08

*. The mean difference is significant at $p < .05$

Source: Author's own compilation

Furthermore, the results of the one-way ANOVA presented in Table 5.12 below, show that there are significant differences between and within relational expectations ($F = 4.089$, $df = 2.152$, $p = .019$), and employee obligations ($F = 7.117$, $df = 2.152$, $p = .001$) in terms of age.

Table 5.12:

One-way ANOVA summary of the results

Variable		Sum of squares	df	Mean squares	F	Sig.
Relational expectations	Between groups	2.08	2	1.04	4.09	.02*
	Within groups	38.58	152	.25		
	Total	4.65	154			
Employee obligations	Between groups	3.41	2	.64	7.12	.00*
	Within groups	36.42	152	.24		
	Total	39.83	154			
Psychological contract	Between groups	1.09	2	.54	5.75	.00*
	Within groups	14.40	152	.10		
	Total	15.49	154			

* Values significant at 95% confidence level

There were no significant differences for OCS and its subscales (affective commitment, continuous commitment and normative commitment), and the RFMS and its subscales (training and development opportunities, career development opportunities, compensation, job characteristics, supervisor support and work-life balance). All their p values are greater than .05, indicating that there are no statistically significant differences in any age groups relating to the OCS and RFMS. There are also no statistically significant differences among any age groups relating to the transactional expectations.

5.4.2.2 Gender

This table 5.13 presents a breakdown of how many observations were in each gender group (N), mean, standard deviation and standard error mean of each gender group.

Table 5.13:

Tests for significant mean differences: Gender

Variable	Gender	N	Mean	Std. Deviation	Std. Error Mean
Psychological contract	Female	72	3.70	0.34	0.04*
	Male	90	3.71	0.32	0.03*

Source: Researcher's own compilation

The results in Table 5.13 show a statistically knowing mean variation amongst females and males in the overall PCQ. The mean of the female on psychological contract ($M=3.70$, $SD=0.335$, $N=72$) and the mean of the male ($M = 3.71$, $SD = 0.315$, $N = 90$). The standard error mean is $<.05$.

The male employees scored higher than female employees in the PCQ scale. Overall, there were no mean differences displayed for all employees in relation to the scales and subscales of the OCS and RFMS including the subscales of the PCQ.

5.4.2.3 Race

The frequency combination of Whites, Asians, Coloured, and Others equals 31, that is, 18% of the total sample (172), hence, they were referred to as Other races. Therefore, the comparison was between Blacks and Other races.

Table 5.14 provides evidence that the demographical variable, race, differs significantly in terms of the overall PCQ between Blacks and Other races (Blacks: $M = 3.72$; $SD = .346$; $p = .029$; Other races ($M = 3.66$; $SD = .218$; $p = .040$).

Furthermore, there is statistically significant mean differences between Blacks and Other races (Blacks: $M = 3.98$; $SD = .547$; $p = .046$; Other races ($M = 3.99$; $SD = .419$) in terms of relational expectations.

Other races scored lower than Blacks in relation to transactional expectations (Other races: $M = 3.27$; $SD = .148$; Blacks: $M = 3.44$; $SD = .486$), as well as employee obligations (Other races: $M = 3.74$; $SD = .473$; Blacks: $M = 3.92$; $SD = .521$).

Other races also scored lower than Blacks in relation to the OCS (Blacks: $M = 3.40$; $SD = .53$; $p = .05$; Other races: $M = 3.65$; $SD = .36$).

Table 5.13 indicates the significant mean differences for the demographical variable, race.

Table 5.13:

Tests for significant mean differences: Race

Variable	Race	N	Mean	Std. Deviation	Std. Error Mean
Relational expectations	Black	140	3.98	.55	.05*
	Other race	29	3.99	.42	.08
Transactional expectations	Black	139	3.44	.49	.04*
	Other race	29	3.27	.42	.08
Employee obligations	Black	140	3.92	.52	.04*
	Other race	29	3.74	.47	.09
Psychological contract	Black	140	3.72	.35	.03*
	Other race	29	3.66	.22	.04*
Organisational commitment	Black	139	3.40	.53	.05*
	Other race	29	3.65	.36	.07

Source: Author's own compilation

Table 5.13, present a statistically knowing variations between the demographical variable race, relational expectations, transactional expectations, employee obligations, the overall PCQ, and the OCS. The results therefore delivered sufficient evidence in support of research hypothesis H3.

There were no mean differences between Blacks and Other races in the subscales of the OCS, and RFMS.

5.5 SYNTHESIS, INTERPRETATION AND DISCUSSION

This section contributes to the integration of the research results.

5.5.1 Demographical profile of the sample

The demographical profile of the sample revealed that the respondents were predominantly between the ages of 30 and 49, and were Black males. Table 5.14 presents a summary of the highest frequency distribution of the demographical profile of the sample.

Table 5.14:

Summary of the highest frequency distribution: Demographical profile of the sample

Demographical variable		Frequency	Percentage
Age	30 and 49 years	115	67%
Gender	Males	71	52%
Race	Blacks	141	82%

Source: Author's own compilation

5.5.2 Discussion of the descriptive statistics

This section presents a conversation of the mean differences reported for each of the measuring instruments, (PCQ, OCS and RFMS). Table 5.15 indicates a summary of the maximum and minimum means of the three constructs.

Table 5.15:

Summary of the highest and the lowest means of measuring instruments

Subscale	Highest mean	Lowest mean
Relational expectations	3.99	
Transactional expectations		3.44
Continuous commitment	3.69	
Affective commitment		3.24
Job characteristics	3.56	
Career development opportunities		2.93

Source: Author's own compilation

5.5.2.1 Sample profile of participants: Psychological Contract Questionnaire

Regarding the mean scores of the PCQ (Adams et al., 2014), the profile disclosed that employees kept their promises. Thus, employees' view is that they have delivered their accountabilities towards their employer.

The highest mean for relational expectations indicated the employees' interpersonal relationship with the employer and teamwork with colleagues and supervisors, which included benefits such as training and development, personal welfare, engagement in the workplace, and the employees felt the employer reciprocated the effort put in by the employees (Adams

et al., 2014). This indicated that the work environment enhances employees' intention to stay longer within the organisation. The highest mean for relational expectations further indicated that employees have a more relational contract with their employer than a transactional contract. The employees place more value on the relational aspects of the psychological contract. The second highest mean for employee obligations confirmed their fulfilment towards the employer.

A significant negative bivariate correlation between age, relational expectations, transactional expectations and employee obligations, showed that there is an inverse relationship between the variables.

As age increases, relational expectations, transactional expectations, and employee obligations decreases, and vice-versa. There was no significant bivariate correlation between gender and relational expectations, transactional expectations, and employee obligations, and no significant bivariate correlation between race and relational expectations, transactional expectations, and employee obligations.

5.5.2.2 Sample profile of participants: Organisational Commitment Scale

The highest mean for the OCS (Meyer & Allen, 1991) was for the subscale of continuous commitment, implying that participants felt to be loyal to their employer and that they opted to stay in the organisation to avoid costs associated with leaving the organisation. Participants who displayed low levels of emotional attachment and relationship with the organisation, did not receive supervisory support, felt their goals and needs were not met in the organisation, but they chose to remain within the organisation to avoid losing too much of their financial benefits if they should decide to leave the organisation (Kruger, 2020). Results showed a relationship between age and normative commitment, meaning that as age increases, normative commitment increases. There was also a bivariate relationship between race and affective commitment.

Continuous commitment is produced by the benefits accrued from working longer within the organisation, and by the lack of available alternative jobs outside the organisation. However, the participants' feelings of normative commitment were slightly lower than that of continuous commitment, which implies that participants may not experience any obligation to continue working in the organisation (Ferreira, 2012). The findings of Grego-Planer (2020) showed that employees with a low affective commitment were inclined to be more disloyal and untrustworthy because their basic needs were not fulfilled, they were less engaged in the organisation, and if they were to leave the organisation they would lose too much.

Overall, the findings for organisational commitment indicated that the employees experience positive and high levels of commitment to the employer, indicating that employees were psychologically devoted, loyal, and contributed to the organisation's goals (Kruger, 2020). Because continuous commitment has the second highest mean, Mercurio (2015), suggested that in the long run, a path will develop from continuous commitment to affective commitment, which will put the employer in a better position to retain employees.

5.5.2.3 Sample profile of participants: Retention Factor Measurement Scale

The results from the mean scores of the RFMS (Döckel, 2003), showed that employees rated average scores to most of the six retention factors. The sample profile showed that employees were not dissatisfied and satisfied with each of the retention factors. The sample profile, furthermore, showed employees were most satisfied with job characteristics. Research discovered a significant relationship amongst job characteristics and the three subscales of PCQ (relational expectations, transactional expectations, and employee obligations).

Furthermore, the profile revealed that employees were partly slightly pleased with supervisory support, and training and development opportunities in relation to both relational expectations and transactional expectations. According to Shi and Gordon (2020), enhanced psychological contracts and improved retention can be achieved when workers are pleased with these two retention factors.

In case of career development opportunities, the sample profile showed that participants were satisfied with the opportunities offered to them by employer in relation to relational expectations and transactional expectations. Preceding research findings demonstrated a sound association between employers that offer employees with prosperous career development opportunities, which in turn increase organisational commitment (Presbitero et al., 2016).

The employees felt slightly dissatisfied with the organisational policies on work-life balance for both relational and transactional expectations. Chang et al. (2019) suggests that employers who offer work-life balance policies to their employees, experienced less turnover than those who does not practice the policies.

The lowest mean for the RFMS was for the compensation subscale. The employees were neither satisfied nor dissatisfied about their compensation packages in relation to relational expectations, and were slightly dissatisfied with transactional expectations and employee obligations.

This situation indicate that employees are indecisive about what is the reasonable salary, which may impact negatively on psychological contract fulfilment and employee retention (Bhatnagar, 2014). According to Döckel et al. (2006), negative perceptions on the salary have predicted occurrence of low organisational commitment.

In summary, the sample profile divulged a balanced satisfaction with the retention factors. For this sample, employees were partly dissatisfied with their compensation and the work-life balance policies of their organisation.

5.5.3 Empirical research aim 1: Discussion of the correlation results

Research aim 1 was to empirically investigate the statistical relationship between the demographical variables (age, gender and race), the psychological contract, organisational commitment and satisfaction with retention factors conceptualised in a sample of employees in the water control sector.

The results presented evidence in favour of research hypothesis Ha 1: There is a statistically significant and positive relationship between the demographical variables (age, gender and race), the psychological contract, organisational commitment and satisfaction with retention factors.

5.5.3.1 Relationship between the demographical variables (age, gender and race), the psychological contract, organisational commitment and satisfaction with retention factors

The results presented in Table 5.8 reveal that age was significantly but negatively related to relational expectations, transactional expectations, and employee obligations. The implication is that younger employees are less anxious about the psychological contract than their older colleagues. Bal's (2017) study confirmed that older employees are more sensitive about the aspects of their psychological contract than younger employees, and older employees have many expectations because of their tenure in the organisation. Mazur (2012) also found that the employment relationship was stronger for older employees than for younger employees.

There was a significant positive correlation between age and normative commitment. This was confirmed by Ferreira and Coetzee (2010) who found that age was strongly related to normative commitment. Maia et al. (2016) further contended that as an employee gets older, the employee's propensity to stay within the organisation also increases. On other side, older employees are more loyal and attached to the organisation than younger employees.

Gender was not related to any of the subscales of the PCQ, OCS, and RFMS (Kung et al., 2018). Contrary to Kung et al. (2018), this study discovered that gender was predominately related to affective and normative commitments. Again, Black participants were more conceivably to stay in the organisation than Other races.

In summary, correlation analysis generated testimony in favour of research hypothesis 1, since age was significantly related to the psychological contract and normative commitment.

5.5.3.2 Relationship between the psychological contract, organisational commitment and satisfaction with retention factors

Bivariate correlation analysis presented in Table 5.9 indicated three subscales of the psychological contract (relational expectations, transactional expectations and employee obligations) which were knowingly and optimistically related to each other. Relational expectations and employee obligations were significantly and positively related to affective commitment, continuous commitment, normative commitment, and all six subscales of the RFMS. Transactional expectations were only significantly and positively related to compensation.

The three subscales of organisational commitment (affective commitment, continuous commitment and normative commitment) were significantly and positively related to one another. Affective commitment, continuous commitment, and normative commitment had a knowing and optimistic relationship with employees' views of the psychological agreement and satisfactory retention factors. This alludes that commitment to the organisation may improve psychological contract perceptions. This finding is ratified by Rani and Samuel (2016), who uncovered a sound and optimistic correlation amongst psychological contract, organisational commitment and satisfaction with retention factors.

Optimistic relationships were communicated between six retention factors. Furthermore, there was a knowingly and optimistic relationship with the employees' overall perceptions of the organisational commitment and psychological contract. This suggests that when employees are satisfied with all six retention factors, positive perceptions may enhance the psychological contract and in return improve commitment of the organisational. Previous research findings verified the relationship of employees' satisfaction with retention factors, the psychological contract, and organisational commitment (Muleya, 2017).

Therefore, the water control sector must develop effective retention strategies aimed at reinforcing psychological contracts of employees, and ensuring compliances of the exchange relationship.

In summary, the constructs of the psychological contract, organisational commitment and satisfaction with retention factors were knowingly related to each other. Accordingly, the evidence findings are in favour of research hypothesis 1.

5.5.4 Empirical research aim 2: Discussion of the stepwise hierarchical regression results

Research aim 2 was to investigate whether age, gender and race, as demographical variables, and the psychological contract and organisational commitment as a set of independent variables, significantly and positively predict satisfaction with the retention factor variables, as a set of dependent variables.

The results provided supportive evidence for research hypothesis Ha 2: There is a statistically significant and positive relationship between the demographical variables (age, gender and race), the psychological contract, organisational commitment and satisfaction with retention factors.

The results of the stepwise hierarchical regression analysis revealed that the relational expectations and transactional expectations significantly and positively predicted satisfaction with retention factors. Although Bal (2017) postulated that younger employees focused more on maximising their employment relationship, all age groups did not predict satisfaction with retention factors. According to Rani and Samuel (2016), it should be acknowledged that Millennials have entered the workforce with their own set of expectations.

In addition, the results discovered that affective and normative commitments knowingly and optimistically predicted satisfaction with retention factors. However, employee obligations and continuous commitment did not predict satisfaction with retention factors.

Demographical variables (age, gender and race) did not knowingly and optimistically predict satisfaction with retention factors. Although age, gender and race did not predict satisfaction with retention factors, Stoltz (2014), suggested that these demographical variables should be considered predominately for career development opportunities and work-life balance which might enhance their satisfaction with retention factors. Stepwise hierarchical regression analysis results generated slight testimony in favour of research hypothesis 2 (Ha 2).

5.5.5 Empirical research aim 3: Discussion of the tests for significant mean differences

Research aim 3 was to empirically investigate whether individuals from the various age, gender and race groups differ significantly regarding the psychological contract, organisational commitment, and satisfaction with the retention factor variables.

The results provided supportive evidence for the research hypothesis Ha 3: Individuals from different age, gender and race vary knowingly in relation to their psychological contract, organisational commitment, and satisfaction with retention factors.

5.5.5.1 Age

Table 5.11 disclosed information that different age groups of employees were varying knowingly with regards to satisfaction with retention factors in terms of relational expectations, employee obligations, and the overall PCQ.

More specifically, individuals from the 30-39 years' and 50–60 years' age groups were significantly more satisfied with the relational expectations than individuals from the 40 to 49 years' age group. Persson and Wasieleski's (2015) study which observed that a relationship between employee and employer grows over time, and this assists with initiating theories and probabilities amongst the employees. Furthermore, results revealed that participants of the age group 39-39 years and 50-60 years differed significantly in terms of overall psychological contract.

In terms of employee obligations, substantial average variations were observed in the age groups of 30-39 years, 40 to 49 years and 50–60 years.

The participants' perceptions regarding promises made to their employers differed among the various age groups because of the differences in their expectations. What has not been previously reported is that no significant differences existed between female and male participants with regard to the relationship between age and employee obligations (Van Hassel et al., 2017).

No average variations were found from all ages in terms of the OCS and its subscales (affective commitment, continuous commitment and normative commitment) and the RFMS and its subscales (training and development opportunities, career development opportunities, compensation, job characteristics, supervisor support and work-life balance).

5.5.5.2 Gender

Table 5.13 presents a statistically knowing mean variation amongst females and males of the overall PCQ. The mean of the male group scored slightly higher than the female group, implying that those male employees were discovered to be knowingly pleased with their psychological contract than females. This is in contrast with a previous study by Adams et al. (2014), where males scored higher on transactional expectations and females scored higher on relational expectations. Furthermore, the F-test indicates that there were no significant mean differences between females and males in terms of the psychological agreement that might influence satisfaction with retention factors.

5.5.5.3 Race

Table 5.14 showed significant mean differences among racial groups in relation to the overall PCQ, its subscales (relational expectations, transactional expectations and employee obligations) and organisational commitment. Specifically, Blacks were found to be significantly more satisfied than Other races as regards the overall psychological contract scale and subscales, as well as organisational commitment.

In conclusion, tests for knowing mean variations supplied limited testimony in favour of research hypothesis 3 (Ha 3).

5.5.6 Main findings

Based on the above deliberations, assumptions can be made that variations in the race group, should thoroughly considered when developing retention strategies. However, age, gender and race were not significant in foreseeing satisfaction with retention factors, therefore, organisations should consider retention factors that might enhance employees 'commitment and attempt to change their perception about the organisation.

5.5.7 Counter-intuitive findings

There were no significant differences between Blacks and Other races in the scale and subscales of the OCS and RFMS.

5.5.8 Decisions on the research hypotheses

Table 5.16 presents the decisions on the research hypotheses.

Table 5.16:

Decisions on the research hypotheses

Research aim	Research hypothesis	Statistical procedures	Supportive evidence provided
<p>Research aim 1: To empirically investigate the statistical relationship between the demographical variables (age, gender and race), the psychological contract, organisational commitment and satisfaction with retention factors conceptualised in a sample of employees in the water control sector.</p>	<p>Ha 2: There is a statistically significant and positive relationship between the demographical variables (age, gender and race), the psychological contract, organisational commitment and satisfaction with retention factors.</p>	<p>Correlation analysis</p>	<p>The results of the correlation analysis yielded partial support for research hypothesis 1 (Ha 1).</p>
<p>Research aim 2: To examine if age, gender and race, as demographical variables, and the psychological contract and organisational commitment, knowingly and optimistically predict employees' satisfaction with retention factors.</p>	<p>Ha 2: Age, gender and race, as demographical variables, and the psychological contract and organisational commitment, as a set of independent variables, significantly and positively predict satisfaction with the retention factor variables, as a set of dependent variables.</p>	<p>Stepwise hierarchical regression analysis</p>	<p>The results for the regression analysis provided evidence in favour of research hypothesis 2 (Ha 2).</p>
<p>Research aim 3: To empirically investigate if employees from different age, gender and race groups vary knowingly relating to the psychological contract, organisational commitment, and satisfaction with the retention factor variables.</p>	<p>Ha 3: employees from various age, gender and race groups differ significantly in relation to their psychological contract, organisational commitment, and satisfaction with retention factors.</p>	<p>Test for significant mean differences</p>	<p>Tests for significant mean differences produced partial evidence in favour of research hypothesis Ha 3 in relation to age, gender and race.</p>

5.6 CHAPTER SUMMARY

This chapter deliberated on preliminary statistical analysis, descriptive statistics, correlation analysis and tests for mean differences in order to evaluate and determine the significance of the relationships between the psychological contract, organisational commitment and satisfaction with retention factors and the demographical variables of age, gender and race. Statistical results were elucidated and inferences made. The results supplied evidence in favour of the research hypotheses.

Research aims 1, 2 and 3 below, were achieved

Research aim 1: To empirically investigate the statistical relationship between the demographical variables (age, gender and race), the psychological contract, organisational commitment and satisfaction with retention factors conceptualised in a sample of employees in the water control sector.

Research aim 2: To investigate whether age, gender and race, as demographical variables, and the psychological contract and organisational commitment, significantly and positively predict employees' satisfaction with retention factors.

Research aim 3: To empirically investigate whether individuals from the various age, gender and race groups differ significantly regarding the psychological contract, organisational commitment, and satisfaction with the retention factor variables.

Chapter 6, attend specifically to drawing conclusions and making recommendations based on the findings of the research study.

Chapter 6 addresses research aim 4, namely, to formulate recommendations for further research in the development of retention strategies, as well as possible future research in the field of human resource management regarding retention.

CHAPTER 6: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

Chapter 6 discusses the conclusions, limitations, and recommendations of this research study. This chapter also addresses Research aim 4, namely to formulate recommendations for further research in the development of retention strategies, as well as possible future research in the field of human resource management regarding retention.

6.1 CONCLUSIONS OF THE STUDY

This segment stipulates the conclusions founded on both the empirical study and literature review, in conformity with research aims as outlined in Chapter 1.

6.1.1 Conclusions relating to the literature review

The aim of research was to examine whether a relationship exists between the psychological contract, organisational commitment and satisfaction with retention factors. The secondary aim of this study was to determine whether employees from different age, gender and race groups showed significant differences in relation to the psychological contract, organisational commitment and satisfaction with retention factors.

The general aim was achieved by addressing and achieving the specific aims of the research. In the section below, conclusions were drawn from the specific aims relating to the relationship between the psychological contract, organisational commitment and satisfaction with retention factors.

6.1.1.1 Research aim 1: To conceptualise and explain the retention of employees in the Industry 4.0 workplace

Research aim 1 was achieved in Chapter 2.

The dynamics and challenges in Industry 4.0 workplaces comprises a plea for technically skilled employees (those employees who are self-directed, goal-driven, passionate about learning new technology and are self-career developers) to remain with their workplaces to enable them to remain competitive (Van der Hiejden & De Vos, 2015). This also applies to the water control sector where there is a need to embrace the new innovative technology of Industry 4.0 to assist with the automation challenges in the water control sector (Omotayo & Telukdarie, 2019).

The water control sector in South Africa faces many challenges, as they are hindered by a lack of resources in retaining skilled employees, there is also an ageing workforce, and an unsafe workplace environment (Primus, 2017). Above all, there is a shortage of engineers in South Africa (Raidani (2019).

The following conclusions can be made about the retention of employees in Industry 4.0 workplaces.

(a) Retention challenges in Industry 4.0 workplaces:

- Employee retention would remain a huge challenge if the retention factors were not appreciated by employees (Pink-Harper & Rauhaus, 2017).
- The challenges of work in the dynamic and changing workplaces had harmful influence in retaining skilled employees, and therefore, organisations should develop strong and holistic strategies to ensure the retention of employees (Sharma, 2016).
- A review of the literature on employee retention in science, technology, engineering and mathematics (STEM) showed that more women leave careers in the STEM disciplines than men throughout their career cycles in the water industry (Freeman et al., 2019).
- One of the main reasons why women working in the STEM disciplines leave their jobs is the inflexibility in working hours, such as work-life balance (Corbett & Hill, 2015). This often makes it difficult for women to balance their work and family obligations (Fouad et al., 2017).
- The retention gender gap among employees in the water control sector is due to a plethora of barriers that often face women who make it into the workforce (World Bank, 2019). Those barriers are mostly related to the satisfaction with retention factors designed by Döckel (2003).
- Lack of information technology in the water control workplaces (Omotayo & Telukdarie, 2019).

In the age of Industry 4.0, organisations need to redesign the workplace and shift from manual operation to automation and prepare their entire workforce to harness the power of technology. Employers should offer frequent training and development opportunities to employees. It also means addressing learning gaps of existing employees and to institute skill upgrades for the new hires to make them multi-skilled.

(b) Retention of employees in the Industry 4.0 workplace:

- The water control sector has been recognised as a data-driven industry, and according to Renze (2019), the water control sector qualifies to become an artificial intelligence industry, which when implemented usefully, would assist the sector to minimise costs and maximise revenue.
- Although Industry 4.0 had various challenges and perceived threats for the organisations, its intention was to create more opportunities for both employee and employer (Hecklaue et al., 2016).
- Industry 4.0 has been branded as an optimistic view (Heinrich, 2019) that presents the positive opportunities that Industry 4.0 has brought for employees to compete with Cyber Physical Production Systems (CPPS), and it does not necessarily mean that employees will lose their jobs. In fact, Industry 4.0 creates jobs (Heinrich, 2019).
- As Industry 4.0 advances, manual work will be replaced by Smart Manufacturing Objects (SMO) and analysed in the cloud system. According to Schwab (2016), Industry 4.0 has forced organisations to re-examine the way they do business due to key trends in the development of technology, and enabling platforms that combine supply and demand to disrupt existing organisational structures.

Organisations that ignore and do not promote factors that retain employees, and organisations that do not develop and implement retention strategies, will find it hard to compete in the water control sector. Those organisations are most likely unfit to transform to Industry 4.0 workplaces.

(c) Changes in retention practices:

- For the organisation to compete and succeed, employees are required to grow and develop themselves by taking initiative in that which the organisation offers (Schaerer, 2017).
- Implementation of work-life balance policies represents a potential retention strategy for valuable and skilled employees (Rodrigues-Sánchez et al., 2020).
- According to Letchmiah and Thomas (2017), the factor that added to retention was providing employees with career development opportunities.
- Uitzinger et al. (2018) insisted that if there was a disregard for employee wellness in the organisation that could result in challenges in retaining skilled employees.

- Organisations should develop and implement strong and holistic retention strategies in order to retain skilled employees in order to remain competitive and successful at the present and in the future (Giannetti & Metzger, 2015).
- It is important for the employer to teach their employees that all retention factors are equally important (Döckel, 2003).

6.1.1.2 *Research aim 2: To conceptualise and explain theoretical models of the constructs psychological contract, organisational commitment, and satisfaction with retention factors*

Research aim 2 was achieved in Chapter 3.

(a) Conclusions relating to the psychological contract

This current study defined the psychological contract the opinion that an employee held in relation to her or his employment association, and the perceptions that the employee might have of the implicit agreement between the employee and employer. Adam et al.'s (2014) Psychological Contract Questionnaire (PCQ) was used in this study to measure relational expectations, transactional expectations, and employee obligations.

- Employers should explore different kinds of psychological contracts that provide a better understanding of their employees' interest and expectations, and offer the most suitable psychological contract to employees that will promote organisational commitment (Lu et al., 2016).
- The type of the psychological contract can compel employees to develop a bias opinion on whether employer has obligations towards employees, and in return, employees have obligations towards the employer (Persson & Wasieleski, 2015).
- The employer's expectations regarding the mutual exchange includes that the employees are expected to be loyal to the organisation, while the expectations of the employees include future training and development opportunities and favourable compensation packages (Milanović et al., 2018).
- New employees who have just join the organisation assess the performance of their psychological contract with the employer once the employment relationship commences (Bordia et al., 2015). This assessment is based on the fulfilment of the employer's obligations.
- Fulfilment of both employee and employer obligations enhances trust and loyalty between them and both receive reciprocal benefits in the employment relationship (Li et al., 2016).

- Literature on the psychological contract broadly agrees that the fulfilment of the promises can influence the employee stay in the organisation (Mensah, 2018).
- Since the psychological contract was conceptualised in terms of mutual obligations between the employee and employer, it made sense that an over-fulfilment of employee obligations and the under-fulfilment of employer's obligations, might lead to the intention to leave the workplace (Van den Heuvel, 2007).
- Adams et al. (2014) concluded that age, gender and race were critical determinants of the psychological contract, and that employers might appreciate the expectations of employees more effectively if they consider these demographical variables.
- According to Adams et al. (2014), there are significant differences in the psychological contracts of younger and older, and female and male employees, and employees from different race groups.

(b) Conclusions relating to organisational commitment

This current study defines organisational commitment as an employee's psychological relationship to the employer, which includes the willingness and wish to remain in the organisation while sharing organisational goals. Meyer and Allen's (1997) Organisational Commitment Scale (OCS) was used in this study to measure the affective, continuance and normative commitments.

- Organisational commitment is of strategic importance due to the potential for financial returns in the long term, and therefore, organisations need to establish place commitment strategies that will align the psychological relationships and the goals of employees with those of the organisation to achieve positive future returns (Geldenhuis et al., 2014).
- Opting for the multidimensional approach, an organisation can strive influence the feelings and understanding of an employee's psychological attachment to the organisation (Meyer & Allen, 1991).
- According to Tladinyane et al. (2013), employers must provide career development opportunities with clearer career goals for their employees.
- Employees who are loyal, committed, and whose career development objectives beyond natural motivation, are more prone to stay in the organisation (Jena, 2015).
- Employees are loyal and committed to the organisation when their expectations are fulfilled (Hassan et al., 2017).

- The employer's obligations in an employment relationship, may enhance or reduce employees' commitment to the organisation, depending on how well they fulfil their psychological contract (Lambert et al., 2019).
- Organisations that provide and support their employees with career mentoring, will be able to retain their skilled employees (Zacher & Schmitt, 2016).
- It has been well established that the individual employee has various reasons for being involved in and remaining with their employing organisation (Meyer & Allen, 1997). It is thus expected that the weight that individual employees place on their reasons for remaining in an organisation and engaging in positive work behaviour will be impacted by their individual characteristics (Maia et al., 2016).
- Adams et al. (2014) concluded that age, gender and race are critical determinants of organisational commitment, and that employers might appreciate expectations of employees more effectively if they consider these demographical variables.

(c) Conclusions relating to satisfaction with retention factors

The study provided various descriptions of retention factors, all stressing the divisors that impact an employee's judgement to stay or leave the employer. This current study defines employee retention as an organisation's strategy, technique and a set of human resource policies intended to retain employees who have the capacity to meet operational requirements and assist with the achievement of organisational goals.

Employers deteriorating the implementation of those retention factors are prone to lose skilled employees to their competitors. Döckel's (2003) Retention Factor Measurement Scale (RFMS) was used in this study to measure the six retention factors.

- Döckel (2003) pinpoint six retention factors, namely, training and development opportunities, supervisor support, career development opportunities, compensation, job characteristics and work-life balances. Individual retentions vary as a result of certain variables. The key variables found in literature include age, gender and race (Du Plessis & Sukumaran, 2015).
- Retention factors are factors that facilitate retention employees, and the decision to stay or leave the organisation depends on the employee's priorities (Okech, 2015).
- Employees who are committed to their organisation show better performance and a low intention to leave, thus, employee commitment influences employee retention (Yucel, 2012).

- Employee retention practices help to retain the most important source of the organisation, which is the skilled employees (Rajan & Radhesham, 2018).
- Retention factors are vital factors that instil and inspire commitment of employees (Döckel et al., 2006).
- Retention factors are essential retention tools for developing and retaining exceptional skilled employees that enable the business to achieve and exceed its goals and objectives (Jakhar, 2015).
- Rajan and Radhesham (2018) further indicated that it is extremely difficult for an organisation to succeed and retain its position in the current competitive and dynamic business environment.
- Factors which were found to be important in the retention of skilled employees are commonly mentioned in relation to psychological contract breach, suggesting that a relationship exists between turnover intention and psychological contract breach (George, 2015).

6.1.1.3 Research aim 3: To conceptualise the theoretical relationship between psychological contract, organisational commitment, and satisfaction with retention factors

Research aim 3 was achieved in Chapter 3.

(a) Conclusions relating to the theoretical relationship amongst the psychological contract and organisational commitment

According to Maia and Bastos (2015), the concept of psychological contract is connected to organisational commitment because beliefs about the employment agreement bind the employee and employer to some set of obligations to each other. If an employment agreement is reached, it will later be remembered as promises and result in the expectations that form the basis of the psychological contract.

- Nwokocho (2015) posits that the psychological contract focuses on the reality of the situation as perceived by the employee and employer, and they should note that it is the psychological contract that effectively tells employees what they are required to do to meet their side of the bargain, and what, in return, they can expect from their job.
- The research results of Behery et al. (2012) showed that a relational contract has an impact on organisational commitment, however, no meaningful relationship exists between transactional contract and organisational commitment.

- Seopa et al. (2015) emphasised that transactional contract is precise on financial interchange following completed tasks within a fixed period.
- Gardner et al. (2015) argue that a constructive relationship exists between relational contract and organisational commitment.
- The psychological contract is used to reduce the gap between employee expectations and employee obligations (Theron & Dodd, 2011).
- There is a positive relationship between employees' expectations and the obligations of employers (Adams et al., 2014).
- Zhou et al. (2014) found in their research that satisfied employees' psychological contract increases organisational commitment.

(b) Conclusions relating to the theoretical relationship amongst the psychological contract and satisfaction with retention factors

The available literature on the psychological contract broadly agreed that the fulfilment of the psychological contract could influence retention of employees (Mensah, 2018). Since the psychological contract is conceptualised in the matter of mutual commitment between the individual and the organisation, it makes sense that an over-fulfilment of employee obligations might lead to resignation (Van den Heuvel, 2007).

- The violation and breach of a psychological contract often results in a decline in employees' willingness to contribute to the employer (Dhanpat & Brijball Parumasur, 2014).
- The literature review indicated that one of the many challenges organisations face is employee retention (Brhane & Zewdie, 2018) and to succeed in a highly competitive market, organisations need to maintain a high employee retention rate.
- The literature indicated that retention is crucial in the workplace to ensure that high potential and loyal employees remain (Mamahit et al., 2019), to reduce the high costs of training new employees (Akgunduz & Sanli, 2017), to prevent the loss of millions in revenue, and to avoid a decrease in productivity in customer services (Wärnich et al., 2015).
- Research has suggested that various retention practices should be implemented to increase retention in organisations, such improved benefits, remuneration and rewards (Lee et al., 2018).
- A psychological contract consisting of a trustworthy employer proves that employees will stay in employment (Hassan et al., 2017).

(c) Conclusions relating to the theoretical relationship between organisational commitment and satisfaction with retention factors

Various scholars, such as Meyer and Allen (1990), Van Dyk et al. (2013), Umamaheswari and Krishnan (2016), and Döckel et al. (2006), acknowledged a progressive relationship between organisational commitment and satisfaction with retention factors. Satisfaction with retention factors is directly proportional to affective, continuous and normative commitment (Döckel et al., 2006).

- Organisations should design career development plans with well-defined career goals for their workers (Tladinyane et al., 2013) and facilitate succession planning, which in return, will increase loyalty, organisational commitment and employee retention (Verbruggen et al., 2015).
- Organisations should support employees in their careers and provide them with a healthy workplace environment that will allow them to engage with each other and learn the available retention strategies (McLaggan et al., 2013).
- Understandable relationship between retention factors and organisational commitment could be useful for planning organisational interventions, such as career development and skilled retention strategies (Van Dyk, 2011). The literature review elaborated on the way retention strategies are influenced by the relationship that exists between organisational commitment and the retention factors.
- Thus, it was found that individuals who are attached to their organisations may experience less job dissatisfaction and a lesser intention to vacate the organisation. Both employee and employer perspectives should be deliberated when producing retention strategies (Van Dyk, 2011).
- Employees who are committed to their organisations show better performance as well as low intentions to leave, thus, employee commitment influences employee retention (Yucel, 2012).
- It is, therefore, imperative for human resource management to aim on maintaining skilled employees to ensure business competitiveness over the long term (Mehta et al., 2014).
- In a highly competitive business environment, employees are attracted to organisations with better compensation packages (Muyela, 2017), hence, employers should develop holistic retention strategies that encompass both monetary incentives and non-monetary benefits (Sindhvani & Mamgain, 2013).

6.1.1.4 *Research aim 4: To conceptualise the effect of demographical variables (age, gender and race) on the relationship between the psychological, organisational commitment, and satisfaction with retention factors*

Research aim 4 was achieved in Chapter 3.

(a) Conclusions relating to the theoretical relationship between age, gender and race, and the psychological contract

Theoretical arguments show that as employees age, their values change and become more mature (Adams et al., 2014). Older employees are expected to focus more on the protection of their current job and employment relationship, especially in the light of the fewer career development options (Adams et al., 2014). Older employees perceive higher relational expectations than younger employees, while younger employees perceive higher transactional expectations than older employees (Adams et al., 2014).

Females and males bring different expectations to the workplace, as employees hold conceptually similar, but distinct perceptions of inducements (Adams et al., 2014). Females focused more on their roles as homemakers (relational orientation) than their roles as employees. Females score higher on relational expectations than males, while males score higher on transactional expectations than females.

The provision of flexible work arrangements would enable females to address work and family responsibilities effectively. This may increase levels of work-to-family enrichment, leaving employees feeling cared for by their employers. Due to this perception, employees reciprocate by showing higher degree of satisfaction and lower levels on turnover intention (Chen et al., 2018). Females select jobs that allow them to have a close relationship with their families and employers (work-life balance), even at the risk of receiving low wages (Chin & Hung, 2013).

Employees from minority groups within the organisation may have different expectations in terms of the psychological contract (Pant & Vijaya, 2015). As a result, Black employees experience several career challenges (Maree, 2016), and racial groups are often compelled to choose silence rather than to speak out (Kong & Jolly, 2018). In a business workplace environment, employees' silence can destroy the organisational learning, development and innovation (Detert & Treviño, 2010). It is crucial for organisations to provide a platform where employees can raise their concerns and issues.

In summary, the literature review confirmed that a relationship exists between age, gender, race, and the psychological contract.

(b) The effect of age, gender and race on organisational commitment

Older human resources are committed to their organisation than the younger counterparts in relation to affective and normative commitments (Ferreira & Coetzee, 2010). The important reason why age matters in the growth of organisational commitment, is that the organisation is comparatively more important to older employees than to younger employees (Maia & Bastos, 2015). Older employees are comparatively more loyal and attached to the organisation than younger employees, older employees also react more strongly to positive organisational actions and positive experiences than younger employees (Maia & Bastos, 2015). Older employees seek more stability in their workplaces than looking for job opportunities outside the organisation (Mensah & Adjei, 2015).

Khalili and Asmawi (2012) found that females and males have the same level of affective and continuance commitments to their employing organisations, and females show higher levels of normative commitment than males. Gender has often been used as a control variable in organisational commitment studies, owing to the different behavioural tendencies ascribed to females and males (Jayasingam et al., 2016). Males keep their promises to the organisation than females (Faisal & Al-Esmael, 2014), especially in a male-oriented organisation (Kumasey et al., 2014).

Ragins et al. (2017) found that employees who have been exposed to racial discrimination in the workplace, have lower organisational commitment than those who have not been exposed to racial discrimination in the workplace. Again, Black supervisors seems to have a knowingly lesser commitment than their white counterparts to the workplace (Ragins et al., 2017).

In summary, the literature review confirmed that a relationship exists between the demographical variable of age, gender, race, and organisational commitment.

(c) Conclusions relating to the theoretical relationship between age, gender and race, and satisfaction with retention factors

Schaap and Olckers (2020) confirmed a positively relationship among age and satisfaction with retention factors that influences employees to stay in the organisation, and again found a negatively relationship among age and satisfaction with retention factors regarding the intention to leave (Schaap & Olckers, 2020). As age increases, the intention to stay also increases (Chawla & Sondhi, 2011). Younger employees who seek a variety of tasks and career development opportunities in the workplace, are more likely to leave their organisation when their expectations are not fulfilled (Stoltz, 2014).

Failure to deal with work-life balance initiate the intention to leave the organisation, and in most cases, it happens to female employees because of their conscious and unconscious prejudice (Pololi et al., 2012). Although work-life balance remains an issue for many organisations, the findings of Watanabe and Falci (2016) and Kanwar et al. (2012) indicated that females showed a lower attachment to the employer and stronger intentions to resign than their male counterparts. Females have significantly stronger vision into the affairs of the organisation than male employees (Tebele, 2013).

Since the promulgation of equity legislation in South Africa, Black employees have regarded career support and career development opportunities as very important factors because those retention factors influence their faithfulness to the organisation (João & Coetzee, 2012). Black employees consider training and development opportunities, and growth opportunities to be most valuable than other races can think about (Pauw, 201). Coloureds and Blacks were identified as the least race groups to be satisfied with the nature of their work, their responsibilities and remuneration (Van Dyk, 2011).

In summary, the literature review confirmed that a relationship exists between the demographical variables of age, gender, race, and satisfaction with retention factors.

6.1.2 Conclusions relating to the empirical study

The empirical aim is to deal with the following four specific objectives:

- To empirically investigate the statistical relationship between the demographical variables (age, gender and race), psychological contract, organisational commitment, and satisfaction with retention factors, as manifested in a sample of the water control sector. (This was achieved by empirically testing research hypothesis Ha: 1).
- To empirically investigate whether age, gender and race, as demographical variables, and the psychological contract and organisational commitment, significantly and positively predict employees' satisfaction with retention factors. (This was achieved by empirically testing research hypothesis Ha: 2).
- To empirically investigate whether individuals from the various age, gender and race groups differ significantly with regard to the psychological contract, organisational commitment, and satisfaction with the retention factor variables. (This was achieved by empirically testing research hypothesis Ha: 3).
- To formulate recommendations for further research in the development of retention strategies, as well as possible future research in the field of human resource management regarding retention. (This was achieved by empirically testing research hypothesis Ha 3).

The statistical results provided supportive evidence for the research hypotheses, as reported in Chapter 5. In conclusion, the findings in terms of the research aims relating to the empirical study are presented in the next section.

6.1.2.1 *Research aim 1:*

To empirically investigate the statistical relationship between the demographical variables (age, gender and race), psychological contract, organisational commitment, and satisfaction with retention factors conceptualised in a sample of the water control sector. (This research aim relates to research hypothesis 1)

The results provide supportive evidence for Ha 1: There is statistically knowing and optimistic relationship amongst the demographical variables (age, gender and race), psychological contract, organisational commitment and satisfaction with retention factors. This aim has been broken down into four parts, as follows:

(a) To empirically investigate the relationship between the psychological contract and organisational commitment

The results showed a significant positive relationship between psychological contract and organisational commitment. The results showed a positive correlation amongst the three subscales of the PCQ and two subscales of OCS.

No significant relationships were observed between obligations of employees and any subscales of the OCS. Affective and normative commitments had a negative relationship with employee obligations, while continuance commitment had no relationship with employee obligations. The following conclusions can be drawn:

- Employees with affective and normative commitments to their organisation are shown to have high levels of relational expectations (psychological contract) and could maintain their attachment to the organisation.
- Affective and normative commitments allow employees to build loyalty and associate with their counterparts, as a way to enhance employment relationship.
- Continuance commitment employees continue with employment since is their best choice, and they merely accomplishing their desires.
- Employees with continuous commitment conservatively will remain in employment since they lack the necessary qualifications and skill to apply for a position outside the current employer.

(b) To empirically investigate the relationship between the psychological contract and satisfaction with retention factors

Research findings found a knowingly relationship amongst the psychological agreement and satisfaction with retentionist. According to the results, participants with the highest relational expectations were on training and development, supervisor support, career development and job characteristics demonstrated aspects of faithfulness, where the employee and employer interchange their desires.

The quoted four retention factors have a moderate positive relationship with the subscale of PCQ (relational expectations), while compensation and work-life balance have a weak positive relationship with the subscales of PCQ (transactional expectations and employee obligations).

The following conclusions can be drawn:

- Psychological contract contributed mostly on satisfaction with training and development, supervisor support, career development and job characteristics.
- Again, psychological contract contributed to the mutual and improved employment relationship.
- Negative perceptions related to employee obligations cause employees to attribute less importance to the organisation and reduce employees' sense of responsibility, causing them to be less productive, which further leads to low employee satisfaction.

(c) To empirically investigate the relationship between organisational commitment and satisfaction with retention factors

Research findings found a knowingly relationship between organisational commitment and satisfaction with retentionist. Compensation, job characteristics, training and development opportunities, supervisor support, career development opportunities and work-life balance have a positive relationship with organisational commitment.

The highest affective and normative commitments among employees were linked to the training and development, followed by job characteristics. The lowest affective and normative commitments were related to the work-life balance, followed by compensation. There was a low positive relationship between all six retention factors and continuance commitment. Skilled employees who worked for employers practicing retention strategies are committed to their organisation, whereas those skilled employees who worked for employers not practicing retention strategies are less committed to their organisation. Therefore, employers should implement retention strategies in order to retain skilled employees.

The multiple regression analysis revealed a more significant positive relationship between human resources practices and the type of affective and normative commitment, when compared to continuance commitment. Organisational commitment of the affective type proved to be positively influenced by the human resources practices associated with career development opportunities, while commitment of the normative type was positively more induced by the human resources practices related to training and development opportunities (Oliveira & Honório, 2020).

The following conclusions can be drawn:

- Employees might initiate organisational commitment if they entirely satisfied with the retention factors supplied by the employer.
- Individuals will fulfil their employee obligations if they entirely satisfied with the retention factors supplied by the employer.

6.1.2.2 *Research aim 2:*

To investigate whether age, gender and race, as demographical variables, and the psychological contract and organisational commitment, significantly and positively predict employees' satisfaction with retention factors. (This research aim relates to research hypothesis 2).

The results provide supportive evidence for Ha 2: Age, gender, and race, as demographical variables, and the psychological contract and organisational commitment as a composite set of independent variables, significantly and positively predict satisfaction with the retention factor variables, as a composite set of dependent variables.

Psychological contract and organisational commitment were forecasters of satisfaction with retentionist.

The following conclusions can be drawn:

- Relational expectations and transactional expectations significantly and positively predicted satisfaction with the six retention factors.
- Affective commitment and normative commitment significantly and positively predicted satisfaction with the six retention factors.
- Age, gender, and race did not significantly and positively predict satisfaction with the six retention factors.

6.1.2.3 Research aim 3

To empirically investigate whether individuals from different age, gender and race groups differ significantly with regard to the psychological contract, organisational commitment and satisfaction with retention factors. (This research aim relates to research hypothesis 3).

The results supplied evidence for Ha 3: Individuals from various age, gender and race varied knowingly with regard to the psychological contract, organisational commitment and satisfaction with retention factors.

Table 6.1 formulate conclusions based on empirical results.

Table 6.1:

Conclusions based on empirical results of individual differences

Age
<ul style="list-style-type: none"> ▪ Relational expectations showed significant difference between the age groups, 30-39 years and 50-60 years. ▪ Employee obligations showed significant difference between the age groups, 30-39 years, 40-49 years, and 50-60 years. ▪ The overall PCQ showed significant differences between the age groups, 30-39 years and 50-60 years
Gender
<ul style="list-style-type: none"> ▪ In relation to the overall PCQ, there was a statistically significant mean difference amongst females and males. ▪ The male employees scored higher than their female counterparts in the PCQ scale.
Race
<ul style="list-style-type: none"> ▪ Black employees were mostly satisfied with their psychological contract than employees from Other races. ▪ Black employees were mostly satisfied with their relational expectations than employees from Other races. ▪ Black employees were mostly satisfied with their transactional expectations than employees from Other races. ▪ Black employees were mostly satisfied with their employee obligations than employees from Other races. ▪ Black employees were mostly committed to the employer than employees from Other races.

6.1.2.4 Research aim 4

To formulate recommendations for further research in the development of retention strategies as well as possible future research in the field of human resource management regarding retention.

The implications of the empirical relationship between psychological contract, organisational commitment and satisfaction with retention factors and assisted in providing the following recommendations for further research in the creation of retention strategies, as well as future studies in the discipline of human resource management regarding employee retention.

(a) Recommendations relating to the development of retention strategies for employees in the water control sector

- The demographical variables (gender and race) need to be explored and considered in a way to enhance psychological contract of the groups. The organisations, therefore, need to certify that promises are kept and employee obligations are pledged. Awareness on gender and race are dealt with in line with the policies and should be included on retention strategies.
- Younger employees should be exposed to challenging and sound job characteristics (Sinding et al., 2018). Periodical surveys should be conducted to get the view of employees with regard to organisational policies to avoid possible unhappiness and concerns relating to job characteristics.
- Older employees need upskilling that will keep them relevant in Industry 4.0 workplace. The organisation should design and implement individual development plan as per the needs of the employee and employer (Hernandez et al., 2018). An open discussion between employees and employer is crucial where both parties communicate their obligations and expectations to avoid unkept promises within the employee-employer relationship.
- A safe working environment strategy creates opportunities for a team-based approach regarding all activities that will contribute to creating the new culture and organisational identity.
- Because of Industry 4.0, employers can standardise the use of IT to enhance the involvement of employees as stakeholders in the process of review and optimisation on an ongoing basis, with greater empowerment and self-management opportunities being given to the service teams. For example, according to Gan and Yusof (2019), some types of effective human resources practices that play essential roles in organisations are human resource policy-making, training and development, a reward system, and job characteristics. These human resource practices could improve the performance of organisations by equipping the workforce with up-to-date skills.
- Environmental employee retention strategies address three fundamental aspects of the workplace (TCii, 2011): the ethics and values foundation upon which the

organisation rests; the policies that interpret those values and translate them into day-to-day actions, and the physical environment in which people work. These aspects are aimed at enhancing organisational commitment. Environmental employee retention strategies include the vision and mission of the organisation, and the honesty and trustworthiness of employees.

- The water control sector needs to develop an employee retention policy that acts as a guiding principle of action, and which can be adopted to assist with decision-making in terms of retaining skilled employees. The retention policy practices for employee retention should include the introduction of a performance-based promotion system, rather than the current situation in which employees are promoted, based on seniority rather than on performance (Samuel & Chipunza, 2009). The key aspects that directly influence the human resource management system to be included in the employee retention policy include the following:
 - (1) Organisational support practices that are characterised by openness and supportiveness regarding caring and respect. These aspects will lead to employee motivation and engagement in meeting relational and transactional expectations (Ghosh et al., 2016).
 - (2) Human resource management should have an understanding of the significant effect that employee motivation has on employee retention (Johennesse & Chou, 2017). Employers should engage, provide and implement effective and understandable retention strategies to the employees in order to retain them.
- Employee relationship strategies have to do with how the employer manages employees. If the manager and supervisor have the knowledge, training and sensitivity to work effectively with employees on an individual level, the employer will probably get the attachment they need to retain employees.
- Employer should assist employees to set life goals and achieve a focus on where the individual employees want to go. Individual employees will then see how their goals match up with the organisation's goals, and that they can achieve their goals by staying within the organisation.
- The introduction of work-life balance, which is a practice to assist employees balance the choices between their work responsibilities and life, including health, leisure activities and family, is important for employee retention (Monica & Kaur, 2017).
- Employee support strategies involve giving employee the tools and equipment to get the job done. The basic principle of employee support strategies is that employees

need to excel, need adequate resources to get the job done, and need moral and mental support from supervisors. Information is another key area in employee support strategies. Inform employees about the financial status of the organisation and let them see the organisational performance measurements, particularly in terms of how these may affect their jobs.

- Employer need to encourage employees to take initiative, provide assistance to employees' challenges, and remove barriers to getting the job done.
- The development of a formal compensation strategy is key to helping the organisation to motivate and retain skilled employees. According to Wolf (2019), a compensation strategy comprises of pay, benefits and careers. Pay includes the basic salary, overtime and stand-by pay, long-term incentives, performance bonuses and short-term incentives. Benefits include retirement, health, death benefits, paid time off, and a work-life balance. Careers include career advancement, leadership development, rotation and job enrichment, and employment stability. The employer must clearly define and develop formulas on how the pay, benefits and careers are calculated for each position level.

(b) Recommendations for future research in the field of human resource management regarding employee retention

The sample comprises of permanent employees from three water boards in South Africa. The empirical study revealed new knowledge that arose from the study of retention of employees within the Industry 4.0 workplace. It is imperative for the future to thoroughly consider the relationship dynamics between age, gender, race and additional other demographical variables (job level, qualification and tenure), the psychological agreement (relational expectations, transactional expectations, and employee obligations), organisational commitment (affective, normative, continuance commitments), and satisfaction with retention factors (training and development opportunities, supervisor support, career development opportunities, compensation, job characteristics and work-life balance). Finally, empirical studies highlighted differences between different demographical variables in relation to the psychological contract, organisational commitment and satisfaction with retention factors.

The findings of the empirical study showed that future research is needed on the dynamics of employee obligations, since the participants showed a negative relationship between employee obligations and the affective and normative commitment subscales. Employee obligations have no relationship with continuance commitment. A fair reward system,

comprehensive communication and participation in organisational decision-making will contribute to a positive psychological contract.

Imminent research requires human capital that will explore further Industry 4.0 workplace as the current water control sector is dominantly traditional. Human resource managers and practitioners who are experts and keen in the discipline of management (human resources) should assist progressive organisations with development and practical implementation of retention strategies at all organisational levels.

6.1.3 Conclusions relating to the central hypothesis

The central hypothesis (Chapter 1) stated that a relationship exists between organisational commitment, psychological contract and satisfaction with retention factors.

This hypothesis assumes the psychological contract and organisational commitment will predict satisfaction with retention factors. Conclusively, the empirical study and literature review has proof in favour of the central hypothesis.

6.1.4 Conclusions relating to further research in the development of retention strategies for the water control sector

According to Van Zyl and Jooste (2020), conventional water management strategies, where water is extracted, purified, and used domestically, are no longer enough to address water shortages in South Africa. This situation is aggravated by climate change, population growth and economic development, the impacts of Industry 4.0 in the water control sector, including the recent global outbreak of the coronavirus in 2019/2020 (COVID-19). It can be concluded that the combination of conventional water management strategies and employee retention strategies for skilled employees in the water control sector might reduce the employee turnover rate.

It is critical for the water control sector to be aware of the role that the organisational commitment and the psychological contract play in the retention of employees and in reducing high employee turnover. Therefore, employee retention programmes and best retention practices are of the utmost importance in the water control sector, and should be further researched. These will ensure the retention of skilled employees and add to the success of the organisation. Overall, retention strategies should include the following:

- A plan on how to minimise employee turnover by implementing organisational commitment initiatives.

- A plan to decrease retention rate by initiating new opinions of the psychological contract and organisational commitment of all employees to prevent the loss of skilled employees.
- Critically opt for and implement retention factors that will enhance the organisational commitment of all employees.
- Employers should take into consideration the retention factors that positively influence organisational commitment, and encourage employees to stay in the organisation.
- Research can be carried out in more than one organisation for comparison purposes, in order to find out if the results differ between organisations or are similar regardless of where the organisations are based. In addition, in future, researchers should consider conducting qualitative interviews in order to draw more subjective responses from participants.
- For future research, a variable, such as location should be included to find out if the employees are committed because their employer is near their homes, or whether they are committed due to their attachment to their jobs.

6.1.5 Conclusions relating to possible future research in the field of human resource management regarding retention

The literature review provided insight into the various concepts and theoretical models that promote the psychological contract, organisational commitment and satisfaction with retention factors. The results pinpointed the benefits of understanding the importance of conceptualising the three quoted constructs. Conclusions explained how the psychological contract and organisational commitment predict satisfaction with retention factors.

This current study set grounds for further research in the new conceptualisation of the three constructs bearing in mind the development of a theoretical employee retention framework, focusing on the buffering effect that organisational commitment has on the psychological contracts and satisfaction with retention factors. From the findings it is evident that the water control sector should focus more on the demographical variables in addition to age, gender and race that might impact the psychological contract, organisational commitment and satisfaction with retention factors.

An employee retention strategy appears as a modified plan to facilitate a sound employment relationship, employers should encourage and develop their employees to be trustful and loyal in return of the monetary package they received from employer. Research findings adds to a standpoint from where employee and employer fully understand reciprocity of their obligations.

Furthermore, these findings can be used by employers to enhance the psychological contract and organisational commitment of their employees, which will in turn, will improve employees' satisfaction with the retention factors, and may result in the possible future retention of skilled employees.

The empirical study supplied new insight into the differences between demographical variables, in relation to the psychological contract, organisational commitment and satisfaction with retention factors. Finally, the findings revealed that human resource managers ought to persist assessing PCQ, OCS and FRMS in the water control sector.

6.2 LIMITATIONS

The limitations of the literature review and the empirical study are discussed below.

6.2.1 Limitations of the literature review

This exploratory research into the psychological contract, organisational commitment and satisfaction with retention factors in the water control sector in South Africa, was restricted with the following aspects:

- Many demographical variables can predict satisfaction with retention factors but only age, gender and race were considered.
- Furthermore, the intention to leave the organisation, could have acted as predecessors to staff turnover, as a result, the study failed to identify factors that might have impacted on retention strategies in the water control sector.
- Several organisations in South Africa, for example municipalities have challenges in retaining skilled human resources, however, this research just studied retention in few water boards. Therefore, the findings may not be generalised to the whole of the water control sector.
- Although there is broad research on psychological contract, organisational commitment, and retention factors, few studies have focused specifically on the relationship of these constructs in the Industry 4.0 workplace. There is a lack of knowledge about Industry 4.0 and the speed at which information management systems are evolving in the water control sector in South Africa.

6.2.2

6.2.3 Limitation of the empirical study

The findings of this study are limited to the ability to generalise and make practical recommendations because of the size, characteristics of the sample, and instruments properties of the PCQ, OCS, and RFMS.

- The sample was limited to permanent employees in the water control sector in only two provinces (Free State and Gauteng) in South Africa. A sample size of 172 does not appear large enough to conclusively establish whether there is a definite relationship between the variables of the psychological contract, organisational commitment and satisfaction with retention factors.
- By utilising Psychological Contract Questionnaire (Adams et al. 2014), the study was limited to three subscales. Through the use Organisational Commitment Scale, the study was limited to three subscales. Furthermore, by utilising Döckel's (2003) Retention Factors model, the study was limited to only six subscales.
- The sample consisted predominantly of Black male participants; females and Other races were not representative. It was difficult to generalised the sample of gender and race statistics. In addition, data was collected only from participants who have access to the Internet.
- The demographical variables were limited to age, gender and race. Other demographical variables might have added similarities and variations to the statistical analysis and alter the research outcomes.
- There is the potential risk of common method bias, as the questionnaires utilised a self-report methodology. In addition, the measuring instruments were dependent on the respondents' self-awareness and personal perception, which could potentially have affected the validity of the results. In view of the nature of the research design, the relations between the construct variables have been interpreted in an exploratory manner, and acceptable internal consistency reliability was reported for the three measuring instruments.

6.3 RECOMMENDATIONS

Based on the findings, conclusions and limitations of this study, recommendations for further research in the creation of retention strategies and possible future research in human resource management regarding retention are discussed below.

6.3.1 Recommendations for further research in the development of retention strategies in the water control sector

The main aims of the study were to extend the existing body of knowledge by investigating the relationship amongst the psychological contract, organisational commitment and satisfaction with retention factors in a sample of permanent employees in the water control sector, and to provide and manage the retention of skilled employees. Therefore, well-planned and well-executed interventions should be implemented to enhance the psychological contract and organisational commitment in retaining skilled staff by providing satisfaction with the retention factors.

To ensure employees remain with the organisation, the water control sector should create a safe and healthy working environment in which employees experience satisfaction with the retention factors. This can be achieved by:

- Training and retaining supervisors with the following qualities: supervisory and engagement skills, and inspiring supervisors who provide clear career paths to employees.
- The water control sector should use performance appraisals to establish clear career goals for employees, as well as providing consistent support and effective communication, which in turn, will enhance the psychological contract and organisational commitment.
- Employees experience a higher emotional attachment and bond with the organisation when they receive feedback, recognition and rewards, as well as being allowed to contribute to the organisation's goals.
- The water control sector should provide their employees with competitive remuneration and excellent balance between personal and work responsibilities policies which will enable the organisation to curb employees' intention to resign.
- It is further suggested that human resource managers should implement strategies for retaining high performing employees by implementing innovative and effective interventions or retention strategies. The employer should periodically assess the status of the psychological contract and commitment to the organisation through an internal survey, and take corrective actions where there are gaps.
- Organisational commitment can be increased by providing training and development opportunities, and interesting and challenging job characteristics, for example, allowing sharing in decision-making processes and increasing employee responsibilities.

- The employee and employer relationship should periodically be strengthened by clearly stating employee and employer expectations and initiating an organisational culture that promotes transparency regarding the policies and procedures that affect employees.
- Employee and employer obligations should be clearly explained. This is necessary to ensure a healthy employment relationship that will ignite employees' emotional stability, provide fulfilment of expectations in the workplace, and create a feeling of obligation among the employees which will cause them to remain with the organisation and contribute to the overall success of the organisation (Nwokocha, 2015).
- Human resource managers have a crucial role in obtaining the employees' buy-in to change. Human resource managers must therefore take the temperature regularly to gauge what is going on around the minds of the employees. Human resource managers can then re-negotiate and adjust their own and their team members' psychological contracts to restore them to a healthy state. Doing so will embrace the use of human resource management practices and develop a psychological contract to improve the retention of skilled employees (Waiganjo & Ng'ethe 2012).
- Employers should consider improving their retention strategies by seeking out other factors which may play a greater function in enhancing the organisational commitment.
- Age, gender and race should be deliberated at the development stage of organisation's retention strategies.

6.3.2 Recommendations for possible future research in human resource management regarding retention

In the light of the conclusions and limitation of this study, the following recommendations are made for future research in human resource management regarding retention.

- There is a requisite for further research on the relationship amongst the psychological contract, organisational commitment and satisfaction with retention factors within the South African background. It is recommended that future research address the limitations identified in this study. This study was limited to a small sample of predominantly Black males, it is therefore recommended that future studies include a larger, more representative sample.
- There is also a need for more research on the psychological contract, organisational commitment and satisfaction with retention factors in the South African context.

- Further studies would be beneficial for the psychological contract in that it would offer direction to employees when making career development plans built on the foundations of their capabilities, and allow them to interpret retention factors that satisfy their commitment to the organisation and their personal needs (Dhanpat & Brijball Parumasur, 2014).
- Employees from the three demographical variables (age, gender and race) require work-life balance policies. This can be further researched to find other demographical variables that can enhance work-life balance.
- There is also a need for further studies on the retention of employees in Industry 4.0 workplaces. This implies that upskilling is necessary in information technology.
- Further studies would be beneficial in terms of career counselling which would be able to offer direction to employees when making career development decisions, and allow them to interpret the benefits of their career development opportunities that would align with their personal needs (Bell, 2016).
- Future longitudinal research would contribute much in analysing the perception of the psychological contract, organisational commitment and satisfaction with retention factors, as the career development opportunities concept evolves over time (Hirschi et al., 2015).
- Lastly, valuable insight may be obtained through the inclusion of the analysis of an additional demographical variable, “qualifications”, that was not measured in this study.

6.4 EVALUATION OF THE CONTRIBUTION OF THE STUDY

This study intent making recommendations on employee retention strategies and further research in the discipline of human resource management relating to employee retention in the water control sector, by summarising empirical findings. The results revealed that the constructs variables knowingly relate to one another, and that the psychological contract and organisational commitment predicted satisfaction with retention factors.

Individual employees from various age, gender and race vary knowingly in relation to the psychological contract, organisational commitment and satisfaction with retention factors. Thus, research findings brought further knowledge on employee retention in the water control sector.

6.4.1 Value added at a theoretical level

The literature review showed that knowing relationship amongst the psychological contract, organisational commitment and satisfaction with retention factors. The literature furthermore exhibited high turnover in the water control sector which require the employer to reduce turnover by creating employee retention strategies. Differences and similarities of age, gender and race groups, psychological contract, organisational commitment, and satisfaction with retention factors should be considered when developing retention strategies.

The findings are useful in understanding the impact of employees' retention in Industry 4.0 within the water control sector and will furthermore contribute to the current body of knowledge in Industry 4.0 workplaces, specifically relating to levels of the psychological contract, organisational commitment and satisfaction with retention factors in the water control sector.

6.4.2 Value added at an empirical level

The research at an empirical level may contribute towards construction of an empirically tested sample profile that may be employed to develop employee retention strategies. The study highlighted those individuals from different age, gender, and race who vary knowingly in relation to their psychological contract, organisational commitment and satisfaction with retention factors.

Statistical analysis results were used to interpret and explain the empirical findings. Findings explained employee retention framework in the water control sector. In addition, there is dearth of research in the water control sector, and specifically on examining the relationship amongst the psychological contract, organisational commitment and satisfaction with retention factors.

6.4.3 Value added at a practical level

At this level, the study donated by ascertaining predictors of satisfaction with retention factors, namely, training and development opportunities, supervisor support, career development opportunities, compensation, job characteristics, and work-life balance. This will assist employers identifying potential predictors.

Research results might assist employers and the human resource managers in the water control sector to attain a better understanding of their employees' psychological contract and organisational commitment, and which will enable them to identify the retention factors that highly satisfy employees, and to maintain these factors at that level. An effort is needed to focus on those factors that produce unsatisfactory results, and to improve them to enhance the psychological contract and organisational commitment.

The findings of this research study may prove to be useful to organisations that wish to retain their employees. Research findings obtained from the current study will provide human resource managers and organisations with a practical means of identifying the factors that satisfy employees. Organisations in the water control sector should not initiate high expectations they might not deliver.

In summary, researcher is certain the recommendations in the creation of retention strategies and in human resource management will enable employers to tackle new knowledge in the development of effective retention strategies for employees.

6.5 CHAPTER SUMMARY

In summary, the conclusions, limitations, recommendations in the development of retention strategies, as well as possible future research in the field of human resource management regarding retention were discussed, followed by the contribution of the study, stressing the degree to which the findings gave evidence in support for the development of retention strategies, resulting from the effects of the psychological contract, organisational commitment and satisfaction with retention factors.

Research aim 4 was achieved:

To formulate recommendations for further research in the development of retention strategies, as well as possible future research in the field of human resource management regarding retention

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APPENDIX A: ETHICS CLEARANCE CERTIFICATE



UNISA HRM ETHICS REVIEW COMMITTEE

Date: 06 November 2019

Dear Mr Israel Setlhogo Ngakantsi

Decision: Ethics Approval from December 2019 to December 2022

NHREC Registration #: (if applicable)

ERC Reference #: 2019_HRM_015

Name: Mr I.S Ngakantsi

Student: #6076602

Researcher(s): Name: Mr Israel Setlhogo Ngakantsi
E-mail address, telephone #6076602@mylife.unisa.ac.za, 0716783309

Supervisor (s): Name: Dr A Deas
E-mail address, telephone # deasaj@unisa.ac.za, 012 429 8436

Working title of research:

Investigating the relationship between the psychological contract, organisational commitment and retention factors of employees in the Water Control sector in the Free State

Qualification: MCOM

Thank you for the application for research ethics clearance by the Unisa HRM Ethics Review Committee for the above mentioned research. Ethics approval is granted for Mr I.S Ngakantsi for 3 years.

The **low risk application** was **reviewed** by the HRM Ethics Review Committee on 19 September 2019 in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the HRM Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.



University of South Africa
Preller Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
www.unisa.ac.za

4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data require additional ethics clearance.
7. No field work activities may continue after the expiry date December 2022. Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

The reference number 2019_HRM_015 should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.

Yours sincerely,



Signature

Chair of DREC: Prof M Coetzee

E-mail: coetzm@unisa.ac.za

Tel: (012) 429-3008



Signature

Executive Dean: Prof MT Mogale

E-mail: mogalmt@unisa.ac.za

Tel: (012) 429-4805



University of South Africa
Preller Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
www.unisa.ac.za

APPENDIX B: PROFESSIONAL EDITING CERTIFICATE



Retha Burger
S.A.(H.E.D.)

tel: 012 807 3864
cell: 083 653 5255

fax: 012 807 3864
e-mail: rethag@skillnet.co.za

Independent Skills Development Facilitator

Dear Mr Ngakantsi

This letter is to record that I have completed a language edit of your master's dissertation entitled, "Examining the relationship between psychological contract, organisational commitment, and employee retention".

The edit that I carried out included the following:

- Spelling
- Grammar
- Vocabulary
- Punctuation
- Pronoun matches
- Word usage
- Sentence structure
- Correct acronyms (matching your supplied list)
- Captions and labels for figures and tables
- Spot checking of 10 references

The edit that I carried out excluded the following:

- Content
- Correctness or truth of information (unless obvious)
- Correctness/spelling of specific technical terms and words (unless obvious)
- Correctness/spelling of unfamiliar names and proper nouns (unless obvious)
- Correctness of specific formulae or symbols, or illustrations.

Yours sincerely

Retha Burger

4 December 2021