

**Key drivers of knowledge worker engagement in the information and
communications technology environment**

Kudzani Ngqabutho Mqhelisi Gangeni
27285716

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

01 December 2020

ABSTRACT

The performance of a business has been showed to be related to the engagement levels of the employees who work in it. Understanding what levers can be used to influence the engagement levels of employees was the objective of this study. Considering that the information and communications technology (ICT) sector is the base from which the fourth industrial revolution (4IR) will build from, these employees will be vital to taking advantage of the opportunities presented by the 4IR. The study looked specifically at employees who are knowledge workers and are employed in the information and communications technology sector in South Africa. The theory base of the study is informed by behavioural and jobs demands-resources theory, using both to understand employee engagement and the key drivers thereof. The study took a qualitative, inductive and exploratory approach to understand what the key drivers of employee engagement were for the employees in the ICT sector. The data collection consisted of 13 face-to-face interviews, which were then analysed to come to an understanding on the topic. The key findings revealed that the leadership style of management and the team culture are the biggest drivers of employee engagement in the ICT sector.

KEYWORDS

Engagement

Knowledge workers

Remote Work

ICT

DECLARATION

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

Kudzani Ngqabutho Mqhelisi Gangeni

01st December 2020

TABLE OF CONTENTS

ABSTRACT.....	i
KEYWORDS.....	ii
DECLARATION	iii
TABLE OF CONTENTS.....	iv
LIST OF FIGURES	viii
LIST OF TABLES	viii
CHAPTER 1: INTRODUCTION TO THE RESEARCH PROBLEM	1
1.1 Introduction	1
1.2 Research Problem	2
1.3 Purpose Statement	4
CHAPTER 2: LITERATURE REVIEW	5
2.1 Introduction	5
2.2 Existing literature regarding constructs	5
2.2.1 Employee Engagement	5
2.2.2 Key Drivers of Employee Engagement.....	8
2.2.3 Common characteristics of employees in ICT	12
2.2.4 Core skills required in ICT	14
2.2.5 Remote working.....	15
2.2.6 Knowledge workers	16
2.3 Research opportunities	17
2.4 Conclusion	19
CHAPTER 3: RESEARCH QUESTIONS	21
3.1 Introduction	21
3.2 Main research question.....	21
3.3 Supporting research questions	21

CHAPTER 4: RESEARCH METHODOLOGY	23
4.1 Choice of methodology	23
4.2 Research philosophy.....	23
4.3 Research approach.....	23
4.4 Methodological choices.....	24
4.5 Purpose of research design	24
4.6 Strategy.....	24
4.7 Time horizon	25
4.8 Techniques and procedures.....	25
4.9 Proposed research methodology and design.....	25
4.9.1 Population.....	25
4.9.2 Unit of analysis	26
4.9.3 Sampling method and size	26
4.10 Pilot individual interview	27
4.11 Measurement instrument.....	28
4.12 Data gathering process	29
4.13 Analysis approach	29
4.14 Quality controls	30
4.15 Limitations	31
CHAPTER 5: RESEARCH RESULTS	32
5.1 Introduction	32
5.2 Discussion of Research Question 1	32
5.2.1 Knowledge work occupations – Information gathered that indicate that the respondents were indeed knowledge workers	34
5.2.2 Occupational Tenure – Information gathered that illustrates that the respondents are seasoned ICT Professionals.....	35
5.2.3 Managerial Role – Information gathered that illustrates that respondents were from managerial and non-managerial roles (including middle and hybrid managers)	37

5.2.4 Alternative definitions regarding engagement related to research question 1 – Greater productivity and discretionary energy	38
5.3 Discussion of Research Question 2	40
5.3.1 Common Characteristics of ICT Professionals	42
5.3.2 Core skills required by ICT professionals	45
5.3.3 Positive Influences of Employee Engagement	49
5.3.4 Negative influences of employee engagement.....	53
5.4 Remote Working – Positive and Negative Effects.....	58
5.5 Discussion of Research Question 3	61
5.6 Conclusion	61
CHAPTER 6: DISCUSSION OF RESULTS.....	64
6.1 Introduction	64
6.2 Research Question 1: Are the classic drivers of employee engagement valid for knowledge workers in the South African ICT environment?	64
6.2.1 Leadership style	66
6.2.2 Work-life balance	67
6.2.3 Opportunities for improvement of skills	67
6.2.4 Recognition and rewards.....	68
6.2.5 Work that is exciting and the organisation taking a keen interest in the well-being of its people	68
6.3 Research Question 2: Which drivers of engagement are relevant for knowledge workers in the South African ICT sector?	69
6.3.1 Leadership style	69
6.3.2 Teamwork.....	70
6.3.3 Problem solving	71
6.3.4 Communication and feedback	72
6.3.5 Learning.....	72
6.3.6 Rewards and recognition.....	73
6.3.7 Working hours	73

6.4 Research Question 3: Are the drivers of employee engagement that have been provided based on the level of work related to the employee’s current role?	74
6.5 Conclusion	76
CHAPTER 7: CONCLUSIONS AND RECOMMENDATIONS	78
7.1 Principal Conclusions	79
7.1.1 Research Question 1	79
7.1.2 Research Question 2	80
7.1.3 Research Question 3	81
7.2 Implications for management and other relevant stakeholders	81
7.3 Limitations of the research	82
7.4 Suggestions for future research	83
7.5 Conclusion	83
8. REFERENCE LIST	85
9. APENDICES	92
Appendix 1: Research Instrument	92
Appendix 2: Atlas.ti Codebook	94
Appendix 3: Consent letter	102
Appendix 4: Non-disclosure agreement	103
Appendix 5: Ethical clearance approval	107

LIST OF FIGURES

<i>Figure 1 - Outline of Research</i>	4
<i>Figure 2 - Summary of Myers-Briggs Dimensions of Preferences (Alexander & Pieterse, 2010)</i>	13
<i>Figure 3 - Number of Codes Created per Interview</i>	30
<i>Figure 4 - Overall Results for Research Question 1</i>	34
<i>Figure 5 - Respondent Tenure In ICT</i>	36
<i>Figure 6 - Role of Respondents (Management Levels)</i>	37
<i>Figure 7 - Overall Results for Research Question 2</i>	41
<i>Figure 8 - Common Characteristics of ICT Professionals</i>	42
<i>Figure 9 - Core Skills ICT Professionals Need</i>	46
<i>Figure 10 - Positive Influences on Employee Engagement</i>	49
<i>Figure 11 - Negative Influences on Employee Engagement</i>	54
<i>Figure 12 - Classic Drivers of Employee Engagement</i>	66
<i>Figure 13 - Relevant Drivers of Employee Engagement</i>	69
<i>Figure 14 - Driver of Employee Engagement from a Manager's Perspective</i>	75

LIST OF TABLES

<i>Table 1 - Summary of Skills ICT Professionals Need To Be Effective (Dubey & Tiwari, 2020)</i>	15
<i>Table 2 - Common Characteristics and Core Skills of ICT Professionals</i>	62
<i>Table 3 - Positive and Negative Influences on Employee Engagement</i>	62

CHAPTER 1: INTRODUCTION TO THE RESEARCH PROBLEM

1.1 Introduction

The value that the Information and Communications Technology (ICT) sector adds to business is explored in Information Technology Business Value (ITBV) research (Melville, Kraemer, & Gurbaxani, 2004). The ITBV model is used to analyse and understand the value that ICT brings to business and is built on the Resource Based View (RBV) of a firm (Melville et al., 2004). The amount of money that business spends on ICT has steadily increased over the years and it is likely to keep rising every year, which raises questions about whether the expenditure is justifiable (Shea, Dow, Chong, & Ngai, 2019). The value that ICT provides to the business is under scrutiny because of this.

Further to this model, the relationship between ICT and the performance of a business is well established and can be explained through production theory (Melville et al., 2004). Understanding the key constructs of production theory (inputs, processing and outputs) enables an observable and quantifiable view of the value that ICT creates (Melville et al., 2004). The value that ICT creates in this view is related to the linkages between the factors in the production process (Melville et al., 2004).

The Information Technology Business Value (ITBV) model used to analyse the impact of ICT on the performance of a firm takes the following into account when showing how ICT resources affect the performance of the organisation (Melville et al., 2004). ICT resources and non-ICT resources from other functions execute business processes which have metrics that measure performance (Melville et al., 2004). The execution of the business processes is objective and measurable, and can be shown as an effect on the performance of the organisation as a whole (Melville et al., 2004).

This demonstrates the link between ICT resources and the performance of the organisation and this in turn demonstrates the performance of these resources in relation to the overall performance of the organisation.

Most ICT resources are considered to be skilled mental labour (Reyt & Wiesenfeld, 2015). The ICT professionals that the study is focusing on are exclusively the skilled mental labour resources. The performance of these ICT resources is related to how engaged they are in their work and the research will aim to explore this (Bailey, Madden, Alfes, & Fletcher, 2017).

Although there is some research on employee engagement in South Africa undertaken by Alexander & Pieterse (2010), it has not been focused on the drivers of employee engagement specific to practicing ICT professionals. Taking into account the proliferation of mobile technologies such as cloud devices the investment in ICT will fundamentally have to change toward finding efficiencies with current hardware and focusing on creating the flexibility to adapt to business needs that cloud computing is offering (Karim & Soomro, 2020)

Taking into account the current National State of Disaster (NSD) brought about by the COVID-19 pandemic (Republic of South Africa, 2020b), and the forced remote working that businesses have had to employ to stay operational while complying with the regulation, the ability to work remotely and get high levels of productivity from employees will be important for businesses.

1.2 Research Problem

The link between employee engagement in an organisation, to its financial performance, is well researched and established (Schneider, Yost, Kropp, Kind, & Lam, 2018). The link between the performance of the organisation and the key resources involved from an ICT perspective has also been stated above using the ITBV model. This can be interpreted as that businesses must be aware of the fact that the performance of an employee is linked to how engaged they are in their work. Taking into account the remote working factor and that the business has to make sure that they get maximum productivity from employees as they have to invest in the increasingly mobile platforms such as cloud based computing (Karim & Soomro, 2020). Knowing this, the business must prioritise understanding the key levers that can be adjusted to influence the engagement levels of employees in the

ICT function as these employees could be the basis of their competitive advantage as they cannot easily be replicated (Anitha, 2014).

The business needs to understand employee engagement from the employee's own perspective, with the employee as the unit of analysis, and not from the organisational perspective as a whole (Anitha, 2014). This is what will allow the business to isolate the factors that influence the engagement of their employees so as to influence their engagement levels, this will lead to better business performance (Melville et al., 2004).

Because the ICT environment is technical in nature, ICT resources are likely to be knowledge workers as they are considered to be skilled mental labour (Reyt & Wiesenfeld, 2015). South Africa has a skills shortage in the IT services sector (BusinessTech, 2019). Having to extract the most value from the scarce resources present and retain them means that businesses will have to ensure these employees have high levels of employee engagement.

Understanding the concept of employee engagement within the South African context is imperative to evaluate whether the current literature on the concept, that is largely Western, is valid for the South African context. The study will also strive to deepen the understanding of employee engagement drivers in the South African context, specifically in the ICT environment.

Given that the world is moving towards a digital industrial age, commonly dubbed the Fourth Industrial Revolution (4IR) (Ayentimi & Burgess, 2019), remote working and mobile technologies are changing the resources allocation that is available in the ICT sector (Karim & Soomro, 2020; Reyt & Wiesenfeld, 2015). This has t understood for South Africa to adopt and benefit from the move to a digital industrial age.

The ICT industry, and department and/or function by extension, is a business enabling function. Most of the employees in the ICT industry are knowledge workers and are the focus of this study. Understanding what drives the

engagement of these employees should be a business priority as the relationship between employee engagement and business performance is well established.

1.3 Purpose Statement

The research aims to explore the factors that influence and drive the engagement of knowledge workers in the South African ICT environment. Business must use these factors as a tool to influence its performance of the business process execution, through the ICT function as a driver for overall organisational performance. The ITBV model discussed above clearly shows the relationship between ICT resources and the performance of the business.

Businesses have a chance to position themselves positively for the future by taking this as an opportunity to understand the mobile technologies as well as the factors around remote working, in an attempt to fine-tune their approach to a potentially new way of operating that may impact the profitability of the business. The government enforced regulation of working remotely has given business a chance to experiment with different factors related to getting more out of their employees while using more mobile technologies which optimise costs and may have some business benefit. The drivers that emerge as influential on engagement from an individual's point of view in the ICT environment will then be analysed and reported on.

The research is outlined in Figure 1 below. Chapter 2 explores the literature with regards to employee engagement in the ICT industry; Chapter 3 describes the research questions in detail; Chapter 4 outlines the research methodology followed; Chapter 5 presents the results of the study; Chapter 6 analyses the results and Chapter 7 concludes with research suggestions and opportunities.

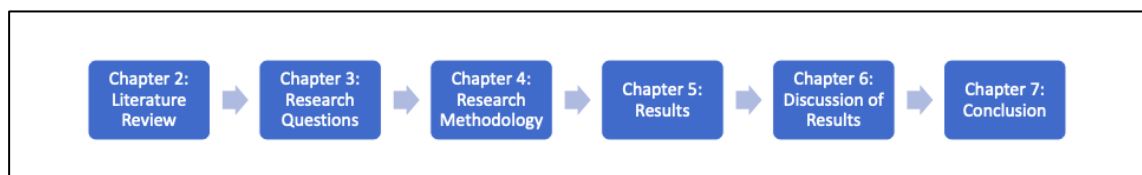


Figure 1 - Outline of Research

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The purpose of this chapter is to discuss the literature that already exists regarding the constructs within the research topic. These constructs are employee engagement and the drivers of employee engagement.

The literature review explores what is already known about the constructs and provides understanding regarding gaps in the literature that requires research. The constructs associated with employee engagement that are relevant to this study were also investigated. These constructs are knowledge workers, common characteristics of ICT professionals, core skills required for ICT professionals to be effective and remote working.

2.2 Existing literature regarding constructs

2.2.1 Employee Engagement

It was found that employee engagement is a term that is used interchangeably with personal engagement, role engagement, work engagement, and job engagement (Soane, 2013). Workforce engagement on the other hand has been found to be different from employee engagement, it is the sum of the engagement levels of all the individual employees in the organisation, meaning that its unit of analysis is the company and not the individual (Schneider et al., 2018). The research intends to explore employee engagement and not workforce engagement, keeping the unit of analysis the individual and not the organisation.

As far as engagement is concerned three types of employees have been found in the literature, namely, engaged, not engaged and actively disengaged (Anitha, 2014). Anitha (2014) explained that engaged employees dispense discretionary effort and have an attitude that tends towards pursuing excellence. Furthermore, employees who are not engaged only do as they are asked and do not share the

bigger picture with the organisation (Anitha, 2014). Employees who are actively disengaged are disruptive to other performing employees and generally do not perform well themselves (Anitha, 2014).

It has been found in many pieces of literature that employee engagement has been a topic for both academics and businesses since the early 1990s when it was first introduced by Kahn as behavioural theory on engagement (Anitha, 2014; Bailey et al., 2017; Guest, 2014; Saks & Gruman, 2014; Soane, 2013). Other theories concerned with employee engagement that followed were based in Work Burnout and Jobs Demands-Resources (JDR) theories respectively (Schneider et al., 2018).

Work burnout theories resulted from research focusing on the wellbeing of employees, which led researchers to develop a definition of employee engagement being the opposite of work burnout (Downey, van der Werff, Thomas, & Plaut, 2015; Vîrgă, Maricuțoiu, & Iancu, 2019). The JDR model was linked to the theory on burnout. The main argument in JDR theory was that high job demands, where there were more job demands than resources, could lead to burnout. Consequently having more resources than demands could lead to engagement (Guest, 2014; Schneider et al., 2018).

Although employee engagement was of interest to some academics before 2006, it only really gained momentum in 2006 when studies were conducted that extended the concept of employee engagement to include concepts such as job, work and organisation engagement (Anitha, 2014).

Employee engagement did not have a single, agreed definition and this was evident in the various definitions that were found in engagement literature (Albrecht, Bakker, Gruman, Macey, & Saks, 2015; Saks & Gruman, 2014). A review in the McLeod report, in Guest (2014), went through over 50 definitions for the concept of engagement, showing what a significant spread of definitions is available (Guest, 2014). This spread made it particularly difficult to narrow the meaning of employee engagement down to one particular definition.

As a result of the wide array of definitions available the research focused on two different schools of thought on employee engagement - one being behavioural theory and the other being work burnout and JDR theory. The first definition of employee engagement found in literature defined it from a behavioural theory perspective, whereas subsequent definitions were based on, and built onto JDR theory (Bailey et al., 2017; Guest, 2014).

A. Behavioural Theory of Engagement

The first school of thought the research explored was behavioural theory, which was championed by Khan. Khan's definition, in Guest (2014), of engagement was based on the behavioural model that he used to analyse the behaviours that were present in engaged employees (Guest, 2014).

The definition explained that engagement would manifest in a person immersing themselves in their work, to the point that they commit to their work mentally, physically and emotionally (Albrecht et al., 2015; Anitha, 2014; Bailey et al., 2017; Joseph, 2018; Saks & Gruman, 2014; Schneider et al., 2018; Soane, 2013; Vîrgă et al., 2019).

The behaviours that employees exhibit when engaged were observed when employees were emotionally invested in each other (Joseph, 2018). This speaks to the value of having the right culture in the organisation that allows for employees to connect with each other in such a way that they become emotionally invested in each other at the workplace. This emotional connectedness was also noticed when looking at the strength of the relationships that employees have with their superiors and peers (Joseph, 2018).

B. JDR Based Theory of Engagement

The second school of thought explored in this research was the JDR based theory of engagement. The research investigated attitudes based theory, built on JDR theory (Guest, 2014; Soane, 2013).

Schaufeli in Albrecht et al., Downey et al. and Guest (2015; 2015; 2014) defined engagement as a work related state of mind that is positive and fulfilling, known to have vigour, dedication and absorption. An employee is said to have vigour when they display a high willingness to overcome crucibles and display mental fortitude, even when they come across challenges (Albdour & Altarawneh, 2014; Guest, 2014; Soane, 2013; Tims, Bakker, & Xanthopoulou, 2011). An employee is said to have dedication when they show a sense of pride and enthusiasm towards their work (Albdour & Altarawneh, 2014; Guest, 2014; Soane, 2013; Tims et al., 2011). An employee displays absorption when they are fully attuned to, and focused on their work (Albdour & Altarawneh, 2014; Guest, 2014; Soane, 2013; Tims et al., 2011).

2.2.2 Key Drivers of Employee Engagement

There are a few key drivers of employee engagement that are aligned to different theories within employee engagement. What is consistent about the drivers in all the theories is that the more prevalent they are, the higher the chance of the organisation succeeding and performing well in the instance of those that are aligned with theories based on Khan's behavioural theory discussed earlier and this encouraged employees to stay longer in the organisation (Anitha, 2014; Schneider et al., 2018).

Researchers Guest and Joseph (2014; 2018) suggested that the following are drivers for employee engagement:

- Leadership style;
- Work-life balance (quality of life);

- Opportunities for improvement of skills;
- Recognition and management skills;
- Work that is exciting and the organisation taking a keen interest in the well-being of its people.

A. Leadership Style

There are three broad categories of leadership styles as stated by Bass, namely transactional, transformational and laissez-faire (Tims et al., 2011).

The transactional leadership style champions the concept of an exchange between the leader and the employee (Tims et al., 2011). This exchange encourages the feedback loop between leaders and employees as this is how expectations are set and rewards are communicated (Stock, Zacharias, & Schnellbaecher, 2017).

The transformational leadership style presents the idea of supporting the employee so that they can express themselves openly (Tims et al., 2011). Because employees feel like their views are considered it encourages them to generate and share new ideas and encourages them to do more than they are expected to while taking on more responsibility (Cummings & Worley, 2014; Stock et al., 2017).

The laissez-faire leadership style presents a very hands-off approach towards the employee (Tims et al., 2011). Because this leadership style does not provide the structure that employees may need to thrive, it leads to role ambiguity and unhealthy levels of conflict between co-workers (Tims et al., 2011).

B. Work-life balance

Work-life balance is made up of two different aspects, work and life, and is about the experiences of employees managing the balance between these two aspects (Kamenou, 2008). The life aspect of the balance includes family commitments and other responsibilities an individual may have that are not necessarily related to work (Parkes & Langford, 2008). The degree to which

employees can achieve balance between these two is a driver of employee engagement.

C. Opportunities for improvement of skills

Making opportunities available to employees for them to improve their skills was found to be a driver for employee engagement, it also shows employees that there is a level of care for them personally (Joseph, 2018). Because employees would feel cared for, they would then show higher levels of commitment and will be vested in the outcome of the work (Joseph, 2018).

Other drivers of employee engagement were found in the work of researchers Downey et al. and Schneider et al. (2015; 2018). They suggested that the practices within a company were a driver of engagement, and the company must work to build and maintain a positive view of the company to the employee. This positive view to the employee will influence their engagement positively and is aligned to attitudinal theory on employee engagement (Downey et al., 2015; Schneider et al., 2018).

It was found by the researchers that the levers that the company could use to influence the engagement in this setting are related to the resources available in four main areas, namely, organisation, interpersonal and social relations, as well as organisation of work and tasks (Schneider et al., 2018).

It was found that examples of the levers within the organisation area that could be used to affect employee engagement included how much money employees are paid, whether the job they have is under threat or not and whether they can build a career in that organisation (Schneider et al., 2018).

It was found through the literature that the levers within the interpersonal and social relations area that could be used to affect employee engagement were related to the kind of support that employees were afforded by not only their colleagues, but by whoever they report to (Downey et al., 2015; Guest, 2014; Schneider et al., 2018).

In the organisation of work area the levers that could be used to influence employee engagement included whether employees actually had the opportunity to participate in the decision making process and whether what is expected from them, in terms of their role, was clearly articulated and communicated to them (Schneider et al., 2018).

In further literature the drivers of employee engagement between the two different theories were brought together, suggesting that the drivers of employee engagement were not different depending on which theory of employee engagement was being discussed (Anitha, 2014; Kumar & Pansari, 2015). Additional drivers of employee engagement related to distributive and procedural justice as well as job characteristics and fit well (Anitha, 2014; Downey et al., 2015; Maslach, Schaufeli, & Leiter, 2001; Report & Africa, 2002).

It was found that distributive justice drives employee engagement by ensuring that allocation of rewards, resources and responsibilities are done on a fair basis for all concerned (Cook & Hegtvedt, 1983). Procedural justice drives employee engagement by having a set method and process for making decisions and ensuring that they are uniformly executed (Cropanzano, Prehar, & Chen, 2002).

It was found that job characteristics, such as what role the employee will play in the team and organisation, as well as the composition of their daily work and the variety embedded in it, have to be aligned with the capabilities of the employee (Maslach et al., 2001). It is the function of management through the different leadership styles, to ensure that job fit is appropriate as it is a driver of employee engagement. The amount identity of and variety, significance and autonomy in a job, as well as how the feedback loop is structured in the job made up the core dimensions of a job's characteristics (Birnbaum, Farh, & Wong, 1986).

2.2.3 Common characteristics of employees in ICT

Weckert and Adeney in Boughton (2013) suggested that an ICT professional is characterised by an individual with certain attitudes towards their work. These attitudes include making an effort to do their work to the best of their ability, actively looking for better ways to get it done and having a sense of pride in the quality of their work in general (Boughton, 2013).

These individuals usually have high levels of competence in their field, and sometimes in other fields as well, and hold ethics in high regards (Boughton, 2013). Although they don't make good team players or managers they perform well under pressure because of their love for challenges (Boughton, 2013). Their direct nature is not always conducive to team environments where diplomacy is required.

ICT teams that have diverse personalities within them have been seen as more effective in delivering outcomes than teams that are not diverse (Soomro et al., 2016). The Myers-Briggs Type Indicator (MBTI) has been the most frequently used tool in studies to classify personalities (Alexander & Pieterse, 2010). It classifies personalities using four bi-polar indicators of preferences individuals lean toward as shown in the figure below (Alexander & Pieterse, 2010). The different combinations of these preferences produced 16 different personality types (Alexander & Pieterse, 2010).

FACTOR LABEL	FACTOR	LEFT EXTREME	RIGHT EXTREME
Social Interaction	I/E	Introverted	Extraverted
Information Gathering	S/N	Sensing	iNtuitive
Decision Making	T/F	Thinking	Feeling
Work Style	J/P	Judging	Perceiving

Figure 2 - Summary of Myers-Briggs Dimensions of Preferences (Alexander & Pieterse, 2010)

Introverted individuals prefer to work in isolation and generally find socialising to be draining, while extraverted individuals prefer to work with other people and find social interaction to be stimulating (A. Johnston, K. Andersen, Davidge-Pitts, & Ostensen-Saunders, 2009; Alexander & Pieterse, 2010; Soomro et al., 2016).

Individuals who lean towards the sensing pole are more detail orientated, are more inclined to consider information that is backed by verifiable facts and look for tangible results (A. Johnston et al., 2009; Alexander & Pieterse, 2010).

Individuals who lean towards the intuitive pole are generally more imaginative while having a holistically inclined view, while seeing facts as contributing to other concepts and not an end in themselves (A. Johnston et al., 2009; Alexander & Pieterse, 2010).

Individuals who lean towards the thinking pole use logic and an objective lens to make their decisions, whereas individuals who lean towards the feeling pole use a subjective lens as well as personal values to make their decisions (A. Johnston et al., 2009; Alexander & Pieterse, 2010). Individuals who lean towards the judger pole work to minimise last minute stress by planning in advance which makes them inflexible and chase closure, while individuals who lean toward the perceiver pole are spontaneous, flexible and perform well in high pressure situations (A. Johnston et al., 2009; Alexander & Pieterse, 2010).

Research has shown that ICT professionals are likely to be of the personality types ISTJ and INTJ (A. Johnston et al., 2009; Alexander & Pieterse, 2010). In other words they are introverts who like to work in isolation, they can be sensing and intuitive. ICT professionals like to use logic and an objective lens to make their decisions and work to minimise last minute stress by planning in advance which makes them inflexible and chase closure. ICT professionals were also noted to have high levels of self-efficacy, which is the belief that an individual has in their ability to perform at a particular level that has a bearing on situations that affect their lives (Soomro et al., 2016).

2.2.4 Core skills required in ICT

The literature shows that the core skills that ICT professionals require are in the pursuit of employability, which for this study was taken to mean an individual's ability to get a job, keep it and get a different one if they so choose (Soomro et al., 2016). Dubey and Tiwari (2020) developed the table below to show the skills that ICT professionals need to be effective. The skills were grouped into personal, leadership, team and enterprising skills (Dubey & Tiwari, 2020).

Table 2 - Summary of Skills ICT Professionals Need To Be Effective (Dubey & Tiwari, 2020)

Personal Skill	Leadership Skill	Team Skill	Enterprising Skill
<ul style="list-style-type: none"> ● Ready to face challenges ● Inquisitiveness ● Result oriented ● Attention to details ● Ability to cope setback ● Diligent/Methodical ● Coping stress ● Ability to work under pressure ● Ability to apply knowledge ● Responsible ● Customer-oriented ● Professionalism in work ● Proactive ● Critical thinking ability ● Having ethics/honesty in work 	<ul style="list-style-type: none"> ● Self-Motivated ● Listen actively to others ● Ability to persuade / Negotiate ● Effective presentation skills ● Accepting compliment in a polite way ● Giving feedback in a constructive manner ● Ability to tackle unpleasant situation ● Share others feeling empathetically 	<ul style="list-style-type: none"> ● Etiquette ● Asking for assistance when required ● Learning ability / willingness to learn ● Respect for people ● Disciplined 	<ul style="list-style-type: none"> ● Being creative ● Entrepreneurship ● Innovative ● Able to work independently ● Competency in locating vital information

Soomro et al. (2016) added that knowledge sharing and providing mentorship to others in the team, as well as an individual understanding their role within the team were key skills that ICT professionals needed to have (Soomro et al., 2016).

2.2.5 Remote working

The literature showed that the proliferation of mobile technologies is allowing people to work remotely with greater ease and ability, as more tasks are executable without having to be in any particular place (Reyt & Wiesenfeld, 2015). These advances are enabling employees to work from home and other locations if there is no requirement to work from a particular space.

Remote working has been hugely enabled by the ability to work on mobile platforms such as cloud computing. One of the leaders providing cloud computing services defined cloud computing as providing computer services for users to consume, over the internet (Karim & Soomro, 2020). These cloud services are what business is leveraging to allow remote working to be effective.

Karim and Soomro (2020) made the point that remote working came with some positives and negatives. They discussed that the positives are mainly in the business case for the companies employing it. Businesses are able to manage operational costs downward while pushing for better efficiencies from their infrastructure and always having the option to scale the business, whether up or down, depending on the business's need (Karim & Soomro, 2020).

Reyt and Wiesenfel (2015) expanded on the negative factors and explained that the negative factors are linked to the social aspect of work and home life, as remote. Working for most during this period has meant working from home to adhere to the government regulations during the National State of Disaster (NSD) brought about by the COVID-19 pandemic. The blurring of the boundaries between social and professional life has led to these workers working more hours than they ordinarily would in an environment where it was separate (Reyt & Wiesenfeld, 2015).

2.2.6 Knowledge workers

As the research explained, knowledge work can be seen as work that is tightly linked to high levels and amounts of information and requires skilled mental labour to interpret, understand or transform the work (Reyt & Wiesenfeld, 2015; Straub & Karahanna, 1998). Given the context of the study being in South Africa, and the study being performed during the declared National State of Disaster (NSD) due to the size and spread of the COVID-19 outbreak (Republic of South Africa, 2020b), knowledge workers have been pushed to work remotely in order to adhere to the government regulations (Republic of South Africa, 2020a).

Research prior to the COVID-19 pandemic showed that mobile technologies have influenced a change in what is expected and demanded from knowledge workers (Reyt & Wiesenfeld, 2015). Because employees are able to access emails on their phones and wearable devices like smart watches as an example, they are essentially never really “off the clock”. This creates an environment where employees are working from everywhere and at all times of the day, even outside traditional working hours (Reyt & Wiesenfeld, 2015).

It is also stated by Anderson (2001) that knowledge workers are expected to have deep and specialised knowledge of their particular domains. This expertise and knowledge are developed initially by formal training that the workers have to go through to prove competence, once competence is established there is a stage of “hands-on” training that usually follows (Anderson, 2001; Boughton, 2013). The hands-on training usually means the employees are mentored to guide them towards the deeper levels of competence required for the job (Anderson, 2001; Boughton, 2013)

2.3 Research opportunities

Although employee engagement has been a topic of interest to, both business and academia since the early 1990s there are some areas that the research and literature have not yet explored.

Although there is a lot of literature that positions employee engagement as a driver of the performance of a company there is not a lot of literature understanding the drivers of company-level engagement drivers (Schneider et al., 2018). There is general agreement that the concepts of engagement with the unit of analysis being the company, and that of the unit of analysis being the individual, are different (Schneider et al., 2018). There is a shortage of research on the drivers of employee engagement with the company as the unit of analysis (Schneider et al., 2018).

Some of the known drivers of company-level engagement such as practices within the organisation, the support that supervisors provide and what kind of work

individuals are doing, are the same as the drivers for individual-level engagement which suggests that company-level engagement is an aggregation of the engagement levels of the individuals in it (Schneider et al., 2018).

The clarity of an organisation's purpose and its vision are factors that have not been explored for driving the engagement of the employees that work in that organisation (Albrecht et al., 2015). Employee engagement has been explored from a Human Resource Management (HRM) perspective as well, but the impact of these systems on employee engagement has not been explored (Albrecht et al., 2015).

The literature showed that understanding which leadership behaviours have an effect on the engagement of their followers is also an underdeveloped topic (Soane, 2013). Leadership behaviours should create a culture that encourages engagement from followers, however this is not verifiable as the research is limited.

The attitudes of employees have been shown to influence their engagement levels in attitudinal theory. There has been research into the effect that diversity practices have on employee attitudes and performance (Downey et al., 2015). The link between diversity practices and the engagement of employees however has not been explored sufficiently, even though the concepts have been linked since the beginning of employee engagement literature (Downey et al., 2015).

Employee engagement has been explored from a South African perspective by authors such as Rothmann & Rothmann Jr (2010), Shirin & Kleyn (2017) and Martins & Neinaber (2018). It has not however been explored from the perspective of the ICT sector in South Africa. More specifically the body of knowledge around the knowledge worker contingent of South African ICT sector employees has not been adequately covered.

The drivers of employee engagement for this group of individuals were important to understand as there may be a push toward remote work in the immediate future after businesses analyse the effect of remote work during the NSD imposed remote

working period. This combination of factors was what informed the need to undertake the specific research study

Although there has been research to understand what personality traits might be applicable to students taking on a wide range of ICT related courses (formal training) at universities in South Africa by authors Alexander & Pieterse (2010), there wasn't research that put together what personality traits may assist in driving the employee engagement levels of knowledge workers in the South African context.

2.4 Conclusion

Quantitative research that demonstrated that employee engagement is a predictor of the financial measures, Return on Assets (ROA) and Net Margin ratios, of the firm has already been conducted, and it showed that higher levels of engagement predict better measures of ROA and Net Margin ratios (Schneider et al., 2018).

Employee engagement has been shown to be a factor in employee performance, meaning that employees with a high level of engagement are more likely to have a higher level of performance (Anitha, 2014).

Employee engagement can be used as a basis for competitive advantage in the market, as the people element in an organisation cannot easily be replicated. It must therefore be considered to be the most valuable asset in the business and managed extremely well (Anitha, 2014; Saks & Gruman, 2014).

Although Kahn's initial research was qualitative, as stated in Schneider et al. (2018), to identify the effects in behaviour on being engaged (Schneider et al., 2018), there has been little qualitative research on what influences the engagement of knowledge workers in an ICT environment from the perspective of the employee, and that is the objective of this research.

Most of the research in this domain is largely western and not specific to a South African context. This is a consideration for the research that aims to understand what factors influence the employment engagement of a particular type of worker in a South African context.

CHAPTER 3: RESEARCH QUESTIONS

3.1 Introduction

The purpose of this chapter is to outline the questions that will attempt to investigate and refine the insights and findings from interviews regarding the research topic. The research topic explores the key drivers for employee engagement in knowledge workers, in the South African ICT environment. The research question consists of a main research question supported by two subsequent research questions.

The main research question is not addressed by the interviews. The intention is for this question to be addressed through the literature review. The supporting research questions will be addressed by the analysis of the insights gained from the interviews.

3.2 Main research question

Research Question 1: Are the classic drivers of employee engagement valid for knowledge workers in the South African CT environment?

The aim of this question is to explore whether the drivers of employee engagement as outlined by literature that is predominantly western (classic), are relevant to knowledge workers in the South African ICT industry.

3.3 Supporting research questions

Research Question 2: Which drivers of engagement are relevant for knowledge workers in the South African ICT sector?

The aim of this question is to understand what drivers of employee engagement are relevant in the South African ICT sector for knowledge workers. These drivers

will be solicited from the interviews. The interviewees will provide the drivers through the interviews that they feel are relevant and not relevant for them to be fully engaged.

Research Question 3: Are the drivers of employee engagement that have been provided based on the level of work related to the employee's current role?

After understanding which drivers for employee engagement are relevant to knowledge workers in the South African ICT industry, the question will be expanded to understand whether there are particular differences between the key drivers related to work levels, for managers and non-managers. Interviewees will provide the drivers for employee engagement from their most recent non-management role in comparison to the drivers in their current management role. Where the subject is not in a management role, distinction will be made between being in an entry level role/position in comparison to being in an intermediate level role/position.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 Choice of methodology

The paper used the qualitative study method, which offers flexibility and the ability to explore fairly complex ideas with subjects (Flick, 2012). The qualitative study method lends itself to an interpretivist, inductive inquiry using a mono-method technique for collecting data. Data was collected using in-depth, semi-structured interviews over digital platforms such as Microsoft Teams, Zoom, Google Meet, as well as face-to-face interviews. This was found to be the optimal method to investigate the topic and formulate findings through interviews.

4.2 Research philosophy

The research philosophy the paper followed is one of interpretivism. Interpretivism is a type of study that does not follow the scientific process of formulating falsifiable hypotheses, which can be tested on data from a set of observations (Williams, 2000). This method of study is very common in the human sciences (Williams, 2000).

4.3 Research approach

The research approach the paper followed is an inductive one. An inductive approach can be characterised by David Hume's suggestion that we often expect similar outcomes if the resulting action is the same (Gilboa & Schmeidler, 2003). Saunders and Lewis (1998) expand on this, stating that this builds generalisations about a wider population by observing and understanding a few cases in a representative sample of that population.

An inductive approach presupposes that the research is going to infer the findings from the interviews onto similar subjects that have not been interviewed as part of the process of the study but fit the population that the sample is drawn from.

4.4 Methodological choices

A mono-method research choice is one where only one technique will be used to collect data (Remenyi et al., 1998). This method was used in the collection of data from the identified respondents for study, using in-depth semi-structured interviews.

4.5 Purpose of research design

The purpose of the research design was to explore employee engagement and understand the influence it has in the context of South African knowledge workers, specifically ICT professionals. An explorative approach is a dialectic one as explained in Robinson and Kerr (2015). It means that the study would try and understand the subject's perspective through interpreting it against the current theory that exists, until there is a common understanding from both sides. The common understanding leads both sides to better understand each other's perspective, in the case of the research the theoretical basis is one side while the perspective of the subjects interviewed is the other.

4.6 Strategy

The research strategy used is that of semi-structured interviews. These were conducted with members of the target population to capture their perspective on what influences their engagement as employees in the technology sector, which was subsequently analysed. According to Saunders and Lewis (1998) using this interview strategy allows for exploration of the chosen topics with the subject by gaining an understanding of their experiences.

4.7 Time horizon

The time horizon of the research was cross-sectional. A cross-sectional research design is described as a design where data is collected from respondents at only one point in time (Remenyi et al., 1998). Interviews were conducted only once with subjects to understand their insights at the particular point in time when the interview happened.

4.8 Techniques and procedures

Data was collected using semi-structured interviews. This allowed the conversation to be guided toward a particular topic or theme, without prescribing questions that were required to be answered. This technique is valuable when exploring a topic or theme and it allows the subject to tell the story from their perspective and express whatever linkages they may find in their experiences (Remenyi et al., 1998).

4.9 Proposed research methodology and design

4.9.1 Population

The population of the study is formed by all the members in the entire universe that could be selected (MEXON & ANANDA KUMAR, 2020). The population in this specific study was individuals who work in ICT companies, ICT departments or ICT teams, in the Gauteng province of South Africa. They all have ICT related training or functions in these companies or teams, who are knowledge workers, at various levels of the organisation. The various levels provided triangulation that created validation of the data collected.

The study did not focus on any particular company or team; it rather focused on any individual from the defined population. However, it only looked at individuals working in the Gauteng province of South Africa. The engagement of these employees is the basis of this research study.

4.9.2 Unit of analysis

The unit of analysis was the perceptions of the knowledge workers in the ICT industry. This unit was appropriate because the analysis provided some insight into the factors that influence employee engagement in this particular industry, for this particular type of employee.

4.9.3 Sampling method and size

The sampling method the paper used is non-probability purposive sampling. This type of sampling used a set of criteria to isolate a specific type of subject in the population (Semon, Cohen, Richmond, & Stock, 1959). The criteria used were individuals working in the ICT ecosystem, who are knowledge workers and apply their trade in the Gauteng province of South Africa.

This non-probability method is also used when the entire population is not known, such that it cannot be listed in its entirety (Remenyi et al., 1998). Given the time constraints, the entire population of ICT professionals who are knowledge workers in the Gauteng province of South Africa could not be identified and given an equal chance at participating in the study.

The method is also purposive because the judgment of the researcher was used to choose respondents based on a set of criteria (Remenyi et al., 1998) as structured and explained above.

The research determines the area where the sample can be drawn from as the Gauteng province in South Africa. Within Gauteng the research was not prescriptive as to the respondents' company of employment. The requirement was that they be involved in the ICT industry, ICT department or work in an ICT team. The research area was thus wide in the context of the time available for the study. Although the area is wide, the prevalence of accessible ICT professionals was not very high. Additionally, the sample was stratified into non-management and

management employees. These were the two levels of employment that the research focused on.

The engagement process with the respondents was one-on-one interviews only, no group interviews or focus groups were conducted. The one-on-one interviews took on various forms using different digital platforms such as MS Teams, Zoom, Google Meet as well as face-to-face interviews.

An appropriate sample size is between twelve to thirty respondents for non-probability heterogeneous samples (Remenyi et al., 1998). To ensure that this sample size was reached, it was requested that the respondents refer the researcher to other individuals who fit the given criteria, who might be interested in participation. The above mentioned description refers to the process for non-probability purposive sampling (Semon et al., 1959). The final sample size consisted of thirteen respondents.

4.10 Pilot individual interview

Although pilot studies are generally used in quantitative research, they are also used in qualitative research to test the procedure and questions of an interview (Majid, Othman, Mohamad, Lim, & Yusof, 2017). In order to test the validity of the research questions in this qualitative study, a pilot interview was conducted with a respondent that met the sample selection criteria of the research study.

The intention of the pilot study was to verify that the questions gather the type of data intended for analysis by the researcher (Remenyi et al., 1998). The pilot interview highlighted the fact that the initial questions did not capture all the data that was required to meet the prescriptions of the research in terms of the themes or topics to be discussed in the paper.

The pilot interview provided the amount of improvisation that was required during the interview process (Majid et al., 2017) and allowed the questions to be adjusted before the interviews started (Remenyi et al., 1998). The amount of improvisation was limited to making sure that if a respondent addressed multiple themes or topics

in a single response, not to come back to them unless the researcher wanted to investigate the particular point further.

Going through the pilot interview process also allowed the researcher to determine the duration of the interview, to ensure that there was sufficient content to keep the respondent engaged for at least thirty five minutes and up to an hour in the interview.

The initial interview guide did not explore sufficient themes related to the research questions to keep the respondents fully engaged in the interview for the minimum expected time of thirty five minutes. This had to be adjusted to allow for a more holistic conversation that was guided towards the themes or topics that have been explored through the research.

4.11 Measurement instrument

The measurement instrument used was the interview guide that outlined the broad topics or themes that data was collected on. It is generally suggested that the interview guide should contain the broad concepts planned for discussion as well as some initial questions for each of the concepts (Remenyi et al., 1998). The interview guide contained some initial questions to get the conversation flowing, then branched out into questions that probed the themes and topics the researcher was aiming to collect data on.

The key themes and topics that the research aimed to collect data on were related to gaining the respondents' understanding regarding:

- Knowledge work
- ICT industry
- Employee engagement
- Factors that influence employee engagement

4.12 Data gathering process

The data gathering process included conducting individual interviews with identified employees. These interviews lasted for an estimated time of between thirty five and seventy five minutes each and were recorded and transcribed.

The structure of the interviews involved that the researcher asked a question or questions to the respondent, then asked follow-up questions to probe required information. The researcher also compiled a field note for each of the interviews to aid analysis, although with the majority of interviews happening over digital platforms the field notes proved to be ineffective.

4.13 Analysis approach

Data was analysed using a computer programme called Atlas.ti to identify any common themes in the responses. To prepare the data so that it was in a format usable by the computer programme it had to be transcribed first from the recorded interviews before being loaded into the computer programme.

The transcription of the interviews was completed through using a computer programme called Otter. It was further edited by a contracted transcriber to produce the transcript documents that were used in the Atlas.ti computer programme which analysed the transcripts focusing on recurrent themes.

The decision to conduct 13 interviews was qualified by the analysis showing that the topic was nearing saturation of ideas. This was demonstrated by the number of codes created for each consecutive transcript as it was analysed. The number of codes created per transcript are shown in the figure below.

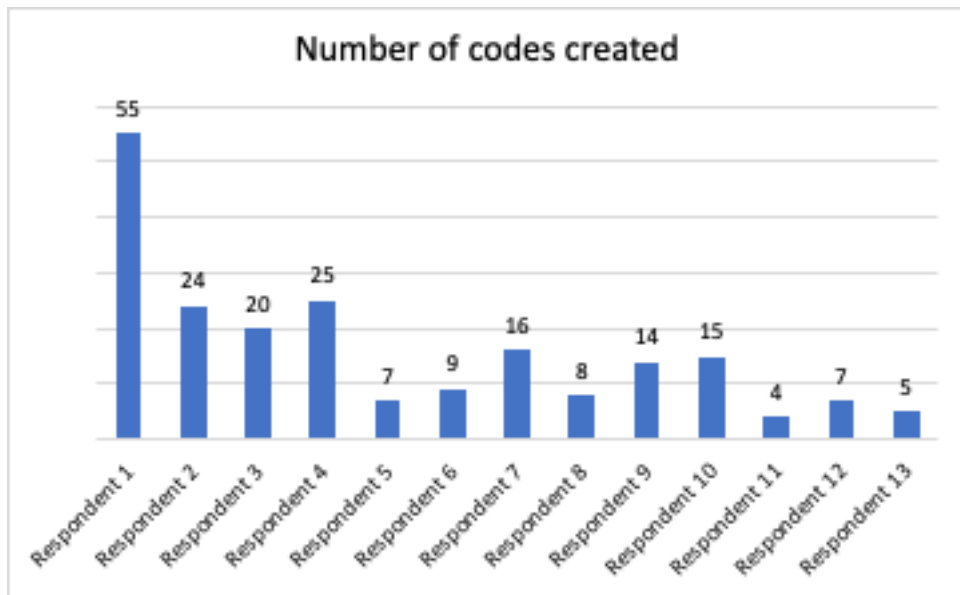


Figure 3 - Number of Codes Created per Interview

4.14 Quality controls

The researcher ensured the quality of data by using the same research instrument and consistent practice in terms of the interview technique, analysis and interpretation of the results produced by the analysis. These steps ensured validity and reliability of the data and results (Remenyi et al., 1998).

A digital tool as well as an independent individual for the transcribing of the interviews with the individuals that were selected using the chosen sampling technique was also used. A computer programme, namely Atlas.ti was used to analyse the responses to verify any trends in the responses.

This standardised approach of using the same research instrument, a transcription tool, an independent transcriber and a tool for the data analysis ensured that the quality of the analysis was consistent.

In summary, the quality controls were:

- Research instrument;
- Transcription programme;

- Independent transcriber and
- Data analysis programme.

4.15 Limitations

The research only looked at one particular industry to understand the phenomenon of employee engagement. There is an assumption made about the homogeneity of the cultures and contexts of each of the businesses where every respondent is employed, which may not be true.

Although not all employees in the ICT industry are knowledge workers, the study focused exclusively on the employees that are considered to be knowledge workers, those that are considered to be skilled mental labour.

Although the general level of education of knowledge workers is high, there may be some respondents who do not understand the concepts that were discussed, and this might have caused outliers in the data. This limitation was mitigated by offering a definition of employee engagement to the respondents and asking them to give an indication of whether it aligns with what they may have thought it was.

While the field of employee engagement has many different facets to it, the research aimed to look at a definition of engagement that is aligned to behavioural and attitudinal factors that drive engagement, relative to what the subjects in the interviews provide. Subjects may have provided factors that are neither attitudinal nor behavioural.

It was also considered that the amount of time the researcher had at their disposal to complete this study did not allow for the collection of data from more respondents at more varied businesses within the ICT sector. This would have lent some greater legitimacy to the outcomes the study has found.

CHAPTER 5: RESEARCH RESULTS

5.1 Introduction

The purpose of this chapter is to present the findings from the data collected from the interviews that were conducted. There were 13 interviews conducted with individuals who were selected using the parameters provided in Chapter 4, the research methodology, namely, ICT professionals in South Africa engaged in knowledge work.

The process of distilling insights from the data gathered followed a structured and predetermined process as stipulated in the chapter on research methodology. Data was collected using face-to-face interviews from 13 individuals. Following this the data was transcribed using a combination of a digital tool (Otter.ai) and the services of a transcriber. The transcripts were proofread and edited to ensure that they were suitable for analysis.

A digital tool called Atlas.ti was used for analysis and to code the transcripts. Once all the transcripts were successfully coded, a process of merging codes was started to ensure that all the relevant codes were meaningful. Once the coding was completed, the codes were grouped in accordance with the themes in each of the research questions. The code groups then informed the structure of the research results. The results were unpacked in detail and were grouped in terms of the research questions they are thematically aligned with.

5.2 Discussion of Research Question 1

Are the classic drivers of employee engagement valid for knowledge workers in the South African ICT environment?

This is the main research question, and it is concerned with the understanding whether the drivers of employee engagement in classic literature are relevant to the individuals who are the focus of this study. These individuals being knowledge

workers within the ICT industry in South Africa. This question is supported by two further questions that delve deeper into understanding different parts of this phenomenon of employee engagement in the particular setting the research is explored.

The approach that the research took in trying to understand this was asking the respondents questions that firstly confirmed that they met the criteria to be included in the study. This was checked by asking them what their occupation was, how long they had worked in the ICT sector (tenure) and if they were in a managerial role.

The respondents would then be presented with a definition of what employee engagement looks like from the theoretical perspective to establish a basis for the interview. They were invited to agree with or critique the definition provided to them and provide one of their own if they found the one provided to them lacking in any way.

Once that was concluded the respondents were asked how their own engagement levels were like currently at work and given a chance to expand on their answer. Additionally the respondents were asked if they thought that the drivers of employee engagement for ICT professionals were homogenous with other professionals and asked to elaborate on why they thought they were homogenous or not.

By gathering the answers to these questions the paper found insights. These insights were in the themes reflected in the figure below and are subsequently explained.

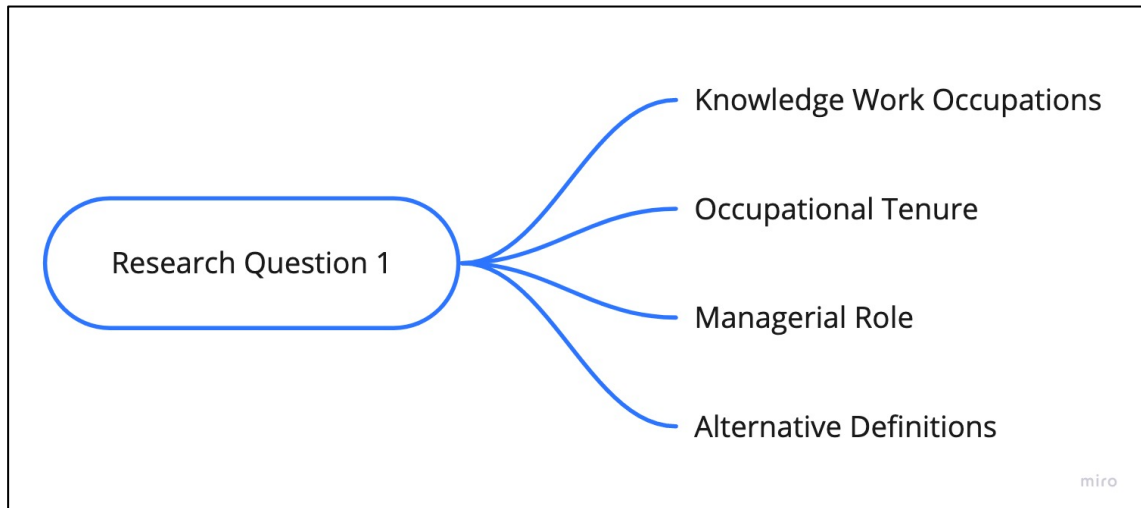


Figure 4 - Overall Results for Research Question 1

5.2.1 Knowledge work occupations – Information gathered that indicate that the respondents were indeed knowledge workers

The qualifying criteria for respondents to be eligible for the research was that they are knowledge workers within the ICT environment in South Africa. They were asked what their current role was as part of the interview questions to capture this detail. All of them turned out to be knowledge workers, although in an array of different roles. Some of these roles are listed below:

- Application Developer
- Technical Team Lead
- Principal Consultant
- Full-Stack Developer
- Business Intelligence Manager
- Business Analyst Team Lead
- Business Analyst
- Banking Technology Strategy
- Software Engineer
- Project Manager
- Management Consultant

These are all knowledge worker occupations as they are roles where the skill is a formally trained one that requires mental work and abstraction. Although formal training is required for all of these, the training was not all ICT related nor was it homogenous.

The respondents studied a variety of qualifications that qualified them as knowledge workers. Some of the qualifications they completed are listed below:

- Bachelor of Commerce (BCom) in Accounting and Information Systems
- BCom Honours in Information Science
- PhD in Microbiology
- Bachelor of Science (BSc) in Computer Engineering

Not all the respondents began their careers in the ICT sector. One in particular is a molecular biologist, holds a PhD in molecular biology, but ended up in the ICT sector.

Respondent 4: "I started out as a Molecular Biologist in academia and then I actually started out in training. My first job I trained people in Microsoft Office. I got my PhD and then went to train people in Microsoft Office and then I did Change Management. And out of that, I went into ICT in various forms".

5.2.2 Occupational Tenure – Information gathered that illustrates that the respondents are seasoned ICT Professionals

The respondents have varying levels of experience in the ICT sector and not all of them started their careers in the ICT industry. The figure below shows each respondent's number of years in the ICT Industry. There are some respondents that did not indicate how long they have been in the industry for and those are marked with "N/A".

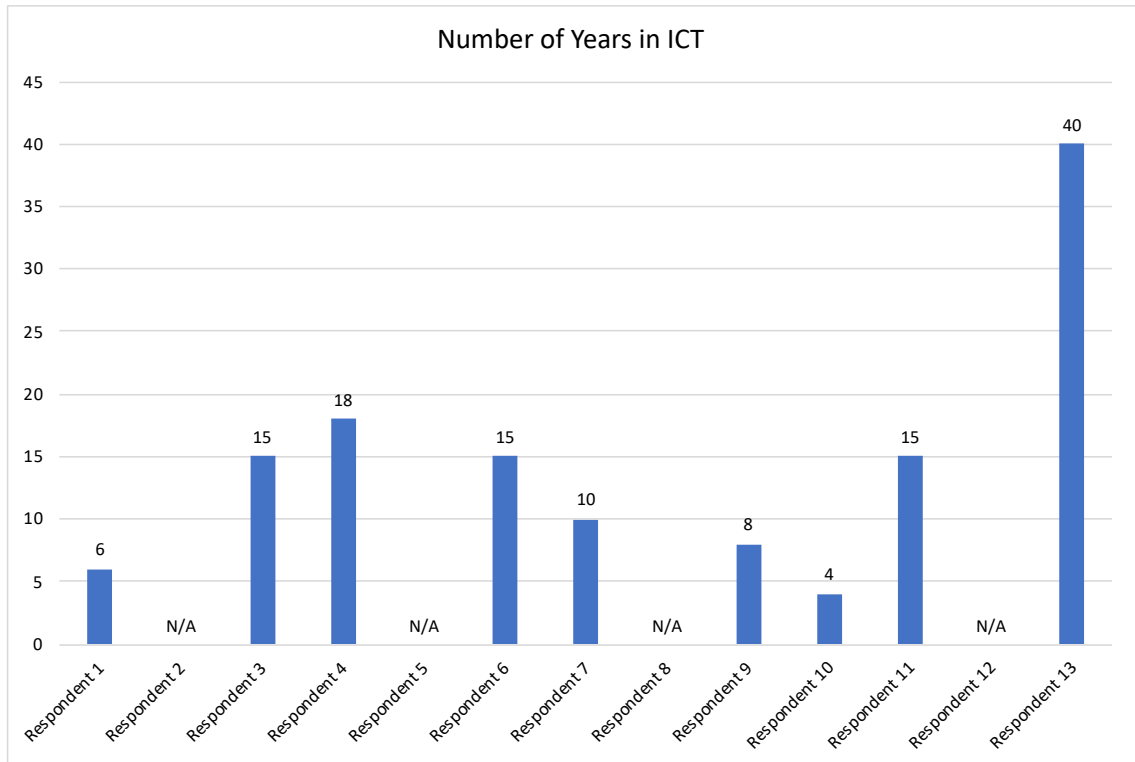


Figure 5 - Respondent Tenure In ICT

Respondent 13 in particular has been in the ICT industry for forty years. The forty years have been spent across different industries.

Respondent 13: *“So very early in my career, I started working firstly, in scientific engineering organizations, then after that, I grew up like most of us in the banks.”*

Respondent 13: *“I’ve been working in an education kind of environment for the latter part of my career. Designing learning management systems”*

This shows that the respondents are seasoned ICT professionals and are not only dabbling in the ICT sector as a passing fancy. The respondent with the least amount of experience has four years of post-graduation experience.

5.2.3 Managerial Role – Information gathered that illustrates that respondents were from managerial and non-managerial roles (including middle and hybrid managers)

The study attempted to include both managers and non-managers. There were a few respondents that were in either middle management or hybrid management roles as displayed on the figure below. This was interesting to note as it seems that the responsibility is given to employees to take on the role of management in an informal arrangement.

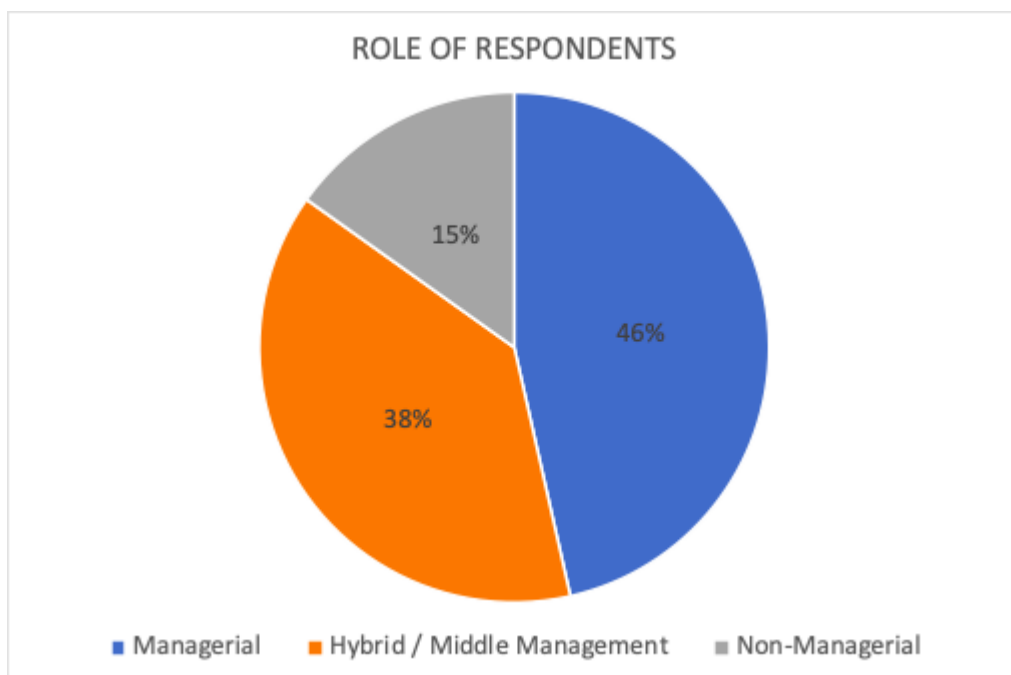


Figure 6 - Role of Respondents (Management Levels)

Respondent 5: *"I'm currently in kind of a hybrid role, where my company encourages continuous growth and has their own internal leadership programme. And so it's myself and two others on our team for the client that basically handle the responsibility of managing the day to day running of the team, between us, overseen by Delivery Manager who gives us feedback and guides us along that so it's kind of a semi managerial role".*

These hybrid roles were seen in scenarios where there were dotted reporting lines into the individuals who were then informally expected to manage the individuals who reported into them via the dotted line. They were also noted when technical leads, who are normally responsible for the design and implementation of a solution, were also informally responsible for the management of the team they work with or in.

5.2.4 Alternative definitions regarding engagement related to research question 1 – Greater productivity and discretionary energy

One of the limitations identified in the study was the possibility of some respondents in the interviews being unfamiliar with the concepts being discussed. The mitigation put in place was to offer a definition of what employee engagement looked like from the literature and observers. Most of the respondents accepted the definition provided to them without any need for further explanation. Some of the respondents offered their own definitions or variations to the one provided.

The definition provided highlighted that employee engagement manifests in certain behaviours and attitudes that cause an individual to be immersed in their work and show a deep commitment on a physical, emotional and mental level. It also highlighted the fact that individuals would show willingness to overcome difficult situations at work and show high levels of mental fortitude while at work. Respondent 1 referred to engagement as an agreement as can be seen from the excerpt from the interview below.

Respondent 1: “an agreement between myself and the employer. And within that agreement, the employer puts something on the table that satisfies me to put in the work that results in greater productivity and greater results”.

One of the definitions provided by the respondents is mostly in line with the definition provided. The greater productivity and increased results are as a result of a willingness to overcome obstacles and to gain a deep commitment to work. This

shows that this respondent's definition of employee engagement is in line with the definition provided.

Another respondent echoed this sentiment of employee engagement being evident in greater productivity. They agreed with the idea of commitment from the employee to go to certain lengths to achieve set objectives for the business and occasionally going over and above the call of duty to achieve the set objectives.

Another variation that is in line with greater productivity is related to making sure that employees are satisfied with the level of work that they are doing on a daily basis and whether the level of challenges they face are acceptable to them or not. When all these are aligned then the employee would feel engaged and thus produce higher levels of productivity than if they were not satisfied with the work they were doing, or the challenges were either too simplified or too complex for them.

Another definition from the respondents highlighted the additional effort that engaged employees put into their work.

Respondent 8: "I think it's also got to do with discretionary energy. What do I use my discretionary energy for? Because it's my energy, so do I redirect it? If I'm engaged, you certainly will get that portion of discretionary energy".

The discretionary energy or effort that the employee gives to the work is a sign of engagement. It shows that they are willing to go above and beyond what is expected of them to overcome obstacles in their work environment. This concept of discretionary energy came up during the interviews with some respondents as they felt that if they were incentivised correctly and the management style in the organisation was appropriate, they would expend a lot more of their energy willingly to solve problems and go beyond the call of duty at work. This is perfectly illustrated with the quotation below:

Respondent 10: "A lot of people, a lot of companies are just like, 'Oh just do your job', but like, when you engage when you have sessions, where you

engage with leadership of the company and they show you the vision, they share the values, then you become more inclined, coz you feel like you're part of the decision making as well”.

The employee would only give what is required of them in terms of the agreed metrics. If effort is measured in hours per week for example, then they would expend only the agreed number of hours a week. If there is a task that requires attention and they have met their obligation hour-wise for the week, then that task would be looked at next week.

One of the outliers that the paper found interesting was a definition offered by respondent 13, of employee engagement as the result of management intent.

Respondent 13: “Is the intent of management to make you, Kudzani, work your backside off, so that I can get a product that will deliver something or is my intent as a manager to make sure that you are being cared for within the organization and that you're given growth opportunities. Care and growth is always valuable everywhere...”.

5.3 Discussion of Research Question 2

Which drivers of engagement are relevant for knowledge workers in the South African ICT sector?

The aim of this question is to understand which drivers of employee engagement are relevant in the South African ICT sector for knowledge workers. These drivers were solicited from the respondents. To gather this information the respondents were asked questions regarding whether they felt that ICT professionals had a common set of characteristics, and if they felt that they did share some common characteristics, what they were.

The respondents were asked if they felt that there are particular skills that are core to ICT professionals, and again were asked what they felt those were. Further to

that they were asked to discuss any factors they felt had an effect, either positive or negative on their engagement and motivation levels. This could be presented in the form of practices in the business, the culture of the organisation or any other facet of their general work life.

The figure below shows an outline of the key themes that surfaced during the analysis of the responses.



Figure 7 - Overall Results for Research Question 2

5.3.1 Common Characteristics of ICT Professionals

The respondents were asked if they thought that ICT professionals shared any common characteristics that distinguished them from other professionals. The majority of them admitted that ICT professionals do share some common characteristics that make them different to other professionals.

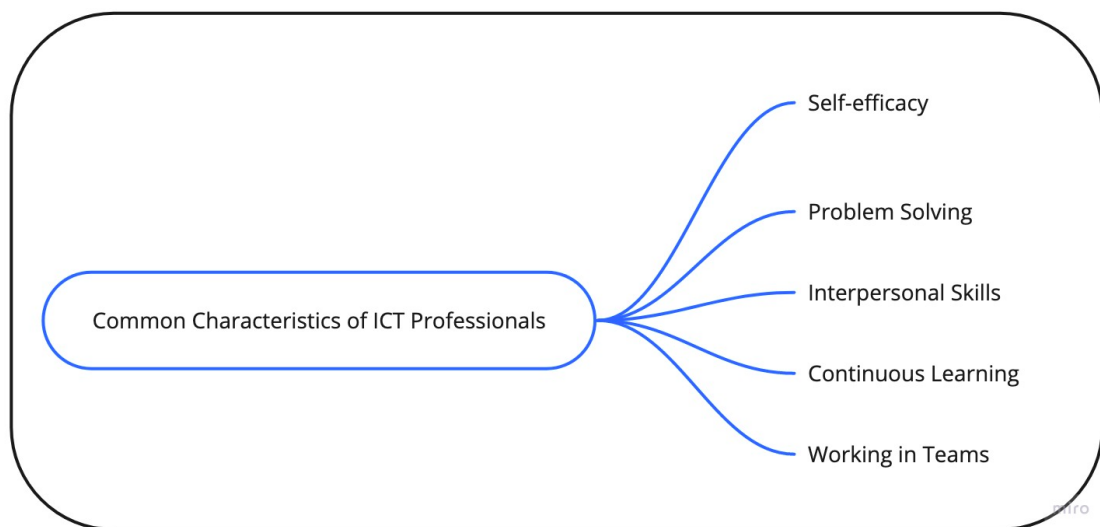


Figure 8 - Common Characteristics of ICT Professionals

Respondent 5: *“I think people in the ICT sector fall more towards the mastery and the technical motivators in general but you will still find people that are motivated by, by the money; by the accolades; by the job titles, etc. But I do think that there will be that divide because it's a more technical industry, you will find more technically inclined guys, or, or people more interested in nuts and bolts motivated in that way”.*

A. Self-efficacy and self-drive

From the analysis the strongest characteristic that ICT professionals share is a high level of self-efficacy and self-drive. Most of the respondents expressed the fact that they have the ability to self-motivate and push themselves forward even if circumstances are unclear. They thrive to

achieve the stated common goals even if others are not necessarily pulling their weight.

Respondent 2: *"I am trying to work towards the achievement of organization objectives and goals but nonetheless, I also just to a certain extent, hold myself to a higher standard so I'm self-motivated extendedly well. So yeah, I think that's really one of the other things in there is my own set of standards and my own personal goals in terms of where I want to be and what it is I actually want to achieve".*

B. Problem solving ability

Another strongly represented characteristic is the ICT professional's ability to solve problems.

Respondent 6: *"because I'm in IT, we definitely sort of are problem solvers. So solving an intricate problem is probably the most amazing feeling with anything. So it's sort of really coming in and having that situation where this was the problem and this is how we fixed it. And explaining that to somebody, even if they can, they don't understand all the concepts but going through the motions of kind of saying, well this is how I figured it out. Now, these puzzle pieces that have come together to give you the entire picture. That little logical flow and having that structure and figuring it out at the end, which again, benefits the people, benefits the customers, benefits the people inside. That's a really, really big thing for me".*

This feeling of achievement and coming across a problem and going through the motions of finding a solution to it, then successfully implementing the solution is something that most of the respondents expressed as a common characteristic that they feel ICT professionals have.

C. Interpersonal skills

Although ICT professionals are often seen to lack interpersonal and communication skills. This is another strong theme from the respondents.

One of them even suggested that not being able to communicate effectively can be taken as a negative characteristic from the perspective of some ICT professionals.

Respondent 11: *“And sometimes we know of a better way and we just need to be able to communicate that better. So probably communication is a thing we in IT need to learn to, or we need to be cognisant of it. Some people can describe an idea in a way that even the layperson can follow and understand. Others, they kind of thrive upon the ‘nobody understands me that makes me seem smart’ kind of thing, right. We need to get rid of that image in IT”.*

They also point out that the notion that knowledge workers have no interpersonal skills is an undesirable trait and stereotype that needs to be managed by ICT professionals.

D. Continuous Learning

Another common characteristic for ICT professionals is their willingness to learn new things. This is the product of ICT being an ever evolving landscape where new technologies are coming out all the time, and if one does not learn the new technologies and techniques, they lose relevance fairly quickly.

Respondent 10: *“ICT people always want to learn, they're always pushing forward, what is the technology? What is going on? So I think that's a very big difference compared to us, then maybe people who are doing nursing or being pharmacists, doctors, maybe scientists would be the same with us. Coz there's always new technology, there's always a new language to learn. There's always a different platform. Now there's cloud services and everything is on the cloud, you know, so I'd say that, that is the fundamental difference between ICT people and the rest of the professions”.*

The ICT industry is always developing and it is never stagnant. Knowledge is forever being created and transferred and it is something that ICT

professionals find exciting, which is a distinguishing factor between them and other professionals.

E. Ability to work in teams

The last strongly represented common characteristic of ICT professionals is the ability to work in teams. Projects are hardly ever delivered in isolation, there is always a need to connect with other individuals, or at the very least with the client who needs the work done, whether it is internal to the business (IT department) or external to the business (consultancy).

Respondent 1: *“Because in IT, teamwork is quite a big thing. Because you all need to collaborate with each other in order to deliver this big monster or this monster that you have on the table. Without that teamwork, I think it's going to be very difficult”.*

5.3.2 Core skills required by ICT professionals

The respondents were asked if they thought that ICT professionals had a set of core skills that they used in order for them to be effective. There were six strong themes that emerged from the answers they gave which are displayed in the figure below.

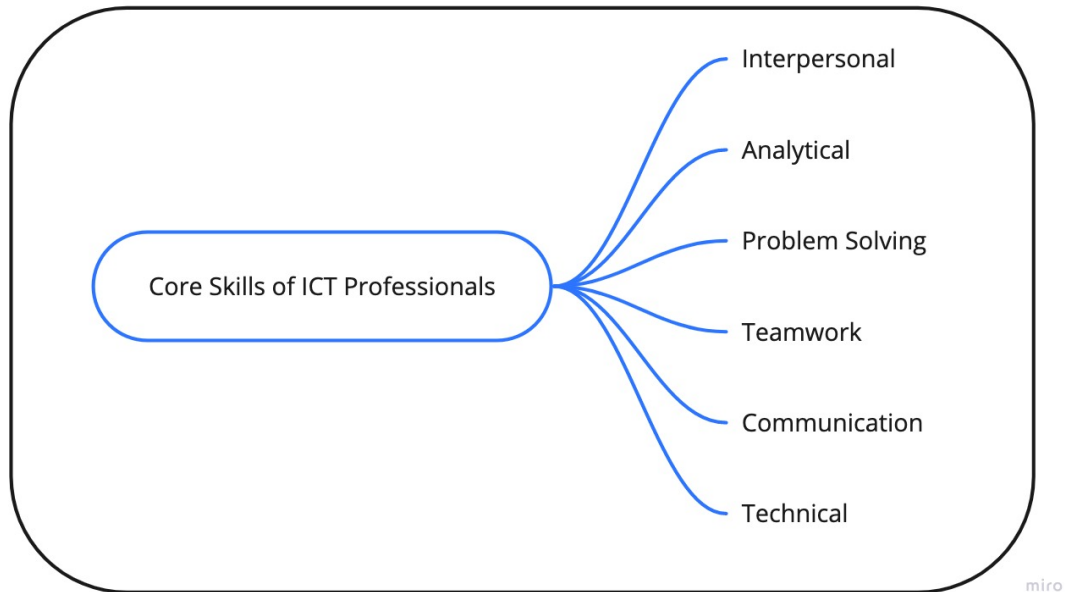


Figure 9 - Core Skills ICT Professionals Need

A. Interpersonal skills

The first core skill that the respondents thought that ICT professionals need to be effective is interpersonal skills. These skills are used in multiple scenarios. ICT professionals generally work in teams, one such scenario is making sure that you have the ability to connect with and be approachable to your team members. For teams to work efficiently the team members have to be able to collaborate with each other and having a teammate who is not open or approachable makes it difficult for the team to function.

Respondent 6: *“I find from the IT perspective, you have to have so many people skills to sort of be able to work nowadays. And historically, that was never really what the IT guys were built to do. But yeah, it becomes a very, very important factor about building relationships”.*

The ability to build relationships is based on one’s ability to connect with people. The people skills that were previously not expected of ICT professionals before have since become important as ICT has become critical to business through the digital age. The closer ICT is kept in the business, the more this skill will be required to get maximum value to the

business. Interpersonal and communication skills are important for ICT professionals to become a strategically valued business partner.

B. Analytical skills

The second core skill that the respondents thought that ICT professionals need to be effective is being analytical.

Respondent 4: *"I think analytical skills, obviously the ability to break down a problem to understand what's really happening, not what appears to happen".*

From the research it can be seen that the ability to systematically approach a problem and map it out is a useful skill in the ICT environment. For a problem to be correctly defined to begin with is the best place to start the problem solving process, which is what ICT professionals do a lot of.

Having to build solutions that do not address the underlying problem is highly undesirable, understanding the core problem is a skill that ICT professionals need.

C. Problem solving skills

The ability to solve problems is a skill that is closely linked with the ability to deeply analyse. This too surfaced strongly from the interviews as they felt that solving problems is core to the work that they do and follows from having analytical thinking skills.

Respondent 5: *"you're expected to, to break down quite complex, vague problems into more understandable, crunchy bits that can be, can be processed long. So I do believe I have a very strong ability to, to map out problems and to come up with solutions for them".*

D. Ability to work in teams

From the research it can be seen that teamwork is a big part of working in the ICT sector and ICT is generally an enabler for business, communication skills follow closely from the interpersonal skills that have already been

discussed. The different roles naturally have different needs, for example an analyst may need to be able to be the intermediary between a technical team and the business. Those communication skills will have to be developed as they become necessary as the employee's role develops from entry level to managerial.

Respondent 13: *"We have to be able to talk succinctly and convey a message and understand each other. I think that's a profoundly important skill. And I think that is a skill that many people in the ICT sector actually struggle with because they're good at writing code; they're good at communicating with computers. But over the years, we have stopped learning how to communicate with each other in a compassionate, caring, productive manner"*.

E. Communication skills

The ability to communicate effectively is not something that ICT professionals are known for. They are known to be able to communicate effectively with machines and not people, and that stereotype will need to change.

Followed by the ability to communicate effectively is the ability to share knowledge. This is a skill that is cultivated and coveted in the ICT space. The sharing of knowledge does not have to be restricted to any particular forum or type of knowledge. It can vary from producing white papers on something from the sector or sharing how to solve a particular type of problem with colleagues.

Respondent 11: *"A lot of companies say they tried it but my company's actually kind of done it in the best fashion that I've seen in my career. We do this thing where every Thursday or every other Thursday someone will host what we call a 'Think Tank Thursday'.*

And this is a session where you can talk about anything. It doesn't have to be IT or digital or anything like that, we've had one about conversational skills. But basically, it's a session that you hold or attend and somebody can

give you a really deep dive into something new or something that is interesting and fascinating to them with the idea that it can enrich you as an employee but also as a person. I've hosted a couple myself for the company and it's a fulfilling thing".

F. Technical ability

The last core skill that the respondents identified is technical ability. ICT is a technical field and the ability to muster technical concepts and technologies will certainly put ICT professionals in good stead.

Being technical would mean that if new technologies are developed ICT professionals should be able to adopt it by understanding what their intended purpose is and being able to abstract how it can be applied from a technical point of view to build solutions that solve problems.

5.3.3 Positive Influences of Employee Engagement

The respondents were asked questions to elicit what factors would positively influence their employee engagement levels at work. There were some main themes that emerged from the analysis and they are shown in the figure below and discussed.

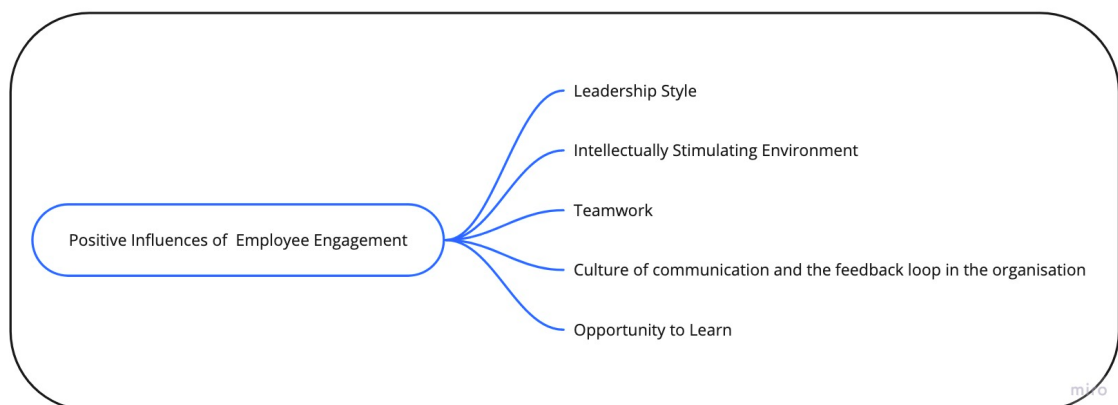


Figure 10 - Positive Influences on Employee Engagement

A. Leadership style

From the analysis is visible that one of the main themes was the leadership style in the organisation. Managers who show high levels of emotional intelligence, trust in the abilities of the team they manage and handle them with empathy created the right kind of environment for employees to feel engaged. These managers take an active interest in the wellbeing of their teams by understanding their personal circumstances and create an empowered environment where access to information and resources is not restricted within the team. They also keep themselves open to give and receive feedback.

Respondent 13: *“the trick there is to show consistent interest in what everybody is doing, even if it's just checking in on somebody every day and say, how are you doing? How are you feeling? Are you lonely? Do we need to talk about this? And because unfortunately and by working from home, can be a very lonely experience for many people. Create intellectual rewards for people. If they work on something, don't just fling them into a team's meeting and then expect of them to feel as if they've done something awesome but as a manager to take the time to deal with either individuals or with groups. And to go through their work and to give them professional rewards for what they've done”.*

The right style of management also ensures that employees are shown appreciation for their input even if it is during the normal run of business and not necessarily some extraordinary feat they have achieved. It shows that management is attuned to the performance of the team and sees where effort has been exerted even if it is not reflected in the amount of time it took to perform the tasks.

B. Intellectually stimulating environment

The second theme that was identified in terms of factors that positively influence employee engagement is working in a stimulating environment that has intellectually challenging problems to solve. These challenges must

be of a suitable level because if they are too challenging or not challenging enough, they have an adverse instead of a positive effect.

Respondent 1: *“you know what, when you're dealing with a complex problem and you're busy trying to put the solution together in your head, then you get that eureka moment. That's when you like start jumping up and down because you just want to put it in motion. So think about that eureka moment. When you have a complex problem and you're trying to get a solution for it then all the dots connect, like from there I'm buzzing like I can work throughout the night”*.

The engagement influence of the intellectual pleasure of solving a problem supersedes the influence of paying employees more money. One respondent pointed out the fact that they would be willing to take less pay if their job gave them intellectual stimulation.

C. Teamwork

The third theme that was identified was that of teamwork and collaboration. The right culture in the team is vital for collaboration to have a positive effect as the team cannot achieve much if they are not working towards the same direction. The calibre of people in the team is a factor in terms of the team being productive and the people in it feeling like they can achieve great things together.

Respondent 4: *“the right amount of time and I've got the right people and I'm talking about attitude skills, as long as they got the attitude to learn, you can, we can do amazing things”*.

Respondent 12: *“So when I come out with the answer, it's not my answer, it's a combination of things I will trigger. I will ask the questions. But at the end of the day, what I come out with is not my solution. It's different views from different people that I deem relevant at the time for the answers that I'll*

need. So I'm not a loner, I'm not a person who wants to show how smart I am by bringing you this brilliant thing that I did in my bedroom, type of thing”.

D. Culture of communication and the feedback loop in the organisation

Another strong theme that has emerged as a positive influence on employee engagement is the culture of communication and the feedback loop in the business. Employees want to see management having a relationship with general employees in terms of communicating with them and being open to feedback, even if the communication is not strictly about work. The idea is that there must be a culture of open communication throughout the business and at all levels. Ideas should be able to flow from the bottom of the organisation to the very top, and there should be a short distance for the flow of ideas.

Respondent 6: “So even though we are a larger organization, it's relatively easy for me to have a conversation with some of the guys right on top. If you ask if you find out sort of who you need to speak to. The fact that the guy's right on top or the men women that are on top of the organization are approachable number one comes into play”.

E. Opportunity to learn

Another strong theme that came up in the analysis as having a positive influence on employee engagement is the opportunity to learn. The opportunity to learn things on the job, both through experience as well as formal training is something that is very attractive to ICT professionals. The high levels of intellectual curiosity that they have lends them to continually wanting to learn new things, using the analytical and problem solving skills that were mentioned earlier in the paper. After learning new things they often want to share these with their peers who share the intellectual curiosity.

Respondent 4: *“there's also a big element of intellectual curiosity. Okay, how does it work? What is cloud? What is it made up of? What does it really mean? And learning, I think there's a lot of, there's always a lot of satisfaction in learning new things. And it's always been a very satisfying path, but I think it's the learning as well.”*

Respondent 3: *“giving mentoring and guiding team members to achieving their goals as well and growing people”.*

There is also a definite drive in ICT professionals to learn new things, which even extends outside the role they should be playing in the organisation. They will actively seek out different challenges or pick up new skills in an attempt to continually learn new things.

The analysis and discussion of the main themes show the factors that positively influence the employee engagement levels of ICT professionals in South Africa.

5.3.4 Negative influences of employee engagement

The respondents were asked questions to elicit what factors would negatively influence their employee engagement levels at work. A number of main themes emerged from the analysis, these are displayed in the figure below and discussed.

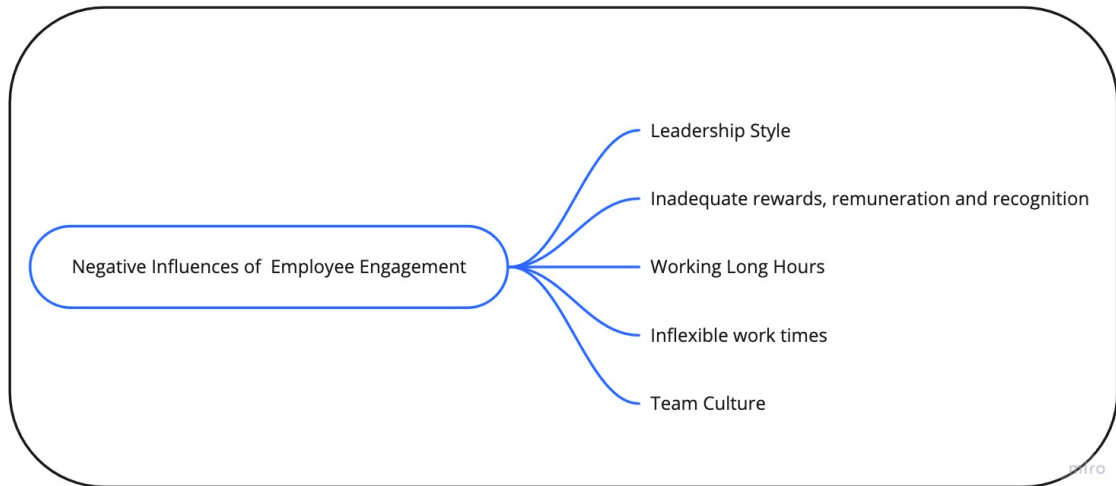


Figure 11 - Negative Influences on Employee Engagement

A. Leadership style

Leadership style can both be a positive and a negative influence on employee engagement. Micromanaging as a practice reduces the engagement levels of employees as they feel that they are being policed and are not trusted to perform without someone over their shoulder telling them what to do.

The disconnect could actually be an individual who is not one with the culture of the organisation who micromanages, but the effects on employee engagement led to much bigger effects.

Respondent 1: *“it's not actually the company that needs to change the micromanaging, it's this actual manager that just needs to change. Because the company itself, it doesn't embrace micromanagement, as they always say, you know what, we all adults, we know how to meet deadlines. Let's do our thing”.*

Another approach in undesirable management practices that has a negative effect on employee engagement is the idea that 'head office knows best' in Multi-National Entities (MNEs). Employees in the non-head office locations,

known as hubs, find that their ideas are quashed and are met with this notion that head office knows what's best for the business, even though the operating environment may be different and carry other applicable skills and knowledge.

Another disconnect with managers is them using formal power to force employees to do certain things as opposed to reasoning with them and empowering them. The effect of this drives down employee engagement levels.

Respondent 12: *“What's an issue for me is not people driven by positions and the reason I'm able to identify that the manager I work for now is not like that is because a lot of people are like that. So I mean, people have to show you that I'm in this position, type of thing in their responses and the way they engage with people, some of them would do that”.*

B. Inadequate rewards, remuneration and recognition

Another main theme that was identified in the analysis as having a negative influence on employee engagement is inadequate rewards, remuneration and recognition in the organisation. From a remuneration point of view not having employee benefits such as medical aid and pension or provident fund contributions has a negative effect on employee engagement. This was not only linked to the benefits part of remuneration but the cash contribution of it as well.

Respondents felt they needed some form of recognition for their achievements or high levels of performance in order to keep the standards above average, and the lack of this recognition they found to have a negative influence on employee engagement levels.

Respondent 7: *“There are other people that I look at and I can see that they're extending themselves beyond but then they don't get the same level of recognition and I can't speak to whatever the reasons may be. But in*

those particular situations, I do see people getting demoralised and demotivated and then eventually, if they stick around long enough, they also stop doing more than they should, they'll just do the bare minimum. And when we have failures, they don't care as much because they feel, oh well I did my bit. Now, if Person B didn't do what he was supposed to do, that's his problem type thing".

C. Working long hours

Working long hours is another main theme that was identified as a factor that negatively influenced employee engagement levels. Working long hours seems to be something employees in the ICT space have to do in order to satisfy client or customer needs and it does not feel like a choice that employees make, rather one that is predetermined and part of the job.

A secondary issue from working extended hours inked up to the remuneration theme above. Employees felt that they do not get fairly compensated for working extended hours when it is required.

Respondent 1: *"it's not something that we're in control of because it's just driven by what the clients need at that point in time. So it's a phased kind of thing".*

Respondent 6: *"So it's just chasing constantly and never getting to a goal and never getting to a finish line where you can have that breather. So constantly just sort of being underwater the entire time is great for the short term, terrible for the long term".*

D. Inflexible work time

A theme that tied into the amount of time employees spend at work that was identified was the idea of the standard workday being eight hours and productivity being tracked according to it. This idea of a fixed amount of time for every day according to some respondents has a negative influence on

employee engagement levels. Applying some current thinking to this age-old idea of a standard eight hour day could see higher productivity levels from ICT professionals.

Respondent 5: *“Within like the ICT space and in general ICT in particular, no one operates at that top level for eight hours a day. So it does seem that I do get, I do have that like long standing feeling that having that arbitrary eight hour limit because it's just been the classic since the 1930s before computers existed isn't the most ideal. I think people could get a lot more out if they're doing that push for five, six hours a day working at their ideal limit and then having that extra time after because I think the way people work and the way the work world has shifted in the last ninety years has moved way beyond what those hours were there to entail and what can actually get done in those hours, people working a lot harder and a lot more efficiently than they were ninety years ago. But they're still expected to do the same hours so it's just squeezing, squeezing more out of people, essentially, when you're not getting that perfect amount of work or that optimal work out of people, I think there could be an argument to lower the hours or do the four day work week in the industry in general”.*

E. Team culture

The team culture is a factor that came through strongly as well as having a negative influence on employee engagement levels of the respondents. Because of the project orientated nature of the work, having people working in small teams that do not get to interact with each other leads to feelings of isolation from the rest of the business.

Having people within the team who have no appreciation for the bigger goal that the team is trying to achieve is another sign that the team culture is unhealthy and causes other employees within the team to experience lower levels of employee engagement.

Respondent 8: *“when individuals are self-centred and looking out for their own interests in a team setup, same bank employees but different needs or requirements or KPIs that different people have to meet. So then what then happens is that they will pull apart in the same team”.*

The above themes analysed and discussed the factors that negatively affected the employee engagement levels of ICT professionals in South Africa.

5.4 Remote Working – Positive and Negative Effects

When addressing the factors that influence the employee engagement factors of ICT professionals in South Africa the study aimed to take into account factors that are both positive and negative pertaining to remote working. A great percentage of ICT professionals have had to work remotely during the current national state of disaster in South Africa brought about by the novel Coronavirus (COVID-19). Respondents were asked questions to elicit how they felt, if at all they were affected by having to work remotely and how this has impacted employee engagement.

The respondents were asked if they had the opportunity to work remotely before the COVID-19 pandemic. This was then followed by if they work remotely now during the pandemic and what the effects of that are.

Remote working was not something that employees in the ICT field were generally allowed to do before employers had their hand forced by the hard lock-down instituted by the government. It was only in exceptional circumstances where someone may have been expecting a large delivery and was able to actually work remote, i.e. had a laptop computer and not a desktop.

Respondent 11: *“Occasion, really only when it was when it was necessary. For example, if I'm expecting a large delivery at home”.*

The respondents that did work remotely pre-COVID did so for various reasons. Some worked remotely in the sense that they worked away from the client site but at the office, others worked for global companies who had clients all over the world. The ones of interest worked away from the office, potentially from home, for a day or two a week as a standard practice.

Respondent 10: *“we also had days where if you wanted to work from home you'd say, okay this week for two days I'll be working at home, I'll be working from home and if you need something from me, just let me know. Because obviously there's VPN you can connect, you can work”.*

The effects that respondents observed from having to work remotely are varied, with some positively and others negatively impacting their levels of employee engagement. There were a lot more negative than positive influencing factors.

For some respondents having more time to spend at home with their families was a positive influence on their engagement levels at work. This was also similar with some having more time in the day to work as they did not have to travel to get to the office, potentially saving two hours of travel time and capitalising that time as productive time. This ability for one to better manage their time had a positive influence on their engagement levels at work.

Respondent 8: *“it's been positive in the fact that I can manage my time. I don't have to worry about going to an office and I can save some time”.*

Teams had to find a way to keep in touch, and that constant communication meant that teams were actually a lot closer to each other during the remote working stage. Having constant touch points throughout the day helped the team keep aligned in terms of the objectives they were trying to achieve. Doing this on a daily basis allowed the team to get really close in terms of delivery of work.

Respondent 6: *“I find I'm working a lot closer with my team now that we are so separated because we are constantly in communication with each other”.*

In terms of influencing employee engagement levels negatively during the COVID pandemic having to give up a portion of their salary was a big factor. This coupled with having to work even longer hours than usual because of the elevated workload and that lead to less sleep and rest. These longer hours can also be attributed to the lack of clear boundaries between work and non-work environments.

Related to this are the communication challenges that came with not being in the same physical space as your workmates, having to work alone at home left people feeling isolated. Having no clear boundaries led to just keep working until employees were tired, and with meetings set up one after the other there wasn't much of a break between meetings to walk around and get some air. The usual trips to get coffee with colleagues also didn't happen so the face-to-face interaction was also missed. All these factors compound and may cause mental and physical health issues for employees, in addition to lowering their engagement levels at work.

Respondent 5: "I struggled quite a bit at the beginning of just like getting the right, the right routine and balance and stuff. Because working from home is a different kettle of fish to what you're used to. It's that I'm used to working late, late into the evening like six, seven-ish, but then I always would go either rock climbing or playing squash or playing football or some sort of sport activity, which was my break but there was always that break of I'm leaving the office now to go do that activity and then going home and then I'm done. With the pandemic around. It's been like, all those facilities have been closed. And now there's no leaving the desk to go do something. So it's kind of coming to that time of like I should stop doing work. And I struggled a lot with that in the beginning of, okay, the workday is over at this point, like, stop working. So my hours started creeping up and up and I was not being very disciplined at like, keeping that in check".

Employees in the ICT sector have been affected by the COVID-19 pandemic. Because the study focused on knowledge workers, and their engagement levels were mostly affected negatively, the COVID-19 pandemic has had an adverse effect on this sample of employees.

5.5 Discussion of Research Question 3

Are the drivers of employee engagement that have been provided based on the level of work related to the employee's current role?

After understanding which drivers for employee engagement are relevant to knowledge workers in the South African ICT industry, this research question sought to understand whether there were any particular differences between the key drivers for managers and non-managers.

The respondents from the selected sample of knowledge workers who are in the ICT industry in South Africa, as seen in Figure 1, were mostly in management roles with a representation of 46%. There were quite a number of them in hybrid management roles with a representation of 38%, which meant that the difference between the influencing factors for managers and non-managers could not be distinguished from each other. The remaining respondents who were neither managers nor hybrid managers had a representation of 15%, and their employee engagement influences were consistent with the themes of the broader group made up of managers and hybrid managers.

5.6 Conclusion

The research results have shown that the respondents generally had a good handle on the concepts being discussed. The definition offered for how employee engagement manifested was generally along the line of what they thought it was with two particular variations, greater productivity and discretionary energy, manifesting through the analysis.

The results also showed that the respondents were knowledge workers by virtue of their roles and have a large amount of experience in the South African ICT sector as shown in Figure 2. The idea of the hybrid management role also came out

strong in the sample as most respondents identified themselves as being in a hybrid managerial role. There were some respondents who were managers and two respondents who were non-managers.

The results also showed what common characteristics the respondents felt ICT professionals had as well as the core skills respondents felt ICT professionals needed to be effective and successful in the South African ICT sector. Both are shown in the table below.

Table 2 - Common Characteristics and Core Skills of ICT Professionals

Common Characteristics	Core Skills Required
High levels of self-efficacy	Interpersonal
Good problem solving skills	Analytical
Good interpersonal skills	Problem solving
Willingness to continue learning new things and	Teamwork
Good teamwork ability	Communication
	Technical

The results then went on to show the factors that influence respondent employee engagement levels, both positively and negatively. These are shown in the table below.

Table 3 - Positive and Negative Influences on Employee Engagement

Positive Influences on Engagement	Negative Influences on Engagement
Leadership style	Leadership style
Intellectually stimulating environment	Recognition, remuneration and rewards
Teamwork	Working long hours
Culture of communication and the feedback loop	Inflexible work times
Opportunity to learn	Team culture

The effects of remote working on the employee engagement levels of ICT professionals in light of the COVID-19 pandemic were also discussed.

Finally there was no discernible difference between the factors that influence managers and non-managers, and the number of hybrid managers in the sample of respondents was noted as something of interest.

CHAPTER 6: DISCUSSION OF RESULTS

6.1 Introduction

The purpose of this chapter is to discuss the results that were analysed in Chapter 5 of the research. The results will be discussed in relation to the literature that was presented in Chapter 2. The aim of this chapter is to establish whether the findings confirm, extend or contradict the literature presented in Chapter 2.

6.2 Research Question 1: Are the classic drivers of employee engagement valid for knowledge workers in the South African ICT environment?

This is the main research question, and it is concerned with understanding whether the drivers of employee engagement in classic literature are relevant to the individuals identified and interviewed as described in Chapter 4. These individuals refer to knowledge workers within the ICT industry in South Africa.

The literature review established that there has not been a universally agreed definition for employee engagement, as the McLeod report noted over 50 definitions of employee engagement (Guest, 2014). For this reason employee engagement was defined from a broad perspective using factors from both the behavioural and JDR based theories.

This definition was provided to respondents and they were asked if they accepted/aligned with it, if they wanted to expand on it or disagree with it. Another reason why this blended definition approach was taken is because literature has shown that the drivers of employee engagement were not different in relation to either of the two theories that have been discussed in the paper, namely behavioural and JDR based theories (Anitha, 2014; Kumar & Pansari, 2015).

The definition that was offered to the respondents was generally accepted, however two themes emerged from the data collected, namely, employee

engagement in relation to greater and increased productivity and distribution of discretionary energy. Respondents agreed with employee engagement manifesting in employees showing commitment to their work as stated in behavioural theory (Albrecht et al., 2015; Anitha, 2014; Bailey et al., 2017; Joseph, 2018; Saks & Gruman, 2014; Schneider et al., 2018; Soane, 2013; Vîrgă et al., 2019).

Respondents also agreed with employee engagement manifesting in employees being focused and determined to overcome adverse situations while showing mental toughness and enthusiasm regarding their work (Albdour & Altarawneh, 2014; Guest, 2014; Soane, 2013; Tims et al., 2011).

The data collected showed that employees are seen to be engaged when they show increased levels of productivity and output. This was directly related to them being resilient and finding ways around the challenges they are faced with in their work (Albdour & Altarawneh, 2014; Guest, 2014; Soane, 2013; Tims et al., 2011). The willingness to overcome these challenges at work are what lead to the employees showing increased productivity levels at work. The employees would also show high levels of commitment by going over and above the call of duty to overcome these problems, which is another hallmark of engaged employees (Albrecht et al., 2015; Anitha, 2014; Bailey et al., 2017; Joseph, 2018; Saks & Gruman, 2014; Schneider et al., 2018; Soane, 2013; Vîrgă et al., 2019).

The data collected showed that employees are seen to be engaged when they willingly choose to use their discretionary energy at work. The discretionary energy or effort that the employees give to their work is a sign of engagement. It shows that they are willing to go above and beyond what is expected of them to overcome obstacles in their work environment (Albdour & Altarawneh, 2014; Guest, 2014; Soane, 2013; Tims et al., 2011).

The definition of employee engagement from literature was consistent with the feedback from the interviews, thus the respondents related and understood the definition as it was presented in literature and the previous research conducted. Employees know what employee engagement is and the data collected confirms that their views are consistent with the literature.

The literature presented five themes that were noted as drivers of employee engagement. The drivers of employee engagement according to researchers Guest and Joseph et al. (2014; 2018) were leadership style, work-life balance, opportunities for improvement of skills, recognition and rewards, and work that is exciting and the organisation taking a keen interest in the well-being of its people. The aim of the research question was to validate whether these drivers of employee engagement were valid for the South African knowledge workers in the ICT industry.

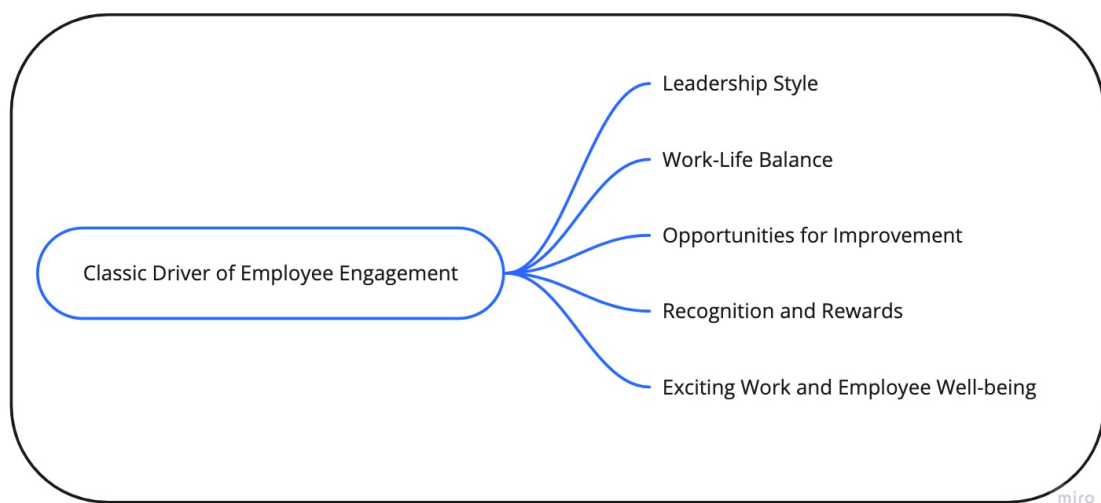


Figure 12 - Classic Drivers of Employee Engagement

6.2.1 Leadership style

The data collected showed that leadership style was a valid driver for the sample that was selected for the research. The data collection showed that employees were sensitive to the style of management as they noted the styles of leadership that would work with them and not.

Some managers displayed the transactional leadership style visible in managers that encouraged using the feedback loop to set and manage expectations, while others displayed the transformational leadership style visible in managers that took

an active interest in the wellbeing of their employees and created empowering environments. This finding was consistent with the literature (Cummings & Worley, 2014; Stock et al., 2017).

6.2.2 Work-life balance

The data collected showed that a healthy work-life balance was a driver for employee engagement. Respondents felt that they tended to spend long hours at work chasing never ending deadlines, as well as being held to account for an eight hour day that they felt no longer made sense in today's world.

Experimenting with shorter workdays felt would lead to better productivity as they would focus more intently to completing their tasks and do other things they need to do with their time for the rest of the day. By working all the extended hours required of them it meant that the respondents were over-extending themselves on the work aspect of the work-life concepts, creating an imbalance (Kamenou, 2008).

6.2.3 Opportunities for improvement of skills

The data collected showed that respondents valued the opportunity to learn, which led them to being more engaged. The learning could take place either as formal training or on-the-job through practices like mentorship and coaching. The opportunity to mentor others was also taken as increasing the opportunity to learn as a mentoring relationship is not a one-way channel. This finding was also consistent with the literature (Soomro et al., 2016). The data collected also showed that respondents would actively seek out new opportunities to pick up new skills on the job which is consistent with the classic drivers of employee engagement theory (Guest, 2014; Joseph, 2018).

6.2.4 Recognition and rewards

It has been found through research consistent with the literature that the recognition and rewards that management give to employees is vital for them to perform and for increased employee engagement (Schneider et al., 2018). The data collected reflects this from the perspective of remuneration, which is also discussed by Schneider et al (2018), as well as the benefits that come with the broader remuneration conversation. The support that respondents received through recognition for their work through non-monetary means was also effective and this too is congruent with the literature (Downey et al., 2015; Guest, 2014; Schneider et al., 2018). The role that feedback plays in recognition is quite sizable (Joseph, 2018), and the data collected showed that the feedback loop is something that the respondents found to have a positive influence on their engagement levels at work.

6.2.5 Work that is exciting and the organisation taking a keen interest in the well-being of its people

Employers taking a keen interest in the lives of their employees and their welfare was established as a key driver of employee engagement. The employer has to make sure that the company has a positive view in the eyes of the employees and actively work at keeping it up (Downey et al., 2015; Schneider et al., 2018). The data collected is consistent with this as respondents indicated that if businesses look out for the employees' interests and wellbeing, employees feel more engaged at work.

The data collected also showed that respondents found an environment that is intellectually stimulating, which posed challenges to them that were of a suitable level, led them to higher levels of engagement. This is consistent with the literature as this environment is the result of the transformational leadership style (Stock et al., 2017).

6.3 Research Question 2: Which drivers of engagement are relevant for knowledge workers in the South African ICT sector?

This is a supporting research question and aimed to understand which drivers of employee engagement are relevant in the South African ICT sector for knowledge workers. These drivers were solicited from the respondents through asking them various questions, then analysed and the themes presented in Chapter 5 of this study.

The themes that came out as the drivers of South African knowledge workers in the ICT sector were in two different groups, those that influenced engagement levels positively and those that influenced engagement levels negatively. The themes are shown in the figure below.

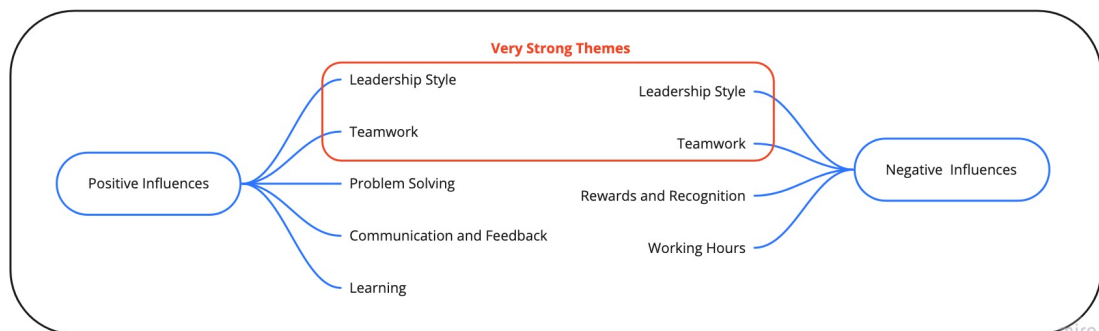


Figure 13 - Relevant Drivers of Employee Engagement

6.3.1 Leadership style

The data collected showed leadership style as a strongly represented theme as it had both positive and negative influences on employee engagement. This shows that it can be a significant driver of employee engagement if it is correctly managed.

The data collected showed that respondents appreciated managers who showed high levels of emotional intelligence, trust in the abilities of the team they manage and handled them with empathy as it created the right kind of environment for employees to feel engaged. These traits are consistent with the transformational leadership style discussed in the literature (Stock et al., 2017).

These managers take an active interest in the wellbeing of their teams by understanding their personal circumstances and create an empowered environment where access to information and resources is not restricted within the team. They also keep themselves open to give and receive feedback which is a trait that is consistent with the transactional leadership style discussed in the literature (Stock et al., 2017).

The data collected also showed that respondents were hugely affected by managers who displayed tendencies to micromanage them and not allowing them the space to be creative and solve problems. These managers displayed characteristics that are often associated with the transactional leadership style that does not encourage employees to go outside the boundaries of the relationship between them and the manager (Tims et al., 2011).

6.3.2 Teamwork

Like the management style, the data collected strongly represented teamwork and collaboration as a driver of employee engagement. This theme also had both positive and negative influences on employee engagement levels showing once again that if it is managed correctly, it can be a significant driver of employee engagement.

The right culture in the team is vital for collaboration to have a positive effect as the team cannot achieve much if not pulling in the same direction. The calibre of people in the team is a factor in terms of the team being productive and the people in it feeling like they can achieve great things together.

This is consistent with the literature relating to the levers which a company can use to influence employee engagement levels. Schneider et al (2018) state that one of the levers to influence employee engagement is on the interpersonal and relations area, where the kind of and level of support given to an employee by their co-workers, whether they report to them or not, is at a certain level.

Teamwork and collaboration is also one of the core skills that an ICT professional has to possess (Dubey & Tiwari, 2020). This is a skill that enhances an employee's employability. This skill ties in with that of Schneider et al in the sense that respect for people and etiquette are ways in which support for each other in a team and between subordinates and managers can ensure adequate support for each other, leading to engaged employees (Dubey & Tiwari, 2020; Schneider et al., 2018).

6.3.3 Problem solving

Being in a stimulating environment that has intellectually challenging problems to solve of a suitable level was a key theme that came out of the data collected. Respondents expressed that having challenging work to do, that was not either too easy to solve or so complex that it was not intriguing, had an effect on their engagement levels.

Having an environment that is mentally stimulating and that employees can see themselves building a career in fall in the organisational area, which is one of the four main areas that companies can use to influence the engagement levels of employees (Schneider et al., 2018). More specifically if the employee feels they can build a career in that organisation and they have job security then they will have higher engagement levels (Schneider et al., 2018).

The ability and willingness to solve problems is also a core skill that ICT professionals need to have for them to be effective in this industry (Dubey & Tiwari, 2020). The data collected confirms this as the ability to solve problems is one of the core skills that respondents identified for ICT professionals.

6.3.4 Communication and feedback

The data collected showed that the culture of communication and the feedback loop in the business have an impact on the engagement levels of employees. Employees want management to have a relationship with general employees in terms of communicating with them and being receptive to feedback.

There must be a culture of open communication throughout the business and at all levels. Ideas should be able to flow from the bottom of the organisation to the very top.

One of the effects of the transactional leadership style is the fact that it establishes and uses a culture of communication to set expectations, evaluate them and constantly provide feedback on performance (Stock et al., 2017). The value of communication and feedback for this style of leadership is in the action of the employee always knowing what is expected of them and always getting and giving feedback. The data collected is consistent with the theory associated with this leadership style.

6.3.5 Learning

Through the research and literature it is evident that the opportunity to learn has an influence on employee engagement levels in the data collected. The opportunity to learn things on the job, both through experience as well as formal training is something that is very attractive to ICT professionals and is consistent with the literature on knowledge workers (Anderson, 2001; Boughton, 2013).

Because knowledge workers are expected to have deep and specialised knowledge in their domains, they have to go through a period of on-the-job training to gather the skills required to be specialised (Anderson, 2001). The high levels of intellectual curiosity requires continuous learning consistent with the core skills that ICT professionals need and were identified in Dubey & Tiwari (2020).

6.3.6 Rewards and recognition

Rewards and recognition, including remuneration were found to be a strong driver of employee engagement in the data collected. From a remuneration point of view, having benefits such as medical aid and pension or provident fund contributions as part of the remuneration package went a long way in providing job security to the respondents. This is consistent with the levers that were identified in the organisational area of Schneider et al. (2018) four main areas. The employees feel more engaged if they feel that they are remunerated fairly (Schneider et al., 2018).

The data collected also pointed to the fact that money is not the only avenue available for recognition of employee and rewarding effort. The data shows that for respondents to maintain a high level of performance, which is beyond what is expected of them, they want to be recognised for their efforts and rewarded accordingly. This is consistent with the theory of distributive justice theory which has been found to be a driver of employee engagement (Anitha, 2014; Downey et al., 2015). Distributive justice champions a fair allocation of rewards and opportunities (Cook & Hegtvedt, 1983).

6.3.7 Working hours

In the data collected working hours came through as a theme as well that drives the levels of employee engagement. Although respondents felt that working long hours was sometimes unavoidable in the ICT sector, there was a need to revisit the concept of working an ordinary eight hour shift per day.

Mobile technologies such as cloud have led to the phenomenon of people constantly working from anywhere (Reyt & Wiesenfeld, 2015). Cloud technologies are what enables us now to be able to perform the work that we would normally have had to go into the office to do, on the go or from home (Karim & Soomro, 2020).

The data collected also points to the fact that in the current NSD brought about by the COVID-19 pandemic, respondents found themselves working even longer hours because they did not have to travel in the mornings and evenings for example or walk between buildings and rooms to attend meetings.

The research and literature show that working long hours for the sake of it is not a sustainable practice and a healthy work-life balance is a driver for employee engagement. This is consistent with the act of balancing both the work and the life components in the balance (Kamenou, 2008; Parkes & Langford, 2008).

The above mentioned discussed drivers of employee engagement are relevant to knowledge workers in the South African ICT sector as the collected data has shown. The style of management, the culture in the team, having interesting and challenging problems to solve, having a free-flowing communication and feedback loop, providing learning opportunities and mentorship, providing adequate recognition and rewards as well as having acceptable working hours are all relevant drivers of employee engagement in the South African ICT sector.

6.4 Research Question 3: Are the drivers of employee engagement that have been provided based on the level of work related to the employee's current role?

After understanding which drivers for employee engagement are relevant to knowledge workers in the South African ICT industry, this research question seeks to understand if there are any particular differences between the key drivers for managers and non-managers.

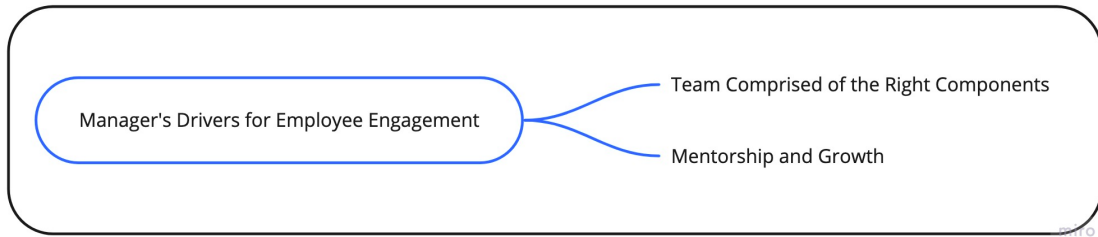


Figure 14 - Driver of Employee Engagement from a Manager's Perspective

A strong theme that surfaced from the data collected from managers was that they view the team from a holistic point of view and as it being capable of performing beyond the sum of its parts. The team should consist of the right people who have a willingness to learn and have the right attitudes.

Managers identified the ability to build a functional team as a driver for employee engagement which is consistent with Maslach et al (2001). The ability of a manager to build a functional team will depend on the job characteristics which have been shown to be drivers of employee engagement already, such as composition of work and understanding one's role in the team.

This also ties in with the transformational style of leadership as employees will need to be given the means, through trust and being in a safe space that allows them to generate ideas, to be able to perform at their desired level (Cummings & Worley, 2014; Stock et al., 2017).

Another theme that came from the data collected was that managers want to actively pass on their knowledge to the team and mentor their subordinates so that they can grow as well. This is consistent with the idea that employees' capabilities must be aligned to what is required from them in their jobs (Maslach et al., 2001), and allowing the team to grow will lead to the team achieving greater things as a unit.

Another theme that came through from the collected data was that managers prioritised the communication and feedback loop in the organisation and they found

this to drive employee engagement. Because these ideas would be allowed to flow freely it would allow for the team to perform beyond the sum of its parts. This is consistent with some of the core dimensions of job characteristics theory, because the feedback loop and the autonomy which fostered by the transactional leadership style would cause employees to experience two of the core dimensions of job characteristic theory (Birnbaum et al., 1986).

This demonstrates that the drivers of employee engagement that were collected through the data are related to an employee's current role. Managers tended to have more team related drivers of employee engagement than non-managers.

6.5 Conclusion

The drivers of employee engagement that are found in classic literature have been shown to be valid for employees in the South African ICT sector. The main drivers of employee engagement are leadership style, work-life balance, opportunities for self-improvement, recognition and rewards as well as appropriately exciting and challenging work. These drivers were found to be valid through the research conducted and the literature explored.

The data collected to understand what drivers of employee engagement were valid for employees in the South African ICT sector were presented and had the theoretical lens applied to them. This showed that these drivers were congruent with the literature presented in Chapter 2 of this study.

The drivers of employee engagement collected showed that the style of management, team culture, having intellectually challenging problems to solve, open communication and feedback loop, the opportunity to learn and share knowledge, working reasonable and appropriate hours as well as being fairly recognised and rewarded for expending effort were relevant.

The data collected to understand if managers have different drivers of employee engagement to non-managers showed that there is some overlap, however managers have a broader view of the team and growing the team is a driver of employee engagement. This was consistent with the jobs characteristics theory as well as some of the leadership styles that the managers exhibited.

CHAPTER 7: CONCLUSIONS AND RECOMMENDATIONS

The aim of the study was to explore the key drivers of employee engagement in professionals, who are knowledge workers, in the South African ICT sector.

After articulating the need for the study the paper first explored the literature on the key themes and concepts for the study. These key themes and concepts were employee engagement, the drivers of employee engagement, the common characteristics that ICT professionals share, the core skills that ICT professionals need to be effective as knowledge workers and remote working.

The study then identified the research questions that needed to be answered by the study as a result of what the literature was suggesting and any gaps that the study found in the literature. The research questions were as follows:

- **Research Question 1:** Are the classic drivers of employee engagement valid for knowledge workers in the South African ICT environment?
- **Research Question 2:** Which drivers of engagement are relevant for knowledge workers in the South African ICT sector?
- **Research Question 3:** Are the drivers of employee engagement that have been provided based on the level of work related to the employee's current role?

With the research questions articulated, the study went on to articulate how it would be carried out from a methodology and design perspective, settling on a qualitative approach and following an inductive process to come to insights about the data collected from the identified sample. The sample was articulated as being within the Gauteng province of South Africa, performing work that is mostly mental labour and is closely associated with parsing and processing high levels and amounts of information or data (Reyt & Wiesenfeld, 2015; Straub & Karahanna, 1998). The sample was to include respondents who were in management positions and non-management positions so as to understand if any of the key drivers of employee

engagement identified in the data collection were relevant to the level the employee was currently working at.

Using the research questions from Chapter 3 and the research design from Chapter 4 the study proceeded to collect data and analyse it, coming up with a thematic analysis that was presented in Chapter 5 of the study. The insights from the thematic analysis were then compared to the literature to understand if the insights confirm, extend or contradict the literature on the key concepts discussed in Chapter 2 of the study.

7.1 Principal Conclusions

7.1.1 Research Question 1

This question aimed to understand whether the classic drivers of employee engagement as identified in the literature are relevant to the sample of the study, which is outlined in Chapter 4.

The study found that the leadership style of the managers who employees report to is a significant driver of employee engagement. More specifically managers who displayed a combination of the transactional and transformational leadership styles were most likely to increase the levels of employee engagement in the teams they manage because of the conducive environment they create and the feedback culture they encourage (Cummings & Worley, 2014; Stock et al., 2017; Tims et al., 2011).

The study also found that establishing a healthy work-life balance was crucial to driving up the engagement levels of ICT professionals. The ICT profession lends itself to working extended hours, which respondents admitted to. Having the ability to work flexible time so as to be able to get things done from the life side of the work-life balance was seen as a key driver of employee engagement (Parkes & Langford, 2008).

ICT professionals want opportunities to learn further and to share their knowledge with their peers (Soomro et al., 2016). This is a classic driver that was confirmed in the study as the data collected showed that ICT professionals actively seek out opportunities to learn new skills (Guest, 2014; Joseph, 2018).

ICT professionals value rewards and recognition that go beyond traditional remuneration. Getting feedback about performance and being rewarded for the effort they put in are effective ways of giving recognition and providing rewards to employees, which makes them more engaged at work (Downey et al., 2015; Guest, 2014; Schneider et al., 2018).

ICT professionals feel more engaged when there is an effort to understand their personal circumstances and if their well-being is taken into account, and the positive image of companies that do this as a practice has to be kept going by those particular companies (Downey et al., 2015; Schneider et al., 2018).

7.1.2 Research Question 2

This question was aimed at understanding what drivers of employee engagement are relevant to the knowledge worker in the South African ICT sector.

Some of the classic drivers of employee engagement were relevant for ICT professionals based on the evidence in the data collected. The classic drivers that were relevant were leadership style, work-life balance, opportunities for improvement of others and self (learning), rewards and recognition and doing exciting work.

The two themes that came out strongest as relevant to ICT professionals were the leadership style the managers employed, which has already been discussed in this chapter, and the teamwork element of the teams that employees worked in.

The data collected showed that ICT professionals also find teamwork to be a significant driver of employee engagement. This theme was strongly represented in the interviews. Having the right culture in the team as well as having the right

people are two of the most important factors that influence the teamwork dynamic. The ability to work in teams was found in literature to be one of the core skills that an ICT professional would need to have for them to be effective at work (Dubey & Tiwari, 2020).

7.1.3 Research Question 3

The aim of this question was to understand if ICT professionals had different drivers of employee engagement in management positions and in non-management positions. The data collected showed that ICT professionals who were in management positions had a more team-centric view to their drivers of employee engagement.

The two themes that came forth from the interviews was that managers find building teams that are highly functional to be a driver of employee engagement (Maslach et al., 2001). Secondly, the managers found growing individuals through practices such as mentorship hugely fulfilling (Maslach et al., 2001).

Both these themes are closely linked with the leadership style the managers would practise. The transactional and transformational leadership styles are best suited to set expectations for the team, give them enough initiative to be creative and to encourage the communication and feedback loops (Cummings & Worley, 2014; Stock et al., 2017).

7.2 Implications for management and other relevant stakeholders

Management has to ensure that employees are engaged in order for organisational objectives to be met. What management can take from this study are the two key drivers of employee engagement in the ICT sector:

- The leadership style they align with most of the time, and
- The composition of the teams they assemble from a job characteristics point of view.

The amount identity of and variety, significance and autonomy in a job, as well as how the feedback loop is structured in the job make up the core dimensions of a job's characteristics (Birnbaum et al., 1986). Management has to ensure that each of these dimensions are considered for each of the team members for the team to function well.

Management also has to ensure that the leadership style they align with is the most effective for their situation as the leadership style informs other drivers of employee engagement such as the level and quality of communication and feedback, how the team is rewarded for performing and the environment the team works in.

7.3 Limitations of the research

The research only looked at one particular industry to understand the phenomenon of employee engagement. There is an assumption made about the homogeneity of the cultures and contexts of each of the businesses where every respondent is employed, which may not be true.

Although not all employees in the ICT industry are knowledge workers, the study focused exclusively on the employees that are considered to be knowledge workers, those that are considered to be skilled mental labour.

Although the general level of education of knowledge workers is high, there may be some respondents who do not understand the concepts that were discussed, and this might have caused outliers in the data. This limitation was mitigated by offering a definition of employee engagement to the respondents and asking them to give an indication of whether it aligns with what they may have thought it was.

While the field of employee engagement has many different facets to it, the research aimed to look at a definition of engagement that is aligned to behavioural and attitudinal factors that drive engagement, relative to what the respondents in

the interviews provide. Respondents may have provided factors that are neither attitudinal nor behavioural.

It was also considered that the amount of time the researcher had at their disposal to complete this study did not allow for the collection of data from more respondents at more varied businesses within the ICT sector. This would have provided some greater legitimacy to the outcomes the study has found.

7.4 Suggestions for future research

Given the role that ICT is currently playing in the fourth industrial revolution, and the role that it is likely to play in the future, understanding the people working in this space should be a priority. It is also important to understand the ICT industry, not only the people that work in it. In the process of gathering data for this study the researcher came across insights that pointed to potential topics to be explored in future research:

- Looking at employee engagement in the ICT industry compared to other industries.
- Looking at employee engagement in the ICT industries across different provinces in South Africa. With the Western Cape province increasingly becoming a hub for technology services companies.
- Would employees still be engaged if one of the drivers were not present, for example what if employees had exciting and challenging jobs but the management was not conducive.
- This study compared to other industries and places in the world.

7.5 Conclusion

The literature was clear on what the classic drivers of employee engagement were. The research found that the classic drivers were still relevant specifically to the ICT sector in South Africa.

The research went on to show that knowledge workers in the ICT sector considered the leadership style of their managers and having healthy team culture and collaboration as strong drivers of employee engagement.

The research also showed that the opportunity to develop individuals within their teams and assembling highly functional teams are strong drivers of employee engagement.

The research has contributed to the body of literature on the employee engagement of ICT professionals as well as the factors that influence the engagement levels.

8. REFERENCE LIST

- A. Johnston, K., K. Andersen, B., Davidge-Pitts, J., & Ostensen-Saunders, M. (2009). Identifying Student Potential for ICT Entrepreneurship using Myers-Briggs Personality Type Indicators. *Journal of Information Technology Education: Research*, 8(1), 029–043. <https://doi.org/10.28945/156>
- Albdour, A. A., & Altarawneh, I. I. (2014). Employee engagement and organizational commitment: Evidence from Jordan. *International Journal of Business*, 19(2), 192–212.
- Albrecht, S. L., Bakker, A. B., Gruman, J. A., Macey, W. H., & Saks, A. M. (2015). Employee engagement, human resource management practices and competitive advantage: An integrated approach. *Journal of Organizational Effectiveness*, 2(1), 7–35. <https://doi.org/10.1108/JOEPP-08-2014-0042>
- Alexander, P. M., & Pieterse, V. (2010). Indications of personality trait difference between ICT and other students. *18th European Conference on Information Systems, ECIS 2010*.
- Anderson, E. G. (2001). Managing the impact of high market growth and learning on knowledge worker productivity and service quality. *European Journal of Operational Research*, 134(3), 508–524. [https://doi.org/10.1016/S0377-2217\(00\)00273-3](https://doi.org/10.1016/S0377-2217(00)00273-3)
- Anitha, J. (2014). Determinants of employee engagement and their impact on employee performance. *International Journal of Productivity and Performance Management*, 63(3), 308–323. <https://doi.org/10.1108/IJPPM-01-2013-0008>
- Ayentimi, D. T., & Burgess, J. (2019). Is the fourth industrial revolution relevant to sub-Saharan Africa? *Technology Analysis & Strategic Management*, 31(6), 641–652. <https://doi.org/10.1080/09537325.2018.1542129>
- Bailey, C., Madden, A., Alfes, K., & Fletcher, L. (2017). The Meaning, Antecedents

- and Outcomes of Employee Engagement: A Narrative Synthesis. *International Journal of Management Reviews*, 19(1), 31–53. <https://doi.org/10.1111/ijmr.12077>
- Birnbaum, P. H., Farh, J., & Wong, G. Y. (1986). The job characteristics model in Hong Kong. *Journal of Applied Psychology*, 71(4), 598–605. <https://doi.org/10.1037/0021-9010.71.4.598>
- Boughton, C. (2013). 5. What is an ICT professional anyway? *Professionalism in the Information and Communication Technology Industry*, 77.
- BusinessTech. (2019). South Africa is in desperate need of these 10 job skills. Retrieved September 12, 2020, from BusinessTech website: <https://businesstech.co.za/news/business/333383/south-africa-is-in-desperate-need-of-these-10-job-skills/>
- Cook, K. S., & Hegtvedt, K. A. (1983). Distributive Justice, Equity, and Equality. *Annual Review of Sociology*, 9, 217–241. Retrieved from <http://www.jstor.org.uplib.idm.oclc.org/stable/2946064>
- Cropanzano, R., Prehar, C. A., & Chen, P. Y. (2002). Using social exchange theory to distinguish procedural from interactional justice. *Group and Organization Management*, 27(3), 324–351. <https://doi.org/10.1177/1059601102027003002>
- Cummings, T., & Worley, C. (2014). *Organization development and change* (10th ed.). Stamford: Cengage Learning.
- Downey, S. N., van der Werff, L., Thomas, K. M., & Plaut, V. C. (2015). The role of diversity practices and inclusion in promoting trust and employee engagement. *Journal of Applied Social Psychology*, 45(1), 35–44. <https://doi.org/10.1111/jasp.12273>
- Dubey, R. S., & Tiwari, V. (2020). Operationalisation of soft skill attributes and determining the existing gap in novice ICT professionals. *International Journal*

of *Information Management*, 50, 375–386.
<https://doi.org/10.1016/j.ijinfomgt.2019.09.006>

Flick, U. (2012). Designing Qualitative Research. In *Designing Qualitative Research*. <https://doi.org/10.4135/9781849208826>

Gilboa, I., & Schmeidler, D. (2003). Inductive inference: An axiomatic approach. *Econometrica*, 71(1), 1–26. <https://doi.org/10.1111/1468-0262.00388>

Guest, D. (2014). Employee engagement: a sceptical analysis. *Journal of Organizational Effectiveness*, 1(2), 141–156. <https://doi.org/10.1108/JOEPP-04-2014-0017>

Joseph, D. (2018). Drivers of Employee Engagement and Innovation in Information Technology Industry. *IOSR Journal of Business and Management*, 20, 38–46. Retrieved from www.iosrjournals.org

Kamenou, N. (2008). Reconsidering work-life balance debates: Challenging limited understandings of the “life” component in the context of ethnic minority women’s experiences. *British Journal of Management*, 19(SUPPL. 1), S99–S109. <https://doi.org/10.1111/j.1467-8551.2008.00575.x>

Karim, S., & Soomro, T. R. (2020). What Is Cloud Computing? <https://doi.org/10.4018/978-1-7998-1294-4.ch001>

Kumar, V., & Pansari, A. (2015). Measuring the benefits of employee engagement. *MIT Sloan Management Review*, 56(4), 67–72.

Majid, M. A. A., Othman, M., Mohamad, S. F., Lim, S. A. H., & Yusof, A. (2017). Piloting for Interviews in Qualitative Research: Operationalization and Lessons Learnt. *International Journal of Academic Research in Business and Social Sciences*, 7(4), 1073–1080. <https://doi.org/10.6007/ijarbss/v7-i4/2916>

Martins, N., & Nienaber, H. (2018). The influence of time on employee engagement

- in the SA business environment. *International Journal of Productivity and Performance Management*, 67(9), 1682–1702. <https://doi.org/10.1108/IJPPM-11-2017-0299>
- Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job Burnout. *Annual Review of Psychology*, 52(1), 397–422. <https://doi.org/10.1146/annurev.psych.52.1.397>
- Melville, N., Kraemer, K., & Gurbaxani, V. (2004). Review: Information technology and organizational performance: An integrative model of it business value. *MIS Quarterly: Management Information Systems*, 28(2), 283–322. <https://doi.org/10.2307/25148636>
- MEXON, J., & ANANDA KUMAR, A. (2020). Business Research Methods. In *Business Research Methods* (3rd ed.). <https://doi.org/10.22573/spg.020.BK/S/026>
- Parkes, L. P., & Langford, P. H. (2008). Work-life balance or work-life alignment? A test of the importance of work-life balance for employee engagement and intention to stay in organisations. *Journal of Management and Organization*, 14(3), 267–284. Retrieved from <https://www.proquest.com/docview/233252985?accountid=14717>
- Remenyi, D., Williams, B., Money, A., & Swartz, E. (1998). *Doing research in business and management* (2nd ed.). Harlow: Pearson.
- Report, K., & Africa, S. (2002). King Report on Corporate Governance for South Africa 2002 What it means to you. In *Corporate Governance*. Retrieved from http://www.mervynking.co.za/downloads/CD_King2.pdf
- Republic of South Africa. (2020a). Disaster Management Act, 2002: Amendment of Regulations Issued in Terms of Section 27(2). In *Government Gazette* (NO. R. 398, Vol. 43258). Retrieved from <https://www.gov.za/documents/disaster-management-act-regulations-alert-level-3-during-coronavirus-covid-19->

lockdown

- Republic of South Africa. (2020b). Disaster Management Act: Declaration of a National State of Disaster: COVID-19 (coronavirus). In *Government Gazette* (NO. 313). Retrieved from <https://www.justice.gov.za/legislation/notices/2020/20200325-gg43148-GoN398-COVID19-COGTA.pdf>
- Reyt, J. N., & Wiesenfeld, B. M. (2015). Seeing the forest for the trees: Exploratory learning, mobile technology, and knowledge workers' role integration behaviors. *Academy of Management Journal*, 58(3), 739–762. <https://doi.org/10.5465/amj.2013.0991>
- Robinson, S., & Kerr, R. (2015). Reflexive Conversations: Constructing Hermeneutic Designs for Qualitative Management Research. *British Journal of Management*, 26(4), 777–790. <https://doi.org/10.1111/1467-8551.12118>
- Rothmann, S., & Rothmann Jr, S. (2010). Factors associated with employee engagement in South Africa. *SA Journal of Industrial Psychology*, 36(2). <https://doi.org/10.4102/sajip.v36i2.925>
- Saks, A. M., & Gruman, J. A. (2014). What Do We Really Know About Employee Engagement? *Human Resource Development Quarterly*, 25(2), 155–182. <https://doi.org/10.1002/hrdq.21187>
- Schneider, B., Yost, A. B., Kropp, A., Kind, C., & Lam, H. (2018). Workforce engagement: What it is, what drives it, and why it matters for organizational performance. *Journal of Organizational Behavior*, 39(4), 462–480. <https://doi.org/10.1002/job.2244>
- Semon, T. T., Cohen, R., Richmond, S. B., & Stock, J. S. (1959). Sampling in Marketing Research. *Journal of Marketing*, 23(3), 263. <https://doi.org/10.2307/1248266>

- Shea, V. J., Dow, K. E., Chong, A. Y.-L., & Ngai, E. W. T. (2019). An examination of the long-term business value of investments in information technology. *Information Systems Frontiers*, 21(1), 213–227. <https://doi.org/10.1007/s10796-017-9735-5>
- Shirin, A., & Kleyn, N. (2017). An Evaluation of the Effects of Corporate Reputation on Employee Engagement: The Case of a Major Bank in South Africa. *International Studies of Management & Organization*, 47(3), 276–292. <https://doi.org/10.1080/00208825.2017.1318023>
- Soane, E. (2013). Leadership and employee engagement. *Employee Engagement in Theory and Practice*, 14(1), 149–162. <https://doi.org/10.4324/9780203076965>
- Soomro, A. B., Salleh, N., Mendes, E., Grundy, J., Burch, G., & Nordin, A. (2016). The effect of software engineers' personality traits on team climate and performance: A Systematic Literature Review. *Information and Software Technology*, 73, 52–65. <https://doi.org/10.1016/j.infsof.2016.01.006>
- Stock, R. M., Zacharias, N. A., & Schnellbaecher, A. (2017). How Do Strategy and Leadership Styles Jointly Affect Co-development and Its Innovation Outcomes? *Journal of Product Innovation Management*, 34(2), 201–222. <https://doi.org/10.1111/jpim.12332>
- Straub, D., & Karahanna, E. (1998). Knowledge Worker Communications and Recipient Availability: Toward a Task Closure Explanation of Media Choice. *Organization Science*, 9(2), 160–175. <https://doi.org/10.1287/orsc.9.2.160>
- Tims, M., Bakker, A. B., & Xanthopoulou, D. (2011). Do transformational leaders enhance their followers' daily work engagement? *Leadership Quarterly*, 22(1), 121–131. <https://doi.org/10.1016/j.leaqua.2010.12.011>
- Vîrgă, D., Maricuțoiu, L. P., & Iancu, A. (2019). The efficacy of work engagement interventions: A meta-analysis of controlled trials. *Current Psychology*.

<https://doi.org/10.1007/s12144-019-00438-z>

Williams, M. (2000). Interpretivism and generalisation. *Sociology*, 34(2), 209–224.

<https://doi.org/10.1177/s0038038500000146>

9. APENDICES

Appendix 1: Research Instrument

The following questions form the base of the interview guide for discussion with the subjects of the study. The intention of the interviews is to capture what factors pull or push the interviewee to contribute as meaningfully as possible at work.

In the analysis the study will aim to understand whether the factors that make the subjects of the study engaged are behavioural or attitudinal.

General questions

1. Are you self-employed (independent consultant) or do you work for someone else?
2. Are you in a managerial role or a non-managerial role?
3. **Employee engagement:** The degree to which you immerse yourself in your work to the point that you are committed to it, are willing to overcome difficult situations and show great focus while also displaying mental toughness in the work environment. – behaviours and attitudes that reflect a commitment to your work (mental, physical and emotional), a commitment shown while displaying mental toughness and a willingness to overcome difficult situations at work.
4. How would you classify your engagement level at the moment at work?
 - a. Engaged – chase excellence
 - b. Not engaged – do what is required of you
 - c. Actively disengaged – potentially disruptive

Research question 2: Which drivers of engagement are relevant for knowledge workers in the South African ICT sector?

In terms of providing the best quality deliverables to your client / customer

1. What are the things about your job that you like?

2. What are the things about your job that you find exciting and make you want to work harder?
3. Please describe how you feel when you are working at your best
4. What motivates you at work? What does your company need to do to make you feel really motivated/engaged at work?
5. What factors in the culture of your organisation motivate and demotivate you?
6. What practices in the organisation motivate and demotivate you? (performance management, rewards and recognition, leave policy, paternity/maternity leave, expense reimbursements)
7. What are the things you don't like about your job?
8. What demotivates you at work? What does your company need to stop doing or do less of to make you feel really motivated/engaged at work?
9. Have you always been an ICT professional? Were the factors that influenced your engagement different? What were they (Positive and negative)?
10. What do you think are the factors that motivate people in the ICT field that are different to other fields?
11. What should your manager do differently to get you engaged/more engaged?
12. What are the skills that you possess that are critical to you performing well in your job?
13. Before the COVID-19 crisis did you work remotely?
 - a. Does working remotely influence your engagement levels?
 - b. Which factors of engagement does it influence? Positively or negatively?

Research Question 3: Is the engagement of managers influenced by different drivers to non-managers in the South African ICT sector?

1. Have the things you described above changed as you have gained more seniority?
2. Which of them do you feel are more relevant now?
3. What factors do you think influence the engagement of your team (as a manager) or your teammates?

Appendix 2: Atlas.ti Codebook

Individual codes created

Ability to deal with conflict as a relevant characteristic of ICT professional management

Ability to influence people as a core skill for ICT professionals

Ability to see the bigger picture as a core skill for ICT profession roles

Ability to work in teams as a common characteristic of ICT professionals

Ability to work in teams as a core skill for ICT professionals

Achievement as a positive influence on engagement

Achievement as a positive influence on team engagement

Admin as a negative influence on engagement

Aiming to impress and get recognition as a positive influence on engagement - Initial stages

All talk and no action as a negative effect on engagement

Allowing time for social interaction as a positive influence on engagement

Analytical as a core skill for ICT profession roles

Being constantly challenged as a positive influence on engagement

Building client relationships as a core skill for ICT profession roles

Building client relationships as a positive influence on engagement

Business writing skills as a core skill for ICT professionals

Clarity on path going forward as a positive influence on engagement

Classic working hours as a negative influence on engagement

Communication and feedback culture at all levels as a positive influence on engagement

Communication and feedback culture at all levels as a positive influence on team engagement

Communication challenges as a negative effect from remote working

Communication skills as a core skill for ICT profession roles

Company culture as a negative influence on engagement

Company culture as a positive influence on engagement

Company strategy as a positive influence on engagement

Conflict as a negative influence on engagement

Conflict as a negative influence on engagement - initial stages
Conflict as a positive influence on engagement - latter stages
COVID effect on engagement
Creativity as a common characteristic of ICT professionals
Critical thinking as a core skill for ICT professionals
Culture as a negative influence on team dynamics
Culture as a positive influence on team dynamics
Culture of innovation as a positive influence on engagement
Curiosity as a core skill for ICT professionals
Currently actively disengaged at work
currently engaged at work
Currently self-employed
Customer satisfaction as a positive influence on engagement
Customer satisfaction as a positive influence on team engagement
Decision making as a positive influence on engagement
definition of employee engagement as being resilient
definition of employee engagement as doing meaningful work and personal growth
definition of employee engagement as HR practice
definition of employee engagement as intent
definition of employee engagement as keeping busy
definition of employee engagement as motivation for greater productivity
definition of employee engagement as use of discretionary energy
Desire to succeed as a core skill for ICT professionals
Disciplined as a common characteristic of ICT professionals
Diversity in the people you interact with as a positive influence on engagement
Education level
Employed
Employee wellness focus as a positive influence on engagement
Employee wellness focus as a positive influence on team engagement
Enabling environment as a positive influence on engagement
Engaged example - going over and above requirement
Engagement drivers for ICT professionals are different from other professionals
Engagement drivers for ICT professionals are not different from other professionals
Engagement influencing factors have changed

Equal access to information as a positive influence on engagement
Equality in the workplace as a positive influence on engagement
Expense reimbursements as a negative influence on engagement
Facilitation skills as core skills for ICT professionals
Fear as a culture as a negative influence on engagement
Fear of unemployment as a positive influence on engagement
Financial services occupation
Flexibility as a positive influence on engagement
Flexibility as a positive influence on team engagement
Flexibility example as a positive influence on engagement
flight mode as a description of when fully engaged
Focus has shifted but factors of influence have not changed
Full time capacity
Gaining experience as a positive influence on engagement
Growing the business as a positive influence on engagement
Growing the team as a positive influence on engagement
Growth as a positive influence on engagement
Growth as a positive influence team on engagement
Has not worked in an industry outside ICT
Having the right tools as a common characteristic of ICT professionals
Having the right tools as a positive influence on engagement
Having the right tools as a positive influence on engagement - Initial stages
Head office knows best as a negative influence on engagement
Higher levels of emotional intelligence as a positive influence on engagement -
latter stages
Hybrid Management role
Idea - Digital engagement argument
Idea - New role in the business to driven monitor and evaluate engagement as a
positive influence on engagement
Implementing solutions as a positive influence on engagement
In the flow as a description of when fully engaged
Inclusive environment as a positive influence on engagement
Ineffective communication as a negative influence on engagement
Innovative as a common characteristic of ICT professionals

Inter-personal skills as a core skill for ICT profession roles

Knowledge work occupation

Lack of accountability as a negative influence on engagement

Lack of boundaries as a negative influence on engagement

Lack of clarity on path going forward as a negative influence on engagement

Lack of confidence in your abilities as a negative influence on engagement

Lack of diversity as a negative influence on engagement

Lack of feedback on your work as a negative influence on engagement

Lack of growth as a negative influence on engagement

Lack of innovation as a negative influence on engagement

Lack of Inter-personal skills as a common characteristic of ICT professionals

Lack of learning and development as a negative influence on engagement

Lack of progressive thinking as a negative influence on engagement

Lack of rewards and recognition as a negative influence on engagement

Lack of trust in the leadership as a negative influence on engagement

Large scale of projects as a positive influence on engagement

Leadership opportunities as a positive influence on engagement

Learning more as a positive influence on engagement

Learning more as a positive influence on team engagement

Leave policy as a practice that has a positive influence on engagement

Lobbying as a positive influence on engagement

Logical thinking as a core skill for ICT professionals

Making a meaningful contribution as a positive influence on engagement

Management style as a negative influence on engagement

Management style as a positive influence on engagement

Managerial role

Meetings as a negative influence on engagement

Micromanagement as a negative influence on engagement

Middle Management role

Money as a factor to influence engagement - Initial stages

Money as a factor to influence engagement - latter stages

Money as a factor to influence engagement - mid stages

Money as a positive influence on engagement levels

Money as a positive influence on team engagement levels

Money driven as a common characteristic of ICT professionals

Motivation versus engagement definitions

Networking opportunities as a positive influence on engagement

No change in engagement levels when working remotely

No change of influencing factors over time

No consideration for my time as a negative influence on engagement

Non-managerial role

Not celebrating success as a negative influence on engagement

Not money driven as a common characteristic of ICT professionals

Occupation length

Offering mentorship as a positive influence on engagement

Offering mentorship as a positive influence on engagement - Latter stages

Offering mentorship as a positive influence on team engagement

Outcomes orientated as core skill for ICT professionals

Output focus as a positive influence on team engagement

Output focus rather than time focus as a positive influence on engagement

Overconcern as a negative influence on engagement

Passion as a positive influence on engagement

Performance management practice as a negative influence on engagement

Performance management practice as a positive influence on engagement

Performing scope outside your role as a negative influence on engagement

Power driven as a common characteristic of ICT professionals

Pride in your work as a positive influence on engagement

Private run businesses versus corporates on growth opportunities

Problem solving as a common characteristic of ICT professionals

Problem solving as a core skill for ICT profession roles

Progression as a positive influence on engagement

Progressive thinking as a characteristic of ICT professionals

Project documentation as a negative influence on engagement

Purpose as a positive influence on engagement

Reciprocity as a positive influence on team engagement

Red tape as a negative influence on engagement

Religion and its relationship with culture as an influence on engagement

Remote working as a negative influence on engagement

Remote working as a positive influence on engagement
Remote working not prevalent before COVID pandemic
Resilience as a common characteristic of ICT professionals
Response to remote working turning positive
Responsibility as a positive influence on engagement - Initial stages
Rewards and recognition as a positive influence on engagement
Rewards and recognition as a positive influence on team engagement
Sales process as a positive influence on engagement
Satisfaction about job as a positive influence on engagement
Self-driven as a characteristic of ICT professionals
Sharing knowledge as a core skill for ICT profession roles
Solutioning as a common characteristic of ICT professionals
Solutioning as a core skill for ICT profession roles
Solutioning as a positive influence on engagement
Solutioning for the wrong outcome as a negative influence on engagement
Solving problems as a factor to influence engagement - Initial stages
Solving problems as a factor to influence engagement - latter stages
Solving problems as a positive influence on engagement
Solving problems as a positive influence on team engagement
Steady pipeline as a positive influence on engagement
Strict time management as a negative influence on engagement
Success in my job as a positive influence on engagement
Success in my job as a positive influence on team engagement
Support as a positive influence on engagement
Support as a positive influence on team engagement
Teamwork (collaboration) and team culture as a negative influence on engagement
Teamwork (collaboration) and team culture as a positive influence on engagement
Technical skills as a core skill for ICT profession roles
Time away from home as a negative influence on engagement
Time pressure as a negative effect on engagement
Tools and technologies as a negative influence on engagement
Trust as a core skill for ICT profession roles
Trust as a positive influence on engagement
Trust as a positive influence team on engagement

Trust in the leadership as a positive influence on engagement
Trust in your abilities as a positive influence on engagement
Trust in your abilities as a positive influence on engagement - latter stages
Type and nature of growth as a negative influence on engagement
Type of clients as a positive influence on engagement
Types of projects as a negative influence on engagement
Upfront and direct as a characteristic of ICT Professionals
Wanting recognition as a common characteristic of ICT professionals
Wide scope Company strategy as a negative influence on engagement
Willingness to learn as a common characteristic of ICT professionals
Work life balance as a positive influence on engagement
Worked remotely before COVID pandemic
Working long hours as a negative influence on engagement
Working with new technology as a positive influence on engagement
Writing code as a positive influence on engagement

Code groups created

Alternative definitions of employee engagement
Common characteristics of ICT professionals in RSA
Core skills required by ICT professionals in RSA
Current engagement levels
Descriptions of when fully engaged
Engagement factors over time
General questions
Initial stages - Positive influence
Latter stages - Positive influence
Negative influences on engagement
Positive influences on engagement
Remote working / COVID
Team - Positive influences on engagement

Code groups per research question

Research Question	Code Group
1	Alternative definitions of employee engagement
1	Current engagement levels
1	Descriptions of when fully engaged
1	General questions
2	Common characteristics of ICT professionals in RSA
2	Core skills required by ICT professionals in RSA
2	Negative influences on engagement
2	Positive influences on engagement
2	Remote working / COVID
2	Team - Positive influences on engagement
3	Engagement factors over time
3	Initial stages - Positive influence
3	Latter stages - Positive influence

Appendix 3: Consent letter

Consent Letter

I am currently a student at the University of Pretoria's Gordon Institute of Business Science and completing my research in partial fulfilment of an MBA.

I am conducting research on employee engagement and am trying to find out more about the key drivers for employee engagement in the South African information and communications technology (ICT) sector. Our interview is expected to last about an hour and will help us understand the key drivers of employee engagement in the South African ICT sector.

Your participation is voluntary, and you can withdraw at any time without penalty.

All data will be reported without identifiers. If you have any concerns, please contact my supervisor or me. Our details are provided below.

Research Supervisor: Karl Hofmeyr
Email: *Removed for anonymity*
Phone number: *Removed for anonymity*

Researcher: Kudzani Gangeni
Email: *Removed for anonymity*
Phone number: *Removed for anonymity*

Participant Signature:

Date: ___ / ___ / _____

Appendix 4: Non-disclosure agreement

Non-Disclosure Agreement (NDA)

This non-disclosure agreement is entered into on [Agreement.CreatedDate] between Kudzani Ngqabutho Mqhelisi Gangeni (Researcher) and [Transcriber.Name] (Transcriber).

The Researcher acknowledges the Transcriber may receive information regarding the Researcher's business, practices, or other properties that may be considered confidential. Therefore, the Parties are in agreement to the following terms and conditions of this agreement.

Confidentiality

For the duration of this non-disclosure agreement, any information the Transcriber may come into contact with that is not public knowledge and is made only available through contact with the Researcher shall be deemed as confidential information.

This includes any information in regard to vendors, pricing, product, technology, software, or product.

The Transcriber should use common judgment when deciding if information is confidential and above all else shall request approval from the Researcher prior to the release of any questionable information.

Confidentiality Protection

The Transcriber understands that the information deemed confidential is of value to the Researcher and shall hold all information at the same level of confidentiality as personal information is held.

The Transcriber agrees to hold all confidential information made available to standard non-disclosure terms and will not make said information available or disclose said information to third party vendors or individuals without the Researcher's prior written consent.

The Transcriber shall under no circumstances modify or copy confidential information that is made available to them.

Unauthorized disclosure

In the event any information is found to be disclosed by the Transcriber without prior written approval from the Researcher, the Researcher will be permitted to seek remedies including, but not limited to legal assistance and termination of this agreement.

Non Circumvention

Upon entering into this non-disclosure agreement and for a period of 5 years after the conclusion or termination of this agreement the Transcriber shall not partake in business with or solicit business that was made available from the Researcher to the Transcriber for the purpose of circumvention.

In the event such circumvention occurs the Researcher shall be entitled to any and all compensation regarding any transactions that may take place from such events occurrence.

Return of Information

Upon the conclusion or termination of this agreement the Transcriber agrees to return any information deemed confidential and in relation to this non-disclosure agreement.

Any information that is unable to be returned must be destroyed immediately following the termination or conclusion of this non-disclosure agreement.

Relationship

This non-disclosure agreement shall not serve in any instance as an agreement between the Parties for employment.

The Transcriber shall remain as an individual contractor unless otherwise contracted by the Researcher directly and shall as so pay all federal and local taxes due for monies received.

License to Use

The Transcriber shall be permitted to use any and all information or products provided by the Researcher strictly in the form such property is permitted.

Furthermore all property provided to the Transcriber shall remain the Researcher's property and shall be treated as such.

Indemnity

The Transcriber agrees to hold the Researcher harmless in the instance of any loss, damage, theft, or injury for any reason.

This is inclusive of any attorney fees, court costs, hospital fees, and loss of funds that may occur from such negligence.

Entirety

This non-disclosure agreement shall serve as the entire agreement between the Parties and shall prevail over any prior agreements conducted in written or oral form by the Parties.

Term

The obligations of this non-disclosure agreement shall survive indefinitely including through termination or conclusion of this agreement.

Assignment

The Parties agree to abstain from the sale, transferring, or delegating of any provisions of this agreement to third party individuals without the prior written consent of the responding party.

Any third party individuals entered into this agreement shall be bound by all the terms and conditions contained within this agreement as so.

Jurisdiction

This non-disclosure agreement shall fall under the jurisdiction of [Researcher.State], furthermore all legal proceedings occurring in relation to this agreement shall be conducted as such.

The prevailing party in such proceedings shall have the opportunity to seek compensation for all court fees associated with said proceedings.

Notification

Any and all notifications related to this non-disclosure agreement shall be produced in person, via courier, or via certified letter to the addresses listed below.

Researcher: [Researcher.Address]

Transcriber: [Transcriber.Address]

Agreement

By affixing their electronic signatures below, the Parties acknowledge and agree to any and all provisions included in this non-disclosure agreement.

Signature:

Date: __ / __ / ____

Appendix 5: Ethical clearance approval

**Gordon Institute
of Business Science**
University of Pretoria

**Ethical Clearance
Approved**

Dear Kudzani Gangeni,

Please be advised that your application for Ethical Clearance has been approved.

You are therefore allowed to continue collecting your data.

We wish you everything of the best for the rest of the project.

[Ethical Clearance Form](#)

Kind Regards

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