



**EMPLOYEE ENGAGEMENT ANTECEDENTS AND  
OUTCOMES:  
PERCEPTIONS OF WHAT ENGAGEMENT LOOKS LIKE FOR  
REMOTE WORKERS**

A Thesis submitted by  
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## **ABSTRACT**

This thesis explores the relationships between job resources and leader-member exchange as antecedents, and job satisfaction and organisation commitment as outcomes of engagement in respect of remote techno workers. The multidimensional approach including job and organisation engagement is considered a moderating variable in circumstances when an organisations proximity and context was altered and broadened, and employee engagement is the overall theoretical framework underpinning this research. The thesis provides a contextual analysis of the data using an inductive case study approach. The thesis found that both social and leadership antecedents were important to building employee engagement in techno workers. More specifically leader-member exchange and engaging leadership influenced the engagement of techno workers and the social and interpersonal organisational artefacts of social capital and social support create a sense of belonging that has a community buffering effect on isolated workers. Similarly, and consistent with the inductive approach, the thesis found that multidimensional employee engagement significantly influenced individual work-related attitudes such as achievement and job satisfaction as well as individual performance such as productivity and going above and beyond. To this extent, the thesis makes a substantial contribution to existing theory by exploring which employee engagement antecedents and outcomes are more germane in respect of remote techno workers. The study extends existing theory about employee engagement in relatively stable and traditional work environments by explicating a stronger link between antecedents and outcomes in remote and distal work environments. This contextual analysis is particularly important and timely in a post Covid-19 world where an increasing amount of work shifts from traditional working environments into the home.

## **CERTIFICATION OF THESIS**

This Thesis is entirely the work of Marnie Gibson \_\_\_\_\_ except where otherwise acknowledged. The work is original and has not previously been submitted for any other award, except where acknowledged.

Principal Supervisor: Professor Peter A. Murray\_\_\_\_\_

Associate Supervisor: Doctor Kim Southey\_\_\_\_\_

Student and supervisors' signatures of endorsement are held at the University.

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## **CHAPTER ONE: INTRODUCTION**

### **1 Introduction**

Chapter one introduces the research project, emphasising the desire of organisations to better engage their remote employees to help them drive productivity and profitability in the new world of work. This is a contextual investigation of employee engagement in the remote techno working environment, which is the background and context of this research. This thesis explores the influences and associated outcomes of employee engagement (EE) in techno working environments, the phenomenon of employees working remotely, virtually and individually (O'Neill et al. 2014). The remote techno working environment is chosen in order to identify a range of successful antecedents that may be utilised to influence EE and result in positive outcomes associated with EE such as job satisfaction and organisational commitment. This thesis investigates how specific job resources, and leader-member exchange factors influence engaged techno workers within a remote working environment isolated from the employing organisation and other colleagues. The following narrative addresses the research background, the research questions, followed by a discussion on the justification, scope and limitations of the research. An overview of the methodology is followed by the conclusion to the introduction.

#### **1.1 Background to the research**

The need for organisations to better engage their employees is pressing because organisations with strong EE generate revenue growth at a rate of up to four and a half times higher than other companies (Delaney & Royal 2015). It is reported that only 13% of employees worldwide are actually engaged (Harter & Mann 2016), suggesting that many organisations are not reaping the rewards of EE. Furthermore, with organisations spending hundreds of millions of dollars on EE programs (Morgan 2017), it seems their attempts to buy their employee's engagement are failing and investments are misguided. Therefore, with the positive outcomes of EE justified (e.g. Delaney & Royal 2015; Witemeyer 2013), the focus needs to shift to better understanding which antecedents of EE benefit both employees and organisations.

Employee engagement (EE), sometimes referred to as work engagement (Schaufeli et al. 2002; Schaufeli 2014), is a concept that has continued to evolve both in academic and practitioner research since its emergence in Kahn's (1990) positive psychology work. Although being a rather new academic construct, its popularity in practice has grown out of these claims of the strong positive relationship between engagement and business success with reported outcomes including, but not limited to, increased employee retention, higher productivity, stronger profitability, and increased customer loyalty and satisfaction both at the individual and organisational levels (Witemeyer 2013).

The tension between engagement and disengagement has led to a significant body of knowledge in the field but as a recent synthesis of the literature (Bailey et al. 2017) highlighted, there was a lack of uniformity about engagement antecedents, mediators, moderators and dependent variables (Macy & Schneider 2008; Saks & Gruman 2014; Truss et al. 2013). Although a considerable amount of research attention has been devoted to employee engagement, Saks (2006), Shuck (2011) and Bailey et al. (2017) suggest that research pertaining to EE antecedents is not unequivocal and needs to be better understood. Focusing on antecedents will enhance the development of measures that will help researchers and practitioners better understand how to cultivate an engaged workforce (Saks & Gruman 2014). Similarly, scholars point to the difficulty in trying to understand which set of antecedents are a more reliable indicator of EE (Bailey et al. 2017; Jeske et al. 2017; Jiang et al. 2012, 2013; Gardner et al. 2001; Saks 2006; Macey & Schneider 2008); the challenge has been identifying the ordering of the constructs, what comes first, antecedents or outcomes in some studies (Schaufeli 2013; Saks & Gruman 2014; Shuck & Reio 2011; Soane et al. 2012).

While a number of studies have focused on the importance of antecedents (Cheng et al. 2013; Del Libano et al. 2012; Idris & Dollard 2011; De Braine & Roote 2011; Balducci et al. 2011; Mendes & Stander 2011; Kahn 1990; Saks 2006; Shuck et al. 2015; Wollard & Shuck 2011; Tims et al. 2011; Xanthopoulou et al. 2009) and the advanced conditions of predicting EE, the wide number of model linkages (Shuck et al. 2015), have been hard to capture due to model complexity and survey fatigue (Shuck et al. 2017). Causality claims have also been limited due to an over reliance on quantitative, cross sectional and self-report studies prompting the call for further research evaluating the salience of a range of different antecedents to engagement outside these common



methodologies (Bailey et al. 2017). Many foundational studies have advanced scholarly understanding of EE (e.g. Kahn 1990; Luthans & Peterson 2002; Macey & Schneider 2008; Soane et al. 2012; Shuck et al. 2017), although identifying a reliable and context-specific instrument to measure EE has become an increasingly elusive pursuit and is the basis of more recent inquiry across different contexts related to how EE influences performance (Koty & Sharma 2016; Truss et al. 2012; Arrowsmith & Parker 2013).

This thesis adds to existing EE theory by applying theory empirically in the unique context of techno working, where employees are physically remote from the employing organisation and any other colleagues. Essentially, they are working individually in a remote environment physically, socially and psychologically separated from the typical and traditional organisational context. This investigation will contribute to the understanding of whether EE linkages and their supporting theories are the same across different contexts which is an important scope of inquiry noted by theorists (Puffer & McCarthy 2011).

## **1.2 Context of this research**

The evolution of the world of work is being driven by economic, social, technological and political changes that are affecting individuals and organisations. The exponential growth of digital connectivity, devices and information is driving profound changes in the way we work across the globe. Furthermore, the recent Covid-19 pandemic forced us into remote working quicker than we expected or were prepared for and it's become evident that there are not policies and interventions in place to best support this new way of working (Vyas & Butakheio 2021). In order to survive in this new world, companies need to rethink everything from culture to tools, processes and environments. Organisations are being forced to think differently about what it means to be an employee, or a manager, how to think differently about how work is performed, where it can be done, by whom and what it actually means for workplace productivity. These changes are affecting the way we work and therefore the changing organisations and the functions of human resources (HR). The changing role of HR practitioners is something that must be addressed explicitly in research of the relationship between human resources management (HRM), employee well-being, engagement and performance, which is relevant to different contextual settings.

Placing EE within the context of the new world of work creates further complexity. Given the growth in multinational firms, technological advances and more recently, the Covid-19 virus outbreak which forced non-essential work entirely into the home environment, there is much uncertainty about what kind of antecedents lead to EE when employees are not physically present within the traditional working environment. While recent literature has investigated the influence of various distributed working practices on EE (Gerards et al. 2018; Masuda et al. 2017; Peters et al. 2013), this research has mainly pertained to employees splitting their work time between the office or traditional workplace and their home or 'remote' location. No research has examined the phenomenon of employees who *only* work remotely, away from the traditional workplace in what is known as a techno working context. During the pandemic, researchers progressed conceptual studies of EE in remote working based on extant literature, however this approach relies on the assumption that you can apply traditional EE theory on new ways of working rather than investigating this context as a new phenomenon giving rise to new EE theory (Chanana & Sangeeta 2020; Vyas & Butakhieo 2021; De-la-Calle-Duran & Rodrigues-Sanchez 2021).

The constancy of physical and psychological separation from the organisation alters the experience of work, the workplace and the employing organisation, and with the rising incidence of this type of work, particularly post the Covid-19 outbreak, this contextual investigation is warranted. The period of quarantined and isolated working during the Covid-19 outbreak saw the immediate shift of non-essential work to the home to allow distancing from others. Whilst this abrupt transformation for some may be short lived for the period of the virus outbreak, many organisations are now considering the advantages of a remote workforce indefinitely. Companies such as Amazon, Facebook, American Express Microsoft, Paypal, Salesforce and several more have announced that employees can choose to permanently work from home, or they can work in a company office if they wish to do so (Courtney 2021). Other companies such as Quora have adopted remote first policies allowing nearly all employees to work remotely and relocate to anywhere the company can legally employ them (Courtney 2021). With the increasing optionality for indefinite remote working, there is the need to understand how to engage this remote workforce. This relates not only to employee job roles at home, but also how to better engage them in the broader organisation. The precise nature of EE antecedents for the

techno work context needs to be understood by HR designers distinct from the large repository of existing knowledge pertaining to traditional organisations and ways of working (e.g. Shuck 2011; Saks 2006; Truss et al 2012; Macey & Schneider 2008).

Techno working is explained in detail in Chapter two, however the phenomenon relates to work which by nature involves using technology such as satellites, computers, tablets and phones to carry out *all* of one's work in a remote location away from the traditional office or workplace. This is different to other distributed and remote working practices where just *some* of the work is performed remotely away from the office or workplace in the case of teleworking (O'Neill et al. 2014). However, the challenge is that the application of traditional engagement strategies, interventions and tools, and even the construct and experience of EE itself, may not be applicable to this phenomenon (Gerards et al. 2018; Sacks & Gruman 2014; Truss et al. 2012), especially given the shifting organisational boundaries which are at the behest of differential contexts.

This thesis suggests that given techno working is altered in time and space, the experience of work is also altered which may have implications on a techno worker's willingness and ability to engage. Studies of telework, a similar remote working practice, have shown that because these employees are physically and psychologically separated from the traditional workplace, they have reduced identification with their organisations and reduced organisational commitment (Allen et al. 2003; Golden 2009; Wiesenfeld et al. 1999). Because of the physical and psychological separation, there may also be salient differences in the experiences of ambiguity and role conflict (Sardeshmukh et al. 2012), including differing levels and experiences of social support and autonomy, with all of these resources influencing the experience of EE (Bailey et al. 2017; Bakker & Demerouti 2007; Saks 2006).

The motivation for this research concerns how to address this problem. The researcher investigates the current gaps in the literature that lead to a lack of clarity around EE antecedent variables and EE outcomes across techno working contexts. This thesis explores whether traditional EE models can be applied across contexts consistent with calls for similar research (Puffer & McCarthy 2011). To this end, the discussion develops a conceptual framework that can be used to measure the relationship between EE antecedents and outcomes moderated by the experience of EE in the context of techno

working which addresses the call from theorists to progress more contextual EE research (Bailey et al. 2017). The research problem and research questions are discussed next followed by the theoretical significance and justification and outline of the thesis. This section includes a description of the methodology, thesis definitions and delimitations.

### **1.3 The research problem and research questions**

This thesis is designed to explore three dimensions of employee engagement; the employee engagement antecedents, experiences and outcomes of techno workers in remote working environments. Given that HR practices fail to capture the relational interplay of EE within a contextually nuanced environment, this thesis recommends EE interventions applicable to techno working contexts. Underpinned by social exchange theory (SET), this thesis seeks to make a significant contribution to the existing EE literature such that the relationships to be investigated are novel and have not been explored in prior research. As such, the research problem of this thesis concerns both the antecedents and associated outcomes of EE in this unique techno working environment and how the state of EE is experienced by techno workers. Specifically, this thesis seeks to determine:

*'What are the antecedents, outcomes and experiences of EE in techno workers in remote working environments?'*

The antecedents of EE in this context are explored in research question one. The experiences of EE - reviewed as part of a multidimensional approach (MDA) of EE including both job engagement (JE) and organisation engagement (OE) - are investigated in research question two, and the outcomes associated with EE are explored in research question three.

#### **1.3.1 Research question one**

RQ1: How are employers *influencing* the employee engagement of techno workers?

RQ1.1: What influence do job resources have on a techno worker's experience of *employee engagement*?

RQ1.2: What influence does leader-member exchange have on a techno worker's experience of *employee engagement*?

### **1.3.2 Research question two**

RQ2: How do techno workers experience the *state of employee engagement*?

RQ2.1: What is a techno worker's experience of *job engagement*?

RQ2.2: What is a techno worker's experience of *organisation engagement*?

### **1.3.3 Research question three**

RQ3: What *outcomes* are associated with a techno worker's experience of employee engagement?

RQ3.1: How does *job satisfaction* emerge as an outcome of EE in techno workers?

RQ3.2: How does *organisation commitment* emerge as an outcome of EE in techno workers?

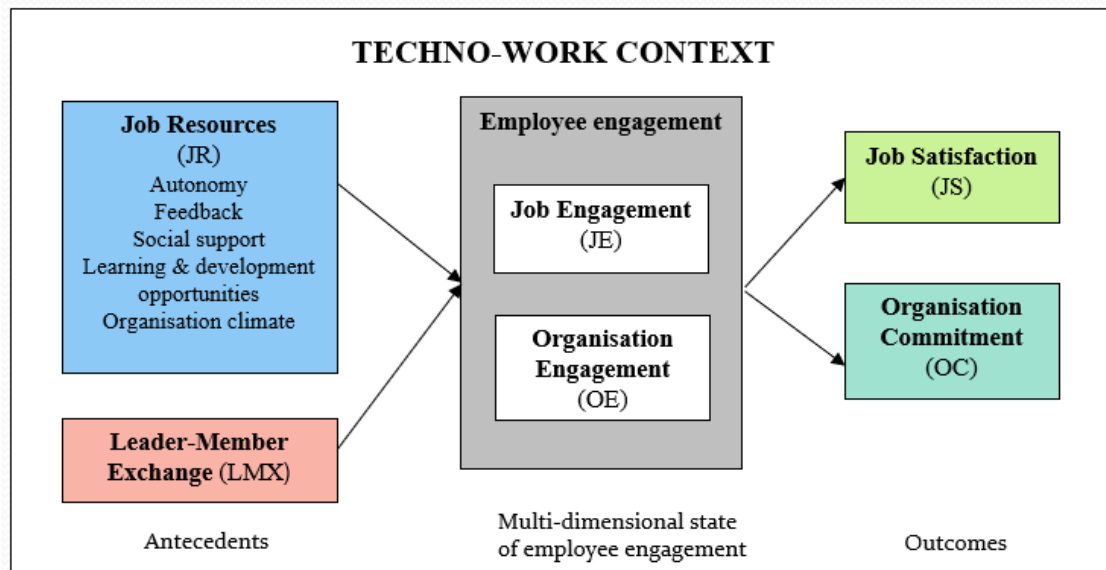
### **1.3.4 The conceptual model**

This thesis explores the phenomenon of employees working remotely, virtually and individually as *techno workers* (O'Neill et al. 2014) utilising an employee engagement theoretical framework. Taken together, the contribution to the literature is in identifying a more granular approach to EE antecedents more likely to be associated with JE and OE outcomes in remote work environments. The investigation of EE antecedents and their associated outcomes employs the multidimensional approach (MDA, Saks 2006 & 2019), an EE theoretical framework that explores how JE and OE moderate the antecedents of job resources and leader-member exchange (LMX) with the associated outcomes of job satisfaction and organisational commitment, one of very few extant studies of this nature (Saks 2006 & 2019). This approach differs from many previous studies that have examined multiple individual level attributes such as the job stress, job burnout effects, psychological factors (Shuck 2011; Shuck & Wollard 2010; Truss et al. 2010; Xanthopoulou et al 2009) on individual level engagement as distinct from what

kind of engagement activities are required for techno workers. In addition, the approach here enlightens scholarly understanding of EE in techno working contexts. That is, this thesis explores how EE might be conceived differently because of changes in the experience of work, changes in the organisation and their teams and changes in manager-employee relationships. Both job satisfaction and organisational commitment are explored as outcomes associated with the experiences of EE with their differentiated focuses critical to understand in this context due to the social and distal isolation of the environment. Here, the thesis makes an additional significant contribution to the EE body of knowledge.

The conceptual model (Figure 1.1) illustrates that job resources are acknowledged as antecedents independent of but dynamically related to, leader-member exchange (LMX) within the techno work setting. The exploration of the model concerns how LMX quality and/or the identified job resources influence the development of EE experiences of techno workers. Figure 1.1 is informed by Social Exchange Theory (SET) as a two-way relationship between the employer and the employee (Robinson et al.'s 2004), providing the rationale for EE antecedents and outcomes. For example, the rules of reciprocity and repayment in the relationship dictate that the employer provides employees with positive resources in exchange for their engagement and high engagement outcomes are then desired by the organisation (Saks 2006). The multidimensional approach (Saks 2006) is introduced as the EE framework operationalised in this research for the purpose of understanding the nuances of EE in this context relevant to job engagement and organisation engagement. With very few studies exploring both the antecedents and consequences of EE using a multidimensional approach (MDA), the relationships to be tested in the model are expected to make a unique contribution to the extant EE literature by expanding the scope of knowledge to the techno working context.

**Figure 1.1 Conceptual model of this thesis depicting the main variables**



#### 1.4 Delimitations of this thesis

Given the extensive nature of the EE literature, this thesis commits only to exploring the dimensions and literature aligned to the main research aim. The aim of this thesis is to explore the employee engagement antecedents, experiences and outcomes of techno workers in remote working environments.

Both construct and instrument validation encompassing all facets of EE means relationships between antecedents and outcomes cannot be empirically tested (Witemeyer 2013). This thesis does not aim to conceptualise nor measure *all* of these antecedent or associated outcomes. It does however aim to focus on two empirically tested antecedent theories of job resources (job-demands resources theory) and LMX, as well as two separately empirically tested EE outcomes of job satisfaction and organisational commitment. Further, and as explained above, two states of EE (job and organisation engagement) will be investigated as part of the multidimensional approach of EE. The choice of these particular antecedents and outcomes as explained in later sections, are specific to the phenomenon of techno working.

At the time of this thesis, these specific antecedents and outcomes had not previously been tested within existing research. Saks (2006) provides the MDA within which these EE theories will be explored. Due to the vast scope of the EE literature, this thesis will only include the following discipline areas and theories determined as the most

applicable to the phenomena; the MDA (JE and OE), job resources, LMX, job satisfaction and organisational commitment. Further, for the purposes of this research, techno working is defined as individual work involving technology such as satellites, computers, tablets and phones to carry out *all* of one's work relevant to virtual, remote and distributed workforces (O'Neill et al. 2014), isolated from the employing organisation premises and other colleagues. The techno working environment is the phenomenon of investigation to the exclusion of all other working environments and contexts.

Whilst the EE literature is wide and varying and there are many organisational behavioural and management theories that could be engaged in this investigation, the scope of investigation these three dimensions of EE alone is considerably large and due focused consideration. Other management theories such as inclusion, performance, collaboration, teaming and many others unfortunately will not be studied as part of this research unless they emerge as an antecedent, experience or outcome of EE as part of the exploratory qualitative investigation.

All other theories, constructs, conceptualisations, antecedents and outcomes fall outside the boundaries of this research and will not be investigated. However, as this investigation is primarily qualitative, further discipline areas may emerge in the data analysis and findings of this research discussed in Chapter four.

## **1.5 Justification for the research**

For over ten years, EE has dominated management research and practice with much being learned about EE (Saks 2019). However, it continues to be of considerable interest to academics and practitioners given continuing reports of low levels of EE (Albrecht et al. 2015; Gallup 2017), and the potential for high EE to contribute to an organisation's competitive advantage (Saks 2019). Organisations continue to spend exorbitant amounts of money on interventions to no avail as only 13-15% of employees worldwide are engaged in their jobs (Harter & Mann 2016; Gallup 2017). Employers are at a loss as to how to cultivate engagement in their workforces to reap the rewards of competitiveness and performance differentiation (Gallup 2017).



However, whilst EE has attracted this attention over the years, the extant research has focused on employees working in traditional workplaces such as offices and worksites with only very few studies investigating new ways of working such as remote, distributed and teleworking (see De vries 2019; Sardeshmukh et al. 2012; Masuda et al. 2016; Ugargol & Patrick 2018; Brummelhuis et al. 2012). At the time of commencement of this research in 2018, these new ways of working were increasing in incidence by 173% since 2005 (Global Workplace Analytics 2019), although it was the onset of Covid-19 in 2020 that expedited workforces across the globe shifting to remote working and working from home almost overnight. Context has been often called out as the limitation in EE research and to this end, this research is timely for providing important insights into the remote and techno working environment not yet explored in the literature. With predictions that 25-30% of the global workforce will spend multiple days per week working from home from 2021 onwards (Global Workplace Analytics 2020), there is an immediate need to understand how to engage this growing number of remote and techno working employees. To this end, with the rise of remote working, it follows that this research is now more relevant than ever. Beyond this practical justification for this thesis, this investigation is also justifiable on theoretical, economic, policy and social grounds which are covered now.

### **1.5.1 Theoretical significance**

The inductive nature of the research is expected to make a major contribution to the employee engagement literature by, 1) identifying which antecedents lead to EE for employees in remote techno working environments, 2) understanding how techno workers experience EE and, 3) the consequences of this EE specific to employees working in remote techno working environments, which is the future of work post Covid-19 (Global Workplace Analytics 2020). Given that there is much disagreement by scholars within the EE literature, this thesis is expected to provide greater empirical clarity related to key EE antecedents and how these are associated with EE outcomes within the techno working context.

Further, this thesis is expected to provide a clearer understanding of the EE experiences of techno workers by investigating an MDA of EE that distinguishes job engagement (JE) from organisation engagement (OE). The differentiation of JE from the less studied

OE builds on the few extant studies available (e.g. Saks 2006; Farndale et al. 2014) to understand how they relate differently to EE antecedents and outcomes (Saks 2019). The distinction of these engagement states also addresses the call to “not combine job and organisation engagement into a measure of employee engagement as this blurs the distinction between them and results in a contaminated measure of engagement that will produce research findings that are difficult to interpret and generalise” (Saks 2019 p. 34). The difficulty in generalising across the literature has been noted. contributes to the deficiency in the OE literature (Guest 2014; Saks 2019). This is also one of very few investigations of EE antecedents and outcomes *not* using the Utrecht Work Engagement Scale (UWES, Schaufeli et al. 2002), therefore providing a significant contribution to EE generalisability (Carasco-Saul et al. 2015).

Further, due to the nature of the psychological studies, with the exception of Kahn’s (1990) work, the bulk of engagement studies has been derived from the positivist perspective. This means that the examination of EE has been predominantly cross-sectional and quantitative in nature (Kim et al. 2012). Findings of these studies are generally pursued using hypotheses arising out of the reviews of the literature, however their deductive nature means they proceed to the exclusion of new information that may arise as a result of an inductive process. Consequently, this thesis uses a qualitative approach.

Finally, extant EE research has focused on workplace-based EE. The transferability and relevance of EE interventions lack the contextual focus beyond traditional workplaces, which is a significant limitation (Breevaart et al. 2014; Guterman et al. 2017; Alfes et al. 2017) that this thesis proposes to address. The timeliness of this thesis is also expected to support organisations needing to engage their remote employees during and post the Covid-19 pandemic as this type of working becomes increasingly common place.

### **1.5.2 Economic/organisational significance**

In consideration of the growing trend in this type of work globally and the impact of the Covid-19 pandemic on remote working, the results of this research may lead to better engagement strategies which contribute to more efficient, effective and profitable organisations and employees who have a higher morale, health and wellbeing. This

research may hypothetically inform future research in relation to the link between EE and its organisational benefits such as organisational commitment (OC), organisational citizenship behaviour, work performance, turnover intention and innovative work behaviours (Agarwal 2014; Breevaart et al. 2015; Martin et al. 2016; Matta et al. 2015; Saks & Gruman 2014). The thesis will similarly inform links between EE and the benefits of distributed working practices associated with increased productivity and higher performance, including better employee retention and stronger workplace commitment (Martin & MacDonnell 2012). These outcomes are considered to be positive and aspirational organisation performance indicators. Direct causal relationships in these more general variables are largely unresolved (Harter et al. 2002) and will remain unmeasured economic outcomes that hypothetically could be significant and achievable. A clearer understanding of antecedents linked to EE may lead to increased employee retention, increased productivity and profitability, and increased customer loyalty and satisfaction both at the individual and organisational levels (Witemeyer 2013). Together with the impact Covid-19 had on remote working, this thesis may also support further investment in remote working practices and environments which could have numerous employee and organisation benefits.

Post Covid-19, organisations may consider the financial benefits of continuing with employees working remotely such as rent reductions and decreases in work-place costs such as lighting, heating, stationery and consumables. Whilst there are likely to be genuine savings to be made with transitioning to a techno working workforce, the findings of this research are expected to lead to the development and implementation of tools and strategies for employers that specifically address EE initiatives. This may lead to employer interventions within techno working environments to ensure that the organisation operation and performance is not compromised. The outcomes of this research will provide the participating organisation with an understanding of how job resources and quality leader-member relationships lead to better EE outcomes within techno working environments. As a result, the outcomes of this thesis may guide future HR and HRD practices.

### **1.5.3 Policy development significance**

The practical implications of this thesis are critical to organisations globally informing those involved in organisation policy development such as HRM personnel, managers and leaders, particularly in the areas of EE, leadership and managing people, and remote working. Consequently, new EE policies should lead to the development of new EE interventions which could be nuanced and customised for techno workers, enabling more organisations to employ workers in this remote nature. It is possible this research may impact not only on EE policies but also policies related to people management, recruitment, working from home and employee working arrangements. During and post Covid-19, as organisations scramble to activate an increased incidence of remote working, and also engage their employees in these remote environments, the findings of this thesis will provide important guidance in developing appropriate strategies and interventions.

#### **1.5.4 Social significance**

This thesis makes a social contribution by investigating how employers can better engage employees who work remotely, enabling organisations and employees more flexibility as to how and where they work. The impact of this increased flexibility in work location allows organisations a larger candidate pool for employment as candidates are less restricted geographically as to where they can work. This also gives rise to greater diversity and improved inclusivity as companies can employ people from different socio economic, geographic and cultural backgrounds as they are not restricted to a specific location. Further, organisations have the opportunity to downsize workplaces reducing their costs and overheads which could be redirected to EE interventions and other employee benefits.

There are significant environmental benefits arising out of increased flexibility with remote working such as reduced travel to and from the office or workplace resulting in drastic reductions in emissions, reduced power consumption as large worksites no longer need to be powered to the same extent and there is less paper usage which saves trees and increases capacity to remove carbon dioxide from the air (Schad 2020). The reduction in commuting also means employees gain more time back in their day which has been associated with stress and anxiety reduction and also cost savings which are both positive individual benefits for employees (Courtney 2020).

The Covid-19 pandemic which catapulted many employees into remote working has already seen social benefits of better work life balance and studies have revealed 65% of professional employees think they would be more productive working remotely (Courtney 2020). Therefore, the remote nature of the environment together with specific techno working EE interventions could possibly deliver even greater productivity for organisations. As the global workforce moves to spend multiple days per week working from home post Covid-19 (Global Workplace Analytics 2020), the findings of this thesis may support employers in engaging their flexible and remote workforce.

### **1.5.5 Practical implications**

This thesis has one main practical implication in that there is an immediate need to examine the utility of traditional EE concepts in the remote techno working environment which has not been studied in the literature. The immediacy of this need has been created by the Covid-19 pandemic as the spread of the virus isolated many employees globally to working from their own homes consistently. In order for organisations to support and even leverage remote working, research should explore the adoption of traditional EE interventions and strategies typically used by organisations to determine whether they are in reality ‘functioning’ and suitable in the techno working environment. Implications of this research will benefit organisations, governments, policy makers and HR departments in particular, as to how they could engage this emerging remote workforce. A secondary practical implication may be that because research in HRM/HRD and their effects on EE is limited, this research could help managers and HR personnel alike to understand why employees are engaged or disengaged at work in understanding the HR variables that influence EE. In particular, it would highlight the importance of managers understanding their role in influencing EE through a more relational and social engagement to build relationship quality as opposed to relegating EE to the domain of the HR department to determine organisation strategies.

## **1.6 Methodology**

This thesis is exploratory in nature progressing mixed methods to address the research problem. The methodology adopted uses an embedded case study with a primary

qualitative approach which is recommended for previously unresearched subjects (Yin 2003) to illicit the wide and inductive nature of the inquiry with a resultant theory to be constructed (Bonoma 1985; Parkhe 1993; Romano 1989). To investigate this new phenomenon, the research design involves a mixed-methods approach using both quantitative and qualitative data collection, as case studies rely “on multiple sources of evidence, with data needing to converge in a triangulating fashion”, and benefit “from the prior development of theoretical propositions to guide data collection and analysis” (Yin 2003 p.18). The quantitative and qualitative research methods used have complementary purposes and will provide for an improved quality of research (Mouton 1996), with qualitative methods being the significant method adopted in this dissertation. The particular embedded case study mixed methods approach has been chosen as the primary qualitative investigation will allow for the induction necessary in understanding the new phenomenon of techno working as prior knowledge is not applicable (Yin 2003). The embedded case study also provides for a secondary quantitative approach where extant EE knowledge is utilised to extend and elaborate on the qualitative data where possible whilst not restraining the inductive inquiry and resultant theory (Bonoma 1985; Parkhe 1993; Romano 1989). This mixed methods approach is deemed appropriate in today’s interdisciplinary, complex and dynamic research world (Johnson & Onwueghuzi 2004) as the methodologies are compatible and in real-world situations, the methods that work best should be used, especially in a viable sequence within the research design (Slevitch 2011).

Mixed methods studies are predominantly pragmatic as they pursue an approach to knowledge that attempts to consider both theory and practice including multiples viewpoints (Johnson et al. 2007). Instead, this research will be based on the constructivist paradigm that is premised on the social construction of reality (Searle 1995). The researcher attempts to “understand the phenomena through meanings assigned to them by individuals rather than seeking an objective, bias-free reality” (Hair et al. 2016 p. 297). The researcher will seek to interpret the complexity, pluralism and constructed views held by the research subjects to derive meanings and induct theory to understand the phenomenon of EE in techno workers. The use of a constructivist paradigm can be justified in that the qualitative approach is dominant in which “one relies on a qualitative, constructivist-poststructuralist-critical view of the research process, while concurrently recognizing that the addition of quantitative data and

approaches are likely to benefit most research projects” (Johnson et al. 2007). The constructivist research paradigm has the potential to resolve the tensions between research and practice in employee engagement whilst also considering the knowledge generated by the more traditional paradigm, pragmatism.

Pluralism, not relativism, is stressed with focus on the circular dynamic tension of subject and object” (Miller & Crabtree 1999). The researcher’s positioning within the research also inevitably guarantees the subjectivity of analysis and interpretation borne of their own historical and cultural interactions of social constructivism (Creswell 2014), and personal experience of the phenomena and context of the research, which can bias the research.

This thesis on techno workers sought out the employees of a global organisation, Savry Industries (Savry hereafter). These techno workers of ‘Savry’ were interviewed as well as their managers, senior executives of the company and human resources personnel, to enable a holistic understanding of the techno working phenomenon. The sample size for interviews was 16 people, within the minimum advocated range of 12-30 (Saunders et al. 2012), and the participants were sourced from within the researcher’s employing organisation. An interview protocol was developed and piloted, and the interviews were conducted via video conference and recorded to maintain the integrity of the techno working environment. An exploratory quantitative survey was distributed within the same organisation and employees’ participation was volunteered with 20 techno workers and 100 office/workplace-based employees participating. The quantitative survey in this embedded case study aims to inform and expand on the primary qualitative data.

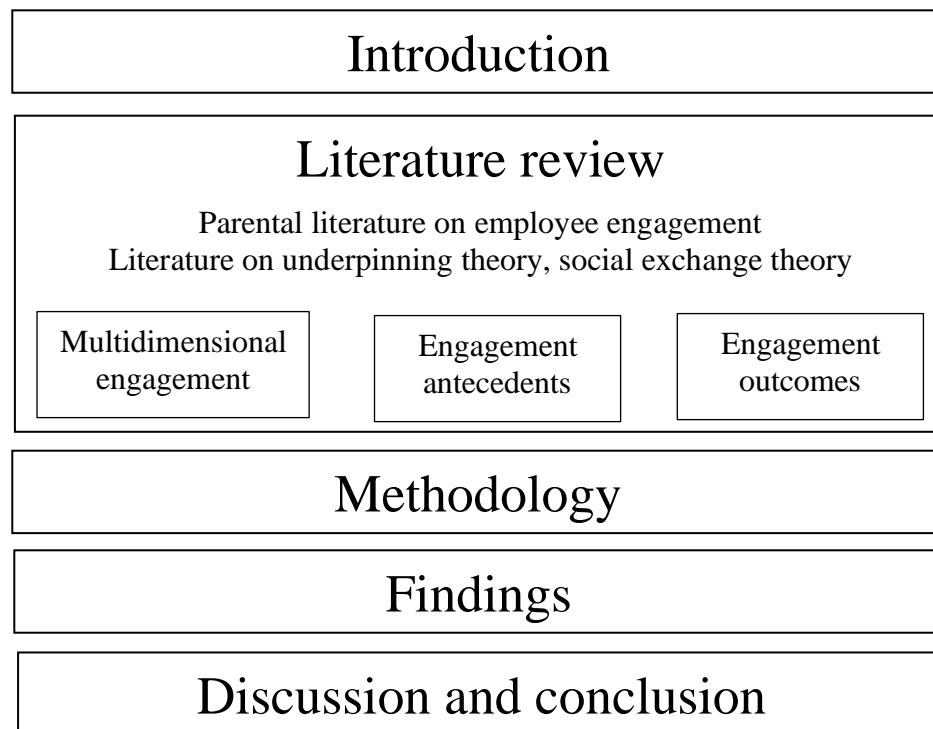
Once both data sets were collected, the qualitative data was explored to determine which themes emerged for subsequent investigation (Corbin & Strauss 2008), and then these themes were expanded upon and extended by the quantitative data set giving rise to the constructivist paradigm. The findings arising from the empirical process guided by the research question offer theoretical orientation for further research as well as being suitable for analytical integration in related theories (Merriam 2009; Yin 2009). The findings represent the views and perspectives of the participants and the events and ideas represent the meanings given to this real-life phenomenon by the people who live it, not

the values, preconceptions, or meanings held by the researcher (Yin 2011 p. 8). Research bias and distortion was avoided by the researcher being methodical and cross checking the research processes and data (Yin 2009) and standardised questions and procedures addressed reliability (Yin 1994).

## 1.7 Outline of this thesis

This thesis consists of chapters including this Introduction. The remaining chapters are organised as identified by Figure 1.2.

**Figure 1.2 Outline of this thesis**



## 1.8 Definitions

The definitions of terms used in this thesis appear in Table 1.1 and provide a quick reference for terms and concepts used in this research.



**Table 1-1 Definition of terms**

<b>Term</b>	<b>Definition</b>
EE	Employee engagement (EE) is “the harnessing of organisation members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances” (Kahn 1990 p.694).
Techno working	Individual work involving technology such as satellites, computers, tablets and phones to carry out all of one’s work relevant to virtual, remote and distributed workforces (O’Neill et al. 2014). Isolated from the employing organisation premises and other colleagues on a continuous basis.
Techno workers	Employees who undertake techno work as above.
HR	Human resources (HR) is the function within organisations that is charged with the management of the human resources/human capital of the organisation generally considered to be the employees and/or contractors who perform work for the organisation. HR are commonly tasked with finding, screening, recruiting, and training job applicants, as well as administering employee-benefit programs and managing the end-to-end life cycle of the organisation human capital.
LMX	Leader-member exchange (LMX) focuses on the dyadic nature and quality of the relationships between a leader and individual subordinates (Graen & Cashman 1975).
JD-R	Job demands-resources (JD-R) a framework that assumes that every occupation has its own energetic and motivational processes associated with organisational and employee wellbeing outcomes (Bakker et al. 2005). The framework uses job design factors and organisational characteristics to classify job experiences into two categories: 1) the energetic forces of job demands and 2) the motivational aspects of job resources (Bakker et al. 2005).
Job resources	Derived from the JD-R above, job resources are the physical, social, or organisational factors that help you achieve goals and reduce stress at work (Demerouti et al. 2001 p.501). There are three levels of job resources: individual, interpersonal and organisational levels resources (Demerouti et al. 2001).
SET	Social Exchange Theory (SET) analyses how the structure of rewards and costs in relationships affects patterns of interaction (Molm 1991: p. 475). Generally, SET concerns social interaction that meets the following conditions: 1) actors are dependent on one another for outcomes they value, 2) actors behave in ways that increase outcomes they positively value and decrease outcomes they negatively value, and 3) actors engage in recurring exchanges with specific partners over time (Cook et al. 1993).
SS	Social support (SS) specifically focuses on the point of emotional or informational support, referred to as helping factors that are shared between people or within helping relationships (Viswesvaran et al. 1999).

<b>Term</b>	<b>Definition</b>
Autonomy	The individual job resources level of autonomy focuses on how individuals shape and customise their job tasks, work settings and employment conditions (Hornung et al. 2008)
Organisation climate	Organisation climate has been referred to as moving patterns of behaviour and perceptions of employees operating in the organisation culture depending on the values and work atmosphere evident and can also be described as the character of the organisation's internal environment (Madhukar & Sharma 2017 p. 276).
SE	Social engagement (SE) is a construct presented by Kahn (1990) integral to the expression of self-in-role through the experience of connectedness with others. It was also leveraged by Soane et al. (2012) in their Intellectual, Social, Affective (ISA) engagement model clearly conceptualising SE as an element of the state of engagement emerging from the shared values and attitudes of an employee group.
JE	Job engagement (JE) relates to engagement in individual job role performance and is role specific (Saks 2006).
OE	Organisation engagement (OE) is an employee's engagement in their role as an organisation member and within the broader organisational context (Saks 2006).
OC	Organisational commitment (OC) is an employee attitude or perception of loyalty, tenure and commitment directed towards one's employing organisation (Saks 2006).
JS	Job satisfaction (JS) is a positive or pleasurable employee attitude resulting from the appraisal of one's job or job experiences (Locke 1976).
HRM	Human resources management (HRM) is the strategic approach to the effective management of people in a company or organisation such that they help their business gain a competitive advantage.
HRD	Human resources development (HRD) is the framework for helping employees develop their skills, knowledge, and abilities, which in turn improves an organisation's effectiveness.
Employee attitudes	Considered primary outcomes of EE that can be directed at either an employee's job or their employing organisation. These attitudes include job satisfaction, organisational commitment, intention to turnover etc. The positive employee attitudes are known positively relate to aspirational organisational outcomes (Saari & Judge 2004).
SC	Social capital (SC) is referred to as emerging from social support and is defined as a higher order construct with 'features of social organisation such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit' (Putnam 1995 p. 67).

Source: authors own work.

## **1.9 Research scope**

This is a singular case study investigating techno workers of a global multinational fast moving consumer goods (FMCG) company, Savry Industries. The interview participants of the qualitative investigation include techno workers, their managers and the senior executives and human resources representatives from the company. The subjects for the quantitative survey are techno workers only from the same company. This participant scope allows for a holistic view of the phenomenon with techno workers providing an internal insider's perspective and their managers, executives and human resources representatives providing an external perspective on techno workers and the techno working environment of the company. These participants groups have been chosen due to their knowledge and experience of techno working. The techno worker managers work directly with the research subjects and can provide their leadership perspective on the phenomenon, whilst the executives and HR representatives have oversight of a range of different employees including techno workers and can provide the benefit of comparing and contrasting these different employee groups due to their broader role scope. The participants have been drawn from the 6500 strong global employee population of Savry Industries and representation spans different countries and functions of the business. The singular case study scope omits techno workers from other companies taking part and further employees from the company were excluded as they generally lack experience of the techno working phenomenon.

## **1.10 Limitations**

The circumstances affecting the strength of this thesis are recognised as limitations and mitigation measures are discussed in this chapter (Dale et al. 2012). As the researcher is an employee of the case study company investigated, the research entails a potential bias which also presents an inherent risk for the participants interviewed. However, the researcher has strictly managed the insider research status, and as Savry Industries employs a large number of techno workers and participants have been sought globally with the guarantee of anonymity and confidentiality, together with their voluntary consent, this intends to provide sufficient mitigation for these issues. The interviews and surveying with these human participants achieved ethical clearance from the Human Research Ethics Committee of the University of Southern Queensland (USQ, approval

number H18REA057), in accordance with the Australian National Statement on Ethical Conduct in Human Research. Together with appropriate research ethics, accurate and relevant methodology is critical and is discussed in detail in [Chapter three](#).

Other limitations prevalent to qualitative methodology include researcher participation in case selection, interviewing and interpretation, and the results being researcher dependent due to the divergence of findings caused by subjectivity (Zikmund 2003). To mitigate the limitations of this methodology and ensure greater credibility, the case study has inbuilt construct validity, external validity and reliability (Yin 2009). Generalisability is also a common concern in qualitative case studies as analytical generalisation and replication must be applied as the case does not represent a quantitative sampling unit (Yin 2009). Therefore, the researcher generalises and replicates particular sets of results to broader theory and this upholds external validity (Yin 1994).

The research is limited to the phenomenon of techno working in a case study focused on techno workers of a global company and their relevant managers, senior executives and HR representatives. It is unclear whether the findings will translate directly to other organisations and industries although applicability would need to be tested.

This research progressed prior to the Covid-19 pandemic it is limited to the understanding of EE in remote working without the overlay of a global pandemic. However, due to the rise post Covid-19 of remote working, the similarities in context may warrant the replication of findings rather than generalisability.

### **1.11 Summary of chapter one**

This chapter summarised the structure and foundations of this thesis. The initiation of the research is explained in the background section detailing how new ways of working remotely impact the ways organisations are engaging their employees. The aim of this thesis is to explore the employee engagement antecedents, experiences and outcomes of techno workers in remote working environments. This is one of very few EE studies exploring the antecedents and outcomes associated with EE using a multidimensional EE approach (Saks 2006; Saks 2019). Three research questions were identified each

with detailed sub questions. A mixed methodology was introduced with the primary qualitative approach expanded by a quantitative survey in an exploratory embedded case study. Justification for the research was presented on theoretical, economic, policy and social grounds as well on practical grounds due to the increased incidence of the techno working phenomenon caused by the recent Covid-19 pandemic. The scope and limitations were recognised and measures for mitigating the limitations were proposed and finally the outline of the thesis was detailed together with the terminologies used throughout this thesis.

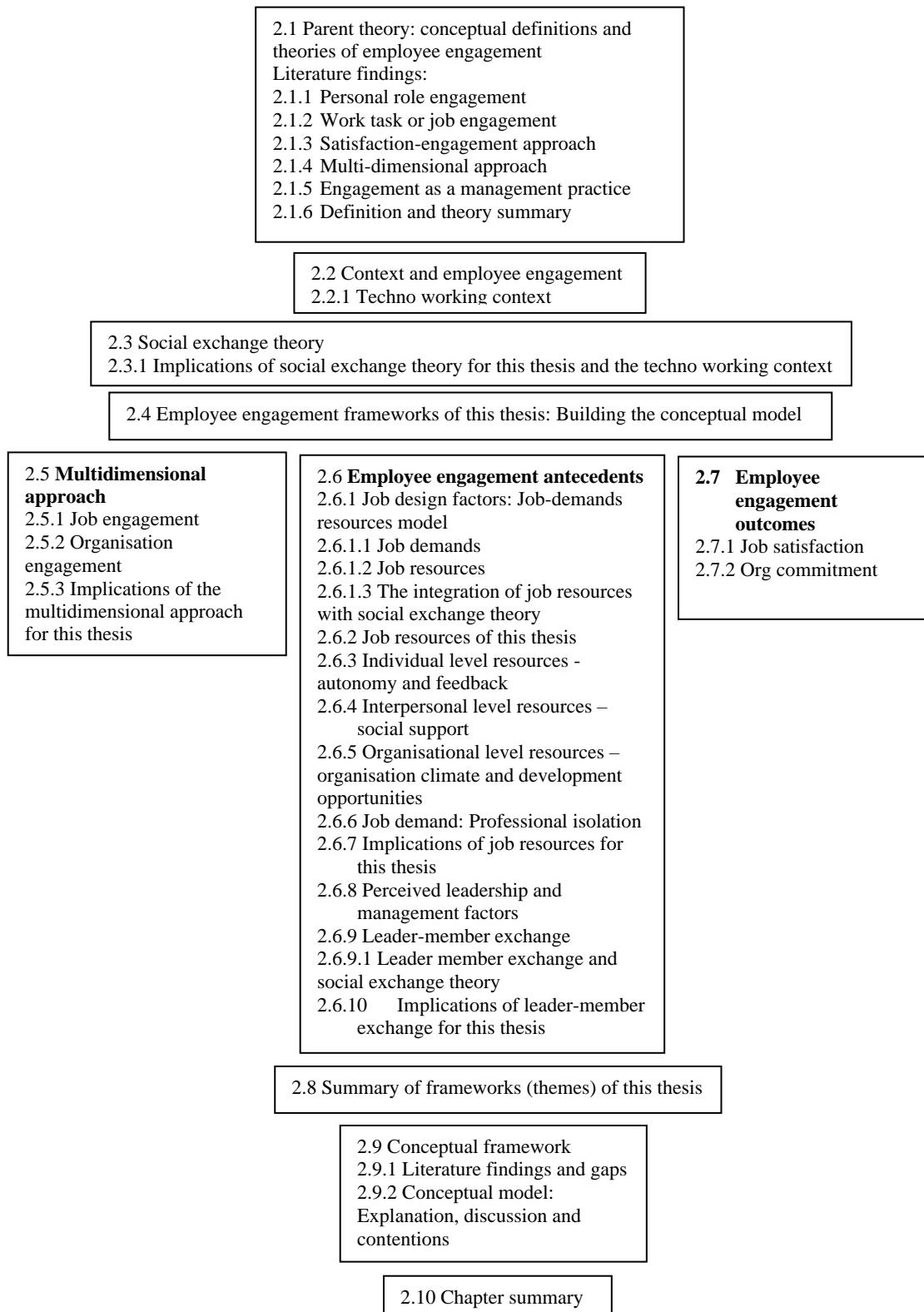
## **CHAPTER TWO: LITERATURE REVIEW**

### **2 Introduction**

The previous chapter introduced the topic and provided an outline as well as the background to the research and presented the research problem. This chapter provides a review of the literature which builds a theoretical foundation upon which this thesis is based (Perry 2013). Firstly, the parent theory is identified, then prior research and developing bodies of knowledge are introduced forming the theoretical framework of the thesis. A review of this literature results in the identification of research gaps and contentions are offered on this basis that have informed the research aim and the conceptual framework consistent with the research problem identified in Chapter one.

This thesis explores employee engagement in techno working environments: exploring the employee engagement antecedents, experiences and outcomes of techno workers in remote working environments. Aligned with this aim, the chapter commences with a discussion introducing EE as the parent theory of the thesis and presents the conceptual definitions of EE and theoretical frameworks. The contextual factors of EE are addressed and the unique context of this research thesis, namely techno working is introduced. This is followed by a section on the key theories and themes contributing to the development of the conceptual model. The EE literature review determines that the multidimensional approach (MDA, Saks 2006) is relevantly operationalised for this thesis and EE antecedents and outcomes are then discussed to progress resolution of the research problem. Employee engagement antecedents are reviewed and refined to determine job resources, from the job demands-resources model (JD-R) and leader-member exchange (LMX) applicable to this research. Finally, job satisfaction and organisational commitment are determined as the most relevant outcomes associated with EE to explore. To conclude the chapter, the conceptual model for the thesis is presented and discussed, and contentions offered. This thesis addresses a gap in the literature examining the precise nature of EE antecedents, the experience of EE and the outcomes of EE from a techno work perspective, as distinct from EE activities. Figure 2.0 below presents the classification framework and chapter structure diagrammatically and the conceptual model will be presented at the end of the chapter.

**Figure 2.1 Chapter two structure and classification framework diagram**



## **2.1 Parent theories: Conceptual definition and theories of employee engagement**

The effective management of employees has been borne out of existing claims of a strong positive relationship between EE and business success with reported outcomes including an uplift in productivity, profitability, and customer loyalty and satisfaction (Markos & Sridevi 2010; Coffman 2000; Ellis & Sorensen 2007; Towers Perrin 2003; Hewitt Associates 2004; Heintzman and Marson 2005), employee retention (Hewitt Associates, LLC 2005; Gallup 2012; Hallberg & Schaufeli 2006) and increased individual performance (Alfes et al. 2010; Bakker & Xanthopoulou 2009). Indeed, the field EE comes from an ornate history of research spanning at least 30 years, though whilst a great deal has been written about EE, limited studies have met the quality threshold in being under theorised leaving considerable scope for development (Bailey et al. 2017). This section will overview the current knowledge base providing justification for EE as the parent theory underpinning this research.

While the EE literature is compelling and vast, to date there is no single and generally accepted definition for the term ‘employee engagement’ (Markos & Sridevi 2010). It is sometimes referred to as ‘work engagement’, and whilst the two terms are often used interchangeably, ‘work engagement’ refers to the relationship of the employee with his or her work only, whilst EE may also include the relationship with the organisation (Schaufeli 2014). This research adopts the term EE due to its broader scope and EE is a concept that has continued to evolve both in academic and practitioner research. In the practitioner sphere, EE has been developed by consultants who have designed and implemented EE surveys, whilst in the academic space the original definition emerged in Kahn’s (1990) positive psychology work. Kahn defines EE as “the harnessing of organisation members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances” (p.694). Since Kahn’s (1990) EE state-based approach, incarnations of EE have been labelled and conceptualised as job engagement (Saks 2006; Anaza & Rutherford 2012) and work engagement (Bakker & Demerouti 2008; Gorgievski et al. 2010; Karatepe 2011), where labels are used alternatively, although are argued as having a common thread (Luthan & Peterson 2002; Robertson & Cooper 2009; Suck et al. 2011; Xu & Thomas 2010; Anitha 2014; Guest 2014). A recent systematic review of the literature



returned 5295 items classified within the EE field which indicates the significance of the concept. Although the lack of clarity around definition was further evidenced with the search including not only employee engagement, but also staff engagement, job engagement, organisation engagement, personal engagement, team engagement, psychological engagement and work engagement (Bailey et al. 2017). These terms are now explored and differentiated.

### **2.1.1 Personal role engagement**

In the application of earlier ethnographical theories of EE, Khan (1990) defined ‘personal engagement’ as simultaneous employment and expression of a person's ‘preferred self’ in task behaviours that promote connections to work and to others, personal presence (physical, cognitive, and emotional), and active, full role performances (p.700). Kahn defines personal presence as when “people become physically involved in tasks, whether alone or with others, cognitively vigilant, and empathically connected to others in the service of the work they are doing in ways that display what they think and feel, their creativity, their beliefs and values, and their personal connections to others” (p.700).

In his Needs-Satisfying Approach (Kahn 1990), personal engagement is an internal state created by three antecedent psychological states: meaningfulness, safety and availability, which allow an individual to connect to their role performance. In contrast, disengagement refers to withdrawal from the work role when the presence of these mechanisms is lacking. Kahn’s findings separated personal engagement from everyday hard work by clarifying the harnessing of one’s full self at work displaying loyalty and ownership to the extent they are willing to also demonstrate extra effort (Kahn 1990). However, he also determined that personal engagement is not static as it fluctuates with psychological availability and whilst Kahn’s qualitative study progressed the understanding of individuals and their attachment to their roles, a conceptual model of EE was not determined. This earliest approach conceptualised EE as a psychological state, reoccurring in the literature since with seven other studies using personal engagement as a study construct (e.g. Soane et al. 2012). From these beginnings thirty years ago through to the literature to date, the multitude of definitions, constructs and theories continues to grow in the EE debate, making it arguably one of the most significant concepts within the management field in recent years (Crawford et al. 2014).

### 2.1.2 Work task or job engagement

The original model conceived by Maslach et al. in 2001 was further developed by what became The Utrecht Group (Schaufeli et al. 2006), who then conceptualised *work engagement* as the opposite of burnout (the ‘burnout antithesis’ approach; Shuck 2011); in their Utrecht Work Engagement Scale (UWES), work engagement was defined by involvement, efficacy and energy. The scale, which has become one of the most widely used in the EE literature (Bailey et al. 2017), drew on Kahn’s (1990) personal engagement theory, differentiating between ‘state’ and ‘transitory experience,’ the state as being a more stable and sustaining attitudinal state of mind rather than a transitory experience of daily activities. Whilst still representing a state-based approach, this alternative perspective was considered a key shift in focus represented within the management discipline of the ‘psychologisation’ of the employment relationship (Godard 2011). This alternative model proposed that burnout involves the erosion of engagement with one’s job (Maslach et al. 2001); if one wasn’t engaged, they could be burned out or disengaged. Their model defines six antecedents of burnout: workload, control, reward, community, fairness and values (Maslach et al 2001), suggesting that the identification of disengagement places engagement at the opposite end of the same linear continuum. This linear approach has been challenged with theorists noting the absence of burnout does not necessarily imply the presence of job engagement or vice versa (Schaufeli et al. 2002), and that burnout and job engagement are overlapping concepts (Taris et al. 2017). The argument here that job engagement and burnout can be explained on a continuum of variables is the key weakness of this school of thought. While burnout and job engagement may be considered as conceptual opposites, that does not necessarily mean they are psychometrically related. For instance, Murray et al. (2020) note the following about psychometric opposites in recent research related to social capital:

*Survey instruments in both social capital and social exchange explore attributes e.g., trust, as having an opposite or converse manifestation of the variable in question. So that distrust might be tacitly assumed to be the opposite of trust, and injustice the opposite of justice; similarly, social support is not necessarily the psychometric direct opposite of*

*social undermining with these scholars noting that opposites are not always the same and may measure different things where correlations are large (Cropanzano et al. 2017: p. 496). Scholars in future research might better establish first, perhaps through existing empirical studies or factor analysis that what is being measured is an accurate description of the social unit characteristics, especially when variables in question are determined as psychometric opposites.*

Although two dimensions may be considered as opposites, for example, vigour as the conceptual opposite of emotional exhaustion and dedication the opposite of cynicism, the absence of absorption does not provide an adequate meaning of job engagement (Gonzalez-Roma et al. 2006). Even though widely utilised, the UWES scale - which has a three, 9 and 17 item version - has demonstrated validity over a wide range of settings (Schaufeli 2014). Accordingly, scholars suggest that the way in which job engagement and EE is measured in this instance may be inherently flawed (Wefalt et al. 2012, p 87), and with this facet level examination of job engagement, measures may be inconsistent (Bailey et al. 2017).

### **2.1.3 Satisfaction – engagement approach**

A more recent conceptualisation of EE was borne out of the practitioner literature and growth of the positive psychology movement which Shuck (2013) identifies as Harter et al.'s (2002) *Satisfaction – Engagement* approach. The evolution of this approach is incorporated both at an organisational and individual level focus which led researchers to define employee engagement as an individual's involvement and satisfaction with as well as enthusiasm for work (Harter et al. 2002 p. 269). The unique angle of this approach identified the antecedents of EE and was the first measurement tool for management practitioners to improve jobs so that employees would be more satisfied (Schaufeli 2013). This approach also established meaningful links between EE and business unit outcomes such as customer satisfaction, profit, productivity, and turnover (Harter et al. 2002).

Other scholars however suggest that a catch-all [approach] that captures a range of work-related attitudes (Truss et al. 2013 p. 5) conflates job satisfaction, leadership voice and involvement which has caused theorists to question the construct validity of this

approach, that might also relegate it to a ‘consultancy approach’ (Guest 2013). For instance, Gallup, one of the largest EE consultancy firms globally applies this approach to EE with its 12-question survey pointing to leadership, satisfaction, reward and recognition, development and role clarity resulting in an ‘employee engagement mean’ or index (Gallup 2012). While the variables of satisfaction and EE are arguably overlapped and blurred (Shuck et al. 2015), there is construct delineation since EE is argued as a higher order construct than simple satisfaction (Macey & Schneider 2008). Therefore, theorists question the integrity of a measure that joins them together making causal links difficult to identify and the approach unreliable (Viljevac et al. 2012; Schaufeli et al. 2002). Such a managerialist approach linking high levels of EE to high levels of performance provides justification for EE to be the new way to best manage the performance of people at work (Keenoy 2013), even though the EE measurement approach of this method is questionable.

#### **2.1.4 Multidimensional approach**

The multidimensional approach (MDA, Saks 2006) is a key theoretical contribution to the EE literature. It is discussed in more detail in [Section 2.5](#) as the EE theory operationalised in this thesis in the conceptual framework to understand the experience of EE for techno workers.

#### **2.1.5 Employee engagement as a management practice**

Employee engagement has evolved out of psychology into the emerging area of EE as a management practice (Truss et al. 2013). This emergent approach considers ‘doing engagement’ in contrast to ‘being engaged’ (Truss et al. 2014). Scholars and practitioners for instance, seek to better align the managing of EE practices with an organisational locus as such practices are predictors of financial success according to these authors (Wefald & Downey 2009). These practitioner models of EE are often defined by the firms and consultants that design employee engagement surveys for company use and as such, these models are not concerned with EE as a state. Typical emerging definitions focus on ‘a workplace approach designed to ensure that employees are committed to their organisation’s goals and values’ or a motivational approach such as ‘[employees]...are motivated to contribute to organisational success and are able at the same time to enhance

their own sense of well-being' (MacLeod & Clarke 2009). Gallup (2006) refers to EE as employees who work with passion and feel a profound connection to their company; they [the employees] ...drive innovation and move the organisation forward (Gallup study 2006, Gallup study 2012 p.5). Global human capital consulting firm Watson Wyatt (2006) provides the view of EE as a combination of commitment and line of sight where committed employees are proud to work for their companies and are motivated to drive success through understanding the steps that must be taken to achieve goals and knowing how they can contribute (p.77). Similarly, Towers Perrin's Global Workforce Study (2006 p.2) refers to EE as employees' who are inspired by their work, feel a strong sense of personal accomplishment in what they do, care about the future of the company and are willing to invest discretionary effort to see that the organisation succeeds, not a measure of happiness or success. Common to the definitions here are the explicit links to organisation outcomes and organisation success through the displays of employees' passion, commitment and discretionary effort achieved by 'managing' the practice of employee engagement. This theoretical stream supports organisations managing their workforce rather than psychological states, which also addresses the debate between unitarist and pluralist perspectives on the employment relationship (Arrowsmith & Parker 2013). The management practice approach makes the operationalisation of EE seem easier to achieve from a practitioner perspective by doing EE actions rather than influencing a psychological state. For instance, *doing* engagement is particularly suited to the large human capital consulting houses that derive revenue from measuring EE and recommending the best ways for organisations to manage EE. This is an important shift in the EE literature which contrasts previous approaches of EE being a state to influence, to a non-empirical practitioner approach of performing EE actions and managing EE.

Although EE as a management practice has gained momentum due to the links to positive business outcomes (MacLeod & Clarke 2009; Gallup 2006; Towers Perrin 2006; Watson Wyatt 2006), the implications of this perspective is that these practitioner studies are not empirically valid (Joobert & Roodt 2011), and they significantly lack highly correlated psychometric variables which accordingly undermines their credibility (Joobert & Roodt 2011; Guest 2011). There is insufficient evidence linking management practices to employee engagement and furthermore there is also little research available that links management practices' effectiveness to business performance (Joobert & Roodt 2011). This lack of validity and unreliability together with the lack of a

determinant definition or conceptualisation of EE as a management practice, hinders application of this perspective (Bailey et al. 2017). While this approach may be applicable from an HRM perspective in understanding EE in order to ‘do’ employee engagement and introduce certain workplace interventions, this pluralist organisational approach with its methodological limitations and diminished range of interventions studied makes it difficult to draw any concrete conclusions (Bailey et al 2017). The lack of reliability and validity in EE practitioner management practices deems these approaches irrelevant to the pursuit of EE exploration in this research.

### **2.1.6 Definition and theory summary**

While there is a myriad of EE approaches, measures and research methodologies, as detailed in this section, the attention on understanding EE remains uncertain. This is because there is a lack of congruency between the EE results from surveys and a declining trend in EE reported levels and increasing disengagement of employees worldwide (Aon Hewitt 2015). This disconnect between research and practice is theorised by Saks (2017), who unpacks the differences between the academic and practitioner definitions identifying several EE barriers. While the two distinct definition groupings similarly result in several problems and limitations, Saks (2017 p.78) espouses three key problems with EE;

1. *the conflating with other related constructs such as job satisfaction and organisational commitment;*
2. *the meaning of employee engagement often including variables that are considered drivers or predictors of employee engagement such as organisational citizenship behaviour and job involvement; and*
3. *the meaning of employee engagement includes variables that are considered consequences such as turnover intention.*

Whilst the academic literature has been able to demonstrate the distinction between the related constructs (Shuck 2015; Harter et al. 2002; Halbesleben 2010; Christian et al. 2011), the practitioner literature commonly interchanges different EE variables with their drivers and consequences which Saks (2017) identifies as problematic (the second and

third points above). Bailey et al. (2017), summarise the EE definitions into four key areas: 1) personal role engagement, 2) work task or job engagement, 3) multidimensional engagement, and 4) EE as a management practice. It should be noted that a plethora of studies exist pertaining to each of these. The Bailey et al. (2017) synthesis also reveals the less significant definitions of EE as a composite of attitudinal and behavioural constructs (Swanberg et al. 2011), and EE as self-engagement with performance (Britt et al. 2005). These different approaches inherently disagree on whether EE is a psychological state or a set of behaviours, although support for EE as a state has been growing as it provides conceptual clarity (Bakker et al. 2011; Parker & Griffin 2011) and separates ‘being engaged’ from the various resultant behaviours of this state of EE (Soane et al. 2015). Therefore, the separation of EE from other constructs is recommended (Saks 2017), and most commonly operationalised (Bailey et al. 2017). In pursuing this belief, the consideration of EE as a higher order construct is adopted as a state rather than a trait involving the holistic investment of the entire self with a psychological connection to the performance of work tasks (Christian et al. 2011). Accordingly, this thesis considers EE as a psychological state consistent with employee and task-based performance.

While many conceptions of EE have been outlined by extant studies as noted, the working definition utilised in this thesis rejects the practitioner definitions of conflating constructs and instead draws on similarities to the definition proposed by Kahn (1990) but reworked by Saks (2006). This thesis adopts Saks (2006) definition of EE arising from the MDA which refers to EE as, ‘a unique construct consisting of cognitive, emotional and behavioural components that are associated with individual role performance’ (Saks 2006 p.602). These three components are described by Kahn (1990) as the personally engaging behaviours when people are:

*“physically involved in tasks, whether alone or with others, cognitively vigilant, and empathically connected to others in the service of the work they are doing in ways that display what they think and feel, their creativity, their beliefs and values and their personal connections to others” (Kahn 1990, p. 700).*

The rationale for engaging this theory in this thesis is expanded in [Section 2.5](#) and is necessitated by the context of enquiry and the research question.

Table 2.1 provides an overview of the origin of the different definitions, approaches and key theories of EE based on extant studies identified thus far and explained in this section.

**Table 2-1 Employee engagement theories and definitions**

Who/ Reference	Approach	Definition	Research Type	Foundation	Theory
Kahn (1990)	Needs Satisfying Approach	Personal role engagement: “the simultaneous employment and expression of a person’s ‘preferred self’ in task behaviours that promote connections to work and to others, personal presence, and active full role performances” (Kahn 1990, p. 700).	Ethno-graphic Qualitative research with 16 summer camp counsellors and 16 financial firm members.	Academic	Personal role engagement is an internal state created by three antecedent psychological states: meaningfulness, safety and availability.
Maslach et al. (2001)  Utrecht Group (2006)	Burnout- Antithesis Approach	Work task or job engagement: “a persistent positive affective state . . . characterised by high levels of activation and pleasure” – the positive antithesis to burnout” (Maslach et al. 2001, p. 417).	Conceptual  Empirical – Utrecht Work Engagement Scale - 14,521 data points.	Academic	Employee engagement is the opposite of burnout - a more stable and sustaining attitudinal state of mind rather than a transitory experience of daily activities.
Harter et al. (2002)	Satisfaction- Engagement Approach	Engagement-satisfaction and business unit level outcomes: “individual’s involvement and satisfaction with as well as enthusiasm for work” (Harter et al. p. 205).	Meta- analysis of 7,939 business units across multiple fields.  Beck and Harter (Gallup, 2015) – 170 managers,	Academic	Using the positive psychology framework to couple employee engagement with satisfaction as positively related to important business outcomes. EE as a composite



Who/ Reference	Approach	Definition	Research Type	Foundation	Theory
			16 direct reports each.		attitudinal and behavioural construct  Further research extended current theory about a manager's role in creating a supportive psychological climate and determining 70% of individual's EE (Beck and Harter 2015).
Saks (2006)	Multidimensional approach	Multidimensional engagement: "a distinct and unique construct consisting of cognitive, emotional, and behavioural components . . . associated with individual role performance distinguishing between job engagement and organisation engagement." (Saks 2006, p. 602).	Empirical: 102 employees working in a wide range of occupations in the Toronto, Canada area.	Academic	Employee engagement developed through a social exchange model that suggests two separate psychological states of EE: job engagement and organisation engagement.
Truss et al. (2014)	EE as a management practice	Numerous definitions that link organisation outcomes and organisation success through the displays of employees' passion, commitment and discretionary effort - 'doing engagement' in contrast to 'being engaged'.	Review of seven articles that advance the nexus of HRM and employee engagement.	Practitioner	Employers managing their workforce rather than psychological states to get positive business outcomes and high performance.

## 2.2 Context and employee engagement

The dynamics of work have changed and are continuing to change. Many organisations are experiencing a dramatic shift from mechanistic models of work to more knowledge intensive communities of practice (Cho et al. 2009). Employees have higher expectations about participating in organisational decision making, pursuing dynamic involvement in organisational activities, and are actively seeking work contexts that embody respect and fairness (Burke & Ng 2006), that offer permanent flexibility to work how and when they want (Kohll 2018). Ways of working have also been recently impacted by the Covid-19 global pandemic which saw non-essential workers propelled into remote working from home almost overnight to protect the health of society. These changes in ways of working have broad implications for organisations and also for human resources management (HRM). The role and relevance of HRM in organisations has increased over the past decades with HRM practices having a positive impact on organisation performance (Burke & Ng 2008). The human resources (HR) department is now frequently relied upon in continually changing contexts where commonality and tradition is a thing of the past. Instead, customisation, purpose, personalisation, creativity and innovation are the expectation (Kohll 2018). Adding to this, the call from scholars has been to develop less ethnocentric and more nuanced, context responsive approaches (Rowley & Benson 2002; Zhu et al. 2007). This suggests that the tried and tested interventions of the past have had their days of ‘lift and shift’ and ‘one size fits all’; new approaches are needed for new ways of working and the context is king.

Scholars suggest that ‘the practice of management can only be understood in the context of the wider socio-economic, political and cultural factors which shape – if not determine – those practices’ (Delbridge & Keenoy 2010, p.801). This research adopts a similar stance. For instance, EE theorists have commonly referred to the limitations of their studies not being contextual (Breevart et al. 2014; Guterman et al. 2017; Alfes et al. 2017), which can refer to the institutional, societal, cultural, organisational, industrial and political contexts within which a study is framed. Although there appears to be widespread appeal in the transferability and relevance of EE interventions, the new world of work provides a significant limitation for research. Therefore, the main argument of this thesis is to explore the EE antecedents, experiences and outcomes of techno workers in remote working environments. The thesis seeks to make a significant contribution to the existing EE literature such that the relationships to be investigated are novel and have not been explored in prior research, and existing HR practices have

failed to capture the relational interplay of EE in a contextually nuanced environment. Further, through qualitative investigation, it is hoped that this thesis provides a more nuanced account of how to develop and apply EE interventions across techno working contexts (discussed next).

### **2.2.1 Techno working context**

Globalisation and technology have been a key impetus in changing organisational work practices and the nature of doing business. The trend towards more flexible and remote ways of working in the new world of work has given rise to a range of work practices which share similar characteristics but are nuanced in their definition and execution. These practices are commonly referred to as ‘distributed work’ as employees could work at any time and from any place while keeping in regular contact with colleagues and remotely accessing organisational resources, rather than having controlled work times at a centralised location. The current literature on distributed work includes practices such as teleworking (e.g. Sardeshmukh et al. 2012), telecommuting (e.g. Masuda et al. 2016) flexible working (e.g. Ugargol & Patrick 2018), mobile working, virtual working, new ways of working (Brummelhuis et al. 2012) and remote working during the pandemic (De-la-Calle-Duran & Rodriguez-Sanchez 2021; Riyanto & Adhitama 2021; Chanana & Sangeeta 2020). These distributed work practices share a common thread where employees control the timing and place of work using electronic communications. The employees inherently have the flexibility to manage their work and working time whilst working remotely. Generally, this means having the flexibility to spend *some* regular work time outside of the conventional workspace and some regular work time at a traditional place of work. These work practices share all the commonality of being transitory and flexible and are therefore referred to in the literature as ‘practices’, ways of doing work, rather than static and enduring work contexts. As distributed work practices alter the time and space of traditional work, they therefore impact the way work is experienced which may have corresponding implications for EE. Therefore, whilst research in EE is currently well-advanced, the impact of a range of new distributed work practices on EE has also been trending in the literature.

Whilst remote working has been rising in incidence over the past 10 years, the practice can be traced back to the inception of the first personal computer in 1975 and by 1979, IBM had allowed the first remote working experiment (Rise of remote work 2021). Since that time, remote work practices have diversified, increased and continued to trend enhanced by the introduction of the internet in 1983 and the invention of Wi-Fi in 1991 (Rise of remote work 2021). These innovations led to the subsequent rise of telecommuting from 1987 through to the earliest models of remote coworking spaces in Berlin in 1995 (Rise of remote work 2021). Social enterprise tools such as Yammer in 2008 and then video collaboration software such as Zoom, and Skype paved the way for the increase in remote working which sustained a worldwide workforce through the Covid-19 pandemic (Rise of remote work 2021). Table 2.2 highlights the definitions of differing distributed work practices in historical order of inception.

**Table 2-2 Distributed work practices definitions**

Type of distributed work		Definition
<b>Distributed work</b>	146 BC	A ‘catch all’ term used to explain a range of practices where team members are not in the same physical location when working. Emerged two millennia ago when the Roman Empire spanned the global and distributed work (Hinds & Kiesler 2002).
<b>Flexible work arrangements (FWA)</b>	1960’s	Enable employees to balance their work and life and contribute better to the organisation. These include perceived flexibility, supportive work-life policies, the use of formal flexible arrangements and occasional flexibility (Albion 2004). The term FWA was coined by a German management consultant however flexible types of working had been around prior to this date (Hinds & Kiesler 2002).
<b>Telecommuting</b>	1972	A type of flexible working arrangement allowing employees to work from home or a remote location, has important benefits for organisations and employees (Nieminen et al. 2011). First coined by a NASA employee who was working remotely on a communications system (Hinds & Kiesler 2002).
<b>Virtual work (same working definition as telecommuting)</b>	1972	Involves using computer technology to work from home or another location away from the traditional office for a portion of the work week (Bailey & Kurland 2002).
<b>Teleworking</b>	1980’s	Involves using computer technology to work from home or another location away from the traditional office for a portion of the work week (Bailey & Kurland 2002).
<b>Satellite working</b>	1990’s	Facilities away from a central office or place of work used for telecommuting by the employees of a single organisation (Nunes 2008).
<b>Co-working</b>	2000’s	Shared working spaces away from the company office giving rise to employees working in alternative spaces.
<b>New ways of working (NWW)</b>	2010’s	Employees to choose when and where to work, while being supported by electronic communication (Brummelhuis et al. 2012).
<b>Mobile working</b>	2010’s	This concept refers to employees working at various locations (customer companies, hotel rooms, airports ...) and provided with the necessary ICT infrastructure to communicate with the employer (Nunes 2008).
<b>Techno working</b>	2014	Individual work involving technology such as satellites, computers, tablets and phones to carry out all of one’s work relevant to virtual, remote and distributed workforces (O’Neill et al. 2014). Isolated from the employing organisation premises and other colleagues on a consistent basis.
<b>Remote working</b>	2020’s	Work done by an individual while at a different location than the person(s) directly supervising and/or paying for it (Nunes 2008).

Source: Authors own work.

*Techno working* similarly shares the distributed work practice features of working away from the traditional office by using electronic communications, as techno workers have the flexibility to manage and plan their work autonomously from a remote location.

However, the difference with techno working is that *all* work is undertaken remotely and flexibly, separated from other employees, rather than just some of the regular work time, and this is what makes it a distinct and unique context rather than just a practice. Technology-related work (techno work) is defined as individual work involving technology such as satellites, computers, tablets and phones to carry out all of one's work relevant to virtual, remote and distributed workforces (O'Neill et al. 2014). The term techno workers (O'Neill et al. 2014) describes those employees who work in this context and therefore are distinguished from the normal 'employee' conception. With techno working, the remote environment is constant and not flexible in terms of offering the opportunity to work from the traditional workplace or face-to-face with other employees. Therefore, techno work and techno working can be considered as an environmental context rather than a work practice. In this context, the work is consistently undertaken remotely from a traditional workplace irrespective of whether techno work is bound by geographical distance or the nature of work being performed. Techno workers therefore complete ALL of their work physically, socially and psychologically isolated from the traditional workplace and other colleagues; they may never meet a colleague in person, never see an office site, company building or any of the more traditional symbols of working in an organisation. Therefore, it is highly likely that the nature techno working, with its inherent professional isolation, may have a potentially moderating effect on EE outcomes. Techno working is similar to the phenomenon of remote working that occurred during the Covid-19 pandemic when employees were relegated to working from home to mitigate the spread of the virus. However, as this research progressed prior to the pandemic, it is free from the overlay of a global health crisis which comes with additional psychological impact that organisations had to combat to engage their employees (Chanana & Sangeeta 2020). This thesis suggests that the development of EE within this new techno working context may lead to the identification of EE outcomes as well as context specific antecedents of EE.

As techno working is absent in the EE literature, the closest comparisons may be referenced from the impact of other types of distributed work on EE. Different types of distributed work practices have been investigated in the EE literature thus far as antecedents linked to benefits such as increased productivity, performance, retention, and commitment (Martin & MacDonnell 2012). Improved work-life balance for

employees and reduced costs for organisations have also been reported as benefits of distributed work practices (Gregg 2011; Kanellopoulos 2011). These antecedent practices have been found to increase work enjoyment (Peters et al. 2012), increase autonomy and process control, and they also help facilitate more efficient communication among colleagues (Brummelhuis et al. 2012), with the potential of increasing work engagement (Steenbergen et al. 2018). Conversely, distributed work practices have been found to result in workers feeling isolated and less engaged with their jobs by virtue of being removed from the physical work environment, office structure and social atmosphere (O'Neill et al. 2009). Other negative costs of these practices are reduced work satisfaction and difficulties in developing shared knowledge (Pyoria 2011; Sarker et al. 2012) as well as the practices having a negative emotional impact on employees (Mann & Holdsworth 2003). A negative relationship between distributed work and job resources such as feedback, social support learning and development opportunities and autonomy has been substantiated (Mann & Holdsworth 2003; Sardeshmukh et al. 2012; Cooper & Kurland 2002; Steenburgen et al. 2018). It must be noted here that the extant literature has commonly investigated a range of distributed practices which balance work between a remote or home environment and the centralised traditional workplace, however this research has not included techno working where the remote working context is a constant. This warrants investigation into the unique context of techno working to understand if the constancy of remote working further alters the experience of work and experience of EE.

Employee engagement studies where distributed work practices have been investigated as antecedents have returned contradictory outcomes which has forced further investigations into these work practices (Boell et al. 2016). These contradictory findings relate to the effects of distributed work on the job resources of autonomy (Steenburgen et al. 2018; Brummelhuis et al. 2012), supervisor support (Steenburgen et al. 2018; Cooper & Kurland 2002) and as mentioned previously the practices don't seem to have a consistent influence over work engagement (Brummelhuis et al. 2012; de Vries 2019). Scholars have called for more research related to understanding how these practices influence the extent of interactions with others, the types of work activities that are adopted, and the situations of individual employees (Boell et al. 2016). The contradictions arising out of the EE and distributed work studies have been attributed to the unclear definitions of this type of work and technology appropriation (Boell et al.

2016). The other contradictions have included the cancellation of first order affects such as increased productivity due to less interruptions cancelled out by the need for colleagues to communicate (Leonardi et al. 2010).

As no techno working research exists in relation to EE, research that focuses on the increasing succession of teleworking for at least five continuous days (full time) working remotely is the most proximal study with a continuous succession of distributed working (de Vries et al. 2019). The study by de Vries et al. (2019) found that the continuous succession of distributed working decreased organisational commitment and increased professional isolation, and that distributed work had no impact on work engagement (de Vries et al. 2019). Whilst previous studies have positively linked distributed work and work engagement (Demerouti et al. 2014; Brummelhuis et al. 2012; Masuda et al. 2017), the lack of a positive link found in the de Vries et al. (2019) study would deem the constancy of distributed work unfavourable. The findings of these studies illustrate that the organisational elements of commitment and isolation are negatively impacted while the job engagement is not. This calls into question the employee's experience of the organisation which may be substantially altered by the constancy of separation. While direct conclusions cannot be drawn, some guidance can be taken from the findings of this research. It may be therefore assumed that the techno working context may also have negative effects such as low organisational commitment, increased professional isolation and perhaps may even negatively influence organisation engagement when considering the dual job and organisation roles employees hold.

Finally, drawing on the close comparison of techno work to distributed working, this practice has been found to reduce the effects of interpersonal factors resulting in other negative effects on the social nature of working which may negatively impact EE (Tremblay 2002; Mann & Holdsworth 2003; Gajendran & Harrison 2007; Golden 2009; Gregg 2011; Maruyama & Tietze 2012; Sardeshmukh et al. 2012; Tremblay & Thomsin 2012). These social and interpersonal factors relate to both the leader-employee relationship and also collegiate and broader social support. Distributed work is said to reduce the quality and frequency of information exchange among team members (Fonner & Roloff 2010), as workers have reduced opportunities for social and informal interactions with colleagues. Distributed work may also contribute to feelings of social isolation and a lack of workplace involvement (Tremblay 2002; Mann & Holdsworth



2003; Gajendran & Harrison 2007; Golden 2009; Gregg 2011; Maruyama & Tietze 2012; Sardeshmukh et al. 2012; Tremblay & Thomsin 2012). Furthermore, the leader-employee relationship has reported adverse effects with reduced supervisory feedback and support coupled with less rich communication media such as video conferencing (Mann & Holdsworth 2003) and lessened supervisory support overall (Cooper & Kurland 2002). However, as the leader-employee relationship is the only formalised relationship extending to the techno working environment, this relationship is important to investigate on the basis of its influential context. Appropriate employee socialisation practices have been suggested to help mitigate the negative effects of distributed work (Mann & Holdsworth 2003) and a recent study has shown that LMX works successfully in this respect (de Vries et al. 2019). This gives rise to the contention that social and interpersonal factors could be pivotal in influencing the effectiveness of EE within the techno work environment. The exploration of the social nature of work and both collegiate and leadership interpersonal factors are important to investigate in the techno working environment as they may be pivotal in buffering social and professional isolation (Crandall & Gao 2005; Kurland & Bailey 1999) and influencing EE.

The similarities between remote techno working and remote working during the Covid-19 are important to acknowledge. Research that progressed during this specific period was predominantly conceptual and leveraged extant literature which references traditional approaches to EE (Chanana & Sangeeta 2020; De-la-Calle-Duran & Rodriguez-Sanchez 2021), rather than exploring EE in this remote working phenomenon in an exploratory manner. The findings of these investigations pointed to a range of practices that addressed EE during “this tough time” (Chanana & Sangeeta 2020) and another study proposed a conceptual model that addressed employees' commitment and engagement using factors that favour organisational health and wellbeing during crisis (De-la-Calle-Duran & Rodriguez-Sanchez 2021). This conceptual model focused on the five C's: Conciliation, Cultivation, Confidence, Compensation and Communication (De-la-Calle-Duran & Rodriguez-Sanchez 2021). When analysed more closely, these five C's emulate the antecedents called out in previous studies, Cultivation is Learning and Development, Communication includes Feedback and Compensation (Steenburgen et al. 2018; Brummelhuis et al. 2012; Saks 2006), although now packaged differently for the purposes of Covid-19.

As noted in Chapter one, this thesis aims to explore how EE is influenced in the techno working context by drawing further revelation from the application of EE antecedents. The separation demanded by techno working draws attention to the employee's experience of organisation and organisation level resources as they are inherently physically and psychologically separated from the organisation. Accordingly, this thesis also explores the importance of social and interpersonal within isolation such that they significantly influence outcomes associated with EE. Distributed work has been shown to have positive links with EE when applied more sporadically (Demerouti et al. 2014; Brummelhuis et al. 2012; Masuda et al. 2017), meaning that only short and intermittent episodes are spent away from the traditional work environment. However, the increasing incidence and more constant nature of this type of working context has not demonstrated positive links (de Vries et al. 2019) to EE, warranting investigation into the specific techno working context to understand how EE is influenced.

The proposed framework of this thesis therefore addresses recent calls from scholars to contextualise EE research across different settings (Bailey et al. 2017). Consistent with the research aim, two broad theoretical propositions are posed for exploring different EE antecedents: 1) antecedents related to the perception of leadership factors (LMX) and 2) job resource antecedents (JR). It is expected that these antecedents will act as enabling functions for increased psychological states of job engagement (JE) and organisation engagement (OE) which are associated with increased organisational commitment (OC) and job satisfaction (JS). Both OC and JS are proposed as outcomes associated with EE. By using these outcomes, we avoid tautological relationships often common in the literature. Taken together, we see EE as a proximate construct for context-specific environments. That is, while EE measures are frequently seen within the context of a universal solution to improve EE, this thesis by comparison will produce theoretical and practical insights about EE within the techno working context and inform human resource development (HRD) specific interventions that are relevant to this context.

### **2.3 Social exchange theory**

A wide range of theoretical frameworks have led to differences in how EE has been conceptualised and applied (Bailey et al. 2017). For instance, EE studies have grounded

their findings in Resource Based Theory (e.g. Alfes et al. 2013), Conservation of Resources Theory (e.g. Halbesleben et al. 2009), Institutional Theory (e.g. Cartwright & Holmes 2006), Self-Determination Theory (e.g. Gillet et al. 2013), Broaden and Build Theory (e.g. Bakker & Bal 2010) and many others. Bailey et al. (2017) cite up to forty-nine frameworks within two hundred and five studies. As the literature is extensive, and for the purpose of this thesis, the foundational framework of social exchange theory (SET) is discussed here as most relevant to this research. The delimitations were also outlined in Chapter one.

Social exchange theory (Blau 1964; Gouldner 1960; Homans 1958; Settoon et al. 1996) is the second most widely used framework applied within the EE literature (Bailey et al. 2017) and the secondary parent theory of this thesis. Specifically, SET analyses how the structure of rewards and costs in relationships affects patterns of interaction (Molm 1991 p. 475). Generally, SET concerns social interaction that meets the following conditions: 1) actors are dependent on one another for outcomes they value, 2) actors behave in ways that increase outcomes they positively value and decrease outcomes they negatively value, and 3) actors engage in recurring exchanges with specific partners over time (Cook et al. 1993). Saks (2006) argues that SET provides a strong rationale for explaining EE as the rules of exchange ‘usually involve the reciprocity or repayment rules such that the actions of one-party lead to a response or actions by the other party’ (p.603). Simply put, if one party initiates a positive offer in the exchange, for example, a leader offering an employee support, the other party feels obliged to respond in kind with a positive response, who might then exhibit innovative work behaviours as an outcome. This is consistent with Robinson et al.’s (2004) description of EE as a two-way relationship between the employer and employee. However, social exchange is a dyadic relationship based on reciprocal exchange, so in instances where reciprocity is not achieved, the cost may be the termination of the exchange or even the relationship in a cost-benefit analysis situation, for example, an employee may leave as their efforts are not reciprocated.

The two broad forms of social exchange relate to economic and social exchange (Blau 1964; Gouldner 1960; Homans 1958; Settoon et al. 1996). Economic exchange is contractually defined and exhibits monetary rewards. Social exchange by comparison is commonly undefined with unspecified obligations and responsibilities and can operate

directly, indirectly and across different types of exchange that are not tied to monetary outcomes (Blau 1964). The relevance of EE within the framework of SET is that social exchange can explain discretionary actions and extra role behaviours (Organ 1988) that are EE outcomes (Bailey et al. 2017). Consequently, SET is a framework that helps to explain why employees feel valued. When employees feel valued, scholars suggest that they are more likely to increase their work effort and goal orientation contributing to increased EE outcomes (Alfes et al. 2013a).

Scholars have argued that SET is among the most influential paradigms for understanding workplace behaviour (Cropanzano & Mitchell 2005 p.874). SET helps to explain some of the fundamental tenets of EE such as social structures and other processes supporting social exchange (Cook et al. 2013) which are generally understood within the EE literature as organisational citizenship behaviour (Deckop et al. 2003). The interacting parties may be individuals or institutions and these social exchange relationships have been identified in relation to their immediate supervisor (e.g. Liden et al. 1997), co-workers (e.g. Deckop et al. 2003), employers or employing organisations (e.g. Moorman et al. 1998) and also parties external to the organisation such as customers and suppliers.

The role of exchange processes has become of increasing interest to EE researchers in recent years (Rousseau 1990; Rousseau & Parks 1993), as SET is being frequently used to analyse and better understand EE behaviour. For instance, SET provides a basis to explain how different EE antecedents lead to positive and beneficial outcomes as individuals repay their organisations by increasing their commitment as evidenced by surveys of EE (Saks 2006). Employees can respond to their organisation's actions and resource provision by investing greater cognitive, emotional and physical effort in their work, which is likely to have positive outcomes for the organisation (Saks 2006).

SET provides a theoretical foundation to explain why employees may be more, or less engaged relative to the resources provided by the organisation. Here, SET is used as a basis to explain the exchange between EE antecedents and EE outcomes, moderated by the experience of EE. The antecedent theories of job resources from the job demands-resources framework and LMX as highlighted in [Section 2.6](#), and the outcomes associated with EE of organisational commitment and job satisfaction, moderated by

the experience of EE defined by both job and organisation engagement. In [Section 2.9](#), the researcher explains in greater detail how various antecedents are connected to job and organisation engagement outcomes with the integration of these frameworks contributing to the conceptual model of this thesis. Noting that the proposed model does not confirm causality.

### **2.3.1 Implications of social exchange theory for this thesis and the techno working context**

Social exchange theory (SET) is used as a basis to explore the research problem related to the EE of techno workers, the dyadic exchange of resources and relationship costs and benefits, and how these influence positive job and organisational outcomes in a working environment that is otherwise physically and psychologically isolated. These relational or resource-based exchanges may be the key to unlocking strategies to influence EE through resource provision, relationship quality building, and the provision of shared team goals and opportunities for collegiate interaction for those in techno working environments. SET is critical to examine in this context where the ‘social’ nature of work is reduced to technologically supported socialising only. This means all socialising and social exchanges are done via technology; phones, laptop, video among others, as work is performed in isolation where there is no face-to-face socialising or interaction. It is important to understand the technological nuances of social exchange within this environment.

Since Saks (2006) made the link between SET and EE, much research has connected the two (Bailey et al. 2017). While many practices such as appraisals, employee development, job design, mentoring and employee support were already solidified in HR practice, SET helped in explaining the reciprocal exchange taking place resulting in the delivery of performance and commitment (Saks 2006). However, the main limitations of the SET and EE literature relate to the uncertainty about the relationship between antecedents and outcomes and continued arguments over causal links (Bailey et al 2017; Saks 2006). This thesis aims to progress the understanding of EE antecedents and associated outcomes in this context providing HRM practitioners with the evidence to progress reliable interventions for this unique phenomenon.

In the pursuit of understanding what interventions an organisation can introduce to influence the EE of employees, SET is pivotal. This thesis will use SET to underpin the exchange of resources and quality employee/employer relationships and their influence on EE. The investigation also hopes to provide clarity on the relationships between various EE antecedents and outcomes, particularly those antecedents associated with positive job satisfaction and organisational commitment within the context of techno working. Consistent with the research questions presented in Chapter one, the techno working context may alter an employee's experiences through physical and psychological distance such that certain exchanges may be more, or less successful in influencing EE outcomes. In conclusion, SET is used as a means to better understand the individual employee perceptions of resources received by examining the social relationships between isolated employees and their employer. This thesis seeks to determine how the social contract within the context of physical isolation influences EE and EE outcomes. In this respect, this thesis seeks to make a significant contribution to the existing EE literature such that the relationships to be investigated are novel and have not been explored within extant literature.

#### **2.4 Employee engagement constructs and theories of this thesis: Building the conceptual model**

The parent theory of EE has been introduced in Section 2.1 followed by the introduction of the unique context of this thesis - techno working, in Section 2.2.1. The discussion then explored how SET underscores the research investigation into EE antecedents and outcomes moderated by the experience of EE. This section introduces the foundational theories contributing to the conceptual framework. Before the conceptual model is presented, an in-depth investigation and discussion of these key theories is required. This discussion is informed by a thorough literature review which will firstly introduce the discipline, followed by a discussion on the literature findings, present a summary of the relevant theory and how it applies to EE, and finally implications of the theories and their application within this thesis will be summarised. As the parent theory of EE has been previously introduced, the MDA approach will be discussed first in more detail as the EE theory of this thesis, followed by EE antecedents, then the outcomes of EE.

Table 2.3 (below) serves to outline the contributing constructs and theories of this thesis to guide the reader through this section and is summarised for the purpose of the conceptual model at the end of this section.

**Table 2-3 Constructs and theories of this thesis**

<b>EE dimension</b>	<b>Constructs/theories</b>	<b>Who</b>	<b>Operation</b>	<b>Focus</b>
State (experience) of EE	Multidimensional EE approach (MDA, job and organisation engagement)	Saks 2006	<b>EE</b> is a multidimensional psychological state comprising job engagement and organisation engagement which are distinct constructs (Saks 2006) and are operationalised as the moderating variables in this research.	Psychological states of job engagement and organisation engagement.
EE antecedent	Job resources (JR)	Bakker & Demerouti (2007)	<b>Job resources only.</b> Taken from the JD-R model, job resources particularly influence motivation or work/job engagement (Bakker & Demerouti 2007), however job demands are not in scope for this research.	Job resources antecedent. Various antecedent resources are explained in the antecedent section.
EE antecedent	Leader-member exchange (LMX)	Graen & Uhl-Bien 1995	<b>Leadership.</b> Dyadic relationships linking the positive quality of the relationship between leader and follower with EE outcomes (Graen & Uhl-Bien 1995).	Perceived leadership and management factors antecedent.
Outcome of EE	Organisational commitment (OC)	Saks 2006	<b>Organisational focus.</b> Perception of loyalty, tenure and commitment, an attitude directed towards one's employing organisation (Saks 2006).	Organisational focused behavioural outcome.
Outcome of EE	Job satisfaction (JS)	Locke 1976	<b>Job focus.</b> A valuation of satisfaction resulting from the appraisal of one's job or job experiences (Locke 1976).	Job focused behavioural outcome.

Source: Authors own work.

## **2.5 The multidimensional engagement approach**

The multidimensional approach (MDA, Saks 2006) concerns the multidimensional nature of EE specifying both job and organisation engagement as elements of the 'state' and experience of EE. The MDA is described as a distinct and unique construct consisting

of cognitive, emotional, and behavioural components that are associated with individual role performance (Saks 2006 p. 602), which is similar to the original conception by Kahn (1990) because of its focus on role performance at work. Kahn (1990) had originally investigated the state of EE in his inaugural research defining employee engagement in terms of personal role engagement, an academic construct that was then advanced by May et al. (2004), Reio and Sanders-Reio (2011), Rich et al. (2010) and Soane et al. (2012). This definition embodied the idea of an employee being psychologically present when occupying and performing an organisational role as part of individual role performance (Kahn 1990). The other dominant role for an employee is their membership of an organisation, the employee role they play in association with their employing organisation. These two roles then formed part of the conceptualisation of EE first seen in the academic literature in Saks (2006) study. Saks' (2006) model acknowledged the broader focus of EE and that it can be directed towards either an employee's job or their employing organisation consistent with other scholars who previously suggested that employees have multiple roles (Rothbard 2001; May et al. 2004). Therefore, the construct of organisation engagement (OE) relates to the focus of an employee's engagement directed towards the organisation rather than their specific job which is the case of work or job engagement (Farndale et al. 2014).

Although role or job engagement (JE) has featured heavily in the literature, EE relating to an employee's role as a valued member of the organisation has received less attention (Farndale et al. 2014; Malinen et al. 2013; Guest 2013; Schaufeli et al. 2002). Guest (2013, 2014) explains this imbalance as academia has been preoccupied with the academic construct of personal or work engagement, while practitioners and consultancies have focused on engagement with the organisation (Truss 2014). This is largely because practitioners have focused on OE driven by the promised return of higher levels of organisation performance (e.g. Harter et al. 2002) while academics have otherwise investigated the wider nomological network of EE seeking clarity around construct validity and empirical validation (Farndale et al. 2014). Saks' (2006) MDA approach took important steps in initially separating the two constructs, and further studies have now bridged the academic/practitioner divide in demonstrating how the two concepts of work and OE relate to and complement each other as useful constructs for research and practice (Farndale et al. 2014).



In his 2006 study, and again in 2019, Saks sets out to test the antecedents and consequences of job and organisation engagements based on social exchange theory (Saks 2006 p.600) and his study was significant in proving that there was a meaningful difference between job engagement and organisation engagement. Saks (2006) separates role performance or 'job engagement' (performing the work role) from 'organisation engagement' (performing the role as a member of the organisation) and reinforces the idea that the two dimensions are distinct (Saks 2006). The distinguishing feature of this EE approach is that Saks' (2006) proposes JE and OE are related but distinct constructs with each exhibiting different antecedent and consequential relationships suggesting disparity in the psychological conditions leading to both. While Saks' 2006 model was one of the earlier theories of EE proposed, it hasn't been as widely used as other theories only appearing in six other studies (Bailey et al. 2017), including Selmer et al.'s (2013) examination of the work group level discussing work group engagement, and Saks own revisited approach in 2019.

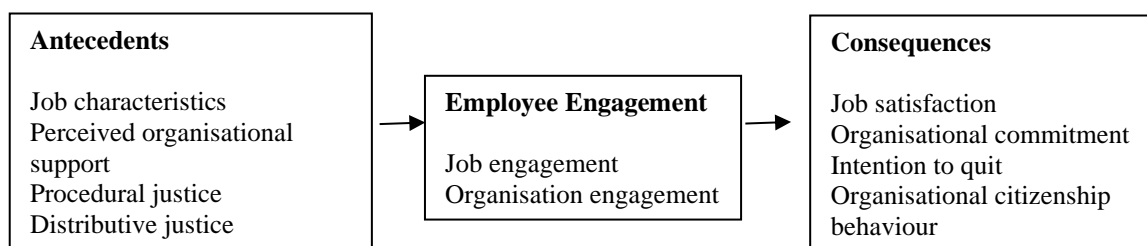
Saks (2006) suggests that perceived organisational support predicts both job and organisation engagement, whilst job characteristics and skill variety predicts JE (Saks 2006, 2019), establishing the differing causal effects of antecedents. Saks suggests (2006, p. 15) that both job and organisation engagement are predictors of job satisfaction, organisational commitment, intention to quit and organisation directed citizenship behaviour (OCB). Although, his study found that only organisation engagement predicted the outcome of individually directed organisational citizenship behaviours (Saks 2006). Saks (2006) empirical examination found that participants scored higher for JE compared to OE indicating a stronger connection to role performance. However, OE was a stronger predictor of all outcomes than JE. Saks' (2006) investigation findings show that employees had higher JE, although OE was a stronger predictor of EE outcomes. Similarly, Farndale et al. (2014) found a stronger relationship between organisation engagement and job satisfaction than between work engagement and job satisfaction. Neither job nor OE represented a meaningful relationship with the outcome of continuance commitment, which is posited as a measure of employees feeling trapped in their organisation (Purcell 2012). However, Suhartanto and Brien (2017) determined a contradictory outcome to Farndale et al. (2014) revealing that OE has more substantial effect on organisation performance as a whole, compared to that of JE. The few extant studies on the MDA approach provide empirical evidence on the existence of the

multidimensional engagement, however with very few extant studies, further investigation is required to better understand the antecedents and outcomes of the two distinct constructs. Further research would be beneficial to understand the antecedents of organisation engagement particularly relevant to it driving the EE outcomes as proven by Saks (2006) and Farndale et al. (2014). However, since the introduction of the MDA, only four studies have progressed the investigation of OE as a construct (Bailey et al. 2017).

Figure 2.2 explains the relationships between the antecedents, states of job and organisation engagement and their consequences within Saks' (2006) MDA underpinned by SET. These antecedents and consequences are examples only, and not purposed for this thesis. Unique to this approach is the separation of JE from OE which can be seen here within the moderating state of EE in the centre of the diagram.

**Figure 2.2 Saks' (2006) multidimensional approach**

Example model of the antecedents and consequences of employee engagement.



Source: adapted from Saks (2006).

Although proven as separate constructs, the inclusion of both job and organisation engagement in this approach has been particularly important in bridging the gap between the academic literature that describes the concept as a state of mind (or psychological state) and EE management practices. Furthermore, Saks' (2006) approach provides the necessary clarity for other academic approaches that blur and combine the two states of job and organisation engagement when they are clearly distinct (Saks 2019). This separation between the two views is important. That is, the academic literature provides greater focus on work/job engagement as a positive, fulfilling, work-related state of mind that is characterised by vigour, dedication, and absorption (Schaufeli et al. 2002, p. 74). Scholars note that the motivation of employees to engage with their employing

organisation is a main contributing factor to organisational success (MacLeod & Clarke 2009). Similarly, within the techno working context, it is important not only to understand the extent to which workers are engaged and committed in their jobs, but also to understand how the context influences the level of engagement experienced. These differing engagement experiences are key to understanding how to influence positive organisation outcomes.

Extant research has found JE outcomes are higher than OE outcomes (Saks 2006; Farndale et al. 2014), although the proximity and sphere of control over workers may explain why the former is higher than the latter. It could be argued that employees may have greater control over their own role because of increased knowledge and understanding of routine skills, versus other roles of the wider organisation. The other consideration here relates to organisational proximity, which is defined as a composite dimension consisting of a geographical and circulatory scale (Burmeister & Colletic-Wah 1997). This means that the employee's job role is geographically closer to them than the whole geography of the organisation. The circulation of resources and information of the job role is focused around the employee and is therefore closer than the circulation relative to the organisation. This may explain why organisation engagement metrics are more difficult to attain and may pose greater challenges when the organisation's geography or circulation of resources and information are more broadly spread.

The broader variables of EE antecedents and EE outcomes reflected in Saks' (2006) model are relevant to the main aim of this thesis. That is, to explore the employee engagement antecedents, experiences and outcomes of techno workers in remote working environments. This thesis seeks to make a significant contribution to the existing EE literature such that the relationships to be investigated are novel and have not been explored in prior research. Given that HR practices fail to capture the relational interplay of EE within a contextually nuanced environment, this thesis provides a more nuanced account of how to develop and apply EE interventions across techno working contexts. The context of this research, which was previously explained in [Section 2.2.1](#), provides a non-traditional approach to the study of EE where employees are not physically or psychologically located relevant to mainstream workers. The implications of this EE approach and this specific context are discussed further in [Section 2.5.3](#).

### 2.5.1 Job engagement

Job engagement (JE) refers to how employees or individuals conduct themselves in the performance of their job (Bailey et al. 2015) specific to the role they perform. In Saks' (2006) MDA, JE together with OE mediate engagement outcomes. Here, JE was constructed using a six-item scale designed to measure the extent to which an employee was 'present' or embedded within their job. In the study by Saks (2006) job engagement was differentiated from organisation engagement by designing questions related to an individual's job such as, "Sometimes I am so into *my job* that I lose track of time", "My mind often wanders, and I think of other things when doing *my job*", and "I am highly engaged in *this job*" (p 617).

Job engagement differs to other job-related constructs such as job involvement and job satisfaction. For example, job involvement is cognitively based rather than invoking the emotional and behavioural facets of EE as it is concerned with the need-satisfying abilities of the job and how that relates to an individual's self-image (May et al. 2004). Saks' (2006) draws on Kahn's original perspective of engagement as a psychological state where the unique construct consists of cognitive, emotional, and behavioural components of individual job-role performance. The separation of the two constructs is also further justified by May et al. (2004) in their proposition that engagement in one's role is actually an antecedent to job involvement and leads to one's identification with their job role.

It is also important to delineate JE from another popular construct in the EE literature, job satisfaction (JS). The evidence separating employee engagement and job satisfaction as distinct constructs has been contradictory as the constructs have been clearly linked in both practice and measurement (Shuck et al. 2017). Theorists claim the empirical and conceptual overlap of the constructs based on the representative measures containing overlapping statements (Macy & Schneider 2008; Newman et al. 2010), however, they have been intertwined operationally in practice. Conceptually they are distinct constructs with EE defined as an active, work related, positive, psychological state (Parker & Griffin 2011; Shuck et al. 2013) of a person towards their work (Kahn 1990). Job satisfaction on the other hand is juxtaposed as static rather than moving (Brief & Weiss 2002). It is

defined as a measure of satiation and contentment with the status quo (Christian et al. 2011; Cooper-Thomas et al. 2010), resulting from the appraisal of one's job or job experiences (Locke 1976 p. 1300). The differing static description of satisfaction versus the active descriptors of engagement (Cooper-Thomas et al. 2010; Xanthopoulou et al. 2009) position JS a resultant indicator of a psychological state (Yalabik et al. 2013). This assumes JS is a separate and proven consequence of EE (Saari & Judge 2004) which justifiably develops under the same conditions.

Saks' (2006) quantitative study determined that perceived organisational support and job characteristics predicted JE and that job and organisation engagement mediated the relationships between the antecedents and outcomes of JS, OC, intentions to quit, and organisational commitment behaviour (p. 600). This thesis by comparison will explore the extent to which the antecedents of job resources and LMX influence both job and organisation engagement and the associated consequences. Similar to the Saks' (2006) study, this thesis will then investigate how the relationships between job resources and LMX (as antecedents) are associated with JS and OC when mediated by job and organisation engagement. These relationships will be explored within the techno working context.

### **2.5.2 Organisation engagement**

The study of organisation engagement (OE) has also been quite limited with only few published studies (Saks 2006; Farndale et al. 2014; Surhurtanto et al. 2017) in comparison to work or JE. For instance, Malinen et al. (2013), applied only OE in a study finding that OE mediates between perceptions of trust and withdrawal attitudes and establishes trust as an important resource in the JD-R model (Malinen et al. 2013). This is the only study to have investigated only OE (Bailey et al. 2017).

Saks' (2006) study investigated the construct using a six-item scale with questions such as: "One of the most exciting things for me is getting involved with things happening in this organisation"; "Being a member of this organisation makes me come alive"; "I am really not into the "goings-on" in this organisation"; and "Being a member of this organisation is very captivating" (p. 617). These variables were in relation to assessing an individual's psychological presence in their organisation while clearly capturing all

three behavioural, emotional and cognitive facets of engagement as opposed to other sometimes conflated constructs such as organisational commitment (OC) and organisational citizenship behaviour (OCB). Organisational commitment is often referred to as an attitude and attachment whilst OCB is more behaviourally based linked to extra role, voluntary and discretionary behaviour (Saks 2006). So, whilst the literature points to similarities between these constructs, OE is distinguished by including the behavioural, emotional and cognitive foundations of social exchange and reciprocity. Both OC and OCB are not based on these foundations (Robinson et al. 2004).

The purpose in separating OE from JE is to better understand the broader perspectives of engagement and how employees can interpret these perspectives. For instance, Lavelle et al. (2007) suggests that employees may judge their manager as acting fairly but that the organisation is not. Reichers (1985) similarly noted that employees could perceive organisational commitment in different ways from the whole organisation to smaller role groups. An employee's commitment to the holistic organisation may vary from their commitment to their team or supervisor depending on how they had been treated (Reichers 1985). An employee's perception of an organisation's level of commitment to their workers explains why some workers leave while others may stay if they have a strong relationship with their manager. Most of the EE research has focused on the job role (Schaufeli et al. 2002), although interestingly, organisation engagement has been proven to be a stronger predictor of all EE outcomes (Saks 2006). Whilst the investigation of the job role is relevant within a techno working context, the experience of OE is important considering the physical and psychological detachment from the organisation and its effects on EE outcomes.

In extant studies, OE has been found to be related to the antecedents of perceived organisational support and procedural justice (Saks 2006), whilst surprisingly an outcome of increased JS was found to have a stronger relationship with OE rather than JE (Saks 2006; Farndale et al. 2014). Farndale et al. (2014) also found that OE is a better predictor of affective commitment and called for further investigation of the OE construct.

### **2.5.3 Implications of the multidimensional approach for this thesis**

The MDA is interesting because it separates job and organisation engagement using both to mediate the relationships between antecedents and outcomes. Similarly, and based on the discussions thus far, the approach of this thesis is to also investigate how both job and organisation engagement are perceived to moderate the relationships between antecedents and outcomes in techno working. For this thesis, the antecedents relate to job resources and LMX, whilst the outcomes associated with EE relate to JS and OC. Drawing from the existing body of literature related to the MDA, the empirical measures of the MDA will be used to analyse, measure and differentiate the constructs of organisation and job engagement which are otherwise blurred in extant studies (Saks 2019). The separation of engagement dimensions in the MDA aims to understand the nuances of EE experiences for techno workers who have close proximity to their jobs and are distanced and isolated from their employing organisations.

## **2.6 Employee engagement antecedents**

While the extant research focuses on the psychological state and concept of EE, there is broad disagreement about which antecedents lead to the development of an engaged workforce (Saks 2006; Bakker 2011), including those which assist HRD practitioners to better design and develop EE interventions. Accordingly, very little research addresses the gap between ‘agreed’ antecedents and EE outcomes. Generally, there is a lack of applied knowledge that actually connects antecedents to outcomes that help to advance our knowledge in the area (Saks 2006; Macey & Schneider 2008; Shuck et al. 2011). As EE is more often discussed as a behavioural construct (Shuck & Wollard 2010), it provides little evidence from an HRD perspective to determine the antecedents and then the relevant interventions appropriate for practitioners to drive EE outcomes. Therefore, this thesis explores the influence of various job and organisation antecedents on techno workers’ engagement, what EE experiences emerge for techno workers, and how their experience of EE results in positive outcomes in such circumstances when an organisations proximity and context is altered and broadened by techno working. The thesis seeks to make a significant contribution to the existing EE literature such that the relationships to be investigated are novel and have not been explored in prior research.

The many different antecedents linked to EE have been represented in the literature from their historical roots in the positive psychology literature (Kahn 1990), to the more recent

management practice literature of HRD interventions (Jenkins & Delbridge 2013; Reissner & Pagan 2013; Truss 2014). Along the EE journey, antecedents have been categorised through literature synthesis under five main headings including: 1) individual psychological states, 2) job design related factors, 3) perceived leadership and management, 4) organisational interventions and 5) individual perceptions of organisational and team factors (Bailey et al. 2017). The number of categories here is testament to the variety of antecedents. Even within these five categories there are mixed findings and significant links are debated between theorists.

It has been argued that antecedents are poorly correlated due to the challenging nature of EE activities being measured across fleeting moments of time thus proving challenging for scholars to capture quantitatively or qualitatively (Shuck & Wollard 2011 p. 442). However, there is a significant need to investigate which antecedents are common across organisations to build the validity of the EE construct (Shuck & Wollard 2011). More recently theorists have worked to consolidate an appropriate measure (Shuck et al. 2017). This is because amid various arguments related to methodology, there is resounding agreement that different kinds of antecedents *do* predict EE (Shuck et al. 2015; Shuck et al. 2011) and positive antecedents such as job resources, positive psychological states and positive perceptions of leaders and organisations are associated with higher levels of EE (Bailey et al. 2017). However, the distal and proximal nature of antecedents relates to how employees feel about the resources received, and how relevant antecedents relate to EE outcomes (Menguc et al. 2013). In this thesis, this relates to job satisfaction and organisational commitment as associated outcomes.

Well-known antecedents of EE have also been identified at the individual and organisational levels (Shuck & Wollard 2011). Organisational antecedents have varied from the execution of mission and vision on a local level (Fleming & Asplund 2007), role and perception of manager expectations (Bezuijen et al. 2009), the role of organisation culture and micro-culture (Brown & Leigh 1996; Shuck et al 2011), and emotionally positive workplace climates (Dollard & Bakker 2010). These pluralist antecedent approaches such as training and development activities or communication programs are embedded within a small number of studies. Because of their individualistic nature including their methodological limitations and the range of interventions studied, it has been difficult to draw robust EE conclusions (Bailey et al. 2017). Although the



antecedent nature of organisational interventions has been deemed as having considerable potential for success (Bishop 2013; Brummelhuis et al. 2012; Carter et al. 2010), unfortunately for practitioners and organisations, the weight of empirical evidence is not universally applicable. That is, many interventions have demonstrated a weaker association with EE than other antecedents such as leadership and management factors, job resources and psychological states (Bailey et al. 2017). In the case of techno working being an isolated and individual pursuit, the exploration of individual rather than pluralist antecedents is preferred based on the empirical evidence presented to date.

As there are a large number of antecedents grouped under the five headings in the Bailey et al. (2017) study, there is little scope within this thesis to review them all in detail as outlined in the delimitations of the thesis in Chapter one. Therefore, this research will limit the investigation to two of the five antecedent categories namely job design related factors and perceived leadership and management factors (Bailey et al. 2017). The ‘psychological state’ category will not be explored in this thesis as generally the innate resilience, efficacy characteristics and perceptions that individuals hold of their personal strength and ability are harder for HRM practitioners to address through various interventions as they are considered stable and innate (Bailey et al. 2017). This is in comparison to interventions related to the redesign of a job role or greater provision of feedback. Furthermore, the antecedent research on psychological states has demonstrated mixed findings (Bailey et al. 2017), which is not reliably leveraged for this research. Organisational intervention antecedents will also not be explored in this thesis as the few extant studies available have highlighted a number of complexities and ambiguities (Jenkins & Delbridge 2013). Similarly, techno workers may have a compromised experience of organisational interventions as they are separated from the organisation.

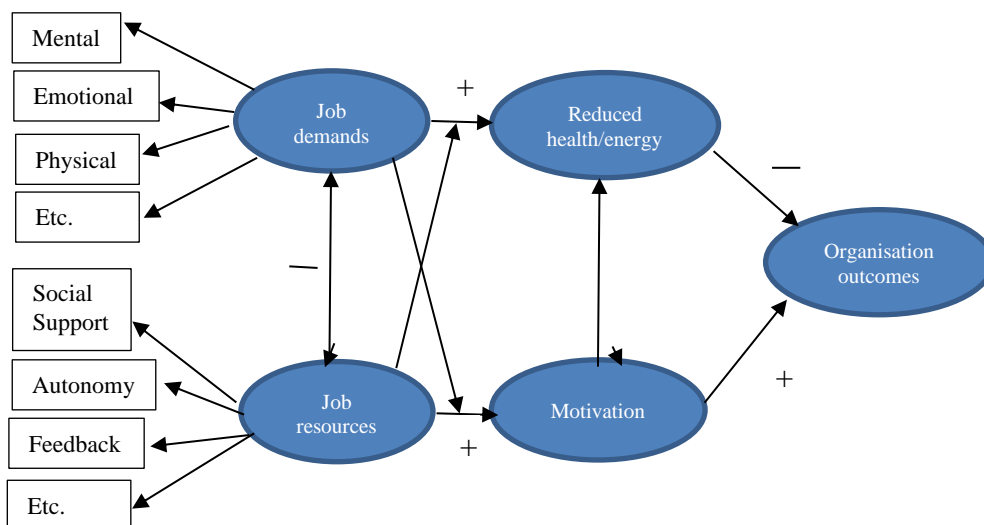
Taken together, the antecedent categories for this investigation have been chosen as they satisfy several criteria. First, they appear to be most appropriate and applicable to the techno working context of enquiry as they can be focused at the individual employee level. Secondly, the theories are empirically evidenced in the literature although have not been investigated previously as an integrated duality. Further, the job resources chosen for this research and LMX have not been considered previously within the composite EE literature, and as direct antecedents. Thirdly, they focus on the themes arising from the context discussion, namely the experience of the organisation and the

professional isolation inherent in this context which highlights the organisational, social and interpersonal factors commonly missing in EE research. Finally, an empirical analysis of these antecedents will enable the development of different HRD interventions that might better facilitate targeted EE outcomes.

### 2.6.1 Job design factors: Job-demands resources model

Most of the antecedent research has focused on job design factors with job resources attracting intense investigation resulting from the dominance of the Job demands-resources theory (JD-R) within the EE literature (Bailey et al. 2017). The JD-R has been used in sixty-five studies (Bailey et al. 2017) and is a theory that assumes that every occupation has its own energetic and motivational processes associated with organisational and employee wellbeing outcomes. The theory uses job design factors and organisational characteristics to classify job experiences into two categories: 1) the energetic forces of job demands and 2) the motivational aspects of job resources (Bakker et al. 2005). The integration of these two categories in the holistic model represented in Figure 2.3 shows how the outcomes of exhaustion and EE may be predicted and illustrated.

**Figure 2.3 Traditional job-demands resources model**



Source: Adapted from Bakker & Demerouti (2007) p. 313.

### 2.6.1.1 Job demands

As antecedents to exhaustion and burnout, job demands refer to those physical, social, or organisational aspects of the job that require sustained physical or mental effort that are associated with physiological and psychological costs (Demerouti et al. 2001 p. 501). These demands are unavoidable in the workplace, and whilst not inherently negative in nature, excessive demands beyond equilibrium place employees at risk if they lack the tools to manage the demands, or if ‘health protecting factors’ (Demerouti et al. 2001) are not available to mediate these demands. Job demands evoke strain, stress and cognitive or emotional effort from the employee(s) which are associated with the subsequent costs of exhaustion (Hockey 1997), chronic fatigue and health problems (Demerouti et al. 2001), sickness absence (Toppinen-Tanner et al. 2005), poor performance (Taris 2006), impeded workability (Siebt et al. 2009), low organisational commitment (Halbesleben & Buckley 2004) and psychosomatic disorders (Rudow 1999). When an employee doesn’t have the capacity to meet the demands, or otherwise meets the demands but is depleted afterwards and finds it difficult to recover, these demands become job stressors which can lead to burnout (Meijman & Mulder 1998).

While substantive, mixed evidence still exists to the contrary finding positive associations between job demands and EE with several studies concluding a positive association (De Braine & Roodt 2011). Further, conservation of resources theory (Hobfoll 1989), which describes the motivation that drives humans to both maintain their current resources and to pursue new resources, has been incorporated into the JD-R by Bakker and Demerouti (2007). This combination implies an involvement of demands on EE as individuals seek to conserve their resources by utilising some while preserving others (Hobfoll 2001). The model does not assume a direct correlation between job demands and work engagement (Schaufeli & Bakker 2004), and job demands, and job resources can be empirically distinguished and are moderately negatively correlated (Bakker et al. 2003; Bakker et al. 2001a). As this thesis investigates the perceived influence of antecedents on EE, it acknowledges job resources as antecedents as the job demand of professional isolation is inherent in the context but not a variable in the proposed conceptual model. Therefore, this thesis does not explore job demands as established in the delimitations in Chapter one.

### **2.6.1.2 Job resources**

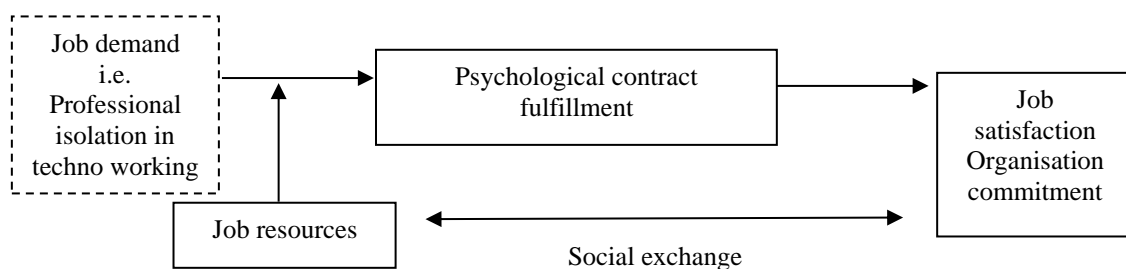
Job resources are the physical, social, or organisational factors that aid employees in achieving work goals, stimulate personal growth and development, and also work to maintain the balance of demands in an effort to defend against the costs of exhaustion, fatigue and other stress reactions (Demerouti et al. 2001 p.501). These resources, while important in helping employees achieve outputs and accomplishments, are also important development, wellbeing and motivation (Schaufeli & Bakker 2004). Job resources tend to buffer the impact of mental and physical demands and on exhaustion and stress reactions in places of work. However, when the demands are not appropriately buffered, the long-term consequences can lead to burnout and disengagement (Bakker & Demerouti 2007). The job resources process also has the potential to promote positive outcomes in the workplace, such as job satisfaction and high work performance (Demerouti & Bakker 2007), employee productivity (Grigsby 2013) and wellbeing (Grigsby 2013; Tims et al. 2013). Job resources may play either an intrinsic or extrinsic motivational role; they provide for growth and development and in fulfilling basic needs such as autonomy or social support. They also extrinsically aid the achievement of work goals such as performance feedback and leader-member exchange outcomes (Demerouti & Bakker 2007).

The literature on job resources suggests that among positive antecedents, job resources lead to higher levels of EE, while negative antecedents and job demands such as bullying, abusive supervision and negative mood are associated with lower levels of EE (Bailey et al. 2017; Shuck et al. 2015; Shuck et al. 2011). There is only one extant study to the contrary which found no association between resources and EE (Ouweneel et al. 2012). Within this thesis, the term job resources will refer to the determined list of resources to be acknowledged as antecedents in light of professional isolation being inherent in the context. Job resources are used to the exclusion of demands as they are proven to be more important and direct antecedent factors to higher EE (Bakker et al. 2007a; Schaufeli & Salanova 2007).

### **2.6.1.3 The integration of job resources with social exchange theory**

Underpinned by distributive justice, SET can be integrated with job resources antecedents as part of the psychological contract fulfillment to explain the job characteristics-job outcomes relationship (Birch et al. 2016). This view of the employment exchange process assumes that an employee who satisfies their job demands but doesn't receive appropriate job resources in return will see the employee-employer relationship as inequitable (Karasek 1979). Social exchanges in an organisational context are founded on the socioemotional nature of the relationship between two parties and this is based on shared values, trust, and feelings of obligation (Foa & Foa 1980). If this perceived psychological contract is unbalanced, it inversely influences job and performance outcomes (Foa & Foa 1980). Given that HR interventions are important in closing this perceived psychological contract gap, it is expected that EE interventions may influence positive job and organisational outcomes. Figure 2.4 demonstrates how SET integrates with the JD-R with job resources being exchanged through the psychological contract fulfillment resulting in the positive outcomes of job satisfaction and organisational commitment (Birch et al. 2016). For the purposes of this thesis, professional isolation is the demand assumed in the context, therefore warranting the investigation of job resources as the antecedents exchanged for EE outcomes.

**Figure 2.4 Social exchange theory and job demands-resources integration**



Source: Adapted from Birch et al. 2016.

The JD-R theory suggests that the relative balance of demands and resources at work can produce either positive and favourable or negative harmful outcomes for the employee. The balance between demands and resources has been used as a basis to diagnose problems and guide interventions in such a way that their outcomes improve working conditions, increase employee health and wellbeing, and increase EE behaviour (Timms et al. 2013). For example, the theory has been applied to a variety of job types

(Euwema & Bakker 2009), job settings and occupations (Demerouti & Bakker 2007) where the resources and demands measured are diverse and interchangeable depending on the organisational or job characteristics evident. Job resources include autonomy, social support, feedback, organisation climate, supervisory support, learning and development opportunities, goal clarity, advancement and many more (Bailey et al. 2015; Karasek 1985). Job demands by comparison include interpersonal conflict, role ambiguity, job insecurity, performance demands and physical demands (Karasek 1985).

The evidence of the reliability of the theory across the literature justifies its continued use, although there have been contradictions amongst the results and challenges to its dependability. Scholars have questioned its linear nature and have proposed that EE only has a positive effect up to a point where a curvilinear relationship is evident before higher levels of job demand-resources cause detrimental effects (Maslach 2011). Further, others question its failure to address the control of resources and demands experienced by employees (Fineman 2006), and diversity factors (Banihani et al. 2013). A study by Ouweenal et al. (2012) however, did not find any significant connection between job resources and EE. Several studies have emphasised the direct and indirect relationships between model variables and the model's flexibility by including many different resources and demands which can be perceived as both a strength and a weakness as it comes at the cost of limited generalisability (Schaufeli 2013). This is because with the differing resources and demands, the model cannot consistently imply that study variables are highly correlated or that interactions exist between resources on the one hand and demands on the other (Schaufeli 2013).

In demonstrating the JD-R model's flexibility, studies of personal resources and engaging leadership have provided for extensions of the theory (Xanthapoulou et al. 2009; Schaufeli 2015). Xanthapoulou et al. (2009) incorporated resilience and control in their longitudinal study suggesting that personal resources predict work engagement through self-efficacy, optimism and organisation-based self-esteem. In 2015, Schaufeli outlined the importance of integrating a particular type of 'engaging' leadership in the JD-R model concluding that the effects of engaging leadership were 'exclusively indirect' (p.455). Rather than the hypothesised direct causal relationship, engaging leadership had a positive impact on the job environment, reducing burnout and in turn, fostering work engagement (Shuck & Herb 2012). This thesis posits that such job

demands are naturally inherent in every role therefore job resources can be acknowledged as direct antecedents for the purpose of this research. The JD-R model will not be used in this thesis as the research scope does not include job demands. However, as professional isolation is inherent in the context, job resources are leveraged as antecedents relevant for this investigation as Saks (2006) operationalised resources that employees respond to by bringing themselves more deeply into their role performances. As SET is utilised to underpin this research, the job resources identified in the literature review are instead operationalised as antecedents that are exchanged for EE outcomes.

While the JD-R theory posits a linear relationship between JE and burnout, prevailing studies question the dual nature of the balance between the two. The differing causal and consequential patterns of job engagement versus burnout implies differing intervention strategies that need to be used to either reduce burnout or increase job engagement (Schaufeli & Bakker 2004). Studies have proposed that organisations should focus on increasing job resources rather than reducing job demands as the job resources are more likely to enhance an employee's engagement (Schaufeli 2015). Focusing on job demands may be more difficult as this may involve appointing more employees to do the job which has substantial financial implications. Resolving other demands that are particular to a techno working environment such as increased role ambiguity, and reduced support and feedback, are more difficult to address because of the nature of the context, therefore focusing on increasing EE is recommended (Sardeshmukh et al. 2012). As Schaufeli (2017 p. 212) notes, by focusing on job resources, EE is fostered and burnout prevented which is like hitting two birds with one stone, whereas focusing on burnout only reduces burnout, and doesn't necessarily affect job engagement. Therefore, this thesis focuses on job resources as proposed antecedents of EE.

Most of the extant research focuses on the negative outcomes of the JD-R model such as burnout and stress, with Schaufeli and Bakker (2004) calling for more attention to be paid to exploring and building positive organisational behaviours instead. This negative predominance has previously been shared across the psychology literature with publications focusing on the negative psychological states outnumbering the positive outcomes by a ratio of fourteen to one (Myers 2000). Focusing on the negative outcomes

assumes that the opposite is ultimately present, e.g. if the negative state is ‘I feel burned out and stressed’, the direct psychometric opposite is ‘I feel energised and motivated’. This assumes that if the negative psychological state or behaviour is not present, that the assumed positive psychological state in turn creates better EE, although this is not always the case. Therefore, turning attention to leveraging the positive outcomes and exploiting these further is a more feasible strategy, providing a better opportunity for EE outcomes relevant to this thesis.

Different HRM systems, procedures and interventions can help design jobs that potentially lead to higher levels of EE. The range of resources linked to EE that have been explored within the literature is quite extensive including resources such as job control, social support, learning opportunities and feedback (Bakker 2011; Bakker et al. 2008). Such resources have also been considered by Saks in his recent study of EE antecedents and outcomes (2019). Personal resources such as resilience, self-efficacy, optimism, self-esteem and hope have also been included within the JD-R model over time (Xanthopoulou et al. 2009), although due to their innate nature and the inability of HRM practitioners to apply these resources, they are not within the scope of this investigation. In their critical review, Schaufeli et al. (2013) provide a list of thirty-one job resources influencing EE outcomes including but not limited to appreciation, advancement, safety climate, team harmony, strategic planning, job challenge and procedural fairness. Accordingly, research that explores the composite of these resources is beyond the scope of this thesis as set out in delimitations in Section 1.5.

The job resource list consists of resources that are either attributed to the job design as structural, or social where they consist of networks and relationships (Schaufeli et al. 2013). This list has been analysed at three levels of focus that relate to individual, interpersonal and organisational resources. Individual resources are targeted solely at the individual, and their job or work role. Interpersonal resources are those exchanged between people through interaction or relationships, while organisational resources are those provided across the organisation such as wellbeing initiatives or compensation structures. The resources determined for this research span all three levels to compare and contrast their impact to better interpret how they influence the remote techno working environment as antecedents. The resources relevant to this research are discussed next.



## **2.6.2 Job resources of this research**

In consideration of the techno working context, while all thirty-one resources could be investigated, only those pivotal and meaningful to techno working experiences will be considered in this thesis. Similarly, resources that most likely enable some form of HR intervention will be included in this thesis. In subsequent sections, the job resources most relevant for investigating the research question, '*what are the antecedents, outcomes and experiences of EE in techno workers in remote working environments?*', will be analysed. Based on the review of literature for this thesis, the relevant job resources and levels are listed below based on the order in which they are discussed:

- Autonomy – individual
- Feedback - individual
- Social (co-worker) support - interpersonal
- Organisation climate - organisational
- Learning and development opportunities - organisational

Again, whilst they have been identified as job resources in the JD-R model (Bakker & Demerouti 2007) and in Saks' MDA studies (2006 & 2019), these resources are considered antecedents for the purpose of this investigation.

## **2.6.3 Individual level resources – autonomy and feedback**

The individual job resources level focuses on how individuals shape and customise their job tasks, work settings and employment conditions (Hornung et al. 2008), which are contexts founded in role theory. Role theory states that employees in the same roles will perform a slightly different set of tasks as they enact their roles in different ways (Biddle 1979), suggesting that employees in techno working environments may perform their same roles differently due to the active nature of redesigning their own roles as they work.

The inclusion of autonomy as an individual resource antecedent is interesting to understand within this context. Employees with greater autonomy are more engaged in

their job (Bakker & Demerouti 2007) as higher levels of autonomy may make it easier for individuals to change their job demands and resources (Leana et al. 2009; Petrou et al. 2012). Autonomy refers to the extent of control individuals have over how their work is to be accomplished (Langfred 2000). Overall, autonomy has been largely positively correlated with EE in five studies represented in Bailey et al.'s (2017) synthesis of the literature, although not specific to this context. Furthermore, as determined by self-determination theory (SDT, Deci & Ryan 2000), autonomy is one of the three basic needs employee's need fulfilled to enable motivation which has been similarly linked to EE. The physical separation of employees within a techno working environment would assume employees are less bound by office routines and have more discretion in conducting their job activities without managerial oversight (Dubrin 1991). This in turn may lead to greater experiences of autonomy leading to increased EE outcomes.

Autonomy has not been analysed within the context of techno working suggesting that conclusions may be drawn from other distributed working practices related to distributed work practices. The practice of teleworking for instance, is a variation of techno working as described earlier in Table 2.2 ([Section 2.2.1](#)) and has been investigated in relation to autonomy. This study concludes that the increased autonomy resulting from teleworking results in higher EE outcomes (Masuda et al. 2017). Although other teleworking studies have found the work practice had an adverse effect on feedback and support due to the distance between the individual and the manager (Sardeshmukh et al. 2012), insinuating the autonomy may be too great and instead, having a negative impact. While autonomy may be assumed in the design of jobs in the techno working environment, the separation and remoteness of the context may influence whether autonomy is positively or negatively linked to EE.

Similarly, feedback has been included as an individual resource in the proposed conceptual model for this thesis. As mentioned previously, the greater physical distance between manager and employee can have a negative effect on feedback and EE outcomes (Sardeshmukh et al. 2012). Scholars have called for job designs that incorporate higher autonomy and feedback routines since they are more likely to influence EE outcomes (Bailey et al. 2017) and the techno working context provides a useful opportunity to test that proposition. The distance between employee and employer has also shown to influence both positive or negative feelings such as being 'cut off' from others and a lack

of connection and feedback (Cooper & Kurland 2002). Different modes of working have progressed considerably since the extant studies in distributed and flexible working were published (Sardeshmukh et al. 2012; Steenbergen et al. 2017; Burke & Ng 2006), to the extent that EE scholars and HR representatives better appreciate the opportunity that individuals have to craft their own resources using an increased variety of applications such as video conferencing, face timing and instant messaging. It has been proposed that by using richer communication sources available in contemporary workplaces such as video meetings, social applications and appropriate socialisation processes, disconnected spaces can be mitigated creating proximal work environments (Sardeshmukh et al. 2012), which may overcome problems related to reduced feedback and poor job design.

#### **2.6.4 Interpersonal level resource – social support**

The concept of workplace social support (SS) can be understood as the perceptions that one has about access to helping relationships and the quality or strength of these (Viswesvaran et al. 1999). Some of these helping factors relate to better communication of information, emotional empathy, or tangible assistance (Viswesvaran et al. 1999). Social support is articulated in the predominant Job Content Questionnaire (JCQ, Karasek 1985) which also provides the measure for SS adopted by the quantitative survey in this thesis. Workplace SS is measured by item scales such as: ‘When it is necessary, I can ask my colleagues for help’, ‘In your work, do you feel appreciated by your co-workers?’ and ‘Do you get along with your co-workers?’ (Karasek 1985). Outcomes related to higher social support measures are assumed to involve regular face-to-face interactions with colleagues or supervisors (Hausser et al. 2010; House 1981; LaRocco et al. 1980). It is contended that the techno working job context is likely to influence the level of SS received (Haddon & Lewis 1994) because of the possibility of less face-to-face interaction (Golden et al. 2008), which has been concluded by other distributed working practice findings. It is important to understand the influence of interpersonal resources such as SS in remote environments as their impact cannot be assumed and may be nuanced due to the physical and psychological separation.

Previous studies of employees working remotely (teleworking), found that employees harboured feelings of being ‘cut-off’ from others, they lacked connection and feedback (Cooper & Kurland 2002) and experienced a reduced sense of attachment and

connectedness with others due to the absence of informal interactions such as lunch breaks and hallway conversations (Burtha & Connaughton 2004). Due to the separation and increased reliance on electronic communications that are deemed to be less rich than face-to-face interactions, SS mechanisms within the context of electronic communications may influence EE outcomes either positively or negatively. Within a world where electronic communications in the digital age are a continuously increasing feature, e.g. mobile phones, it is important to understand the extent to which these resources are substitutes of face-to-face arrangements and the extent to which they support techno workers on an interpersonal basis. It is now increasingly important to understand the effects of the internet and electronic-based communications as a channel for enabling greater SS and how this influences EE outcomes. Some studies have found for instance that group members appreciated the informational and emotional support without the spatial or temporal restrictions of face-to-face interpersonal contact (Coulson & Knibb 2007). Other studies have shown that online SS has provided a buffer for other workplace demands (e.g. Amichai-Hamburger 2005), suggesting that virtual SS practices might influence EE outcomes within similar remote contexts. A conceptual study during Covid-19 coined the category 'Communication' which included networking, involvement and feedback to be key in reinforcing EE in remote workers during Covid-19 however this construct is untested in remote working and fails to reference the emotional support offered by one's network (De-la-Calle-Duran & Rodriguez-Sanchez 2021).

It is important here to differentiate the construct of SS from other interpersonal resources. Social support relates to the collective nature of getting along with colleagues and feeling cared for. Other interpersonal constructs such as LMX are dyadic and measured quite differently measuring the quality of the leader and employee relationship. It is important to understand the influence of SS in techno working to see if the remote environment nuances the social organisational context (Alderfer 1985). This exploration will aid the understanding of whether techno workers have the experience of connectedness with colleagues and others, which is an integral feature of the experience of self-in-role, being the behaviours by which people bring in or leave out their personal selves during work role performances (Kahn 1990). Interpersonal factors have also been directly linked to organisational commitment (Rousseau & Aube 2010; Hsu et al. 2011), indicating that the social sphere connects employees to an organisation. With the aim to understand the

nuances of EE antecedents, job and organisation engagement, and the associated outcomes of OC and JS, the interpersonal resource of SS is a critical inclusion.

### **2.6.5 Organisational level resources – organisation climate and learning and development opportunities**

Conditions promoting learning have been proven to reduce stress (job demands, Holman & Wall 2002; Paulsson et al. 2005; Rau 2006), increase motivation (Morrison et al. 2005; Parker et al. 1997) and have been tied to positive EE outcomes in the literature (Bailey et al. 2017). Learning and development opportunities in the workplace have broad scope because they address both the informal and formal nature of development which is represented in the Job Content Questionnaire (Karasek et al. 1998). Examples of learning and development include: ‘Does your work offer you opportunities for personal growth and development?’, ‘Does your work give you the feeling that you can achieve something?’, ‘My work offers me the opportunity to learn new things’. Personal growth, achieving, and learning new skills and competencies can all be attributed to workplace learning opportunities which are of particular interest in this context. However, within the techno working context, physical and psychological separation may pose as a barrier to the translation of new skills or ability to learn by observation or mimicry. Similarly, the prevention of task-related observations may reduce the ability of a manager to intervene with an instructional learning opportunity. In such situations, working remotely may lead to a mindset of ‘out of sight, out of mind’, which is a less desirable outcome in keeping workers engaged. However, there are also positive outcomes that the techno working environment could provide in enhancing EE outcomes through learning and development opportunities.

Empirical investigation has found that both autonomy and task variety for instance are positively associated with learning opportunities indirectly resulting in decreased emotional exhaustion through stimulating learning opportunities at work (Van Ruysseveldt et al. 2011). This supports the motivational process of the JD-R model in that job resources instigate a process leading to job-related learning outcomes (Bakker & Demerouti 2007). As autonomy is assumed in the techno working environment, this increased resource could provide a greater opportunity for employees to learn by being more resourceful, which in turn might influence EE outcomes. This is because autonomy

allows for productive learning behaviours such as reflection, exploration and experimentation which may be less pervasive in situations of decreased autonomy (Van Ruysseveldt et al. 2011). Consistent with extant research, distributed working practices actually reduce career development opportunities because of the fewer learning opportunities available (Cooper & Kurland 2002; Mann et al. 2000). These outcomes are yet to be tested within the techno working context and could be challenged on the basis of advances in technology, the trend towards on demand and virtual learning together with the predilection for new learning models such as the 70/20/10 learning model (which holds that 70% of learning is on the job, 20% from interactions and 10% from formal education), favouring on-the-job learning rather than formal learning (Lombardo & Eichinger 1996).

Overall, existing theory is not clear about how the techno working context may influence (or create) learning barriers which warrants further investigation. The inclusion of learning and development opportunities as a resource in this thesis also facilitates comparative analysis with other traditionally contextual studies (Xanthospoulou et al. 2009). Furthermore, with SDT (Deci & Ryan 2000) determining competence as one of three innate basic needs employees need fulfilled in order to be motivated for work, understanding learning and development opportunities and how they operate to fulfill competence in this remote environment is important. It is useful to explore how key changes in technology, new learning styles and on demand delivery influences the quality of learning and development. Furthermore, learning and development opportunities are representative of the organisation as they are organisational level resources and their inclusion in the research also helps assess the influence of the organisation in this remote working environment.

A conceptual study progressed during Covid-19 referenced the term ‘cultivation’ as key to reinforcing EE during remote working in times of Covid-19 stating that professional career development, new technology, coaching, and development opportunities resulted in higher EE and wellbeing (De-la-Calle-Duran & Rodriguez-Sanchez 2021). This study leveraged extant EE research and theoretical findings based on traditional ways of working, consequently undermining the contextual nuances particular to remote working that an exploratory investigation may reveal. This research aims to apply these

propositions to understand if extant theory is in fact relevant to remote working or if new theory is demanded.

The final resource determined for this investigation is organisation climate, a resource that often incorporates team climate and work climate. Organisation climate has been referred to as moving patterns of behaviour and perceptions held by employees operating in the organisation culture depending on the values and work atmosphere evident and it can also be described as the character of the organisation's internal environment (Madhukar & Sharma 2017 p. 276). Organisation climate moves and shifts, different to organisation culture which is more static in that it refers to the set of values, rules and beliefs shared by its members, which create an internal environment that is taught to new members (Lopez-Martin & Topa 2019). An organisation's climate has been found to have a positive correlation with EE (Bailey et al. 2017) and EE outcomes such as organisational commitment (Schaufeli 2017). It is also a construct measured in the widely used EE survey, the Job Content Questionnaire (JCQ, Karasek et al. 1998) where organisation climate is measured in relation to the team unit represented in questions such as: 'The work climate in my team is encouraging and supportive of new ideas', 'The work climate in my team is prejudiced and clinging to old ways', and 'The work climate in my team is strained and quarrelsome'. Scholars have argued that engaged employees might better perceive the availability of resources and be better able to mobilise these in places of work because they are more pleasant colleagues to interact with (Bakker & Demerouti 2007 p.14), and that organisation climate can help employees cope with job demands (Bakker & Demerouti 2007). Organisation climate is important to understand in this context since physical and psychological separation may inhibit or disadvantage a techno workers' experiences of the climate. Organisation climate for instance, may help to explain any salient differences and nuances between SS and the relationship with the supervisor as these social factors may be the key to better connect an employee to their employing organisation.

The inclusion of organisational level resources such as organisation climate and learning and development opportunities address a key limitation in the current research (Bakker & Demerouti 2007), that is, to provide more concrete evidence and stronger empirical relationships in measuring work engagement (Inoue et al. 2012). There is also the opportunity in this research to see if these organisational level resources influence the EE

experiences of techno workers, particularly OE. It is also useful to understand the extent to which these resources are influential considering the physical and psychological separation from traditional work contexts. Previous studies have shown that remote employees do not identify as strongly with the organisation when these benefits are absent (Wiesenfeld et al. 1999).

#### **2.6.6 Job demand: Professional isolation**

Whilst not a resource, the job demand of professional isolation has been included in the quantitative exploratory survey in this investigation as it is inherent in this remote context therefore its relevance is assumed. Studies have proven a negative relationship between EE and professional isolation (Golden et al. 2008; Cooper & Kurland 2002). It is included as a measure in the embedded quantitative survey to better understand how techno workers are affected by the isolation comparative to resources. Two of the questions posed are: “I feel left out on activities and meetings that could enhance my career”, and “I miss out on opportunities to be mentored” (Golden et al. 2008). These questions aim to enhance the understanding of learning and development opportunities and the level of feedback provided to remote workers. Professional isolation may be an inhibitor as the three types of developmental opportunities are predominantly social; 1) interpersonal networking with colleagues, 2) information learning that enhances work related skills, and 3) mentoring from colleagues and supervisors (Cooper & Kurland 2002). The extant literature presumes that these development activities occur in a face-to-face interpersonal context and perhaps these resources are not as influential or powerful delivered through new technology within a techno working context.

Furthermore, there is also an opportunity to understand how professional isolation relates to autonomy in this research. The questions used in the professional isolation measure, “I feel isolated” (job demand) and “I feel out of the loop” (Golden et al. 2008), focus on the social nature of work and informal interaction. The results of these questions will be interesting to understand compared with the results of questions related to social support and LMX as resources perhaps buffering the isolation. Since professional isolation is a job demand there is no expectation it will contribute to EE, therefore it is not represented in the conceptual model.



### **2.6.7 Implications of job resources for this thesis**

This thesis will focus on job resource antecedents and their influence on EE underpinned by SET. This integration espouses that the provision of resources fulfils a psychological contract with the employee reciprocating with positive job and organisation outcomes such as organisational commitment and job satisfaction (Birch et al. 2016), moderated by the experience of job and organisation engagement. This exploration aims to provide HR and managers with a greater appreciation about which job resources are antecedents to EE within the techno working context, to provide an enhanced understanding of how to influence an employee's level of engagement in their job role, and also in their organisation role. Given the thesis aim, only the job resources part of the theory will be utilised, and they will be considered as antecedents for the purposes of this thesis. Job demands are not included as antecedents as outlined in the delimitations ([Section 1.4](#)) as they are not positively linked to EE (Schaufeli 2017). However, as professional isolation is deemed inherent in the context, this has given rise to the acknowledgement of job resources as antecedents. From the thesis perspective, job resources are connected to EE outcomes (Bakker et al. 2007; Idris & Dollard 2011; Schaufeli 2017) to understand how EE can be influenced within this specific techno working context. To that end, predetermined resources predicted to be most relevant to techno working will be investigated and these resources are explained with their relevance to techno working in this section. Job resources are ideally suited to this investigation due to the inherent isolation in the context, their flexibility can be tailored to any organisation and situation, and they have proven relevance across a wide range of settings (Schaufeli 2013).

Four of the five resources engaged in this thesis; autonomy, feedback, social support and, learning and development opportunities, have been proven to result in greater work engagement and job satisfaction in a previous study in a traditional work context (Tims et al. 2013). Therefore, the opportunity for contextual comparison exists between the results of thesis and other extant studies. The specific resources have been justified as antecedents in this discussion to include in this research and will appear in the quantitative survey undertaken as part of this thesis.

### **2.6.8 Perceived leadership and management factors**

In 2012, Shuck and Heard stated that;

*[V]ery little research could be located that examined the relation, conceptual or empirical, specifically between leadership and employee engagement throughout the broader human resource literature base, and no article could be located in any of the Academy-sponsored journals that included both the key phrases leadership and employee engagement (pp. 159-160).*

The relationship between leadership and EE however has since been investigated in the literature with extant studies substantiating a link (Tims et al. 2011; Breevart et al. 2014; Welfald et al. 2011; Hoon Song et al. 2012; Salanova et al. 2011), suggesting that leadership behaviour has the potential to influence EE factors to a great extent (Mester et al. 2003; Bailey et al. 2017). Several models suggest leadership is a crucial element in the development of EE (e.g. Christian et al. 2011; Macey & Schneider 2008; Martin & Schmidt 2010) due to this being a formalised reporting relationship. Beck and Harter (2015) of Gallup propose that seventy per cent of EE can be explained by an employee's manager (Beck & Harter 2015). This figure suggests that there is scholarly support for the relationship between leadership and EE practices, however the relationship is not widely investigated (Carasco-Saul et al. 2015), and the nature of the relationship has been ambiguous with little research addressing the relational, conceptual or empirical links between the two (Shuck & Herd 2012). This is not helpful for HR professionals who need to build successful interventions such as leadership development programs to provide leaders with the tools needed to engage their teams. This ambiguity has prompted this thesis investigation to understand how leaders influence follower outcomes and which processes and behaviours underpin leadership influence leading to increased EE outcomes.

In seeking to combine leadership and EE research, scholars have identified some of these underlying processes such as transformational leaders providing greater meaning for employees' work (Arnold et al. 2007), leaders encouraging employees to actively increase their own resources (Tims & Bakker 2010), and leaders communicating an appealing vision of the future by showing confidence in the follower's ability to contribute to this vision (Seibert et al. 2011). Some previous studies have examined the

role of leadership for promoting EE outcomes by mainly focusing on transformational leadership (Hoon Song et al. 2012; Salanova et al. 2011; Tims et al. 2011), which is geared towards change and improving individual and collective performance (Bass & Bass 2008). There have been other forms of leadership investigated in the broader EE literature e.g. servant leadership, however these leadership styles are not explored within the scope of this thesis. Following on from transformational leadership, leader-member exchange theory remains one of the most popular streams of research within the leadership literature (Epitropaki & Martin 2015), and the justification for including it in this thesis as an antecedent variable is now discussed.

### **2.6.9 Leader-member exchange theory**

Leader-member exchange (LMX) focuses on the dyadic nature and quality of the relationships between a leader and individual subordinates (Graen & Cashman 1975). The theory contends that subordinates with in-group status with their leaders have higher productivity and job satisfaction, improved motivation, and engage to a greater extent in organisational citizenship behaviours at work (Chen et al. 2007; Ilies et al. 2007). An organisation must work to develop and nurture EE activities which require a two-way relationship between an employer and an employee (Robinson et al 2004). In this respect, LMX has been proven as an important antecedent in relation to work outcomes (e.g. Christian et al. 2011; Janssen & Van Yperen 2004; Wayne et al. 2002). In contrast, followers in low-quality relationships can be disadvantaged in terms of their access to the supervisor, have fewer resources, and restricted information which can lead to dissatisfaction and lower organisational commitment (Gerstner & Day 1997). The LMX relationship identifies other characteristics such as trust, respect and mutual obligation (Graen & Uhl-Bien 1995). This is very different from other leadership approaches which focus either on the domains of the leader where personal characteristics and leader behaviour are more desirable. The latter is often referred to in the literature as a transformational leadership approach, or a follower-based approach such as Self Determination Theory (SDT, Ryan et al. 1997 & 2000) where traits, behaviours or attitudes create desired effects and outcomes.

LMX has been previously investigated within the EE literature, although as a job resource rather than an antecedent in its own right (Xanthospoulou et al. 2009). The first

study to examine the relationship between LMX and EE was conducted in 2014 finding that high quality LMX relationships are associated with a more resourceful work environment, leading to greater EE (Breevart et al. 2014). Other studies have supported these findings (e.g. Cheng et al. 2013). Breevart et al. (2014) studied a very specific occupational context of police operations and found that LMX was positively related to job performance and stimulated the provision of job resources related to work engagement. The study also found that policing required a highly localised leadership practice, with leaders and followers operating in close physical and psychological proximity with close task association (Breevart et al. 2014).

Previous LMX and EE research has confirmed that the employees/members who were part of high-quality LMX relationships perform better, and that high-quality relationships contribute to employees' work engagement producing positive organisational outcomes (Breevart et al. 2014). The importance of LMX has also been highlighted in studies linking it to positive follower outcomes such as job performance, commitment and job satisfaction (Dulebohn et al. 2012; Gerstner & Day 1997, Ilies et al. 2007; Martin et al. 2015; Restubog et al. 2010), and high quality LMX also allows employees to contribute more fully to the organisation in constructive ways (Blau 1964). Recent LMX studies illustrate empirically that leaders can foster the availability of job resources, which enhances employee's work engagement (Breevart et al. 2014 p.11), resulting in outcomes such as employees' high involvement in creative tasks (Atwater & Carmeli 2009). The Breevart et al. (2014) study proved that other resources such as autonomy, developmental opportunities and social support were also built from the LMX relationships.

As previously mentioned, LMX has been considered as a job resource within the JD-R model as a type of coaching intervention (Xanthospoulou et al. 2009). LMX per se, can be considered an antecedent facilitating other job resources suggesting that supervisors create resourceful work environments for their employees (Breevart et al. 2014). The Breevart et al. (2014) study was pivotal in finding that LMX acts as an antecedent outside the JD-R model and is a distal predictor of wellbeing and job performance. The implications are that LMX as a standalone antecedent may actually be a predictor of other possible EE outcomes prompting further exploration of the data (Breevart et al. 2014). Whilst LMX has been found to significantly influence job engagement (Kim & Koo 2016), the existing literature has reviewed EE without considering the

multidimensional nature of EE (i.e. job and organisation engagement, Saks 2006; Lee et al. 2014), which are unique and important for this thesis.

### **2.6.9.1 Leader-member exchange and social exchange theory**

The social exchange theory provides an opportunity to investigate the social exchange in the employee/employer relationship (Graen & Scandura 1987). LMX is considered an important social exchange because high quality exchanges distinguished by respect, trust, mutual liking between the parties, and the nature of the relationship quality, influences job-related well-being and effectiveness of employees (Graen & Uhl-Bien 1995). Saks (2006) highlights the importance of the social exchange between managers and their workers that lead to better mutual understanding and potentially higher levels of EE. The relationship between LMX and SET suggests that reciprocity should come into play with high quality exchange relationships influencing the employee to feel obligated to perform and engage in behaviours benefiting their leader. Here, a highly engaged worker could be expected to perform above and beyond their prescribed role and likewise the leader reciprocates with support, rewards and other such privileges (Wayne et al. 1997). LMX has consequently received greater attention across the SET literature leading some scholars to suggest that the LMX process produces outcomes linked to positive job performance, increased motivation, social support and employee development (Breevart et al. 2014), which are generally associated with higher levels of EE.

### **2.6.10 Implications of LMX for this thesis**

LMX has not to date been theoretically applied within a techno working context to determine whether the quality of relationship exchange influences EE and EE outcomes providing an opportunity with this thesis to explore the relationship empirically. Furthermore, the extant LMX and EE studies have been conducted in more traditional working environments where employees and their leaders work together in the same workplace (e.g. Breevart et al. 2014). This thesis will explore the manager/employee social exchange within the context of physical and psychological separation which may impact the relationship of LMX with EE in this environment. As quoted by Gutermann et al. (2017, p. 300), because humans are social in nature, good leader–follower

relationships should a) build on leaders' engagement and b) facilitate followers' willingness to put energy and effort into their work, hence highlighting c) the link between EE and LMX and the social exchange aspects of EE relevant to this thesis. The inclusion of LMX as an antecedent in this research provides the opportunity to explore the social exchange within a fully implemented technological and remote environment.

It should be noted that the relationship between LMX and EE has not been explored within multidimensional EE, and the relationship between LMX and OE remains unexplored. Previous studies have explored the relationship between LMX and EE with EE being a singular psychological state of work/job engagement (Breevaart et al. 2014). In this research, LMX will feature as an antecedent, not as a job resource as in previous studies, with the mediating variables of both JE and OE engagement (Saks 2006) which is the unique contribution of this research.

Linking LMX theory with EE addresses the limitations of current research (Kahn & Heaphy 2013; Schaufeli 2013) by exploring the interpersonal aspect of EE as well as addressing the functional application of leadership and management. This thesis suggests that LMX relationships are key antecedents which need to be tested empirically (McLeod & Clark 2009). This contention is also supported by the assertion that one of the top reasons people leave their jobs is because of poor relationships with their manager or boss (Gimbel 2015; Lipman 2015), with 'management issues' helping to explain the highest percentage of disengagement in EE surveys (Beck & Harter 2015). As extant empirical studies have not commonly focused on the interpersonal nature of EE (Kahn & Heaphy 2013; Schaufeli 2013), using LMX as an antecedent in this isolated techno working environment will facilitate the examination of interpersonal elements of EE which are central to keeping employees engaged in their work (Kahn 1990). A stronger understanding of LMX processes within the techno working context will enable an organisations HR department to partner with organisation leaders to better influence EE outcomes through HRD interventions and strategies focused on enhancing employee/leader relationship quality.

## **2.7 Employee engagement outcomes**

Bailey et al. (2017) categorise the outcomes of EE under two main headings: performance and morale. Performance outcomes relate to individual, organisation or team performance, whilst morale includes wellbeing and health perceptions, and work-related attitudes (Bailey et al. 2017). Employee engagement outcomes under these headings can also be divided into individual and organisational outcomes. Extant literature has justified numerous individual EE outcomes such as innovative work behaviours (Agarwal et al. 2012), organisational citizenship behaviour and task performance (Soane et al. 2012). Further to these individual level outcomes are the organisational level EE outcomes of improved business results (Harter et al. 2002) and increased organisation performance (Farndale et al. 2014), although it is argued that these can still be related to individuals' attitudes, intentions and behaviours (Saks 2006). An overview of EE outcomes is provided below in Table 2.4. However, consistent with the delimitations outlined in Section 1.4, only the EE outcomes of job satisfaction and organisational commitment will be explored in detail and are therefore highlighted in Table 2.4. The table below demonstrates EE outcomes as substantiated by extant literature however, as this research is qualitative, the *perceptions* of EE outcomes only will be investigated as causality cannot be determined.

**Table 2-4 Outcomes of employee engagement**

<b>EE outcome category</b>	<b>Individual or Organisation/team</b>	<b>EE Outcome</b>	<b>Correlation with EE</b>
Performance	Organisation/team	Team performance	Positive (e.g. Song et al. 2014).
	Organisation/team	Customer loyalty	Positive (e.g. Salanova et al. 2005).
	Organisation/team	Quality of care	Positive (e.g. Van Bogaert et al. 2013).
	Individual – in role task performance	In role task performance	Positive (e.g. Steele et al. 2012; Yeh 2012).
	Individual – in role task performance	Third party performance rating	Positive (e.g. Bakker et al. 2012; Bakker & Xanthopoulou 2013).
	Individual – in role task performance	Performance appraisal	Positive (Yalabik et al. 2013).
	Individual - extra role performance	Extra role performance – organisational citizenship behaviour	Positive (e.g. Rich et al. 2010).
	Individual - extra role performance	Innovative work behaviours	Positive (e.g. Alfes et al. 2013b).
	Extra role performance	Adaptive service offering	Positive (e.g. Barnes & Collier 2013).
	Extra role performance	Knowledge sharing	Positive (e.g. Chen et al. 2011).
Morale	Individual – wellbeing and health perceptions	General health/positive health outcomes	Positive (e.g. Freaney & Fellenz 2013).
	Individual – wellbeing and health perceptions	Poor health outcomes	Negative (e.g. Hallberg & Schaufeli 2006).
	Individual – wellbeing and health perceptions	Stress/burnout	Negative (e.g. Buys & Rothmann 2010).
	Individual – wellbeing and health perceptions	Work ability	Positive (e.g. Airila et al. 2012).
	Individual – work related attitudes	Turnover intentions	Negative (e.g. Agarwal et al. 2012; Soane et al. 2012).
	<b>Individual – work related attitudes</b>	<b>Organisational commitment</b>	<b>Positive (e.g. Hu &amp; Schaufeli 2011).</b>
	<b>Individual – work related attitudes</b>	<b>Job satisfaction</b>	<b>Positive (e.g. Biswas &amp; Bhatnagar 2013).</b>

Source: Authors own work, adapted from Bailey et al. 2017.

The EE literature maintains that causal relationships have been difficult to prove (Shuck 2011) and this is also evident for EE outcomes. Whilst performance is often used as a tangible outcome of EE, at the organisational level the causal link cannot be justified as there are numerous contributors to organisation performance beyond how EE is perceived. Furthermore, individual performance has been measured in the extant literature mostly by using individual’s perception rather than objective performance data



(Bailey et al. 2017), and the subjectivity of this measurement undermines the validity of these outcomes. It is important to note also that performance is considered by some theorists to be an outcome of work-related attitudes (Lee & Allen 2002), with the attitude being the primary outcome which then drives the performance. It is for this reason that only work-related attitudes will be considered as the predetermined outcomes associated with EE in this thesis. Therefore, JS and OC have been determined as the most relevant first order job attitudes to investigate and they have not been explored with a techno working context. It is posited that JS and OC are outcomes associated with OE and/or JE and these are explained further as variables within the conceptual model as presented in Section 2.9.

### **2.7.1 Job satisfaction**

Job satisfaction has been examined in the literature as an EE outcome (e.g. Biswas & Bhatnagar 2013), an antecedent to EE (Abraham 2012), and in part, as a mediator of EE (Crede et al. 2007), with studies proving a positive association between JS and EE outcomes. Several contradictions point to whether JS is an antecedent, an outcome, or a mediator, with scholars noting that this confusion is a result of the conflation of constructs, semantics and measures derived from differing contexts. Job satisfaction can relate to the extent of pleasurable feelings employees have about their jobs and their cognitive and felt satisfaction with particular elements of the job including pay, working hours, job tasks and organisation climate. Job satisfaction is described by Locke (1976) as a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences (p 1304). Locke's definition implies both the cognitive and thinking element with feeling elements that are often associated with EE possibly explaining the blurring of the two constructs. While EE has been noted as an active, work related positive psychological state (Parker & Griffin 2011; Shuck et al. 2013), JS is operationalised as a stationary state and a measure of satisfaction (Christian et al. 2011; Cooper-Thomas et al. 2010). This stationary definition posits JS as an outcome of the more active EE state and as a consequence of experiencing the energetic aspects of EE processes. Thus, it is relevant for an employee to evaluate their experience in terms of a consequential outcome. Although EE has been demonstrated to have a positive influence on productivity, profitability, employee retention and safety (Coffman & Gonzalez-Molina 2002), similar relationships have not been demonstrated for JS (Fisher & Locke

1992), which lends support for thinking about JS in terms of its consequential positioning. For the purposes of this thesis, JS is considered an outcome associated with EE.

Although many JS constructs are conflated, Shuck et al. (2015) suggests that there is a semantic similarity across EE scales. Representations of scale connotations are evident in JS statements such as, 'Most days I feel enthusiastic about my work' (Brayfield & Rothe 1951, p. 311), which Macey and Schneider (2008) argue overlaps with statements on the UWES (Schaufeli & Bakker 2003). Such overlapping variables beg the question whether enthusiasm is actually a satisfaction outcome or an outcome of some other EE process. Generally, EE is argued as 'above and beyond' simple satisfaction (Macey & Schneider 2008). The analysis between EE and JS scales confirms semantic similarity yet it displays how both constructs create 'blurring' or the conflation of item scales depending on the tool of measurement (Shuck et al. 2015). The overlapping features of JS and EE could be explained by the differing measures being derived from disparate theoretical backgrounds suggesting that there may be important differences in content and criterion-related measures. Hence, the UWES scale is not used in this thesis due to the conflation of variables pointing to its unreliability (Viljevac et al. 2012, Schaufeli et al. 2002). Instead, multidimensional EE is engaged in this thesis as a moderating variable separating the constructs enabling job satisfaction to be considered as a stationary outcome associated with EE.

Job satisfaction has been proven as a work-related attitudinal outcome of EE in different empirical studies (Bailey et al. 2017), although again it should be noted that whether it is an antecedent, mediating or outcome variable in these studies is not clear cut. The nature of JS being an individual work attitude is relevant within the context of the techno working environment as the employee inherently works individually in physical and psychological isolation, therefore this attitude may be perceived individually. Thus, it is unclear how JS contributes to higher level outputs at the team, unit or organisational level. While techno workers may form part of a larger regional and functional team, this thesis explores two individual attitudes, one related to the job itself (job satisfaction), and attitudes towards to the organisation (organisational commitment), which is discussed next. It is proposed that techno workers may not be privy to perceiving organisational outcomes such as organisation performance due to their proximity, therefore individual

attitudes have been deemed most relevant due to their proximity to techno working. The proposed conceptual model of this research outlined in [Section 2.9](#) is underscored by SET which assumes the exploration of a unique set of antecedents in the exchange of job resources and LMX moderated by multidimensional EE reciprocating JS and OC. Similarly, while other models explore several consequences or outcomes of EE, the proposed conceptual model of this thesis includes only OC and JS as previously explained.

Scholars have argued whether employee attitudes are important within an EE context and whether satisfied employees are actually productive employees delivering business outcomes (Saari & Judge 2004). However, there is strong correlation between work-related attitudes and EE outcomes such as turnover intentions, counterproductive performance and extra role performance (Bailey et al. 2017), and employee attitudes are often related to organisational outcomes (Saari & Judge 2004). There are many underlying factors of an employee's attitude including but not limited to their disposition, organisational culture as perhaps the most salient, and job characteristics or work situation influences (Saari & Judge 2004). Some suggest that the most influential of these include autonomy, job challenge, variety and scope (Saari & Judge 2004). Some of these characteristics have already been included as job resource antecedents in the conceptual model and JS will provide the job-related attitudinal outcome of investigation in this thesis. We now turn to a discussion of OC as the second outcome variable to be explored as part of proposed model in this thesis.

### **2.7.2 Organisational commitment**

Through an organisational and HRM lens, EE has been positively related to outcomes such as organisational commitment (OC), organisational citizenship behaviour, work performance, turnover intention and innovative work behaviours (Agarwal 2014; Breevaart et al. 2015; Martin et al. 2016; Matta et al. 2015; Saks & Gruman 2014). Generally, these outcomes are positive because they represent aspirational organisational performance indicators appealing to organisational practitioners. Organisational commitment has been dominant in the literature with different empirical studies reporting positive links with EE (e.g. Hu & Schaufeli 2011). Extant research suggests that OC is

only second to turnover intentions as an EE outcome measure appearing in many studies (Bailey et al. 2017).

Saks (2006) suggests that OC is related to, but distinct from, EE as it can be directed towards one's employing organisations perception of loyalty, tenure and commitment more generally, although OC is more of an attitude than a psychological state. Macey and Schneider (2008) note a similar conception in that practitioners often define EE in terms of OC. For instance, Wellins and Concelman (2005, p. 1), suggest that to be engaged is to be actively committed, as to a cause. Whilst OC is associated with the state of attachment (O'Reilly & Chatman 1986) between an individual and their organisation (Meyer et al. 2004), this attitude is quite different from the psychological state of EE. Uniquely, EE is described as above and beyond an attitude, or as Robinson et al. (2004) describe, 'one step up from commitment'. However, it is not surprising that the similarity between EE processes and OC exists because of the similarity between the variance of measures and constructs. For example, the UWES scale (Schaufeli et al. 2006) demonstrates a positive link between all the components of EE and OC with the exception of absorption (Wefald et al. 2012), while other measures do not record a significant association at all (Britt et al. 2006).

Organisational commitment refers to an employee's sense of attachment to an organisation (Meyer & Allen 1990). This commitment is an attitude towards one's organisation depicted by the following elements: 1) a strong belief in and acceptance of the organisation's goals and values identification; 2) a willingness to exert considerable effort on behalf of the organisation effort; and 3) a strong desire to maintain membership in the organisation (Mowday et al. 1979 p. 226). Such commitment and belonging enables employees to reciprocate the benevolence shown to them by the organisation with exerted discretionary effort towards achievement of company goals (Meyer & Allen 1990), which is an aspirational outcome for any organisation. Organisational commitment is an important measure within the proposed conceptual model here given the need to determine the commitment of techno workers to their employer. Organisational commitment is different to the individual outcome of job satisfaction in that they have different focuses. However, for techno workers, both the level of job satisfaction attained, and the level of OC shown are significant outcomes to measure.

Within his MDA study, Saks (2006) described at least four consequences of EE (or outcomes) including JS, OC, organisational citizenship behaviour and intention to quit. All of these consequences are considered as employee attitudes that precede performance. The MDA study however omitted performance-related outcomes which are usually the major criteria of measure (Lee & Allen 2002). However, research has recognised the importance of work behaviours and their impact on employees and customers and the cost to employers of poor work attitudes (Lee & Allen 2002). As extant theory notes, work behaviours result from, and are influenced by, employee attitudes or thoughts (Lee & Allen 2002). Saks' (2006) study for instance found that job and organisation engagements predicated all four EE outcomes while only OE predicted organisational citizenship behaviour (OCB). Organisational commitment is an attitude whilst organisational citizenship behaviour is defined as an employee behaviour that serves the organisation's functioning, although is not critical to the employee's job or task (Lee & Allen 2002). Therefore, OCB could be considered a behavioural consequence of OC, and only OC is investigated in this thesis as a first order outcome.

This thesis explores the perceptions of how job and organisational attitudes are associated with EE processes within the techno working context, with OC representative of an organisational attitude. Given that OE is a stronger predictor of all EE outcomes (Saks 2006), it is contended that the conceptual model of this thesis will be important to a broader research field related to organisational performance more generally. Extant studies have reported a positive link between EE as a psychological state, with OC a positive outcome (e.g. Hu & Schaufeli 2011; Wefald et al. 2012; Shirom 2003), but it has not been tested in this context.

## **2.8 Summary of constructs and theories (themes) of this thesis**

Social exchange theory underpins this thesis where the reciprocity of EE inputs and outputs are investigated, moderated by a multidimensional approach of EE to explore the research questions as well as add to theory building. Unique to the MDA is the inclusion of both organisation and job engagements which the researcher suggests moderate a range of perceived EE antecedents and outcomes as underpinned by SET, one of very few studies to do so since Saks' (2006) inaugural study (Saks 2019). The antecedents investigated in the proposed model include job resources from the JD-R

theory operationalised as antecedents. These resources are facilitated to individuals within their job role and setting and they attempt to optimise these provisions in such a way as to enhance their experience and counteract burnout. Further to job resources, the influence of the leader as the most direct formalised relationship that techno workers experience through formal reporting, is investigated. Similarly, and as discussed, the leadership antecedent of LMX has been included as an antecedent representative of this leadership perspective. Subject to empirical investigation, the interplay of these antecedents could help the organisation's HR department to develop a range of interventions that optimise EE outcomes. Thus, individualised interventions that either enhance leadership factors or bolster resources would represent a useful outcome of the variables investigated in this thesis. Further, most EE theory has adopted a state based, within-person perspective, although the experience of a multidimensional state of EE has rarely been investigated in the literature (Saks 2019), especially in this unique context. The reciprocal nature of SET determines that positive outcomes of EE are possible, and these are also captured by the conceptual model proposed. We now turn to a discussion of the conceptual framework which illustrates and supports the EE processes and outcomes adopted for this thesis.

## **2.9 Conceptual framework**

This section focuses on the proposed conceptual framework for this thesis. It begins by introducing the key literature findings that have contributed to the development of the framework. This section also discusses the gaps and limitations in the current literature that this thesis aims to address. The conceptual framework is then presented and explained. The variables leading to the creation of the research questions will be explored and discussed in relation to the overall research objective.

### **2.9.1 Literature review findings and gaps**

The findings from the literature review underpin the rationale of the conceptual framework. The identification of gaps and limitations in the literature review led to some important conclusions as noted. The aforementioned discussions also challenged several EE theoretical assumptions while at the same time, the EE body of knowledge was explored with key gaps highlighted. Table 2.5 provides a summary of the EE literature

review findings, gaps and limitations in the left-hand column and in the right-hand column, an explanation of how these gaps and limitations have influenced the development of the conceptual model for this thesis.

**Table 2-5 Literature review findings, gaps and limitations influencing the conceptual framework development and design**

Literature review findings	Literature review gaps and limitations	Influence on framework development and design
<p><b>Context: Techno working</b></p> <p><u>Findings</u> - Theorists have called for research to find out whether EE and the theory behind it are the same across contexts (Puffer &amp; McCarthy 2011; Bailey et al. 2017). Given the great momentum towards more flexible and new ways of working, this techno working context warrants investigation.</p>	<p><u>Gaps</u> - No research has examined the precise nature of EE antecedents for techno work and the outcomes as distinct from EE activities.</p>	<p>The proposed framework specifically explores EE in the phenomenon of employees working remotely, virtually and individually as techno workers (O’Neill et al. 2014) which has not been previously investigated in the literature yet is becoming increasingly common.</p>
<p><b>State/experience of EE:</b></p> <p><b>Multidimensional EE</b></p> <p><u>Findings</u> - The multidimensional approach acknowledges the broader focus of EE in that engagement can be directed towards either an employee’s job or their employing organisation (Saks 2006). As nearly all EE research has focused on job role engagement (Schaufeli et al. 2002), an employee’s experience of the organisation and their organisation role engagement is important as it has been shown to have the greatest impact on EE outcomes (Saks 2006; Farndale et al. 2014). Only four studies have focused on OE (Saks 2019).</p>	<p><u>Gaps</u> – multidimensional EE has not been investigated in this context with these specific antecedents.</p>	<p>This thesis contributes to the EE literature by exploring both job and organisation engagement as one of few extant studies to do so (Saks 2006; Farndale et al. 2014) and the only one to investigate the MDA in the techno working context. Both JE and OE are relevant to the techno working context, however it is the experience of OE that is most interesting to understand due to the employee’s physical and psychological detachment from the organisation.</p>
<p><b>EE antecedents</b></p>		

Literature review findings	Literature review gaps and limitations	Influence on framework development and design
<p><u>Findings</u> - Research pertaining to EE antecedents is particularly lacking and needs to be better understood (Bailey et al. 2017; Jeske et al. 2017; Jiang et al. 2012 &amp; 2013; Gardner et al. 2001; Saks 2006; Macey &amp; Schneider 2008). Focusing on antecedents will enhance the development of measures that will help researchers to better understand how to cultivate an engaged workforce (Saks &amp; Gruman 2014; Saks 2006; Bakker 2011).</p>	<p><u>Gaps</u> – no research to date has investigated antecedents in this specific context and it is not known specifically how to engage these employees.</p>	<p>The conceptual framework extends current literature on EE antecedents by investigating a unique combination of antecedents within a unique context. The research model also applies the empirically tested antecedents of job resources and LMX.</p>
<p><b>EE antecedents: Social and interpersonal perspectives</b></p> <p><u>Findings</u> - As the ‘social environment’ of techno working is one which is entirely virtual, social and professional isolation are prevalent in remote working environments (Crandall &amp; Gao 2005; Kurland &amp; Bailey 1999) and EE as well as EE outcomes may be influenced by these factors.</p>	<p><u>Gaps - Social and interpersonal perspectives have been notably absent in the literature (Kahn &amp; Heaphy 2013; Schaufeli 2013), although they are argued to be key to EE (Kahn 2007) because they help buffer work demands (Hobfall 1989).</u></p>	<p>Social and interpersonal factors such as social support and LMX are proposed as influential EE variables in remote working environments to buffer the inherent environmental isolation. Further factors reminiscent of the collective and social nature of the organisation such as feedback, organisation climate and learning and development opportunities have also been included for investigation.</p>
<p><b>EE antecedent: Leadership perspective</b></p> <p><u>Findings</u> - The role and influence of the manager/leader in EE, may be the most critical relationship to measure (Jenkins &amp; Delbridge 2013; Keenoy 2013; Purcell 2013), being the only formalised relationship into the techno working environment through</p>	<p><u>Gaps – The relationship between leadership and engagement is widely uninvestigated (Carasco-Saul et al. 2015). LMX has not been considered a direct antecedent to OE</u></p>	<p>LMX is included in this conceptual framework as an antecedent of EE to better understand how the quality of relationship between a leader and subordinate influences EE outcomes within isolated</p>



Literature review findings	Literature review gaps and limitations	Influence on framework development and design
<p>direct reporting. LMX has previously been considered within the JD-R model as a type of coaching (Xanthospoulou et al. 2009), although LMX in its own right can be considered an antecedent of EE and other job resources suggesting that supervisors create resourceful work environments for their employees (Breevart et al. 2014).</p>	<p>in any prior studies, nor within this context, only the relationship between LMX and JE is understood.</p>	<p>environments. LMX is separated from job resources since it is a relational antecedent in its own right. This will also be the first investigation of LMX as a possible antecedent to OE.</p>
<p><b>EE outcomes – employee attitudes</b>  <u>Findings</u> - Employee attitudes are most often related to organisational outcomes (Saari &amp; Judge 2004) and are outcomes of EE. These attitudes can be directed at an employee’s job or organisation and include OC and JS. As per social exchange theory, an employee will exchange their ‘EE’ and the organisation will generally benefit with EE outcomes such as employee attitudes which are positively regarded and said to drive performance (Lee &amp; Allen 2002).</p>	<p><u>Gaps</u> – Employee attitudes have not been investigated in this context.</p>	<p>The conceptual model engages a balance of a job focused attitude (job satisfaction) and an organisational focused attitude (organisational commitment). This will help to distinguish between the attitudes of techno workers and gain useful insights into their experiences of the job versus their experiences of their employing organisation.</p>

Source: Authors own work.

In conclusion, SET is used as a means to better understand the individual employee perceptions of resources received by examining the social relationships between isolated employees and their employer, and the reciprocal nature of EE inputs and outputs. This thesis seeks to determine how the social contract within the context of physical isolation influences an employee’s OC and JS as outcomes of JE and OE. Therefore, the organisation’s provision of social, interpersonal and other resources, together with LMX which is also an interpersonal antecedent, is posited to create the psychological state of EE. The employee exchanges these antecedent resources to mitigate the inherent

isolation of remote working for the employee's job satisfaction and organisational commitment, which are positively perceived by the organisation (Saks 2006).

Whilst the delimitations in [Section 1.4](#) noted what aspects of EE are not explored in this thesis, the research outcomes are expected to significantly advance both academic and practitioner knowledge. This thesis is expected to provide a new theoretical construct by which EE can be investigated within techno working contexts. In addition, the research model is expected to highlight the different social and interpersonal factors of LMX and resources relevant to JE and OE. For instance, there have been calls from EE scholars for greater clarity around the role of leadership, and to better understand how social factors influence EE outcomes (Bakker 2011; Truss 2014). Similarly, scholars have called for clarity from practitioners and HRM academics (Truss 2014) to articulate which EE interventions are more suited to specific contexts including empirically valid measures (Bailey et al. 2017). Previous research has tested *some* antecedents of EE whilst empirically proving some desirable features of EE; however, this thesis seeks to address several existing gaps and limitations as explained. Next, a model of job and organisation engagement within a techno working context is presented and the relationships in the model outlined. The links in the model have been justified by the research discussions in this chapter. The next section builds the connecting relationships between the constructs and the research questions (RQs) emerge from these relationships. The RQs are thus restated from [Chapter one](#). Accordingly, the aim of the next section is to connect the theoretical frameworks within the model to the research questions and to the context and research problem in which the research is to be explored.

### **2.9.2 Conceptual model: Explanation, discussion and contentions**

The conceptual model is based on the relevant disciplines, theories and concepts that support the identification of the problem (research problem), what is known from the body of knowledge (prior research), and the unknown (gap spotting, research sub-questions), while informing data collection and data analysis (Merriam 2009). A review of the literature discussed thus far reveals several EE themes related to understanding EE antecedents, the experience of EE and EE outcomes in the techno working context relevant to new ways of working related to solving the research problem.

A review of the literature and study of relevant articles on the topic and parent theory of ‘employee engagement’ elicited a large range of discipline areas. Due to the scope of the research, resources available, sampling requirements, and the underpinning nature of SET, three dimensions of investigation were identified; 1) EE antecedents, 2) the experience of EE and, 3) outcomes of EE. The first antecedent dimension determined that two broad antecedent themes were to be investigated: 1) the implications of perceived leadership and management, and 2) the level of influence of job design factors. The theories used to explore these dimensions are job resources (acknowledged as antecedents) and leader-member exchange theory. The second dimension of investigation related to the experiences of EE, which was investigated using the multidimensional approach of EE inclusive of JE and OE. Finally, the third dimension investigates JS and OC as outcomes associated with EE. Here, the research questions are designed to explore an employee’s experiences and perceptions of these factors. The research problem is explored by the following research questions restated from Chapter one.

### **Research question one**

RQ1: How are employers *influencing* the employee engagement of techno workers?

RQ1.1: What influence do job resources have on a techno worker’s experience of *employee engagement*?

RQ1.2: What influence does leader-member exchange have on a techno worker’s experience of *employee engagement*?

### **Research question two**

RQ2: How do techno workers experience the *state of employee engagement*?

RQ2.1: What is a techno worker’s experience of *job engagement*?

RQ2.2: What is a techno worker’s experience of *organisation engagement*?

### **Research question three**

RQ3: What *outcomes* are associated with a techno worker's experience of employee engagement?

RQ3.1: How does *job satisfaction* emerge as an outcome of EE in techno workers?

RQ3.2: How does *organisation commitment* emerge as an outcome of EE in techno workers?

Accordingly, the research questions have emerged from the following themes in Table 2.6 (below) that were derived from literature review.

**Table 2-6 Model variables, emerging themes and research question correlation**

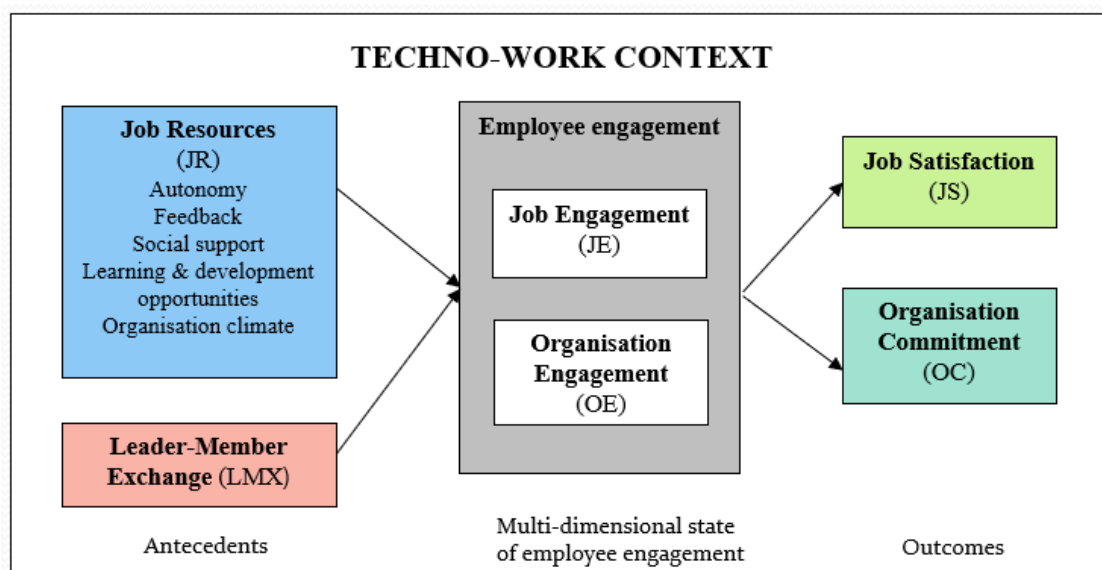
	Model variables	Conceptualisation	Emerging themes	Emerging themes matched to RQ's
EE ANTECEDENTS	<b>Job design perspective:</b> job resources	The physical, social, or organisational factors that help employees achieve goals.	<b>Proximity/isolation:</b> job resources have been found to influence EE and may buffer the isolation inherent in the context. If so, which of the three levels (individual, interpersonal and organisational) and particular types of resources, are most influential?	What influence do job resources have on a techno worker's experience of employee engagement?
	<b>Leadership perspective:</b> Leader-member exchange	Leadership impacts employee outcomes through the formalised reporting mechanism.	<b>Formalised relationships:</b> As techno working is a socially and physically isolated phenomenon and the formal reporting line to a techno worker's leader is the only assumed relationship, how do these relationships influence EE outcomes?	What influence does leader-member exchange have on a techno worker's experience of employee engagement?
STATE/ EXPERIENCE OF EE: MULTIDIMENSIONAL EE APPROACH	Job engagement	Relates to engagement in individual job role performance and is role specific.	<b>Proximity to and experience of the job:</b> EE has not been explored in techno working so it is important to understand how EE is experienced. Job engagement is assumed in this environment due to employee's proximity to the job, although this needs to be qualified.	What is a techno worker's experience of job engagement?
	Organisation engagement	An employee's engagement in their role as an organisation member and within the broader organisational context.	<b>Proximity to and experience of the organisation:</b> As techno working is socially and physically isolated from the organisation, it is not understood if OE is experienced or whether techno workers engage as a member of the organisation, or just in their job role.	What is a techno worker's experience of organisation engagement?
EE OUTCOMES	Job satisfaction	A positive or pleasurable employee attitude resulting from the appraisal of one's job or job experiences (Locke 1976)	<b>Proximity to, and experience of the job:</b> The job focused employee attitude is assumed in this environment due to employee's proximity to the job, but unexplored in the literature.	How does job satisfaction emerge as an outcome of EE in techno workers?
	Organisational commitment	An employee attitude or perception of loyalty, tenure and commitment directed towards one's employing organisation.	<b>Proximity to, and experience of the organisation:</b> The organisational focused job attitude is to be explored to understand if the separation from the organisation inhibits or prevents techno workers developing organisational focused attitudes as EE outcomes.	How does organisation commitment emerge as an outcome of EE in techno workers?

Source: Authors own work.

The model variables in Table 2.6 were chosen for three reasons: 1) they are most appropriate and applicable to the techno working context of enquiry, 2) the theories are empirically evidenced in the literature indicating that this thesis can build on solid foundations, and 3) these theories can be operationalised within an MDA informed by SET relationships. The frameworks discussed and integrated in this thesis offer a unique perspective on how EE can be both conceptualised and operationalised and these relationships are summarised in the conceptual model (Figure 2.5).

The conceptual model for this thesis has therefore been developed using two antecedent theories, LMX and job resources (Figure 2.5). Both antecedents are moderated by JE and OE, with the dependent variables representing the attitudinal outcomes of OC and JS. Techno working represents the context in which the variables are investigated. The black arrowed lines show the pathway of EE antecedents through the context of techno working influencing the psychological states of JE and OE. It is important to note that the conceptual model illustrates the relationships to be explored through the qualitative methodology adopted. The conceptual relationships between the antecedents, psychological states of EE and outcomes associated with within the context outlined, are further explained in [Chapter three](#).

**Figure 2.5 A model of job and organisation engagement in the techno work context**



Source: Authors own work.

Figure 2.5 identifies antecedents not previously explored in empirical research within the techno working context. The research questions posed explore how the antecedents influence the state of EE, and the extent to which the experiences of EE are associated with JS or OC. The experiences of JE and OE are the moderating psychological states that may be associated with the outcomes of JS and OC. The qualitative focus of this investigation will also give rise to further emerging themes in the data. This contextual research is timely because of the increasing occurrence of flexible working and working-from-home arrangements, particularly post the Covid-19 pandemic (Global Workplace Analytics 2019). It may also be relevant to understand EE concepts in consideration of the rise of globalisation and technological advances and changes in HRM policy settings with respect to matrixed organisation structures, project and cross-functional teamwork. The model also assumes that the context of techno working influences the understandings and practices of EE as a unique phenomenon in contrast to traditional working environments.

The failure of scholarly study to offer both construct and instrument validity that encompasses all facets of EE means that the relationships between antecedents and outcomes cannot be empirically tested (Witemeyer 2013). The proposed model does not aim to conceptualise nor measure ALL of these relationships. Rather, and as highlighted in the review, it focuses on two empirically tested antecedent theories (job resources and LMX), as well as providing new insight in relation to their influence on multidimensional EE and also outcomes associated with EE as perceived by the participants. These particular antecedents, experiences of EE and outcomes are specific to investigating EE in the phenomena of techno working. In Figure 2.5 (above), the perceived outcomes of EE are positive and aspirational organisational indicators. Direct causal relationships in these general variables are largely unresolved thus far in extant studies (Harter et al. 2002) and will remain unmeasured outcomes that hypothetically could be significant if achieved.

## **2.10 Summary of chapter two**

In conclusion, Chapter two described the parent theories of EE in detail and discussed the main body of knowledge, through an extensive literature review. The chapter began

with an introduction of the core definitions and theories, followed by a discussion of the key contributing constructs and theories. Research gaps and issues were identified based on the literature including the antecedents, experiences and consequences/outcomes of EE. The discussion explored the contextual nature of EE specifically in relation to the techno working context. Limitations and gaps were identified and discussed leading to the development of a number of research questions that explored the research problem. An explanation of the conceptual framework for this thesis was provided. The following section describes the sampling strategy, instruments, data collection procedures, the evaluation of validity and reliability of the interviews and also the data analysis procedures enlisted.



## CHAPTER THREE: METHODOLOGY

### 3 Introduction

This chapter discusses the research methodologies and techniques used in this thesis. In this chapter, the research of this thesis is introduced as constituting a case study combined with a mixed-methods approach and purposive sampling (Creswell & Plano-Clark 2006). The research philosophy and paradigm is elaborated with the use of an *embedded* mixed methodology approach which is explained and justified. Both qualitative and quantitative methodologies are used to best explore the research questions with a qualitative data set taking the predominant role for interpretation supported by exploratory quantitative data. The justification for a case study approach is presented and the population of investigation is introduced followed by a discussion on the research context. The qualitative paradigm is discussed before the quantitative approach and in both cases the sampling strategy, data collection procedure and data analysis methodologies explained. For the qualitative investigation, the thematic analysis technique engages the research questions and core themes from the literature discussed in Chapter two. For the quantitative investigation, descriptive statistical analysis is utilised to aid in identifying trends to correlate to the qualitative data and themes.

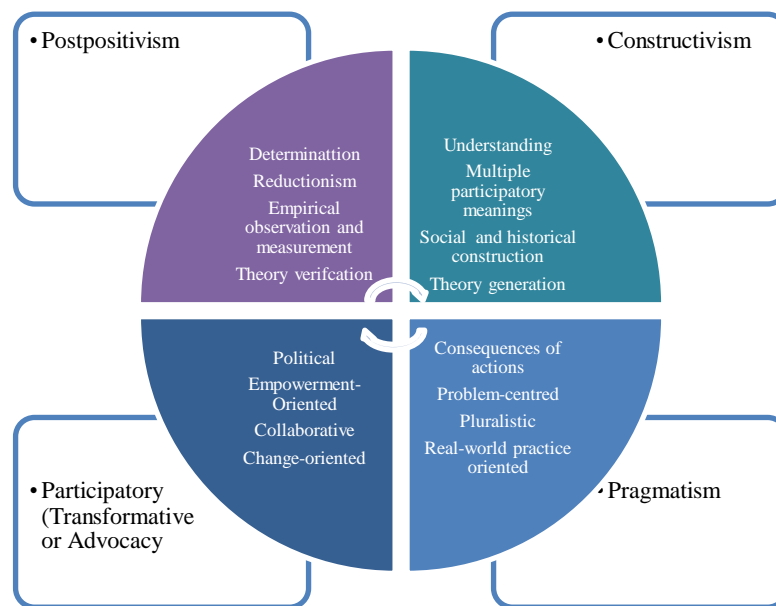
The chapter continues with a discussion on validity and reliability issues and then the limitations with the research. Ethical considerations and compliance in line with the Australian and international research standards are reviewed in relation to the actions and processes engaged in the research investigation and followed by a chapter summary.

#### 3.1 Considerations of research paradigm

For the progression of research, the world view held by the researcher and paradigm of research are critical to the research methodology and have become common since the publication of Kuhn's (1962) *The Structure of Scientific Revolutions*. The term *worldview* refers to a large philosophical idea espoused by a researcher (Creswell 2014) and this idea and set of beliefs guide the action of the researcher (Guba 1990). This worldview is said to be derived from a researcher's experiences, discipline orientations,

advisory inclinations and past research journeys (Creswell 2014; Guba & Lincoln 1994) and consists of stances adopted on the facets of ontology, epistemology, axiology and methodology (Creswell & Plano-Clark 2006). Since this publication (Kuhn 1962), social science research has been shrouded by debate regarding the distinction between the two dominant paradigms: constructivist which lends more to the qualitative approach and the positivist which advocates a quantitative approach. These two approaches then segregate into four distinct world views and implications for practice; post positivism, which is deductive theory testing, and the other three inductive approaches of Constructivism, Pragmatism and Transformative - also known as the Advocacy or Participatory paradigm (Creswell 2014; Perry 1998; Guba & Lincoln 1994). Guba and Lincoln (1994) argue that it is crucial for the researcher to be clear on the most appropriate paradigm to adopt for a study to guide the approach. A summary of the major elements of the paradigms is presented below in Figure 3.1.

**Figure 3.1 Major elements of the four paradigms**



**Source:** Adapted for this thesis from Creswell 2009.

The postpositivist world view is deductive in nature and the quantitative research design uses surveys or experimental research to test a theory (Creswell 2014) and describe an experience through observation and measurement to predict a hypothesis. In survey studies, numeric descriptions are the outputs of data whilst in experimental research

treatments and outcomes are tested, although both concentrate on testing causal or complex relationships and include variables, treatments, modeling and varied structures (Creswell 2014). On the other hand, one of the inductive paradigms, the constructivist world view is based on the premise of a social construction of reality (Searle 1995), where constructivists believe truth is relative and born of one's perspective. This view is dependent on the importance of the subjective human creation of meaning, although it doesn't reject outright the notion of objectivity (Searle 1995). Pluralism, not relativism, is stressed with focus on the circular dynamic tension of subject and object (Miller & Crabtree 1999). This type of inductive enquiry allows researchers to derive the meaning of a phenomenon through working with participants to understand their subjective views on their experiences.

The final two inductive paradigms are pragmatism and participatory. The participatory world view is influenced by political concerns and argued to be self-reflexive (Heron & Reason 1997). This view proposes humans know everyone is part of the whole, not separated, and that collaborative forms of enquiry can be pursued. Aligned to a political bent, this view often contains an action agenda for reform and speaks to important issues of the day such as empowerment, oppression, marginalisation domination, suppression, inequality and alienation. The fourth worldview is pragmatism which only deems concepts as relevant if they support action, emphasising the consequences of research. This pluralist approach can move between using either deductive or inductive reasoning producing an abductive reasoning approach (Morgan 2007) as a kind of logical inference starting with observations that seeks to find their most likely explanation. Pragmatism rejects that thoughts are used to describe or reflect reality and instead considers words and thoughts as tools for problem solving, action and prediction. Pragmatism is also known to engage both objectivity and subjectivity capturing an intersubjective approach and this view harnesses the concept of transferability where learnings in one context can be applied in another.

This thesis is based on the constructivist paradigm engaging a predominantly inductive approach to, "understand the phenomena through meanings assigned to them by individuals rather than seeking an objective, bias-free reality" (Hair et al. 2016 p. 297). The researcher seeks to interpret the complexity, pluralism and constructed views held by the research subjects to derive meanings and induct theory to understand the EE

experiences of techno workers. Pluralism, not relativism, is stressed and the researcher's positioning within the research also inevitably guarantees the subjectivity of analysis and interpretation borne of their own historical and cultural interactions of social constructivism (Creswell 2014), and personal experience of the phenomena and context of the thesis, which can bias the research. This view will provide for the interpretation of the complexity and pluralism of views to derive meanings to induct theory and the subjectivity of the analysis and interpretation results from the personal experience of historical and cultural interactions of social constructivism (Creswell 2014). Whilst pluralism is common to pragmatism, the pragmatic world view is rejected as the paradigm for this thesis as it undermines the perspective that thoughts are used to describe or reflect reality which is the view held by the researcher and adopted in this research.

### **3.2 Research design and epistemology: Mixed methods**

Research design refers to the plans, procedures of inquiry and strategy to approach a thesis which is informed by a researcher's world view (Creswell 2014). These lines of inquiry can either be deductive, narrowing down to a particular measure or testing of a theory, or wider and inductive with a resultant theory constructed (Romano 1989). These designs, also known as epistemological positioning, determine the researcher's view on the nature of knowledge as influenced by the determination of reality (Klenke 2008). A positivist view of suitable knowledge requires testing and confirmation, a factual basis and the assumption that objectivity can rationalise human activities (Bryman & Bell 2007). The interpretivist view seeks to comprehend human activities through interaction between the researcher and what is being researched or investigated (Bryman & Bell 2007). Deriving from these epistemological positions, three main methodologies span research design and they are qualitative (interpretivist) and quantitative (positivist) and the third, mixed methods, which was a resolution found during the 1990's to acceptably mix both qualitative and quantitative methods in research (Tashakkori & Teddlie 2009).

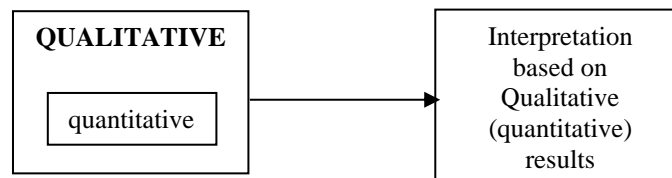
The difference between a quantitative and a qualitative methodology is based on its philosophical foundation embracing a distinctive ontological and epistemological orientation (Bryman & Bell 2007). The epistemology and ontology define and even

restrict how the world is examined and knowledge is created therefore not all methodology is suitable (Guba & Lincoln 1994; Klenke 2008). The mixed methods approach is the research design chosen to investigate this phenomenon of EE in techno workers with the approach using both qualitative and quantitative data collection. This combination allows for mixed evidence which increases knowledge in a more meaningful manner than either model could achieve alone (Creswell & Plano Clark 2006) rendering the notion of competing paradigms redundant. It is also a common approach used in social science research as it aims to collect detailed accounts investigating into the understanding of human behaviours, focusing on the why and how of decision making with the quantitative investigation supporting this rich data set with the what, when and where of the incidents. The qualitative and quantitative research methods have complementary purposes and will provide for an improved quality of research (Mouton 1996), with qualitative methods being the significant method used in this thesis. The significance of the qualitative methodology in this thesis draws from an emphasis on interpretivism and constructionism, a theoretical stance that reflects the aim of understanding the meaning and context of a defined social reality by an involved researcher through in-depth investigation of a particular phenomenon. Whilst pragmatism may be common in mixed methods research, this thesis relinquishes pragmatism in exchange for constructivism which is aligned to the qualitative progression of the research (Johnson et al. 2007).

As identified by Greene, Caracelli and Graham (1989) there are four purposes for mixed method research: 1) triangulation (convergence and corroboration of findings from different methods), 2) complementarity (elaboration, enhancement or clarification of findings from one method with findings from the other method), 3) development (results from one method help to develop or inform the use of the other method) and, 4) expansion (extending the breadth and range of enquiry by using different methods for different enquiry components). The objective of this thesis in utilising mixed methods is for complementarity and expansion purposes, not triangulation. The complementarity seeks to elaborate and clarify whilst the expansion increases the amount and variety of data available to investigate the research problem increasing the interpretability and meaningfulness of the results. This complementarity approach also aligns with a constructivist view whereas triangulation is a more purist mixed methods approach aligned with pragmatism. Expanding on this purpose, the four major types of mixed

methods designs are identified by Creswell and Plano-Clark (2006) as triangulation design, the embedded design, the explanatory design, and the exploratory design. Of these designs, the embedded design as featured in Figure 3.2 has been chosen to progress this thesis and is argued below.

**Figure 3.2 Embedded mixed methods design**

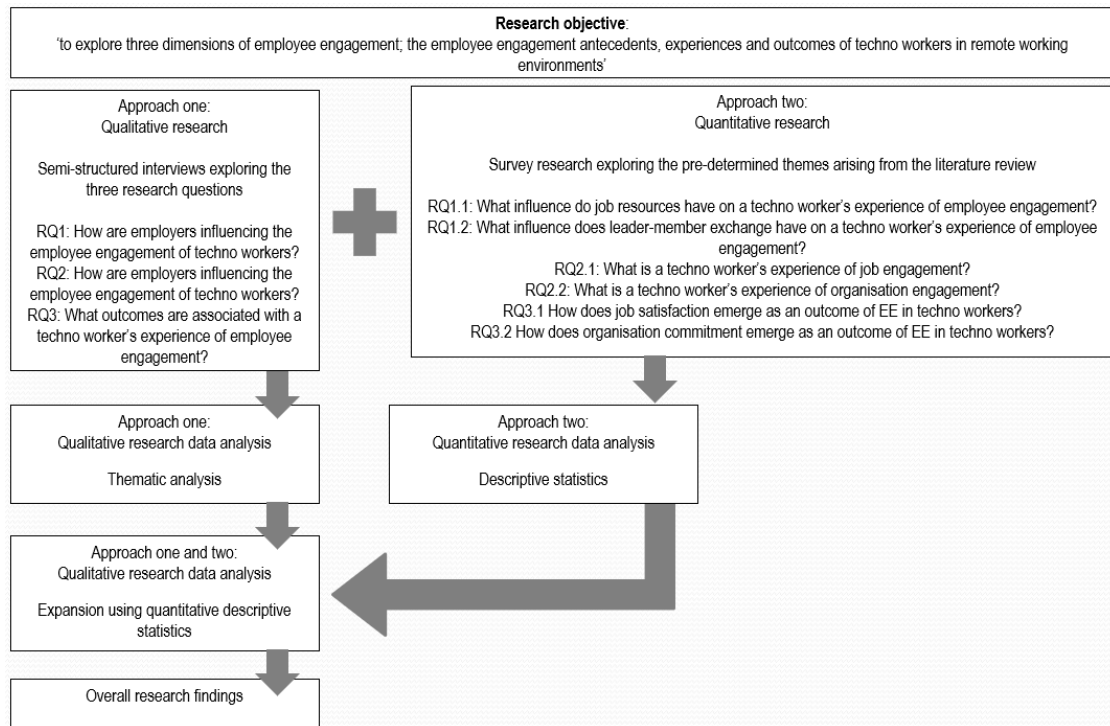


**Source:** adapted from Creswell and Plano-Clark 2006.

The type of mixed methods design where one data set plays a primary and significant role and the other data set provides a supportive, secondary role is known as an embedded mixed methods design (Creswell et al. 2003). As the name assumes, one data set is embedded within the other and in this thesis the qualitative data set takes the primary role which is common in phenomenology design (Creswell & Plano-Clark 2006) and aligned to the constructivist paradigm. Embedded designs can take a singular or two phased approach, however for this thesis a one phased approach is adopted where both data sets are collected concurrently. Different questions are asked in each data set and the quantitative sample is larger and less focused allowing for a macro data view, whilst the qualitative interview sample is much smaller and focused providing the micro phenomenological view. The data sets in embedded designs are not converged for triangulation, rather they are reported separately (Creswell & Plano-Clark 2006), and in this thesis the supplementary data set will be in the form of descriptive statistics existing to contextualise and quantifying the primary qualitative data (see Figure 3.2). The primary course of qualitative investigation will take the form of in-depth interviews aiming to understand “how people make sense out of their lives” (Merriam 2009 p. 14), in this instance, the experience of EE in their work lives. Through this methodology the researcher acts as the ‘data processing’ instrument to “make sense of, or interpret, phenomena in terms of the meanings people bring to them” (Merriam 2009 p. 14). This embedded design with the quantitative data set embedded within the qualitative study is not common within the literature with few examples and little written on this approach (Creswell & Plano-Clark 2006). However, the mixed-methods approach has been

selected by the researcher as the most appropriate design to best understand the techno working phenomenon; this methodology will provide the opportunity to compare and contrast data with non-techno working employees in the same organisation and expand on the data provided by techno workers with a quantitative approach to questioning.

**Figure 3.3 Embedded case study methodology flowchart**



Source: Authors own work.

### 3.3 Epistemological stance: Rationale for using a mixed methods approach

Essential to mixed methods studies is the use of both qualitative and quantitative methodologies offering a better understanding of complex phenomenon than either approach could provide alone. Whilst pragmatism dominates mixed methods research, this investigation adopts a constructivist paradigm recognising a dominant qualitative view of the research rather than purist or quantitative view (Johnson et al. 2007). The aim of this thesis is to explore the employee engagement antecedents, experiences and outcomes of techno workers in remote working environments using the qualitative method. The constructivist paradigm assumes that the techno workers will build their own reality shared within this research based on their experiences and learning. Then expanding on this data by determining any associations between variables by using

descriptive analysis and quantitative surveying. The rationale for using this approach is to build on previous EE findings by allowing for different themes to emerge that are otherwise obscured in EE studies to date.

As EE studies have been mainly quantitative in nature, employing a mixed methods approach will help to overcome the limitations in the extant literature. Using both techniques helps explain the same social phenomenon using a complimentary approach, hence diverging from the prevalence of deductive study in this area. The multiple sources of data collection neutralise the weaknesses of a single approach thus enabling greater usability for data validity (Creswell 2014). Although critiques of mixed methods suggest that quantitised qualitative data is very vulnerable to collinearity (Johnson & Onwuegbuzie 2004), the predominance of the qualitative approach in this thesis will negate collinearity by aiming for expansion rather than triangulation which is also an approach rarely seen across EE studies.

Other criticisms of mixed methodologies are that they are time consuming and expensive and limit statistical power (Johnson & Onwuegbuzie 2004). These arguments are also addressed by this thesis in that in-depth interviews are limited to a targeted sample and the derived data expanded using descriptive statistics adding some statistical power without diminishing the richness of the qualitative data. While it may seem viable to integrate a qualitative approach in interviewing participants with a follow up quantitative survey for convergence and triangulation, this mixed methods approach would diminish the flexibility and depth of the qualitative data. As quantitative EE studies have been restrictive in limiting the choices of participants to the information and beliefs of the researcher only, the prevailing qualitative approach allows for emergence, depth and flexibility not found in deductive studies. Numerical data and quantitative statistics may be useful for decision makers, although the full story is not told through these numbers and often the qualitative data helps in furthering an understanding of the 'what' and 'how' to pose new questions and counterarguments. The complementarity and expansion offered by an embedded design aims to provide more comprehensive findings and useful insights into the underlying phenomenon, and as Creswell and Plano-Clark (2006) note, the embedding of a quantitative study within a qualitative study is used in phenomenological design such as in this thesis.



Furthermore, the confidence and validity of the results are increased by using mixed methods in this thesis. The complimentary nature of the data allows for stronger inferences to be made and also provides options for unexpected results. In the case of results that are not anticipated or related, this research design can leverage the other method to provide an extension or explanation as to whether the results are significant or irrelevant to the phenomenon under study. Mixed methods are also justified as the context of this thesis was yet to be explored in the literature, and as it is indicative of a new way of working, it aligns best to a method of enquiry that is flexible, unrestrictive and holistic in order to capture the complexity and reality of this nuanced working environment. As most of the EE literature concentrates on quantitative methods in traditional working environments, the inaugural thesis in this context invokes the use of a reflexive qualitative methodology to best understand the full meanings of the experiences encountered which can then be expanded through complimentary quantitative data.

Lastly, the ontology departs from a set of research questions and sub questions searching for convergence on how techno workers EE is influenced and how they experience engagement which requires a qualitative approach. Further investigation of the links between antecedents and outcomes and explanations of the qualitative data requires quantitative expansion. Therefore, by utilising both methods this thesis may contribute to existing theory and research, generate suggestions for theory generation and justify employee engagement research.

### **3.4 Research design method: Exploratory approach**

The research questions of a thesis influence the choice of research method and determine whether the research is exploratory, descriptive or causal (Zikmund 2003), which is also known as confirmatory. Confirmatory or causal research is used to determine cause and effects and relationships among variables once a research problem has been narrowly defined (Zikmund 2003) and tests whether a model is true or not. Exploratory studies are undertaken when a research problem has not been fully addressed in the literature and greater understanding is needed to crystallise a problem (Zikmund 2003). As EE within a techno working environment is a phenomenon yet to be explored, an exploratory study is engaged here allowing for investigation and determination of the factors at play where

the researcher formulates research questions rather than hypotheses. An exploratory approach here will enable learnings from the experiences which can possibly lead to interventions and actions to apply the learnings.

Although both qualitative and quantitative data may be provided in an exploratory study, more exploratory studies are focused on words, observations and meanings (Zikmund 2003). The primary qualitative research approach here concentrates on “sense making in the construction of coherent inquiries” (Chenail & Maione 1997) and is therefore exploratory inductive research. Critical to the qualitative ‘sense making’ process, qualitative researchers seek to understand how the literature on the topic, their own experiences with the phenomenon, and also their sense making of the phenomenon in the field, all fit together (Chenail & Maione 1997). This type of approach commonly asks, ‘what are the variables?’, ‘how do they fit together?’, ‘where do they relate?’ and is a valuable method for developing theory and interventions (Baxter & Jack 2008), which arises from a deductive and critical approach using existing literature to define research questions.

A thematic analysis approach is taken to understand the qualitative data set and this is one of the most common forms of analysis within qualitative research. This type of analysis emphasises identifying, analysing and interpreting patterns of meaning or themes within the data which relies on heavy involvement of the part of the researcher who is often described as the research instrument of this analysis. Thematic analysis takes into consideration both semantic and latent themes; those which are explicit surface meanings, and also those which are latent and lie beyond what is being said and are identified as underlying ideas and conceptualisations which inform the semantic content (Braun & Clarke 2006). Codes are developed to represent themes which are tied to the raw data sets which may be revisited later for further analysis.

This exploratory approach will be expanded upon using the quantitative methodology of descriptive statistics which are used to summarise data in meaningful and useful ways often determining frequency, central tendency, dispersion, variation and measures of position. This embedded quantitative approach will be used to explain any unexpected qualitative data and expand upon the words, observations and meanings (Zikmund 2003).

### 3.5 Case study approach

This proposal follows the structural recommendations by Perry (1998) and also echoes Yin's (2009) case study process in understanding the research problem and the conceptual model by interpreting and contextualising meaning from people's beliefs and practices. The choice of case study as a method is a response to a desire to gain holistic, and meaningful insights into a complex social phenomenon (Yin 2009). The thesis is grounded in a constructivist ontology, in that it departs from the roots of social and historical construction of learning through the experience of how individuals' engagement is influenced through the analysis of a specific case, in an attempt to generate early suggestions for theory generation concerning how specific antecedents affect EE (Easterby-Smith et al 2012). The aspiration here is to gain a comprehensive understanding of a phenomenon in the context of real world setting (Yin 2012), "especially when the boundaries between phenomenon and context are not clearly evident" (Yin 2012 p.18). As the real world context of techno working and the understanding of the phenomenon of EE are interrelated, the lines between phenomenon and context are blurred, aligning with the intent of case study research. As case study research transcends the examination of particular variables (Yin 2012), it is therefore the appropriate approach for this thesis.

It is argued that case study design lies within the realism paradigm as cases are pre-paradigmatic and contemporary in nature, not limited by relativism (Hunt 1991) which is said to be pertinent to constructivism and critical theory (Perry 1998). Contrary to this view, the approach of this thesis is based on the Stake (1995) and Yin (2003) constructivist case study paradigm. This is because the constructivism acknowledges that "pluralism, not relativism, is stressed with focus on the circular dynamic tension of subject and object" (Miller & Crabtree 1999) and the pluralism employed by individual employee experiences will be collectively analysed to obtain common themes rather than engaging in relative and differential comparisons and contrasts. A constructivist case study is most appropriate for the nature of this inquiry because it answers "how" and "why" questions, and allows for the contextual conditions of the thesis which are highly relevant to the phenomena being studied and the boundaries are not clear between the phenomenon and context (Yin 2003). Therefore in this thesis, the research question of determining 'what' antecedents influence 'how' engagement is experienced for

employees in the context of techno workers begs the utility of a case study design. This is also because it is impossible to otherwise apply extant EE theory derived of more traditional environments as it would be deemed perhaps irrelevant or inappropriate. This case rests on the fringes of prior investigations providing new ways of understanding a current problem.

### **3.5.1 Justification and limitations of the single case study**

Single case studies are recommended for previously unresearched subjects (Yin 2003) to illicit the wide and inductive nature of the inquiry with a resultant theory to be constructed (Bonoma 1985; Parkhe 1993; Romano 1989). Case studies rely “on multiple sources of evidence, with data needing to converge in a triangulating fashion”, and benefit “from the prior development of theoretical propositions to guide data collection and analysis” (Yin 2003 p.18). Easterby-Smith et al. (2012) argue that a single case can serve as a powerful example and provide unique insights (2012) and Yin (2009) further states that a single case study approach can provide proof of the existence of a concept and be worthy of studying simply thanks to its uniqueness, revelatory, or critical properties, or typical character. However, the limitations of this approach are often highlighted by its singularity and uniqueness. Although the single-case study is “a single example of a phenomenon” (Gerring 2007 p. 42), its unrepresentative nature does not prevent it from shedding light on more conventional cases and providing the prompts for broader representative investigation (Siggelkow 2007) and the same is typical for this thesis.

This mixed methods approach is deemed appropriate in today’s interdisciplinary, complex and dynamic research world (Johnson & Onwueghuzi 2004) as the methodologies are compatible and in real-world situations, the methods that work best should be used, especially in a viable sequence within the research design (Slevitch 2011). As a consequence, this approach has been chosen to most appropriately address the research problem and questions.

### **3.5.2 Case description**

The single case study design is suitable for critical, extreme, unique, representative, revelatory or longitudinal cases (Yin 2009). Three of those elements; unique, representative and revelatory were relevant to the progression of this thesis, therefore a single case study of a bounded system is deemed most suitable. The case is unique as techno working is a phenomenon yet to be studied in the literature, and the term yet to be popularised. Most organisations may have a few employees who are techno workers, but it isn't common that a large portion of an organisation's workforce works in this nature. Although recently as a result of the Covid-19 crisis, many non essential-workers found themselves working remotely from their organisations individually from their homes which could also be referred to as techno working. This investigation concentrates on the few employees that were already techno working in the case study organisation, prior to Covid-19. This case would be deemed as representative as it investigates a corporate organisation operating in a large global industry and the learnings gained in this thesis may be used representatively. Lastly, to qualify as a revelatory case, this phenomenon has not been investigated as yet by scientific research and furthermore, large global corporates of this nature do not often appear in the EE literature. Thus, the revelation lies in the researcher having access to the organisation and key employees in order to progress and explore the research problem.

The case at hand describes and analyses a global multi national corporation operating within the fast moving consumer goods (FMCG) industry selling food and beverage products. The company is headquartered in Europe, although has expanded a secondary headquarters to the United States of America and has many satellite offices around the world. For the purposes of this thesis, we use a pseudonym called Savry Industries. Savry Industries has over six thousand employees world wide and do not have offices in all countries, however they have a large techno working workforce which spans the globe. As Savry Industries has grown world wide, their entry into new markets has taken a techno working approach with the company engaging employees who are geographically spaced to service specific countries and regions providing face-to-face service to build relationships until perhaps an office may be established. The distributed nature of their business demands a field sales approach which cannot generally be fulfilled by employees located at a centralised office or place of work, hence techno working has been utilised to best service customers and manage customer relationships

across regions and countries. Savry Industries presents a unique opportunity to understand the experiences of this techno working workforce across a global setting.

### **3.6 Research context**

The ideas for this thesis originated from the researcher's professional involvement in HRM working with techno working employees. While working for Savry Industries, this type of work was common such that the researcher was able to identify certain gaps in the literature relating to context, transferability and the varied experiences of JE versus OE. The lack of applied interventions and relevant empirical theory to draw upon and apply in a business context prompted this investigation and inherently the target population was accessible and available to the researcher. This situation coincides with Cavana et al.'s (2001) *Applied Business Research* approach of using applied research to resolve a business problem providing a useful product to the business as an outcome. Furthermore, since Covid-19 has prompted the shift of traditional work from the office to the home, the rapid growth in techno working suggests that the outcomes of this thesis may resolve a larger research problem than initially expected.

#### **3.6.1 Target population and unit of analysis**

The unit of analysis for this thesis is professional employees working within Savry Industries. There are a number of reasons for choosing this sector for this thesis. Firstly, a global FMCG company employs a range of professional staff whose job roles can generally be replicated across their company globally such as field sales or account management. These employees are selling products into a variety of outlets such as supermarkets, specialty stores, warehouses, petrol stations and convenience stores and these products sell quickly and turnover at a high rate, therefore the pace of the industry and servicability of customers is high and constant in every country and region. Companies in this industry include Johnson & Johnson, General Mills, Diageo, Colgate-Palmolive, Coca-Cola, and L'Oréal. These companies are large employers globally. Employees holding the same job roles such as 'Regional Account Manager' or 'Sales Manager' would exist in Australia as they do in India, Canada, Russia and South Africa, and many other countries globally. Similarly, functions supporting these roles also replicate globally such as trade marketing, supply chain and brand marketing as they are

market and region specific. Therefore, employee volume in a particular job role can be established, and findings may be broadened with applicability across comparable industries such as consumer goods, pharmaceuticals, consumer durable goods and some commodity processing where similar positions exist also operating in a techno working capacity. The choice to use a global company like Savry Industries within a large industry such as FMCG is not so specific or unique in comparison to previous engagement studies (e.g. Breevaart et al. 2014), and therefore aims to increase the transferability and applicability of findings while the specifics of the phenomena remain unique enough to warrant a singular case study approach.

The employees identified for participation in this investigation were the techno working employees of Savry. They fulfill varying roles but mainly work in a field sales capacity with job titles ranging from Regional Account Manager, Key Account Manager, Country Manager and State Manager with all of their roles being tied to a particular geographic area, either a country, region, or state. The field sales nature of their roles means they often live or work in the same area as their customers, although work is predominantly completed at home and sometimes they perform customer visits. While it is critical to survey and interview these techno working employees to best understand their experience of the techno work phenomenon, the participant population was expanded to include the manager's of the techno working employees and also the human resources (HR) representatives of the company working in roles supporting these employees. It has been argued that researchers are likely to measure 'actual' HR practices by surveying employees and the 'intended' HR practices can be understood by surveying HR representatives (Kinnie et al. 2006). Therefore, the inclusion of these further participants is to not only understand the reality of practice but also what HR personnel, executives and managers have intended by their actions and chosen interventions.

The size and operational structure of the organisation chosen was important and critical to the investigation. This is because evidence has shown that HR practices vary systemically depending on an organisation's size, operation and reach. While the importance of such global organisations is self-evident, the circumstances under which they operate differ significantly from small and medium size businesses, public sector organisations, and firms in industries like construction, mining and tourism. Larger

organisations generally have systemic practices and interventions as well as dedicated means and resources for HR and learning and development which are pertinent to the context of this thesis. The FMCG industry was chosen as the setting for this thesis mainly for practical reasons to do with the author's existing industry knowledge and contacts allowing for firms to be approached more easily and the nature of work to be understood with greater ease in contrast to an industry where the author may have had no prior experience.

### **3.6.2 Techno working context**

Past EE studies have been conducted primarily in the United States and European countries (Bakker et al. 2005; Breevart et al. 2014, Demerouti et al. 2001; Soane et al. 2012) with very few studies being conducted in Asia. Additionally, engagement studies have also concentrated on a singular, traditional environments of working ie. an office, facility, plant, institution etc. (e.g. Breevart et al. 2014; Soane et al. 2012) where employees are centralised in the same physical working environment. The work environment has a considerable impact on EE with the workplace playing an important role in whether employees want to continue working in and organisation (Anitha 2014). Furthermore, the physical work environment is argued to have a positive relationship with EE when the physical workplace is designed to be comfortable, flexible and aesthetically pleasing also encouraging mobility, concentration and physical connection to work roles (Gabriel et al. 2017).

By conducting this investigation in the techno working context with participants from across the globe, including a contingent from Asia, this thesis seeks to capture the relational interplay of EE within a contextually nuanced environment, providing a more nuanced account of how to develop and apply EE interventions across techno working contexts. The cross cultural nature of participation together with the expanded groups of participants (managers and HR representatives) will also provide for adjacent views of the same phenomenon through the purposeful sampling approach. The data collection field work for this thesis took place in 2018.

### **3.7 Approach one: Qualitative research**



The qualitative and quantitative studies in this research are addressed separately. This next section details the adoption of the primary qualitative method to explore the techno working experience of EE through the administration of semi-structured interviews. This approach not only addresses the lack of qualitative research in the field of EE (Reissner & Pagan 2013), it also satisfies the fact that interviews constitute an essential source of case study information (Yin 2009). It is argued that pure inductive research does not exist as researchers cannot approach a study from a point of absolute vacancy (Perry 1998); therefore, the embedded case study methodology balances the underpinning theoretical framework of this thesis with the flexibility to expand on the journey of enquiry as data is collected.

The qualitative primary method of inquiry includes semi-structured, open-ended interviews to confirm and refine validity and to explore the attitudes and feelings of the participants achieving an insider's view of the environment in a subjective way (Welman et al. 2005). Participants respond and may rank or rate the items summarised by the researcher based on emerging themes and interview questions. Open-ended questions are utilised to ensure the interviewer isn't confusing or leading the interviewee in a particular direction to skew the data collected. An interview protocol is developed, and observation and interview data direct the 'how' nature of the research opening opportunities for participant's responses to iteratively guide the next question allowing each interviewee to tell their own story in their own words free from bias. This process explores what the participants think, and the researcher can describe what is observed in order to explore the data or to build or question understanding. The following research questions introduced in Chapter two are now restated:

### **Research question one**

RQ1: How are employers *influencing* the employee engagement of techno workers?

RQ1.1: What influence do job resources have on a techno worker's experience of *employee engagement*?

RQ1.2: What influence does leader-member exchange have on a techno worker's experience of *employee engagement*?

## **Research question two**

RQ2: How do techno workers experience the *state of employee engagement*?

RQ2.1: What is a techno worker's experience of *job engagement*?

RQ2.2: What is a techno worker's experience of *organisation engagement*?

## **Research question three**

RQ3: What *outcomes* are associated with a techno worker's experience of employee engagement?

RQ3.1: How does *job satisfaction* emerge as an outcome of EE in techno workers?

RQ3.2: How does *organisation commitment* emerge as an outcome of EE in techno workers?

Research questions one, two and three all focus on techno working employees to understand their beliefs, opinions, thoughts and experiences of EE. Question one focuses on the antecedents influencing the EE of techno workers who are physically and psychologically isolated from the traditional working environment. Research question two seeks to understand techno workers' experience of JE and OE as part of multidimensional EE. Research question three attempts to understand how a techno worker's experience of EE is associated with outcomes and consequences such as JS and OC. It is proposed that in this nuanced environment, the states of JE and OE are influenced by different antecedents and furthermore these states are associated with the disparate outcomes of JS and OC.

In exploring these questions with participants including techno workers, their managers, senior executives and HR representatives, the subjective meanings of experiences through the participants as individuals and through their interactions with others (Creswell 2007) will form the data set. However, the isolated nature of techno working may also produce differentiated findings in comparison to the traditional ways of working. Collecting data about EE from techno workers represents a relatively nuanced approach. The previous chapter posits that the job resources of feedback, autonomy,

learning and development opportunities, organisation climate and social support together with LMX may influence JE and/or OE. The following section describes the sampling strategy, research instruments, data collection procedures, the evaluation of validity and reliability of the interviews and also the data analysis procedures.

### **3.7.1 Sampling strategy for qualitative approach one: Qualitative research**

This section focuses on the details pertaining to the sampling strategy including the sampling frame and size as well as the sampling design most appropriate for the *qualitative* part of this thesis. The population and unit of analysis has been previously discussed in [Section 3.6.1](#).

Multi-stage sampling was used to recruit participants for this case study. This was achieved through initial voluntary sampling where interested employees volunteered. Then the next stage was cluster sampling in selecting the volunteers aligned to the required cluster samples followed by purposeful sampling based on the determined sampling frame. Multi-stage sampling, as the name suggests, involves the taking of samples one stage after another, refining the sample down each and every time to a smaller sampling unit. To progress this approach, the entire employee base of the company was emailed with an invitation to participate in the research. The invitation firstly included a link to voluntarily complete the quantitative survey (see [Section 3.8.1](#)), and secondly, the email included details on how to volunteer for the qualitative investigation. Voluntary sampling is a common non-probability sampling method generally made up of people who self-select into the survey. The invitation included details on the nature of the thesis, and certain eligibility criteria which needed to be met in order to voluntarily participate. The eligibility criteria was provided for by the three predetermined cluster samples determined through purposeful sampling which were techno workers, the managers of techno workers and the HR representatives or senior executives who worked with techno workers, plus any volunteers that identified as part of these clusters. The sampling frame of the population was then determined by the global employee master data report accessed and analysed by the researcher. The frame identified all techno worker employees of Savry as their home address was listed as their location or business address. A deductive approach using the organisational reporting chart was then used to identify all the managers of these employees, and then the

subsequent and related senior executives and HR representatives. These selected employee names then formed the sampling frame of the thesis that the researcher used to qualify the final sample.

Once the sampling frame had been determined for the thesis from the original organisation population, purposeful sampling was used to enlist those who had volunteered. Purposeful or purposive sampling is where specific target groups or individuals are chosen for a particular purpose (Cavana et al. 2001). Purposeful sampling is used in the qualitative investigation where the researcher has relied on their own judgement when choosing participants for this thesis. Also known as judgement or selective sampling, this technique is commonly used in qualitative research as it provides for the identification and selection of information rich cases for the most effective use of limited resources (Patton 2002). This conceptually driven sampling strategy lends itself to this thesis in that the process involves selecting participants that are especially knowledgeable about or have experience with the particular phenomenon of interest (Creswell & Plano-Clark 2011), in this case, the phenomenon of EE within a techno working context. Therefore, the participants chosen for the research were considered a typical or average representation of ‘techno working employees’, or managers of techno workers and HR representatives or senior executives working with and supporting techno workers. This typicality is also important to ensure the transferability of the data, meaning the generalisability of the results from this sample, or sending context, to a receiving context (Tashakkori & Teddlie 1998). The aim was to select cases that would yield the greatest depth of information to generate enough data for the research (Patton 2002).

The final sample for this singular qualitative case study included 16 participants and this number also falls within the recommended sample size taking a non—probability heterogeneous population approach of 12-30 people (Saunders et al. 2012). These participants fulfilled the sample criteria and were derived from the sample frame of Savry by fulfilling a variety of roles across the globe. Sample participants were purposefully chosen due to their depth in experiencing techno working or working with techno workers, which therefore qualifies them to provide meaningful input by having greater representativeness (Neuman 2000), rather than being determined on whether the sample size was small or large. Of the 16 participants, some were not only currently working in

a techno working environment, but also managed other techno workers. Of the senior executives, some had also managed techno workers in the past eliciting a closer personal experience and connection to the phenomenon. Thus, the final sample included participants who did not exclusively fulfill only one of the cluster definitions. Rather, they had broader experiences across the clusters which was deemed valuable in offering broader, richer and varied perspectives. The structure of the sampling also allowed for comparison between the dyads (leader-member relationships) within and between teams, eliciting multi-case comparisons within the singular case study. While qualitative methods emphasise saturation obtaining a comprehensive understanding by continuing to sample until no new substantive information is acquired (Miles & Huberman 1994), new information was discovered and expanded upon in each interview warranting the completion of the full interview schedule.

### **3.7.2 Data collection method for approach one: Qualitative research, semi structured interviews**

Case study data predominantly originates from interviews reflecting the behavior of human beings, providing an authentic picture of the situation and allowing further discoveries (Yin 2009). The strength of the interview method for this thesis is based on the views of Gray (2011) and Yin (2009) as the method holds value in deriving a depth and richness from relevatory insight. Furthermore, the interviewee can present variance in opinion, behaviour and context nuance which can then be prompted, probed and unpacked by the interviewer which is seen as more valuable than a finite survey answer. While the interviewer accordingly has to minimise bias, interviews are never completely objective or neutral as their success is dependent on the interviewer's attitude and a greater, understanding of their role and how the interview should be conducted. The interview design provides for the exploration of human behavior (EE experiences and outcomes), and the interviews aim to reveal the inputs (antecedents) or causes (Yin 2009). Gray (2011) reinforces that interviews are most important when exploring and examining opinions and the employees' views on the phenomenon are the focus of the thesis.

The interview instrument extracts data aligned to the research inquiry and provides more information than structured surveys as the conversational approach allows for

explanations of the issues (Yin 2009). Structured interviews involve asking each and every participant the exact same questions very much like a questionnaire (Sommer & Sommer 1992). While unstructured interviews commence without pre-determined questions and continue as lengthy conversations with sporadic prompts by the researcher (Patton 2002). In semi structured interviews, as used in this investigation, the questions are developed in line with the research issues to facilitate data extraction and analysis, but also provide enough flexibility for expansion. Semi structured interviews are also deemed appropriate for qualitative research with an embedded case study design as they provide for flexibility in process depth, and the perspective of the informant (Bryman & Bell 2007).

The interview agenda began with the demographic lines of questioning to determine the employee's role profile and organisational fit. The proposed conceptual framework then provided the theoretical basis to form topical areas of questioning which progressed lines of enquiry around leader's behaviour, colleague and manager relationships, HR practices, resources and the employee's actions, opinions and behaviours. These themes were specific enough to the framework yet flexible enough to allow for new themes to emerge for theory building purposes (Yin 2009). To understand the role the manager played versus that of HR, and job resources versus the social nature of working, specific questions were directed to understand these influences on EE. The interview guide was also customised for each cluster group i.e. techno workers, techno workers' managers, to ensure the appropriate perspective was approached and captured. Questions explored particular resources such as learning and development opportunities, feedback and autonomy to ensure understanding. Questions regarding their experiences of EE were directly asked but also indirectly approached to allow for variance and nuance in the answers.

Prior to conducting the research, a pilot was progressed in April 2018 to assess validity, reliability and relevance of all the interview questions and protocol. Four reviewers provided feedback and commentary in regards to the interview information provided, the clarity of the questions and opportunities for further investigation. The interview guide and protocol was finalised to include this feedback and is provided in Appendix B. The final interview protocol guide included a customised version for each of the cluster

participant groups with an introduction to the project and the required compliance details to ensure ethical clearance.

### **3.7.2.1 Insider research and reflexivity in data collection for approach one:**

#### **Qualitative research**

The researcher's stance and the place of reflexivity in qualitative research has been discussed across the literature as reflexivity is important, and there are costs and benefits to each and every researcher stance (Finefter-Rosenbluh 2017). Outsider research occurs when the researcher is not a member of the population they are studying and this can be a challenge for them to access participants, and then for the participants to be willing to openly share and disclose their thoughts and opinions (Borrill et al. 2012). On the other hand, insider researchers are within and connected to the population, therefore come from a position of strength perhaps knowing the participants, relating to the issues and being less intrusive to the context (Bridges 2001). In both cases there is a risk that the researcher's personal thoughts, experiences, and agendas can affect their data collection and interpretations, but also how they apply findings (Drake 2010). Therefore, the process of reflexivity is required in both stances to ensure the researcher is diligent in reflecting on how their beliefs, experiences, thoughts, may affect the research and how this may be managed most effectively to not bias the outcomes.

While there is a perspective that insider research in qualitative studies undermines the research and this should be limited (Finefter-Rosenbluh 2017), there are also significant upsides which were leveraged by the researcher in this thesis. The researcher is a human resources professional working in the company supporting techno workers, therefore shared meanings, relationships and a common business language existed that expedited and smoothed the interview process. Some participants were very candid, shared real work examples and referenced others providing a rich data set, and the interest in their unique contextual experience in some cases was greatly appreciated. This explicit role was very valuable with the level of comfortability perhaps not achievable for an outsider or even a researcher without the credentials of working in HR, which already holds a reputation of confidentiality in contrast to other functions. However, understanding the place of proceduralism, the researcher ensured anonymity and confidentiality to ensure comfortability and openness in disclosure and refrained from any personal, emotional or

other reaction to answers to limit bias. As a large percentage of participants were known to the researcher, unknown participants, where there was no direct relationship, allowed for greater distancing of personal-professional knowledge, but also greater variance in the sample and resultant data. Also, researcher objectivity was enhanced as post the data collection phase, the researcher resigned and moved on from the company and therefore the role of researcher, rather than HR employee, was the prevalent mindset in finalising the thesis.

To limit bias throughout the process the researcher engaged in consistent reflexivity actions which included considering the perspective (insider vs outsider angle), dissecting the perspectives of others and also refraining from assumptions and impositions with shared meanings as recommended by Finefter-Rosenbluh (2017). This high quality standard was maintained throughout the process from the interview preparations, invitation communications, participant communications through to the interviews and post interview actions.

### **3.7.2.2 Data collection procedures for approach one: Qualitative research**

Contact was first made with all participants in April 2018 as an email was sent to the global email distribution list of Savry employees. Of the 2600 employees globally, only 1350 had ordinary access to email and appeared on the global email distribution list and the remaining employees work within the manufacturing sites without consistent email access and email accounts. The email included an introduction to the researcher and the research, as well as details pertaining to the nature of involvement for the participants and an invitation for volunteers to respond for the qualitative investigation. The volunteer respondents were then contacted to organise a time to participate in an interview and were provided with the research overview and consent form. Due to the research context being techno working, all interviews were undertaken via Skype video link to provide for consistency in data collection approach as participants were located globally, and also to protect the integrity of the techno working environment being studied. The interviews ran between 60 and 90 minutes and were planned over a period of a month with each interview being recorded with the permission of the participants. The interviews were private, between the interviewer and participant under strict research ethics protocols where participants had emailed their consent form to the researcher.



The interviews began with short introduction from the researcher and then some brief demographic questions. There was no prior preparation required by the participants as they were not provided with questions before the official interview. The interview progressed with the semi-structured interview questions utilising open-ended ‘how’ and ‘why’ questions (Yin 2009) from the researcher’s interview guide which was standardised for each participant group. Probing questions were used to uncover or confirm meaning and non-evaluative listening techniques were adopted to ensure discussion flow and progression. An interview protocol template was used by the researcher to create consistency across all the interviews and to make interview notes on the setting, atmosphere, depth of interview, usability of guide, observations and final interviewer reflections. This template accompanied the consent form and recording as the official interview documentation and collateral for analysis.

### **3.7.2.3 The research participants for approach one: Qualitative research**

The participants provided demographic data at the beginning of each interview which is summarised in Table 3.1. The interview participants came from a range of cities and countries primarily across Asia Pacific and United States of America (USA) as described in Table 3.1. Of all the participants interviewed, three were located in the USA, one was located in each of Singapore, Malaysia, South Korea and the Philippines, and the other nine (56%) were located in Australia.

The participants fulfilled differing criteria within the sample as some were techno workers (10, 63%), some were techno workers also managing other techno workers (2, 13%), and one participant had previously been a techno worker (1, 6%). Three participants (19%), were aligned to the cluster of human resources representatives or senior executives working with techno workers and participated in the research to provide their perspectives on leading and managing techno workers as part of their organisation. This participant data is also collated in 3.1 below.

**Table 3-1 Table representation of interview participants by city, country and cluster for approach one: Qualitative research**

<b>Location</b>	<b>Techno working employees</b>	Techno workers who also manage other techno workers	Managers of techno workers	HR representatives and senior executives	<b>Total</b>
California, USA				1	1
Chicago, USA				2	2
Brisbane, Australia	1				1
Kuala Lumpur, Malaysia	1				1
Gold Coast, Australia		1			1
Adelaide, Australia	1	1			2
Melbourne, Australia	1		2		3
Seoul, Korea	1				1
Perth, Australia	1				1
Singapore			1		1
Manila, Philippines	1				1
Sydney, Australia	1				1
<b>TOTAL</b>	<b>8</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>16</b>

### **3.7.3 Data analysis method for approach one: Qualitative research**

The method of analysis undertaken was thematic analysis (TA) which is a common strategy employed in qualitative studies. The TA approach takes the unbounded nature of qualitative data and reduces it into themes, patterns and topics related to the research questions to further understanding (Braun & Clarke 2006). The method is defined as, “identifying, analysing, and reporting patterns (themes) within data” (Braun & Clarke

2006 p. 77) and its usability across a wide variety of topics and research questions is the reason for its commonality (Braun & Clarke 2006). The interview recordings were all transcribed by the researcher to progress analysis and this also allowed concurrent collection, transcribing and analysis to take place which is a constancy in analysis ensuring analytic focus (Merriam 2009). The interview notes were added to the process of analysis helping the researcher to reflect, learn and associate while shaping the outcome (Merriam 2009). All the transcribed data was read and reread to identify common themes, a product of thematic analysis, which can be words or phrases that capture the essence of the data in relation to the research question (Braun & Clarke 2006). Themes were reviewed in line with other previous studies while at the same time allowing the data to remain open and flexible enough for new themes to occur due to the unique nature of the context. The research questions provided a starting framework or lens for the themes to emerge as ultimately they represent what the data is aiming to achieve.

#### **3.7.3.1 Data analysis tool for approach one: Qualitative research**

The Nvivo software program was used to undertake the qualitative data analysis. Nvivo proves valuable in that it allows for access to word frequencies and key words in context allowing for pattern identification throughout various content sources. The program was used to identify patterns and then electronically code and theme the content. While it allows for various multi media sources, all the content used in this thesis was text based and transcribed by the researcher, then uploaded into Nvivo for analysis, tabulation and implementation

#### **3.7.4 Validity for approach one: Qualitative research**

Pre-tests chosen for this survey included face validity, internal validity and construct validity. Face validity is one of the most important validity tests that should be carried out prior to any other validity tests (Hair et al. 2010a). A panel of HR and subject matter experts were engaged to assess the face and content validity of the interview questions which were met positively and deemed valid. The interview questions were perceived to be structured in a way to obtain the data for the researcher to be able to draw accurate conclusions relevant to the investigation.

### **3.7.5 Reliability for approach one: Qualitative research**

Reliability is about producing the same results using a particular instrument regardless of who does the research and when or where it occurs (Blanche et al. 2006). In this research, attempts were made to ensure reliability by identifying participants of mixed gender, age and other key demographic details and the data was managed and assessed to exclude generalisations and inconsistencies. It is assumed that because participants are employees of a global company working within the same contextual capacity, the transferability of questions asked will extend to similar corporate environments and perhaps those in differing industries also. Therefore, repeating this case study should lead to similar findings and conclusions according to Yin (2009), which reduces inaccuracies and bias. Furthermore, the representativeness of the sample in this case study may be used to make inferences about the larger techno working population in the participating company, and indeed wider across other organisations, through ‘statistical generalisation (Yin 2009). This case study may be privy to internal generalisation, where the people, events, and setting studied can be extended within the case studied, for example to the same person interviewed or within the same organisation as with this thesis (Maxwell 1992). Additionally external generalisability may occur beyond the case where the knowledge can be successfully transferred without necessarily all the same conditions.

### **3.8 Approach two: Quantitative research**

The embedded design of this qualitative case study, also labelled as a QUAL - QUANT embedded design, included a quantitative survey used to support and expand the qualitative data set. The design of the quantitative investigation was to elicit a macro data view using a larger sample of *only* techno workers with a different range of questions. The aim of this quantitative data set, as mentioned, is to qualify and expand on the primary qualitative data set pursuing the same research questions as previously set out in [Section 3.7](#). The strategy for the quantitative approach is set out in the sections below and is separate to the qualitative investigation.

#### **3.8.1 Sampling strategy for approach two: Quantitative research**

This section focuses on the details pertaining to the sampling strategy for the quantitative survey only, which is different and separate to the previous sampling strategy described for the qualitative section of this thesis. This includes the frame and size as well as the sampling design most appropriate for the quantitative part of this thesis as the population and unit of analysis has been previously discussed in [Section 3.6.1](#).

The applied business research approach required that the research question and problem of this thesis be pursued through a focused sampling and data collection strategy. Although for this investigation, an opportunity presented to collect data more broadly so that the targeted sample of techno workers could be compared and contrasted against the traditional employee population. This is called a convenience sampling approach and is also deemed more inclusive by inviting the opinions and inputs of all employees who take part based on their availability and willingness. This is an appropriate sampling strategy for this quantitative supplementary approach as it won't provide for the important primary data set, but rather be used to expand upon on compare and contrast to the primary data. The issues identified with convenience sampling relate to the voluntary nature of participation leading to volunteer bias with the sample not being representative of other characteristics such as age, sex etc. The purpose of this sampling was to collect a large number of responses representative of the entire population of the company studied that will lead to a breadth of information on the general employee set (Patton 2002). The design of this thesis, whilst uncommon, mimicks that of Strasser et al. (2007), which used a primary qualitative approach with in depth interviews which then used a survey questionnaire to focus on the differences between groups, in this instance, techno workers and non techno workers to best understand the differences and nuances related to context. As this thesis is pursuing an embedded qualitative research approach suited to phenomenology design (Creswell & Plano-Clark 2006), the qualitative exploration is supported by a measure designed by the researcher as one is not available (Plano-Clark et al 2003), and to further explain variables that are unknown (Creswell & Plano-Clark 2006). Creswell and Plano-Clark (2006) also refer to this as exploring a phenomenon in depth and then measuring its prevalence.

The same email that was sent out to all employees with email addresses in the company in April 2018 containing the information pertaining to the qualitative interviews, also included information on the quantative investigation. This email invited employees to

voluntarily participate in the survey. Details on participation and consent were contained in the email, and participants could immediately click through to the survey providing ease and efficiency in participating. This meant that the quantitative survey and data collection occurred concurrently with the timing of the qualitative interviews. Of the total target audience of 1350 employees who were sent email invites to participate in the survey, 122 completed the survey, yielding a total participation rate of 9%, and these participants were working in a variety of jobs at the organisation. This was not unusual for the company, as a company wide engagement survey had also recently been held which may have resulted in survey fatigue, but participation in that survey was also not high. Of the 122 completed surveys, 20 participants identified as techno working employees which was 16.39% of the respondent population, and 102 identified as working from a corporate office (83.61%). The total number of techno working employees in the company is 67, therefore the number of survey respondents was equal to 29.85% of all techno workers, and 7.95% of the 1283 corporate office based employees responded. Table 3.2 demonstrates the participant’s location by region for the quantitative survey.

**Table 3-2 Representation of survey participants by region for approach two: quantitative research**

<b>Location</b>	<b>Number of Participants</b>
Asia Pacific	9
North America	8
Latin America	0
Europe	3
Middle East	0
Africa	0
<b>TOTAL</b>	<b>20</b>

The sample size of a research design is an important consideration in order for a researcher to achieve a statistically significant result to further understanding in the area of research. Sample size generally refers to the minimum number of participants required to identify a significant difference, if one does indeed exist at all. The homogeneity of techno workers in the quantitative investigation is a strong reflection of the research population which provides for significance in the research as representative of the true

population. In determining the sample size, Roscoe (1975) proposes that sample sizes between 30 and 500 are appropriate for most research and where subsamples are used, 30 for each category is recommended. However, for simple experimental research, which is relevant to this thesis, Roscoe (1975) espouses samples as small as 10 to 20 can be successful. When calculating the sample size population for the survey using the techno working population of 67, the recommended number of participants is 23 using general research sampling recommendations (Creative Research Systems 2012). For the quantitative survey method used in this thesis only 20 techno workers were recruited and participated, as opposed to the 16 participants used in the earlier qualitative approach. A sample size of 20 participants for the quantitative study brings into question the generalisability and statistical validity of the findings as this number fall short of the recommendation (Creative Research Systems 2012). In order to ensure generalisability the minimum threshold of 23 should be met and if possible, a larger number of cases that are collectively representative of the population of interest should be recruited leading to a breadth of information (Patton 2002). Whilst the characteristics of the study setting and participant demographics are not uncommon, the restrictions within this original study may impact generalisability and give rise to replication. When ‘a previously developed theory is used as a template with which to compare the empirical results of the case study, analytic generalisation occurs. If two or more cases are shown to support the same theory, replication may be claimed’ (Yin 2003, pp. 32-3). This is used frequently within case study research methods and is applicable to this investigation. As QUAL – QUANT embedded research designs are not common and the literature lacks sufficient extant references, this thesis also presents as an opportunity to provide insight into the justification and operation for this design.

### **3.8.2 Data collection procedures for approach two: Qquantitative research**

The data collection procedures for the quantitative research design in this thesis is different and separate to the quantitative methodoloday data collection procedures as mentioned earlier. The unique differences between the two procedures warrant explanation. A self administered method was used after contact was made to senior leaders in the organisation asking if they would endorse the research. Their endorsement supported the thesis objectives and provided access to all their employees with email addresses enabling the introduction email including the survey questionnaires to be sent

out in April 2018. The emails included the research introduction and a clear link to the survey was provided in bold advising their participation would take between 15-30 minutes. The survey was open for two weeks before a reminder email was sent out to prompt final participation in the final week. Participants were ensured of their anonymity and the survey confidentiality to encourage participation and the introduction to the survey provided necessary contextual information provided by the researcher to qualify the insider researcher nature of this thesis and the relevance to the employees of the organisation. As the researcher had access to live participation numbers, once the participation rate had reached the necessary 100 participants, and response rates declined after the reminder email, the survey was closed off after three weeks and an email notified all employees of the closing date. Certain managers in the organisation who managed techno workers also forwarded on the research email to their teams in support of research participation and the researcher was copied in on such emails.

### **3.8.3 Survey questionnaire for approach two: Quantitative research**

The survey questionnaire was developed in line with the conceptual framework outlined in Figure 2.5 ([Section 2.9.2](#)). As the conceptual framework drew from a range of different theories, the embedded quantitative survey in this thesis used a customised questionnaire was developed for the purpose of this thesis. The survey drew upon validated empirical measures for the aforementioned theories and constructs to gain an understanding of their relevance and application in this context. Concern has been expressed towards using previously published surveys as it inherently implies the disembodiment of the survey from its context (Hardy & Ford 2014). For the purpose of this thesis, the empirical measures used in this survey are disembodied from the previous approach's context to understand if EE and related constructs are experienced and influenced differently in the techno working context. With the survey participants and context in mind, the most appropriate presentation and process for data collection was technology supported through the recommended online digital questionnaire called Lime Survey.

The survey comprised of two main parts; a section on demographics and a section related to the conceptual framework theory measures. Fourteen demographic questions were designed to collect data about the characteristics of the respondents such as tenure,



age, education background, techno working status and tenure. The theory related questions from the conceptual framework were broken into subsections and included their relevant rating scale. There were 54 questions in total in this theoretical part of the survey which is included in Appendix C.

### **3.8.4 Measures and pilot for approach two: Quantitative research**

All measurement scales used in the survey are previously validated empirical scales used to understand their relevance in the techno working context. As the quantitative approach is complimentary in this embedded case study, the focus is primarily on using this data to expand upon the qualitative data rather than testing and validating new measures for engagement in this context which may be a follow on from this thesis. The following section details the measures utilised in the survey for each theory.

#### **3.8.4.1 Leadership perspective measure**

The influence of leadership on EE was measured using the LMX-7 (Graen & Uhl-Bien 1995) which is one of the most common survey scale used to measure leader-member exchange (Dulebohn et al. 2012). There is strong support for the psychometric properties of the scale (Gerstner & Day 1997) and the commonality of this particular scale will allow for greater comparison to other studies and also may aid in explaining contextual factors which have been absent in the literature to date. The LMX-7 includes seven questions which can be completed by a leader and subordinate to capture the dyadic approach to leadership and both perceptions, the subordinate's and leader's perceptions of the relationship (Graen & Cashman 1975). However, for this thesis, as the focus is on the subordinate's experience of leadership and the subsequent influence on engagement, only the subordinate version of the LMX-7 was used and completed by each employee from the subordinate perspective. The reciprocal nature of LMX underpinned by SET also assumes that the quality of relationship is shared and experienced by both the leader and subordinate. The seven questions explore how a supervisor might recognise potential and understand job problems and needs, as well as asking employees to characterise the working relationship they have with their supervisor and rating how satisfied their supervisor is with what they do. The questions are rated on a five point Likert scale from 1) to 5) with a range of descriptors written

clearly on the scale to limit common method bias. The Cronbach alpha for the LMX-7 in the research of Graen and Uhl-Bien was consistently 0.80 - 0.90. This measure features below in Table 3.3 and also within the final survey in Appendix C.

**Table 3-3 The LMX-7 measure**

No.	Question	Likert rating	Likert rating	Likert rating	Likert rating	Likert rating
1	Do you know where you stand with your supervisor, do you usually know how satisfied your supervisor is with what you do?	Rarely	Occasionally	Sometimes	Fairly often	Very often
2	How well does your supervisor understand your job problems and needs?	Not a bit	A little	A fair amount	Quite a bit	A great deal
3	How well does your supervisor recognise your potential?	Not at all	A little	Moderately	Mostly	Fully
4	Regardless of how much formal authority he/she has built into his/her position, what are the chances that your supervisor would use his/her power to help you solve problems in your work?	None	Small	Moderate	High	Very high
5	Again, regardless of the amount of formal authority your supervisor has, what are the chances that he/she would 'bail you out' at his/her expense?	None	Small	Moderate	High	Very high
6	I have enough confidence in my supervisor that I would defend and justify his/her decision if he/she were not present to do so.	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
7	How would you characterise your working relationship with your supervisor?	Extremely ineffective	Worse than average	Average	Better than average	Extremely effective

Source: – Graen and Uhl-Bien 1995.

### 3.8.4.2 Employee engagement measure

While there are many EE measures utilised across the literature, the measurement scale to best capture both JE and OE is Saks' (2006) MDA employee engagement scale. Although the scale has only been taken up in six studies (Bailey et al. 2017), the original and revisited study (Saks 2006 & 2019) produced reasonable construct validity and verified that the two constructs of JE and OE are unique from each other (Saks 2006) which is an important distinction warranting measurement in this contextual study. The measure contains ten questions in total with five questions relating to each of JE and OE to understand the extent to which an individual is engaged in their job role and also psychologically present in their role as a member of their organisation (Saks 2006). The job engagement questions which are included in Table 3.5 depict the absorption, vigour and dedication in the job role which was first evident in Kahn's incarnation of job role engagement (1990). The OE questions aim to understand the level of absorption and dedication to their organisational role. A five-point Likert rating scale is used with 1) 'strongly disagree' to 5) 'strongly agree' and Cronbach's alpha for job engagement was 0.82 as opposed to organisation engagement which is 0.90. The questions for these measures are detailed below in Table 3.4 and appear in the final survey in Appendix C.

**Table 3-4 The multidimensional approach measures: job engagement and organisation engagement**

Job engagement or organisation engagement	Question	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
JE1	Sometimes I am so into my job that I lose track of time.					
OE1	Being a member of this organisation is very captivating.					
JE2	This job is all consuming; I am totally into it.					
OE2	One of the most exciting things for me is getting involved with things happening in this organisation.					
JE3	I am highly engaged in this job.					
OE3	I am really not into the “goings-on” in this organisation.					
JE4	My mind often wanders, and I think of other things when doing my job.					
OE4	Being a member of this organisation makes me come “alive.”					
JE5	I really “throw” myself into my job.					
OE5	Being a member of this organisation is exhilarating for me.					

Source: Saks 2006.

### 3.8.4.3 Job resources measures

Job resources are the predominant antecedents to EE within the context of Bakker et al.’s (2003) job demands-resources model and in this thesis they are measured with several instruments. Across the literature, the two predominant instruments used to measure job resources are the Job Content Questionnaire (JCQ) originally developed by Karasek (1985) and revised by Karasek et al. (1998), and the Questionnaire on the Experience and Evaluation of Work (QEEW) developed by Van Veldhoven and Meijman (2005). The JCQ is designed to measure social and psychological characteristics of jobs with scales on decision latitude, psychological demands and

social support (Karasek et al. 1998) and the QEEW assesses some critical aspects of work organisations and job characteristics connected to employee wellbeing such as pace, amount of work, ambiguities about work, communication and relationships with colleagues (Van Veldhoven & Meijman 2005). The specific scales adapted for the quantitative survey were dictated by the job resources of the conceptual model and are detailed below in Table 3.5. The individual measures have been derived from differing empirical measures and have been combined for the purposes of this study.

*Autonomy* was measured by seven items adopted from the revised JCQ (Karasek et al. 1998) and some examples of these items are “I am able to decide myself how to execute my work” and “I can resolve problems arising in my work” which are all rated using a four point Likert scale ranging from 1) Never to 4) Always. There has been substantial theoretical and empirical work supporting the reliability and validity of the JCQ measure and the internal consistency for this study was 0.73 (Karasek et al. 1998).

The resource of *social support* was also measured using items adopted from the JCQ (Karasek 1985). Seven questions were used to understand social support with examples including “When it is necessary I can ask my colleagues for help” and “Do you get along with your co-workers?”. The original JCQ contained a 5 point likert scale and Cronbach’s alpha coefficient for this scale for social support (0.86) was good (Karasek 1985).

*Feedback* is measured in the survey using items from the QEEW. Five feedback questions were leveraged including examples such as, “I get enough feedback about the quality of my performance” and “Do you receive sufficient information on the results of your work?” (Van Veldhoven & Meijman 2005). These questions were all rated on a four point Likert scale with 1) Never, and 4) Always, and the internal consistency for this measure is 0.88.

The QEEW also provided the measurement scale for *learning and development opportunities* with six items leveraged including “Does your job give you the opportunity to be promoted?” and, “My work offers me the opportunity to learn new things” (Van Veldhoven & Meijman 2005). Cronbach's alpha was 0.95 and the items were measured on a four point Likert scale.

*Organisation climate* was the only job resource measurement not taken from either of the two aforementioned instruments. The construct of organisation climate for the purposes of this thesis was measured by questions adopted from the Healthy Organisation Questionnaire (Lindstrom et al. 1997). Five questions from this questionnaire were used to evaluate climate as part of the psychosocial work environment as analysed by Viitala et al. (2015) and use a 5 point Likert scale ranging from 1) Never to 5) Very often.

The questions relating to all the job resources and the job demand, professional isolation, are included below in Table 3.5 below and the full survey can be seen in Appendix C.

**Table 3-5 Job resources questions included in the quantitative survey**

Job resources level	Job resource	Question	
Individual	Autonomy (Karasek et al. 1998)	I am able to decide myself how to execute my work	
		I can resolve problems arising in my work	
		Do you have influence on the pace of work?	
		I have influence in the planning of my work activities	
		Can you interrupt your work for a short time if you find it necessary to do so?	
		Can you decide the order in which you carry out your work on your own?	
		Can you personally decide how much time you need for a specific activity?	
	Alpha	Feedback (van Veldhoven & Meijman 1994)	I get information/feedback from my supervisor about how well I do my job
			Do you receive sufficient information on the results of your work?
			Does your work give you the opportunity to check on how well you are doing your work?
			Do your colleagues inform you about how well you are doing your work?
			I get enough feedback about the quality of my performance
			When it is necessary, I can ask my colleagues for help
			Do you get along with your co-workers?
Interpersonal/ social	Social support (Karasek 1985)	Do you have conflicts with your co-workers?	
		In your work, do you feel appreciated by your co-workers?	
		Are your co-workers friendly towards you?	
		Is there a good atmosphere between you and your co-workers?	
		Have there been any unpleasant occurrences between you and your co-workers?	
		The work climate in my team is tense and competitive, everyone looks after his or her own best interest	
		The work climate in my team is encouraging and supportive of new ideas	
Organisational	Organisation climate (Lindstrom et al. 1997)	The work climate in my team is prejudiced and clinging to old ways	
		The work climate in my team is relaxed and friendly	
		The work climate in my team is strained and quarrelsome	
		Does your work offer you the possibility of independent thought and action?	
		Does your job offer you opportunities for personal growth and development?	
	Learning and development opportunities (van Veldhoven & Meijman 1994)	Does your work give you the feeling that you can achieve something?	
		My work offers me the opportunity to learn new things	
		Does your organisation give you opportunities to follow training schemes and/or courses?	
		Does your job give you the opportunity to be promoted?	
		I feel left out on activities and meetings that could enhance my career	
		I miss out on opportunities to be mentored	
Job demand	Professional isolation (Veiga & Dino 2008)	I feel out of the loop	
		I miss face-to-face contact with co-workers	
		I feel isolated	
		I miss the emotional support of co-workers	
		I miss informal interaction with others	

Source: Authors own work.

#### **3.8.4.4 Professional isolation measure**

Professional isolation (PI) is often adopted as a job demand in the JD-R model and although it is not positively related to EE, it is used within this survey to better understand the context. As techno workers operate in physical and psychological isolation, this measure was introduced to understand the significance and influence of this isolation. The adoption of a PI scale in the survey is to aid the embedded nature of the case study to help expand on the assumed challenges or demands presented by the unique context such as isolation. The measure utilised to investigate PI is a seven item questionnaire developed by Veiga and Dino (2008) which is one of very few established measures (Cooper & Kurland 2002) and the scale ranged from 1) Rarely to 5) Most of the time with a coefficient of 0.88. The scale includes questions all of which could be assumed in the isolated techno working environment which are detailed in Table 3.5 above and in the survey in Appendix C.

#### **3.8.4.5 Measures used for approach two: Quantitative research**

The measures representing the conceptual framework have been derived from a range of extant empirical measures. These measures combine to form the quantitative survey for this investigation and the instrument names, number of items, source reference and Cronbach alpha are detailed in Table 3.6.



**Table 3-6 Measures of approach two: Quantitative research**

Measure	Source Reference	No. of items	Cronbach alpha
LMX	LMX-7 (Graen & Uhl-Bien 1995)	7	0.80 - 0.90
Job engagement	Multidimensional employee engagement (Saks 2006)	5	0.82
Organisation engagement	Multidimensional employee engagement (Saks 2006)	5	0.90
Autonomy	Job content questionnaire (Karasek et al. 1998)	7	0.73
Feedback	Questionnaire on the Experience and Evaluation of Work, QEEW (van Veldhoven & Meijman 1994)	5	0.88
Learning and development opportunities	Questionnaire on the Experience and Evaluation of Work, QEEW (van Veldhoven & Meijman 1994)	6	0.95
Social support	Job content questionnaire (Karasek 1985)	7	0.86
Organisation climate	Healthy Organisation Questionnaire (Lindstrom et al. 1997)	5	0.92
Professional isolation	Healthy Organisation Questionnaire (Lindstrom et al. 1997)	7	0.88

#### **3.8.4.6 Pilot of quantitative survey for approach two: Quantitative research**

The final survey and scales were tested prior to launch in April 2018 involving employees from the sector and fellow human resources professionals with the objective of assessing the validity of the scales and the measures. The surveys were distributed via email and feedback was provided on content, relevance and readability. As the scales used were leveraged from existing studies, their reliability and validity was somewhat known, although relevance and applicability to this thesis was further examined in this pilot. The feedback resulted in only a few small adjustments, none of which altered the empirical scales used.

#### **3.8.5 Data analysis method for approach two: Quantitative research**

The emergent and inductive nature of this thesis prescribes the concurrent processes of data collection, analysis and recording of findings. As this research employs a primary qualitative approach informed by a constructivist paradigm rather than the typical pragmatism commonly observed in mixed methods, the quantitative method of analysis is descriptive only meaning that the quantitative survey will not be correlated or regressed. The participant's responses will indicate their relevance and significance within the techno working environment only. The quantitative survey data will be

analysed concurrently using the descriptive statistics methodology. Descriptive statistics describe the data visually and numerically providing basic summaries about the sample and data collected. The purpose in using descriptive statistics in this qualitative embedded thesis is to enable the quantitative data to aid in summarising and understanding the complete data set, and to provide the opportunity for further exploration and expansion. The statistics will be engaged to help identify and qualify peculiar or perhaps conflicting information obtained through the qualitative phase and furthermore provide indications of any oversights by comparing the two data sets and using statistics such as distributions of frequency, percents, averages, ranges and standard deviations. This method will help in identifying future areas of research and may lay the groundwork for more complex statistical analysis.

The survey responses are not being used to statistically validate findings, therefore this will alleviate the need for an increased sample size. The sample size of techno workers for the survey is 20 and non-techno workers 102 with a total of 122 survey responses. Also, the results from the quantitative survey will not be correlated or regressed, the participant's responses will indicate their relevance and significance in the techno working environment only. The quantitative survey will only include the predetermined themes as mentioned above and not emerging themes from the qualitative investigation.

The overarching analysis of this thesis will include directive qualitative content analysis and electronic text analysis using NVivo. The analytic process is one where patterns are uncovered, meanings determined, and conclusions made in order to build theory (Patton & Applebaum 2003). The steps to achieving this are maintained by Yin (2003) and involve examining, categorising, tabulating and testing. During analysis of the qualitative data, the coding process may lead to emerging new themes which will not be evident in the quantitative data, however all coding activity will be driven by the research questions (Creswell 2014). Again, the rationale for this approach was to provide a comprehensive qualitative understanding of the influences on techno workers' engagement and then to verify the interpretive analysis with quantitative analysis of data from a larger population of techno workers and non-techno workers for comparison.

### **3.8.6 Validity for approach two: Quantitative research**

Pre-tests chosen for this survey included face validity, internal validity and construct validity. Face validity is one of the most important validity tests that should be carried out prior to any other validity tests (Hair et al. 2010a). A panel of HR and subject matter experts were engaged to assess the face and content validity of the survey questions and instrument. Construct validity of the scores obtained on the measuring instruments has previously been conducted and validated in prior studies to ensure that the instruments measured the intended constructs rather than irrelevant constructs or measurement errors. Internal validity also refers to the researcher being able to draw accurate conclusions about relationships in the data so to test this validity.

### **3.8.7 Reliability for approach two: Quantitative research**

The reliability of the instruments used in the survey were tested by the researcher to ensure that the questions being asked were understood by respondents in the current context considering that past research was carried out in different contexts and cultural environments. The questions were deemed reliable by a panel of HR and subject matter experts who tested all the questions within the quantitative survey instrument and deemed them suitable. . This case study may be privy to internal generalisation, where the people, events, and setting studied can be extended within the case studied, for example to the same person interviewed or within the same organisation as with this thesis (Maxwell 1992). Additionally external generalisability may occur beyond the case where the knowledge can be successfully transferred without necessarily all the same conditions.

### **3.9 Mixing strategy for qualitative and quantitative approaches**

Based on the embedded case study approach, whilst the qualitative and quantitative investigations will take place simultaneously, the qualitative data will take precedence in being analysed in detail first aligned to the main research questions. Following the thematic analysis of the qualitative data the findings of the quantitative data will be analysed using descriptive statistics only as this is the secondary research approach. The descriptive statistics will then be used to expand the primary qualitative research findings. This means that the quantitative findings cannot triangulate or change the qualitative findings, they may however, expand and extend these findings where the results are similar. The proposed outcome is that the main research questions will be

answered through pure induction expanded on by quantitative statistics provided for by extant literature. The research subquestions will also be resolved through induction from the interview question data and expanded on by quantitative statistics. This mixing strategy is also detailed in the methodology flowchart that can be seen in Figure 3.2 in [Section 3.2](#).

### **3.10 Ethical considerations**

Ethical principles in research are represented with methodological soundness entailing transparency about the topic, research design, data collection and storage, analytical processes and reporting, as well as responsibility and moral integrity towards the involved parties (Saunders et al. 2009). This is to ensure that ethical issues embedded throughout the research project reaching even beyond the actual gathering of data, are considered from the very beginning of the study conducted (Kvale & Brinkman 2009). This section therefore outlines the ethical issues of establishing guidelines, ensuring for informed consent, avoiding potential harm and confirming privacy, confidentiality and anonymity.

The code of ethics details the rights and obligations of all parties to the research and these are related to the required behaviours of researchers and respondents (Zikmund 2003). An ethical code of conduct underpinned and guided this research. As human subjects were interviewed in this research, the University and Australia National Statement on Ethical Conduct guidelines were adopted. This research met the requirements outlined in the University of Southern Queensland's (USQ) Human Research Ethics application and subsequent approval provided by the University Human Research Ethics Committee. The application submitted detailed information on the research plan and project, researcher information and risk management, the engagement of a participant organisation, participants and their recruitment, potential risks, proposed benefits, details on debriefing, feedback and the provision of information pertaining to the thesis post conclusion. Privacy, information storage and confidentiality were covered in the application as well as consent, and the relevant information provided to participants was provided in draft form for approval. In line with the Australian Code for the Responsible Conduct of Research, the National Statement on Ethical Conduct in Human Research 2007, the ethics approval was granted by the USQ Human Research

Ethics Committee (approval no. H18REA057, Appendix A), before the progression of data collection. Since the initial approval was granted, progress reports and Human Research Ethics Milestone reports have been provided and approved.

The ethical issue of informed consent was addressed through the provision of full and open information on the research to all participating parties as they have the right to voluntary and uncoerced participation without psychological or legal harm or risk, and they may withdraw this consent at any time (Miles & Huberman 1994; Zikmund 2003). The nature of the research, the plan, time commitment, potential risks and harm were all outlined including detailed information on privacy, confidentiality and anonymity. A research *Participant Information Sheet* was provided to each participant and interested participants were invited to sign and complete a consent form to progress their participation.

Potential harm was an ethical consideration in progressing this research as there are possible concerns for embarrassment, stress, discomfort, pain and other harm through research progression (Saunders et al. 2009). While the research was approved as ‘low risk’, these were all outlined in the Participation Information Sheet under informed consent, and plans were enacted to mitigate these risks. The major risks identified with the research pertained to privacy, confidentiality and anonymity including the sharing and publication of the results. Assurance around the protection of these elements was provided up front and reiterated throughout the research process by the researcher as part of each participant interaction as the researcher was also an employee of the same organisation, reiteration was adopted for further comfort and the organisation provided due independence and neutrality. A data management plan was created to underpin the protection of all collected information and its security and the data collected will be retained for at least fifteen years in accordance with university policy.

### **3.11 Summary of chapter three**

This chapter has detailed and discussed the research methodology for the thesis investigating the phenomenon of EE in techno working environments. The research strategy detailed an inductive approach borne of the constructivist paradigm, and a clear understanding of the qualitative and quantitative methodologies is provided with rationale

for the progression of a mixed methods embedded case study with a primary qualitative focus. The research design, data collection and analysis plans were presented for both methods to achieve the research objective. Finally, the chapter detailed the limitations of the selected research methods and then explained the ethical considerations imperative to the research pursuance. The next chapter will present the qualitative content analysis and the inclusion of the quantitative descriptive statistics.

## CHAPTER FOUR: DATA ANALYSIS AND FINDINGS

### 4 Introduction

The research data was collected utilising the methodology detailed in Chapter three, and the results will be presented in this chapter in relation to the research questions and research problem. This chapter will focus on the analysis of the collected data to identify the themes and patterns both emerging from the data and those emerging from the literature review as presented in the conceptual framework in Chapter two. Chapter two introduced the research aim of exploring the employee engagement antecedents, experiences and outcomes of techno workers in remote working environments. The data analysis and research findings are presented here reflective of the embedded case study methodology with the leading primary qualitative analysis proceeding first, complimented by the quantitative analysis. Extracts from the participant interviews are included as a means to analyse data items. The descriptive statistics from the quantitative survey are used to expand on the qualitative themes and data analysis findings.

#### 4.1 Research themes and model variables

The review in Chapter two detailed three them emerging from the literature review: 1) EE antecedents 2) states of EE, and 3) outcomes of EE, and these guided the formation of the research questions. The two predetermined antecedent research themes were identified as leadership, more specifically leader-member exchange (LMX) and job resources. Multidimensional engagement, depicted by JE and OE, represented the focus of investigation for the state of EE, and finally the two predetermined outcomes (JS and OC) were discussed. Taken together, these themes are the variables of the proposed conceptual model (Figure 2.5, Section 2.9.2), used to analyse the data. For the purposes of this chapter, these predetermined themes emerging from the literature review are now restated:

#### **EE antecedent themes:**

1. **Job resources** – are motivational aspects of job experiences. The physical, social, or organisational factors that aid employees in achieving work goals, stimulate personal growth and development, and also work to maintain the

balance of demands in an effort to defend against the costs of exhaustion, fatigue and other stress reactions (Demerouti et al. 2001 p.501). The scope of this thesis does not extend to include the investigation of job demands as they do not generally contribute to EE (Bailey et al. 2017), however the demand of professional isolation is assumed in the context. Whilst job demands are not assumed to be consistent as they may differ across contexts, levels and groups resulting in variances in EE in employees, this thesis specifically excludes job demands from its scope as the focus is on EE antecedents only, included as job resources. Five specific job resources including autonomy, feedback, social support, organisation climate and learning and development opportunities were used in this research.

- 2. Leader-member exchange (LMX)** – focuses on the dyadic nature and quality of the relationships between a leader and individual subordinates (Graen & Cashman 1975). The LMX relationship identifies characteristics such as trust, respect and mutual obligation which differ to other theories of leadership such as transformational leadership and servant-based leadership (Graen & Uhl-Bien 1995).

**The state of EE theme:**

**Multidimensional engagement** - a multidimensional psychological state acknowledging the broader focus of EE and that it can be directed towards either an employee's job or their employing organisation (Saks 2006).

- 3. Job engagement** – the idea of an employee being psychologically present when occupying and performing an organisational role as part of individual role performance (Kahn 1990).
- 4. Organisation engagement** - relates to the focus of an employee's engagement directed towards the organisation rather than their specific job which is the case of work or job engagement (Farndale et al. 2014).

**Outcomes of EE themes:**



**5. Job satisfaction** – A valuation of satiation ‘resulting from the appraisal of one’s job or job experiences’ (Locke 1976).

**6. Organisational commitment** – the perception of loyalty, tenure and commitment, an attitude directed towards one’s employing organisation (Saks 2006).

Three key research questions each with two sub-questions were then derived from the themes and conceptual model as identified from the literature review. The correlation of emerging themes from the literature review and the research questions is detailed in Table 2.9 in [Section 2.9.2](#). Individuals were asked to reflect on these themes as part of the interview process and the analysis of the interview data was designed to answer the research questions, while the inductive nature of this thesis also allowed for the emergence of explanatory data. The survey findings, in the form of descriptive statistics, are used to compliment and expand upon the primary qualitative findings. This chapter presents the results of the data set and provides the relevant data items, extracts from transcripts, descriptive statistics and overall results. The research questions are now restated.

### **Research question one**

RQ1: How are employers *influencing* the employee engagement of techno workers?

RQ1.1: What influence do job resources have on a techno worker’s experience of *employee engagement*?

RQ1.2: What influence does leader-member exchange have on a techno worker’s experience of *employee engagement*?

### **Research question two**

RQ2: How do techno workers experience the *state of employee engagement*?

RQ2.1: What is a techno worker’s experience of *job engagement*?

RQ2.2: What is a techno worker’s experience of *organisation engagement*?

### **Research question three**

RQ3: What *outcomes* are associated with a techno worker's experience of employee engagement?

RQ3.1: How does *job satisfaction* emerge as an outcome of EE in techno workers?

RQ3.2: How does *organisation commitment* emerge as an outcome of EE in techno workers?

To analyse the qualitative data, emerging themes were derived from the literature review and an inductive method of analysis was used in relation to further interpretations of the data set (Braun & Clarke 2006). In this method, themes were closely connected to the raw data; and the specific thematic framework was used to select salient themes. Table 4.1 below explains how each theme relates to each research question for the purposes of the data analysis. As an inductive approach to this thesis has been adopted, further new themes were identified in the data related to each research question and these are discussed in detail in this chapter.

**Table 4-1 Research questions and findings emerging from the literature review and data**

<b>Research questions</b>	<b>Predetermined themes from literature review investigated in RQ's</b>	<b>Findings related to predetermined themes emerging from literature review</b>	<b>Different findings consistent with extant research (not predetermined)</b>	<b>New findings not observed in extant literature</b>
<b>RQ1 EE antecedents</b>	RQ1.2 Leader-member exchange	Leader-member exchange	Compensation	Social capital
	RQ1.1 Autonomy	Autonomy	Policies/procedural justice	
	RQ1.1 Feedback	Feedback	Technology, equipment and tools	
	RQ1.1 Social Support	Social Support	Culture	
	RQ1.1 Organisation climate	Organisation climate	Passion	
	RQ1.1 Learning and development opportunities	Learning and development opportunities	Engaging leadership	
Ownership				
<b>RQ 2 Experience of EE</b>	RQ2.1 Job engagement	Job engagement	Trait engagement	Social engagement (SE as a state)
	RQ2.2 Organisation engagement	Organisation engagement		
<b>RQ3 Outcomes associated with EE</b>	RQ3.1 Job satisfaction	Job satisfaction	Wellbeing	Achievement satisfaction
	RQ3.2 Organisational commitment	Organisational commitment	Organisation performance	Productivity
			Innovative work behaviours	Going above and beyond
			Retention	

In this chapter, demographic profiling and statistics relating to the participants and a brief overview of descriptive statistics from both the qualitative and quantitative methodologies are presented first. Then the findings of the chapter are separated into three parts aligned to the research questions. Firstly, research question one and the

relative sub questions and findings are presented followed by research question two and sub questions and findings and finally research question three with sub questions and findings. Each part will begin with the data analysis and findings on the question themes followed by the descriptive statistics drawn from the qualitative data. As this is an embedded case study with a primary qualitative approach, the primary qualitative thematic analysis findings will be presented first followed by relevant quantitative data from the survey. This structure of presentation allows for the qualitative findings to be expanded on by the survey data collected through quantitative surveying as detailed in [Section 3.8](#) as aligned to the embedded approach. Each section will then conclude with a summary of the research question findings. Finally, the chapter will conclude with an overview and summary of all results analysed against the overall research questions and research problem.

## **4.2 Demographic profile and statistics of participants**

The demographic profile describes the relevant characteristics of the participants in the research. This information is important as it helps determine whether individuals in a study are a representative sample of the target population for generalisation purposes.

### **4.2.1 Demographic profile and statistics of participants in qualitative interviews**

Next is the summary and description of the frequency distributions of the demographic variables providing a profile of the qualitative interview participants. The frequency distributions for the demographic variables are presented by number and percentage in Table 4.2 for all participants related to the semi structured qualitative interviews.

**Table 4-2 Demographic profile of participants in the qualitative interviews**

<b>Demographic question</b>	<b>N</b>	<b>%</b>	<b>Demographic question</b>	<b>N</b>	<b>%</b>
<b>1. What is your gender?</b>			<b>2. What is your age? (in years)</b>		
a) Female	5	31%	a. Under 25	1	6%
b) Male	11	69%	b. 26-35	2	13%
			c. 36-45	9	56%
			d. 46-55	4	25%
			e. 55+	0	0%
<b>3. What is your length of service in this company? (in years)</b>			<b>4. Is English your first language?</b>		
a. 1 year or less	2	12.5%	a) Yes	12	75%
b. More than 1 year but less than 2 years	3	19%	b) No	4	25%
c. More than 2 years but less 5 years	6	37.5%			
d. More than 5 years but less than 10 years	5	31%			
e. More than 10 years but less than 15 years	0	0%			
f. Over 15 years	0	0%			
<b>5. What is your highest level of completed education?</b>			<b>6. What is your work location?</b>		
a. High school	4	25%	a. North America	3	19%
b. Technical qualification/associate degree (1-2 years)	4	25%	b. Asia Pacific	13	81%
c. Bachelor's degree	5	31%	c. Latin America	0	0%
d. Post graduate qualification	2	13%	d. Europe	0	0%
e. Doctorate	1	6%	e. Middle East or Africa	0	0%
<b>7. Which function/department are you working in?</b>			<b>8. What is your work environment?</b>		
a. Sales/commercial	11	69%	a. techno working environment (home office/in the field)	10	62.5%
b. HR	1	6%	b. a company office or worksite	6	37.5%
c. Executive	2	12.5%			
d. Marketing	0	0%			
e. Finance	0	0%			
f. Other	2	12.5%			
<b>9. What is your length of service as a techno worker?</b>			<b>10. Do you report to a manager in -</b>		
a. 1 year or less	2	12%	a. a techno working environment (home office/in the field)	5	31%
b. More than 1 year but less than 2 years	3	19%	b. a company office or worksite	11	69%
c. More than 2 years but less than 5 years	3	19%			
d. More than 5 years but less than 10 years	3	19%			
e. More than 10 years but less than 15 years	0	0%			

Demographic question	N	%	Demographic question	N	%
f. Over 15 years	0	0%			
g. I have never worked as a techno worker at the company	5	31%			
<b>11. How many people report to your manager and are in your immediate work team?</b> 'Team' represents how many people report to your manager along-side you, how many in your team including you?			<b>12. What is your management level?</b>		
a. 1, just me	2	13%	a. Individual contributor, no direct reports	6	38%
b. 2, me and one other	0	0%	b. Middle level manager (direct reports overseeing a function)	7	44%
c. 3	1	6%	c. Regional leadership	1	6%
d. 4	3	19%	d. Executive leadership	2	12%
e. 5	5	31%			
f. 6 +	5	31%			
<b>13. If you have direct reports, what environment do your direct reports work in?</b>			<b>14. What is your manager's work location?</b>		
a. all in techno working environments	5	31%	a. Asia Pacific	12	75%
b. in a company office	3	19%	b. North America	4	25%
c. in both techno working and company environments	2	12%	c. Latin America	0	0%
d. I don't have any direct reports	6	38%	d. Europe	0	0%
			e. Middle East	0	0%
			f. Africa	0	0%

Table 4.2 shows that four (25%) of those interviewed cited English as their second language. All interviews were conducted in English as all participants had a solid command of the language as a requirement of the employer. Of the 16 participants, 11 were male (69%) and five female (31%), where three female participants were techno workers (30%) compared to seven males (70%), reflective of the company's gender statistics of techno workers. The representation of female participants in the qualitative interviews indicates that females are neither precluded from, nor over represented in techno working. The majority of those surveyed had a highest education level of a Bachelor's degree (31.25%) with technical college and high school being the next highest education levels of completed (25% each). Only two people (12.5%) had completed a Masters degree and one person had completed a Doctorate (6.25%).

The majority of participants were located in the Asia Pacific region which is the emergent region for Savry represented by a high proportion of techno workers as the company grows and expands. The next highest region of participants was North America where the company headquarters is located and Savry enjoys a mature market with an established business. Five employees (31%) spent under two years techno working, three

employees (19%) were techno working for two to five years and three employees (19%) were techno working for over five years. This is also relative to the maturity of the organisation where techno working progresses until a quorum of employees is reached in each location and then a satellite office is established to house work related activities. In one participant case, they previously were a techno worker before the quorum was attained and now that participant together with a group of employees are located within a satellite office. Sixty nine percent of managers who supervise techno workers were located in company offices and 31% of managers were also techno workers, separated from their direct reports, in different states, territories and countries. These descriptive demographic statistics enabled the researcher to profile the interview participants. Given that the researcher was an employee of the company, this led to further insights about the company and its employees.

#### 4.2.2 Demographic profile and statistics of participants in quantitative survey

The demographic variables and related frequencies pertaining to the participants of the quantitative survey are provided next where only techno workers were invited to participate. The frequency distributions for the demographic variables are presented by number and percentage in Table 4.3.

**Table 4-3 Demographic profile of participants in the quantitative survey (n=20)**

Demographic question	N	%	Demographic question	N	%
<b>1. What is your gender?</b>			<b>2. What is your age? (in years)</b>		
c) Female	6	30%	a. Under 25	0	0%
d) Male	14	70%	b. 26-35	6	30%
			c. 36-45	11	55%
			d. 46-55	2	10%
			e. 55+	1	5%
<b>3. What is your length of service in this company? (in years)</b>			<b>4. Is English your first language?</b>		
a. 1 year or less	3	15%	c) Yes	16	80%
b. More than 1 year but less than 2 years	4	20%	d) No	4	20%
c. More than 2 years but less 5 years	10	50%			
d. More than 5 years but less than 10 years	3	15%			
e. More than 10 years but less than 15 years	0	0%			

Demographic question	N	%	Demographic question	N	%
f. Over 15 years	0	0%			
<b>5. What is your highest level of completed education?</b>			<b>6. What is your work location?</b>		
a. High school	3	15%	a. North America	8	40%
b. Technical qualification/associate degree (1-2 years)	4	20%	b. Asia Pacific	9	45%
c. Bachelor's degree	11	55%	c. Latin America	0	0%
d. Post graduate qualification	1	5%	d. Europe	3	15%
e. Doctorate	1	6%	e. Middle East or Africa	0	0%
<b>7. Which function/department are you working in?</b>			<b>8. What is your work environment?</b>		
a. Sales/commercial	18	90%	a. techno working environment (home office/in the field)	20	100%
b. HR	0	0%	b. a company office or worksite	0	0%
c. Executive	0	0%			
d. Marketing	0	0%			
e. Finance	0	0%			
f. Other	2	10%			
<b>9. What is your length of service as a techno worker?</b>			<b>10. Do you report to a manager in -</b>		
a. 1 year or less	4	20%	a. a techno working environment (home office/in the field)	12	60%
b. More than 1 year but less than 2 years	4	20%	b. a company office or worksite	8	40%
c. More than 2 years but less than 5 years	7	35%			
d. More than 5 years but less than 10 years	4	20%			
e. More than 10 years but less than 15 years	0	0%			
f. Over 15 years	1	5%			
<b>11. How many people report to your manager and are in your immediate work team? 'Team' represents how many people report to your manager along-side you, how many in your team including you?</b>			<b>12. What is your management level?</b>		
g. 1, just me	3	15%	a. Individual contributor, no direct reports	8	40%
h. 2, me and one other	1	5%	b. Middle level manager (direct reports overseeing a function)	10	50%
i. 3	1	5%	c. Regional leadership	2	10%
j. 4	2	10%	d. Executive leadership	0	0%
k. 5	4	20%			
l. 6 +	9	45%			
<b>13. If you have direct reports, what environment do your direct reports work in?</b>			<b>14. What is your manager's work location?</b>		
a. all in techno working environments	8	40%	a. Asia Pacific	9	45%
b. in a company office	1	5%	b. North America	8	40%
c. in both techno working and company environments	2	10%	c. Latin America	0	0%
			d. Europe	3	15%
			e. Middle East	0	0%



Demographic question	N	%	Demographic question	N	%
d. I don't have any direct reports	9	45%	f. Africa	0	0%

While the qualitative interviews included ten participants who were techno workers and one participant who had previously worked as a techno worker totalling 11, 20 techno workers by comparison participated in the quantitative survey. The gender split of participants was almost identical between the two participant groups and English as a first language was common.

Asia Pacific participants made up 45% of those interviewed however the survey had increased participation from North America with eight techno workers participating (40%) and three participants (15%) from Europe. No European participants were evident in the qualitative interviews. Sixty-six percent of techno workers participating in the survey had a bachelor degree or higher compared to only 50% of the interviewed participants. This is interesting to note as the interviewed participants included more executive and office based employees who would typically hold more senior positions in the Savry company.

All participants in the survey were techno workers with 80% of these working in sales/commercial roles. Sixty percent of these techno workers reported to a manager who was also a techno worker, the rest reported to managers based out of company offices. Office based employees such as HR and senior executives reported to managers within the same office. The management level of techno workers in both the qualitative and quantitative approaches was largely the same.

### **4.3 Descriptive statistics**

Descriptive statistics were used to draw inferences from both the qualitative interviews and the quantitative survey and are presented in the following two sections as they relate to the predetermined themes which helped to inform the research questions.

#### **4.3.1 Descriptive statistics drawn from qualitative data**

The distinction between qualitative and quantitative methodologies is a false dichotomy with researchers believing that quantifying qualitative data can enhance the result as it can reinforce issues of validity (Miles & Huberman 1994). While looking at qualitative data can appear meaningful with the exploration of themes, concepts, patterns and ideas, even with a small data set, the quantification value beyond a qualitative lens provides greater research precision when interpreting research statements (Maxwell 2010), enabling patterns in the data to emerge with greater clarity (Dey 1993), and providing greater focus to key findings (Sandelowski 2001).

This quantification of qualitative data occurs by reporting the frequencies of responses and themes across participants. Even though presenting numbers is considered an 'objective' approach to research in measuring reality not aligned with qualitative research, the intention is not to compete with the strength of quantitative objectivity; the quantification is only relative within the studied sample only (Maxwell 2010). The use of frequencies in coding and categorising can enhance the analysis of qualitative data and can provide evidence of thorough and objective analysis (Cuyler 2014), increasing the internal generalisability, reliability and validity of the research.

To progress the frequency analysis of the qualitative data, firstly the participant responses were calculated. The participants in the research were identified as either a techno worker (TW,  $n = 8$ ), techno worker's manager (TWM,  $n = 3$ ), HR representative or senior executive (HRSE,  $n = 3$ ) or a techno worker who also managed other techno workers (TWTM,  $n = 2$ ). Table 4.4 below represents the frequency of responses by participant for each research question excluding inductive and emergent themes. Due to the anonymous and confidential nature of this research, each participant was identified numerically under each cluster.

**Table 4-4 Frequency of qualitative responses by participant by research question**

Participant	RQ 1.1 JR	RQ 1.2 LMX	RQ 2.1 JE	RQ 2.2 OE	RQ 3.1 JS	RQ 3.2 OC	SUM
TW1	31	9	6	13	7	3	78
TW2	20	11	1	6	3	0	41
TW3	19	14	4	5	1	1	44
TW4	9	8	3	4	0	0	24
TW5	21	24	3	3	4	0	55
TW6	17	10	2	2	1	1	33
TW7	21	15	1	5	3	2	47
TW8	23	16	0	4	0	0	43
TWTM1	18	26	4	1	2	2	53
TWTM2	11	9	3	5	4	1	33
TWM1	9	5	2	1	0	0	17
TWM2	10	8	1	3	0	1	23
TWM3	16	19	5	4	2	1	47
HRSE1	4	4	0	2	0	0	10
HRSE2	16	13	1	0	1	0	69
HRSE3	7	27	1	3	0	0	38
<b>Total</b>	<b>252</b>	<b>218</b>	<b>37</b>	<b>63</b>	<b>28</b>	<b>12</b>	<b>622</b>

Table 4.4 above indicates that seven participants commented on all of the themes. The range in frequency of techno workers' responses was from 24 to 78 with techno workers averaging 45 responses. Techno worker managers average number of responses was 34.6 whilst HR representatives and executives averaged 39 responses. There is a large spread of the number of themed responses made by the participants, the lowest being ten responses; the highest 78 responses. All outliers and themes with minimal responses have been included as a non-probabilistic approach has been taken. Most importantly, all participants responded and it is clear from the table above there has not been any singular participant overly influencing the results and outcome (Namey et al. 2008).

#### **4.3.2 Descriptive statistics drawn from quantitative survey**

The embedded case study design with a primary qualitative approach dictates that the qualitative data is analysed and included first as above, and therefore the descriptive statistics for the quantitative survey are provided in Table 4.5. Table 4.5 highlights the significance of the predetermined themes in influencing participating techno workers.

The antecedent of SS was rated as having the greatest influence on techno workers (84%), although only slightly higher than the next antecedent of LMX (82%), and feedback returned the lowest rating of all antecedents (10%). This outcome differs to the findings of the qualitative investigation which determined LMX as the highest rated antecedent followed by social support with organisation climate returning the lowest rating. The job demand of professional isolation had high relevance in the techno working environment with a rating of eighty percent. The measures were then ranked in order of influence from highest (1) to lowest (8) which can be seen in the far right column.

**Table 4-5 Results of the quantitative survey demonstrating relevance in the techno working environment (n=20)**

Dimension	Measure	Average employee rating	Percentage of possible highest rating	Rank: high (1) to low (8)
<b>Antecedent measure</b>				
LMX	LMX	28.7	82%	2
Job resources	Social support	29.45	84%	1
	Autonomy	20.9	74.6%	6
	Learning & development opportunities	17.5	73%	7
	Feedback	13.75	69%	8
	Organisation climate	18.85	75.4%	5
Job demand	Professional isolation	27.95	80%	3
<b>Employee engagement measure</b>				
	Organisation engagement	18.15	73%	7
	Job engagement	19.25	77%	4

As the above measures were unique to each construct it is important to note their individual relativity, particularly with LMX as it relates to a quality scale. The LMX-7 measure (Graen & Uhl-Bien 1995) that assessed leader-member exchange returned a score for the quality of the relationship that techno workers have with their manager (28.7). This score is indicative of a 'high' rating as per the LMX-7 guidelines which interprets scores as follows: very high = 30–35, high = 25–29, moderate = 20–24, low = 15–19, and very low = 7-14 (Graen & Uhl-Bien 1995). Higher scores indicate stronger, higher quality leader–member exchanges (e.g. in-group members), whereas lower scores indicate exchanges of lesser quality (e.g. out-group members). Therefore, this LMX score would assume these techno workers on average are in-group members

who have high quality relationships with their leaders which would be indicative of higher EE (Breevart et al. 2014).

Interestingly, the top two constructs of relevance in the techno working environment are interpersonal with leadership (LMX) and social support (SS) featuring, followed by the job demand of professional isolation. It may be assumed that these interpersonal antecedents buffer the high incidence of isolation as prescribed by the job demands resources model and this is discussed further in [Chapter 5](#). Finally, Table 4.5 (above) shows that techno workers are perceived to experience JE (77%) to a slightly greater extent than OE (73%) which is discussed further in [Section 4.5](#) related to research question two.

#### **4.4 Research question one (RQ1)**

This section focuses on the analysis of the data relative to the first research question. Research question one has two sub questions exploring the influence of antecedents on the experience of the state of EE where the overarching question is:

RQ1: How are employers *influencing* the employee engagement of techno workers?

Sub question one investigates the influence of the antecedent theme of job resources (JR) on the state of EE. Sub question two investigates the influence of leadership (LMX) on the state of EE. All participants interviewed offered comments in relation to these questions. In particular, techno workers answered in light of their lived experience as a techno worker. Techno workers' managers, HR representatives and executives provided insight into their experiences working with and managing techno workers to provide some context of the phenomenon of techno working.

Consistent with the aim of this thesis, research question one explores the influence of various job and organisation antecedents on techno workers' EE. The analysis of data for this broader question identified established themes from the literature review namely; LMX and the five specific job resource antecedents: autonomy, feedback, social support, learning and development opportunities, and organisation climate. Emergent themes from the data pertaining to the EE antecedent dimension of this

research were also identified. The themes emerging from the literature review and the themes emerging from the data arising from research question one are provided in Table 4.6 (below) which details the subthemes and quotes as a means to explain the data analysis journey. This table also notes the overall frequencies of influences on the experience of EE. For the purposes of this analysis, EE is not relegated to either JE or OE, rather the table below depicts the perceptions of influences on the collective state of EE. The specific focuses of EE, namely JE and OE, will be analysed in research question two.

**Table 4-6 Research question one: antecedent themes emerging from the literature and data**

Emerging from literature review or data	Themes	Sub themes	Example quotes	Frequency
Literature	Job resource	Autonomy	<i>"...(he) trusts me with my decisions and trusts me with the things I do every day so that is a great impact on me and would drive me more to the excellence expected"</i> (TW8)	29
		Feedback	<i>"Acknowledgement, feedback, whether its constructive feedback, ideas, whether they're asking me for ideas or I'm asking them for ideas"</i> (TWTM1)	85
		Social support	<i>"...knowing that people actually care about what goes on. Because we're not robots, we have important feelings, we can get very drained, certain things could be too overwhelming, certain things are great, so to know that they are there not just to celebrate all the numbers that I achieve, but also when things get tough"</i> (TW5)	97
		Learning and development opportunities	<i>"...it makes me feel like the business is investing in me...when I get to go on a course, I feel that you guys are investing in me and that makes me feel engaged"</i> (TW3)	66
		Organisation climate	<i>"You could tell people were getting stressed...it was just day in, day out, push, push, push...you can't keep doing that day in day out without acknowledging it...You speak to some of them or you just read between the lines of the emails and you go yeah, this is getting a little bit, we just need to take a deep breath and reset..."</i> (TWM3)	14

Emerging from literature review or data	Themes	Sub themes	Example quotes	Frequency
Data	Job resource	Compensation – monetary recognition for service to the organisation.	<i>“...as long as people are engaged and feel like they are getting something out of it and for different people it’s going to be a different driver. It might be compensation for some...” (HRSE2)</i>	2
		Policies/ Procedural justice – acting fairly in administrative decision-making concerning employees.	<i>“...we had the discussion around standardising policies...so they don’t feel like they are treated different...the kind of benefits which as an organisation we pass on so that you’re being fair and treat everybody with the same mode of love” (TWM2)</i>	2
		Technology, equipment and tools – the items needed to perform the work.	<i>“...making sure we evolve from an IT point of view so if you’re not there face-to-face, you can be at least seeing facial expressions and tone at the same time. Body language and that kinda gear is all good” (TWTM2)</i>	18
		Ownership – building from autonomy to empowerment and accountability.	<i>“How can you expect them to be engaged if you don’t give them any ownership whatsoever other than you’ve got to dial in and sit there and listen for two hours” (HRSE1)</i>	12
		Culture – the systems, symbols, beliefs and behaviours of an organisation.	<i>“If you haven’t got your culture right, then people aren’t happy, and if the people are unhappy, they’re going to do a 9-5 job” (TWTM1)</i>	20
Data	Personal resource	Passion - personal alignment of purpose, values and vision, role identity	<i>“I hope anyone chooses an industry they are passionate about. My things are sports nutrition and fitness alright. I get there are people out there who sell fashion cosmetics or electronics but because that’s something they really like” (TWTM2)</i>	45
Literature	Leadership perspective	LMX	<i>“It’s a pretty strong relationship with regard to being remote we’re able to be quite direct, quite honest. On some levels</i>	218

Emerging from literature review or data	Themes	Sub themes	Example quotes	Frequency
			<i>we keep it quite informal so we can talk, I mean it's almost like a laid-back conversation being quite honest" (TW6)</i>	
Data	Leadership perspective	Engaging leadership – style where a leader strengthens , connects, empowers and inspires employees (Schaufeli 2015).	<i>"It helps create that level of engagement for other people around you or if they see their leader is super engaged and motivated versus somebody who is slacking and not engaged and they say, 'well my boss is not engaged then why should I be" (TWM2)</i>	112
Data	Social perspective	Social capital – the quality and strength of the relationships between employees.	<i>"I think you feel more relaxed, you feel more open to share. You feel like part of the team I guess, a group. And to me that's important...I like to know that other people are experiencing what I'm experiencing and when we're altogether we talk openly and freely, and you really feel that connection" (TW3)</i>	186
<b>TOTAL of ALL antecedent responses</b>				<b>906</b>

As part of the semi structured interview process, participants were asked about the antecedents they perceived to be influencing their state of EE aligned with research question one. The frequencies of their responses are captured in Table 4.7 below.

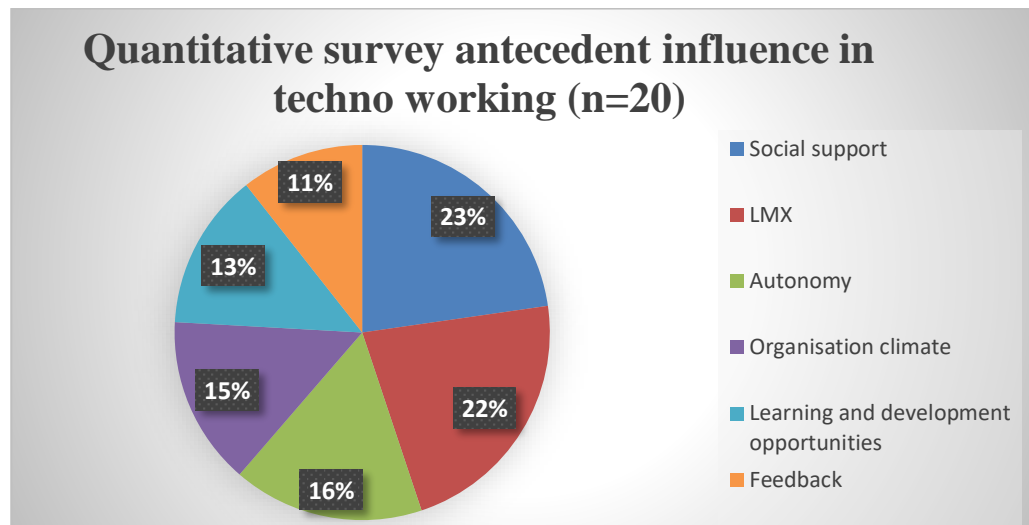


**Table 4-7 Frequency of predetermined antecedent responses by participant**

<b>RQ1.1 Participant</b>	<b>Auto- nomy</b>	<b>Feed- back</b>	<b>Social support</b>	<b>Learning &amp; Dev.</b>	<b>Org. Climate</b>	<b>LMX</b>	<b>SUM</b>
<b>TW1</b>	2	9	13	10	1	9	44
<b>TW2</b>	2	5	12	3	0	11	33
<b>TW3</b>	0	9	8	6	1	14	38
<b>TW4</b>	1	3	3	2	0	8	17
<b>TW5</b>	2	7	12	1	1	24	47
<b>TW6</b>	1	8	3	8	1	10	31
<b>TW7</b>	1	9	10	6	2	15	43
<b>TW8</b>	3	8	10	5	1	16	43
<b>TWM1</b>	4	2	0	3	0	5	14
<b>TWM2</b>	2	3	3	2	1	8	19
<b>TWM3</b>	3	9	4	2	1	19	38
<b>TWTM1</b>	0	4	7	7	3	26	47
<b>TWTM2</b>	3	2	5	2	1	9	22
<b>HRSE1</b>	0	1	3	0	0	4	8
<b>HRSE2</b>	3	5	3	5	1	13	30
<b>HRSE3</b>	2	1	1	4	0	27	35
<b>Total</b>	<b>29</b>	<b>85</b>	<b>97</b>	<b>66</b>	<b>14</b>	<b>218</b>	<b>509</b>

Table 4.7 shows that of the themes emerging from the literature review, LMX was perceived to be the most influential EE antecedent emerging in the qualitative responses followed by social support, then feedback. Differentially, the quantitative survey investigating the predetermined themes from the literature review resulted in SS having a slightly higher prevalence for techno workers (23%), one percent higher than LMX (22%). These findings are presented in Figure 4.1 below. The rationale for the difference in findings may be explained by interpretation of the constructs differing between the participants and the researcher as the participants rated based on the literal explanation in the survey and the researcher used more interpretive thematic analysis to categorise responses.

**Figure 4.1 Results of the quantitative survey for antecedents' influence in the techno working environment**



#### **4.4.1 Research question 1.1**

RQ1.1: What influence do *job resources* have on a techno worker's experience of employee engagement?

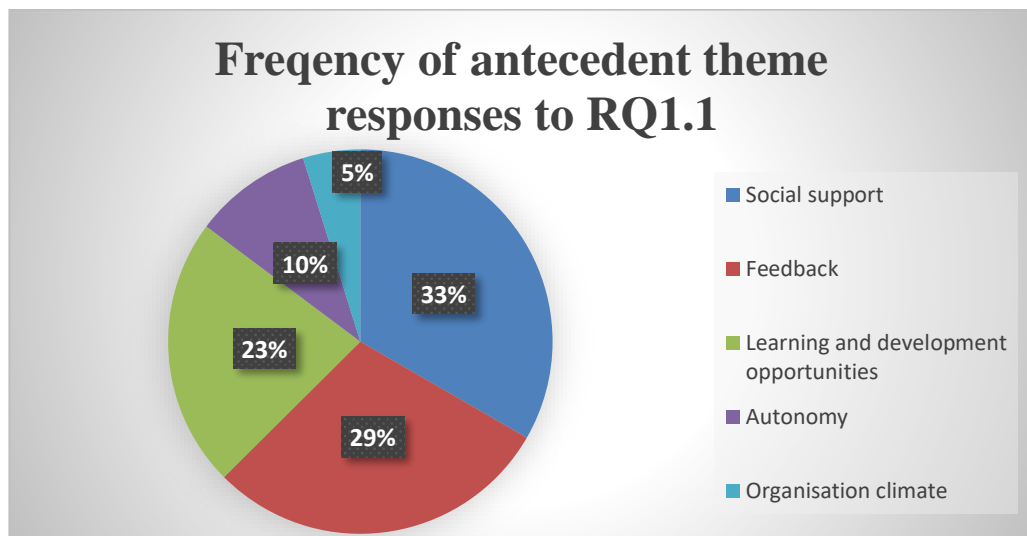
This research question is introduced in Chapter one and the antecedent theme of job resources was identified in the literature review due to their relevance in an inherently isolated context. In relation to extant job resources, autonomy, feedback, social support, organisation climate and learning and development opportunities arose from the literature review as most relevant for investigation, acknowledged as antecedents. The frequencies of all antecedent theme responses are included in Table 4.6 (above) which includes the themes from the literature review, emerging themes from the data consistent with extant research, and new themes not observed in extant literature, all of which were identified as influencing a techno workers' engagement. Table 4.8 (below) highlights the frequencies of themes relevant to research question 1.1 emerging *only* from the literature review and the level frequencies for personal, interpersonal and organisational job resources are included also for comparative purposes.

**Table 4-8 Qualitative job resource antecedent theme responses to RQ1.1 with level frequencies**

Responses to RQ1.1	Job resource level	Frequency	Level frequency
<i>Autonomy</i> influences EE	Personal	29	114 personal
<i>Feedback</i> influences EE	Personal	85	
<i>Social support</i> influences EE	Interpersonal	97	97 inter-personal
<i>Learning and development opportunities</i> influence EE	Organisational	66	80 organisational
<i>Organisation climate</i> influences EE	Organisational	14	
<b>Total of job resources influencing EE</b>		<b>252</b>	<b>252</b>

The responses to RQ1.1 as illustrated in Table 4.8 and Figure 4.2 are now discussed in more detail supported by the quantitative findings in Figure 4.1 (above).

**Figure 4.2 Results of qualitative job resources responses to RQ1.1**



#### 4.4.1.1 Social support

Of the job resources identified in the literature review, the largest number of responses relevant to influencing EE in techno workers related to social support (Figure 4.2) which is categorised as a interpersonal level job resource. The concept was discussed by all 16 participants and generated 97 coded references evidencing the important influence of social support on EE for techno workers. Workplace social support (SS) is defined as,

“the exchange of verbal and nonverbal messages conveying emotion, information, or referral, to help reduce one’s uncertainty or stress” (Walther & Boyd 2002 p. 154) and is a feature of colleagues and managers social interactions at work. Across the EE literature it has been investigated in the forms of manager/supervisor and co-worker supportiveness (e.g. May et al. 2004), perceived organisational support (e.g. Saks 2006; Rich et al. 2010) and SS has consistently been found to predict EE (Saks 2019). Social support is recognised by the comments of TW5’s, “*For me as a (techno worker), I would think just our management checking on me every now and then making sure everything is ok*”, indicating that this employee feels she is helped by others showing care and concern for her wellbeing, contributing to her engagement.

The construct of SS is not to be confused with social capital or social engagement, all of which emerged in the data of this thesis. SS specifically focuses on the point of emotional or informational support, referred to as helping factors that are shared between people or within helping relationships (Viswesvaran et al. 1999). Social capital (SC) is referred to as emerging from SS and is defined as a higher order construct with ‘features of social organisation such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit’ (Putnam 1995 p. 67). A support group is likely to offer relative social capital implying a linkage from SS to social capital (Lin 2011), therefore distinguishing them as related but separate. For the purposes of the findings in this thesis, they have been separated as unique and differentiated antecedents. Social engagement (SE) is a construct presented by Kahn (1990) integral to the expression of self-in-role through the experience of connectedness with others. It was also leveraged by Soane et al. (2012) in their Intellectual, Social, Affective (ISA) engagement model clearly conceptualising SE as an facet of the *state* of engagement emerging from the shared values, attitudes and goals of an employee group. This thesis espouses that SS is the lowest order construct and antecedent which links to the antecedent of SC which can influence the experience of SE in techno workers discussed in detail in the next chapter.

Social support is valuing the effort of others to listen, acknowledge, show care and empathise with techno workers, however the data evidences a more basic need arising from the experiences of techno working namely being seen and acknowledged. For example, TWTM2 comments: “*...its just the acknowledgement that you exist is always,*

*well they care, thats the overriding factor of engagement*". The sentiment shared here is relative to the techno worker feeling that their remoteness affects their ability to 'be seen' or acknowledged at work. This is also reiterated by TWM3 who manages techno workers now but had previously worked remotely himself suggesting that, "*Because you can feel alienated.... the team, manager and I think recognition, just not forgetting about them...they need to be supported you know*". A HR representative HRSE1 further commented that when they themselves work from home on odd occasions they recognise some of the same feelings of lacking acknowledgement and importance through separation and distance: "*Well my feeling is that I'm forgotten about, out of sight out of mind kind of*". Commentary throughout the data refers to the reality of professional isolation and separation, however this is mitigated in a sense by, "having someone show interest in what you do even if it is to check up keeps you engaged" (TWTM2). Clearly the provision of social support through acknowledgement by colleagues and/or managers ensures a techno worker is seen in doing their work and this can directly nurture engagement within their techno working experience.

Social support is important to techno workers as they receive help, advice and information to support them in their roles. Techno worker TW1 comments that "*I get satisfaction just from helping the team*". He goes on to relate a story where he worked with another techno working employee on a video idea and sales solution and the engagement which arose from that experience. Another techno worker, TW5, noted that her manager, "*gave me a couple of solutions that I could work around with and then I feel like, OK, I mean alright, its not as hectic as I thought*". She says, "*when I feel supported I know I can do more, rather than you know, dwelling on the existing problem*". EE is nurtured in techno working employees when they feel they can share their challenges with others and through this support, they can better understand solutions to problems. While they might not have colleagues within proximity, the availability of that support virtually is important, as TW7 comments, "*...when I come across something challenging that I need advice on, I reach out and (my manager) is there.... it's available to me*".

It is evident that techno workers' EE is influenced by others showing concern about their problems and personal issues. For example, TW5, a techno worker comments, "*(My colleague) checks on me, asks if everything is OK, if I need anything. Things like*

*this encourage engagement on my end because I wouldn't simply reach out to anyone to say 'hey look, these are my problems'.* This is also reiterated by another techno worker in sharing of the frustration of working in a techo working environment where he noted that, *"He gave me comfort and he was understanding... (he) understood where I was coming from, and that meant a lot to me"*. Techno workers' engagement is influenced when others reach into their environment providing comfort and a 'serenity' at work. This support shows elements of psychological safety and vulnerability in opening up and sharing with those outside their environment relieving a kind of pressure through sharing, listening and understanding.

Social support was evidenced strongly in the data influencing EE through the sharing of the techno working experience. Techno worker TW2 suggested that, *"by having other people in the same situation you tend to, you know, get on a bit better or you know, understand people's circumstances a bit better and appreciate that better as well"*. It seems that in sharing the similar techno working experience, techno workers were able to provide better support to each other positively influencing their feelings of commitment to feeling engaged. This provision of SS was clearly a benefit as TW2 noted that, *"...we had that kind of commonality between us which just helped us like we would talk to each other knowing that we weren't all in the office...being in the same situation helped"*. Fellow techno worker TWTM2, who also manages other techno workers alludes to this sentiment in his comment, *"When you are by yourself, that lots of people are actually experiencing the exact same thing as you... I thought I was the only one, well I'm not, I understand that now"*. This shows there is clearly comfort gained from others sharing their same experiences and being able to give and receive support to others who have the same challenges and feelings of isolation.

As this thesis engaged an embedded case study approach, the quantitative survey completed by 20 techno workers reflects the same result with social support also rated highest (84%) of the job resources influencing EE, 8.6% more than the next highest influencing job resource, 'organisation climate'. It also rated as the highest antecedent overall in influencing EE the quantitative survey results. This finding is consistent with recent research where social support returned the highest correlation with EE in a quantitative study over other job resources such as rewards and recognition, procedural and distributive fairness and opportunities for learning and development (Saks 2019).

Interestingly, in this same survey, the experience of professional isolation also rated very highly at 80% demonstrating the high relevance for techno workers. Although professional isolation was the only job demand included in the survey, it may be assumed that this significant demand defined by the absence of others is buffered by social resources such as SS.

Whilst this finding is not surprising with SS being perceived as a strong predictor of EE (Saks 2019), it is important to note that SS research has traditionally examined the personal, face-to-face context (Lin 2011). However, there is increasing evidence that social support obtained virtually or online is comparable to that found in face-to-face settings (Lin 2011), which is demonstrated in the techno workers' responses. One techno worker (TW2) expressed this virtual feeling of support when he joined the company, "...I think everyone, yeah, definitely everyone put their arms around me initially". As organisations have increased the implementation of these technology-based communications such as instant messaging, virtual project communities and workplace social networking, many employees are able to build a social relationship and foster interactions with one another suggesting the importance of understanding social support in remote techno working environments (Lin 2011). This mitigates the fact that employees may not meet each other face-to-face.

Although, SS is clearly influential to a techno worker's EE experiences, it is evident that the virtual environment remains secondary to the level of SS experienced in a face-to-face context. For instance, TW2 notes that, "...you can kind of get a feeling of people's stress of maybe they might tell you 'oh look I've got a bit on at the moment' so you can kind of, you get a bit more in person as opposed to working from home where its pretty, you know, 'Ok what do you need'". This statement alludes to the argument that support through electronic media, contains fewer interactional cues and contextual indicators (Rice and Gattiker 2001), leading to a less rich experience of the support offered and perhaps a predominance for task focused support over personal support evident in remote working. This is reiterated by a techno worker manager (TWM1), "...I think its far easier and flexible to be able to have those conversations in a face to face environment with your colleagues on an ad hoc or as needs basis". Whilst SS is perceived to positively influence EE in techno workers, this support also satisfies the human need to belong (Bakker & Demerouti 2007), although across the respondents,

the sentiments show there is agreement that “...*there’s a little more engagement face-to-face*” (HRSE1). The quantitative data supports this finding in that professional isolation was the third most prevalent construct in the techno working environment (80%), just behind SS (82%) and LMX (84%), justifying the significance of the isolation in techno working that is seemingly buffered by social, interpersonal and leadership resources such as LMX and SS.

#### **4.4.1.2 Feedback**

The provision of feedback arose as the second most frequent influencer of EE for techno workers of all the resources identified in the literature, and as reflected in the qualitative descriptive statistics. The personal level resource feedback generated 85 coded references not far behind social support (97 coded references), evidencing the strong influence of feedback in the techno working environment (Figure 4.2 in [Section 4.4.1](#)). These results are also consistent with extant studies based in traditional workplaces which show that job resources such as SS and feedback reduce job demands assuming EE is evoked as a result (Bakker et al. 2007). Feedback is generally performance or task related and as TW6 remarks, “*I think getting feedback during those meetings is what keeps you focused and motivated*”, engaging her in her role.

Feedback seems to be critical to techno workers for a range of reasons but this was a predominant sentiment as revealed by TW5, “...*feedback is very important to know that I am doing the right thing...I worked independently before, the expectations are set only on my numbers...*”. These comments reflect the clarity on expectations being provided (the ‘numbers’), and feedback is needed to guide and navigate tasks and performance to ensure they are on the right track to meet expectations. This is reinforced by TW3, “*I need to know that he’s happy with what I’m doing and I’m heading in the right direction...he steers me, he gives me ideas*”. A techno worker manager similarly notes, “*I don’t know whether its self-confidence or just verification from your manager...maybe you need to give them that reassurance that yep, you’re doing the right thing, good stuff*”. This feedback can foster learning and engagement as TW4 comments, “...*feedback can be positive can be negative...if I can get feedback it must be another trigger to do the best thing*”, indicating a motivation to improve, thereby increasing job competence (Bakker 2011).



Participant responses align with techno workers' perceptions that individuals' overall EE benefits from position recognition and appreciation feedback. For instance, TW8 states that, *"So if I receive word of affirmation that means I'm valued...I get more motivated in doing things...I am able to engage more"*. The higher level of ambiguity caused by being remote is exemplified by one of the techno workers such as TW2 who comments that, *"I suppose the biggest anxiety is not knowing what's going on or not knowing if they're happy with your performance..."*, reinforcing the need for positive affirmation and recognition of role performance. Feedback seems to be more commonly desired from superiors rather than feedback from other colleagues, although some techno workers credited feedback from teams and colleagues such as TW3 who noted that, *"with the broader team, its knowing that I'm doing what they need me to do"*.

Whilst feedback was a common feature influencing EE in techno working environments, the experience and provision of feedback in this context was nuanced. For example, TW4 noted that feedback is more important, *"working separately physically in different places...than in a corporate office environment"*. TW6 similarly noted that, *"The more (feedback) the better...I feel like I don't get enough sometimes, I'm kind of left wondering..."*. This indicates that the isolation of the techno working environment creates greater uncertainty for techno workers and perhaps less opportunities for feedback without a consistent visual reinforcement and affirmation. Justifying an increased focus on the provision of feedback in this context has been noted previously by extant scholars (e.g. Cooper and Kurland's, 2002). Yet, some comments clearly enunciate the quality of feedback received despite working in remote locations such as TW3 who noted that, *"like if we were to go into an office and we sat down and had a chat"*, indicated the importance of closeness to her manager understanding her performance. This comment reflects not only the quality of the feedback per se, but the way the feedback is provided that is important.

Finally, the quantitative survey results suggest that the feedback category was influential at sixty nine per cent compared to other categories, yet was the least influential of all the antecedents consistent with the qualitative results presented. This is an interesting finding and one that may be explained by the data explored above. The quantitative survey questions focused on the types of feedback provided and also included questions on receiving 'enough feedback' and 'sufficient information on the results of the work'.

This may indicate that while feedback was influential, a techno workers' isolation prevents them from receiving quality feedback at regular intervals. The difference in findings between the qualitative and quantitative data could be explained by a study by Cooper and Kurland (2002) that while feedback is important and influential, the separation of a worker from a traditional office reduces the richness of the benefits overall. The frequency and quality of feedback in the results presented can be attributed to the overall relationship strength between a manager and a techno worker. However, feedback quality might also be better explained by LMX discussed shortly in the findings for research question 1.2.

#### **4.4.1.3 Learning and development opportunities**

Learning and development opportunities (L&D) are an organisational level resource. These opportunities can be experienced by employees in the form of personal growth and development, work achievement and the opportunities to learn new things which can be formal or informal. With 66 responses arising from the interviews (Figure 4.2 in [Section 4.4.1](#)), L&D has a reasonable influence on EE in the techno working environment, third highest overall of the job resources. The quantitative data also suggests L&D opportunities, whilst influential, are not as successful as other job resources with the second lowest rating of all the job resources. However, there was a higher incidence of qualitative responses that referred to informal opportunities for L&D (86%) and only nine responses referencing formal opportunities. Informal learning occurs through self directed activities, on the job learning, through performance support, feedback, mentoring and coaching while formal learning opportunities are those which are structured in a classroom or similar online environment.

The majority of informal learning opportunities in the commentary arose from learning on the job, learning through and from others, as well as from self reflection. Learning through others occurred in this context with the direction and guidance from a manager and by sharing ideas with colleagues at meetings via phone or virtually. For instance, TW6's commented that, "*When we're engaged and when we're motivated at team meetings, when we've got something that's new to learn or we've discussed some issues and resolutions and we've talked about successes... we can kind of plan differently or add something in that we haven't done before...*". Online formal learning options are

provided to techno workers and while not featuring heavily in the commentary, some workers suggest that, *“The trainings have been a godsend...I think they’ve been great and that does help foster especially a remote workforce”* (TWTM1). However, techno working may act as a barrier to increased participation in these formal programs as explained by one worker that joining online training can be, *“...a little bit challenging...especially as I’m here by myself”* (TW4). It seems techno workers may be too remote and isolated to ‘share the load’ with others to relieve them from duties while attending training. Shuck et al. (2014) note that learning opportunities don’t need to be robust and formal, engagement is influenced when where there is equal accessibility for involvement ensuring support is proportional to the desired levels of engagement. Lack of access to L&D for techno workers could explain why there is a reduction in EE outputs when compared to employees working in traditional working environments.

The opportunity to learn through others is perhaps diminished in the techno working environment as noted by TW1, *“Where they might be out working together...I kinda miss that. Things you can learn from others just being there with them as opposed to, you know...”*. This type of learning and exposure to other areas of the business, learning about themselves in relation to others provides more meaning and context to their work, influencing EE (Kahn 2010). It seems techno workers feel that face-to-face learning has a greater impact than learning remotely and therefore they seek more opportunities to learn: , *“...many jobs are required to be remote so the chances to get together and exchange a story or attend a conference or an expo is a chance to interact, throw around ideas, hear what other people thinking”* (TWTM2). The data suggested that techno workers perceive fewer opportunities for participating in L&D and other HRD practices such as mentoring, or skills development compared to those working in traditional work environments. This is a perception of inequality in L&D which can negatively influence EE success (Shuck et al. 2011).

It can be understood that whilst L&D opportunities have a reasonable influence on the EE of techno workers, there is an uneven differential in L&D opportunities compared to to their office-based colleagues. This is because techno workers seem to have decreased opportunities to learn through and from others due to their inherent isolation. While formal opportunities are provided, access is difficult together with the perceived lack of support in sharing their remote responsibilities and accountabilities with others.

#### 4.4.1.4 Autonomy

The personal job resource of autonomy was discussed by all except three participants and generated 29 coded references, the second lowest number of responses from participants in the qualitative data indicating a lower influence on a techno workers' level of EE (Figure 4.2 in Section 4.4.1). In these few responses, autonomy appeared to be related to trust, increased flexibility and independence. Self determination theory (SDT, Deci & Ryan 2000), suggests that the psychological need for autonomy and relatedness, together with competence not only provide for healthy functioning, but also influence EE to the degree that the employee's needs for autonomy, competence, and relatedness are satisfied (Ryan & Deci 2012). This balance is evidenced in TWTM2's commentary here;

*“Yeah, it's a pretty good balance in being given independence and autonomy but also checking in. Or the sharing of information or sense of fun, all of those things combined there's always some kind of interaction but there is also a trust piece that goes with that...which does give confidence that you know your boss does trust you to work remote. And at the same time, you appreciate the contact times, whether it's just to joke around or to delve into something that you're working on, how are we tracking, what are the results etc. It's been a pretty good mix, particularly the first four and half years”.*

The autonomy paradox is also reflected in the literature, that while autonomy is recognised as a factor influencing EE (Bakker & Demerouti 2008), it has also been consistently related to burnout (Maslach et al. 2001). Whilst participant narratives favour the autonomy predisposition that it helps create increased EE, the paradox of autonomy was evident in the responses as to whether this led to higher EE or to a higher significance of professional isolation as indicated by strong results in the quantitative survey (80%).

Autonomy in the techno working environment is assumed due to the remote and isolated nature of the work, and the physical and psychological distance from the techno

worker's manager or leader. The manager is deemed to be in the position to provide autonomy through their level of control over the management of tasks and duties (Breevaart et al. 2014). However, while higher levels of autonomy allow employees to control and change their job demands and resources (Leana et al. 2009; Petrou et al. 2012), extreme levels of autonomy result in decreased relatedness and increased professional isolation as evidenced by both the interview responses and quantitative survey results. For instance, TW5 suggested that, "...if I don't pick up the phone and call, I'm pretty much on my own" and, "Its not the greatest thing to be here alone". Similarly, TW3 suggested that being a techno worker "can sometimes be lonely" while HRSE3 noted several times that techno work is like being "on an island". The "freedom to set up my own day", as indicated by TW5 suggests that autonomy can become an isolation mechanism when not punctuated or enriched by relatedness and social support. The quantitative survey returned a relevance rating of 80% for professional isolation, which was the third highest relevance rating for techno workers behind LMX and social support. This may be indicative of the interpersonal antecedents of LMX and social support buffering the inherent isolation of the context. These results align with the suggestion that while autonomy may positively influence EE, greater autonomy does not equal higher EE as captured perfectly by TW8: "autonomy is important, but shouldn't be extreme". It would seem relatedness of SS buffers professional isolation and influences the relationship between the level of autonomy provided and the degree of EE experienced, which is also represented in the quantitative findings.

The qualitative interview responses noted however that techno workers have a predisposition to autonomy perhaps as a contributing factor to EE. For instance, TWM3 suggested that "...they've chosen that career because they like to be out there...you choose to be on the road every day...if you didn't like that, you would change your job", a sentiment shared by HRSE2: "they thrive off that autonomy". However the preference for autonomy and its ability to influence EE relies on on clear expectations and limitations set by the manager. Several techno workers echoed this such as TW8 who noted that "My style is really to independently deliver, so long that I am within the boundaries of the objectives and within the boundaries of what is expected". Similarly, TW7 suggested that, "I like that he gives me the space to do what I need to do, that's probably what I like best...and its very rare we are on different pages". Thus, autonomy needs to be balanced with the right level of support in terms of a manager setting

expectations and checking in as TWTM2 observes: *“I think the combination of autonomy and having someone show interest in what you do, even if it is to check up, does keep you engaged”*.

Although techno working has a predilection for autonomy, one worker reported a lack of autonomy due to the low quality relationship with her manager. Participant TW5 noted that her decisions were questioned, that she had to have her actions and decisions confirmed by her manager and there was little trust: *“He tried to micromanage me, I think he doesn’t understand what I’m trying to do here”*. She felt frustrated, demotivated and, *“bullied into doing things”*. This lack of autonomy had a negative affect on her engagement, however it is evident that the low quality of the relationship with her manager, a low LMX relationship, resulted in a lower provision of resources such as autonomy, which is an outcome substantiated in the literature (Breevaart et al. 2014). This is relevant to research question 1.2.

Autonomy is one of the most widely studied job resources and a common antecedent in the EE literature (Bakker et al. 2005; Bailey et al. 2017). It can also lead to the higher order construct of ownership (accountability), as evidenced in the qualitative data and discussed in [Section 4.4.3.5](#). However, whilst autonomy is perceived to have a positive influence on the EE experiences of techno workers, the level of autonomy provided needs to be balanced with the amount of social and managerial support available before autonomy per se has a detrimental affect on EE. The quantitative findings show that professional isolation (80%) was only slightly more significant in the techno working environment than autonomy (75%) and both were very significant demonstrating the importance of managing the remote nature of this working environment with other interpersonal and social resources.

#### **4.4.1.5 Organisation climate**

The organisational level resource of organisation climate didn’t return a strong significance for techno workers in the qualitative data with only 14 responses in the interviews, the lowest of all the predetermined antecedents (Figure 4.2 in [Section 4.4.1](#)). Techno workers only gained a sporadic appreciation of the organisation climate when they were involved in direct interactions with others as suggested by TW7: *“...the only*

*time we're experiencing any energy exchange is when we're in a meeting.... I don't really experience it*". Since organisation climate is, "seen as the tangible and observable practices, systems and outcomes" of an organisation (Langford 2009 p.186), the organisation climate or atmosphere is not readily available or tangible to techno workers because of the physical isolation. For instance, TWTM2 notes that "...*the story telling comes out of the head office or from the management team*", who are more commonly located in head or satellite offices.

Data suggests that the organisation climate is experienced through social and interpersonal interactions (Lindstrom et al. 1997). The interpretation of this antecedent did not seem to resonate as strongly as other social and interpersonal antecedents such as SS, LMX and social capital which all relied on the strength of interpersonal connection, shared values and quality of relationships. Organisation climate is a subset of organisation culture (Langford 2009), and culture had a higher response level than climate with 20 responses compared to 14. Techno workers might more consistently experience the culture of the company over time because of the many interactions experienced. In contrast, the intermittent interaction of techno workers did not facilitate better organisation climate experiences to any great extent. One participant, TWTM2 suggested that the climate exchange "*does go both ways*", and you can "*always get a feel just through voice tone...or the way that emails read*". So there is acknowledgement of climate influence among participants. For instance, TWM3 who managed techno workers suggested that, "*I knew people who were getting stressed, you could feel it...not just in the office, but you could tell*". He notes that stress was creating disengagement, and therefore it can be perceived that organisation climate had both a positive and negative influence on the level of engagement experienced.

The quantitative survey by comparison returned the second highest response for organisation climate (75.4%), only eight percent lower than the most significant antecedent (SS) indicating that climate may have a strong influence on EE across techno workers. Interestingly, the top two antecedent themes emerging from the literature both reflect the collective nature of working. The quantitative measures for SS and organisation climate refer to the team and other colleagues more so than other measures such as learning and development opportunities, feedback and autonomy. For example, one question posited, "The work climate in my team is relaxed and friendly", referring

to how an employee felt among the team, relative to others. These findings suggest that antecedents with a collective, social or interpersonal element are more significant for techno workers, and may have a greater influence on their EE commitment. The anomolie in results between the qualitative and quantitative data sets may also be explained from the inductive nature of the qualitative interviews where the social and interpersonal antecedent themes emerged strongest. These themes featured more heavily than organisation climate in the qualitative approach however did not appear in the quantitative survey which limited participants to only those antecedent themes emerging from the literature review.

#### **4.4.1.6 Summary of research question 1.1**

Of all the job resources investigated in research question 1.1, the interpersonal resource of SS returned the highest number of responses with participants indicating that SS helped to mitigate the separation and isolation experiences of techno working influencing EE. The personal resource of feedback, which also involves an element of perceived 'support' to perform one's role, received the second highest number of responses with learning and development opportunities returning a meaningful response frequency of 66. The findings in the data reflect the three dimensions of self determination theory (SDT); relatedness, competence and autonomy. The relatedness is provided for by social support, competence by feedback and learning and development opportunities, and autonomy by the autonomous nature of the role (Deci & Ryan 2000). Autonomy did not return a meaningful frequency of responses presumably as it embodies the techno working role. However, the balanced combination of the three highest responses align with the proposition of SDT (as introduced in [Section 4.4.1.4](#)), that states that the basic needs of employees are competence, relatedness and autonomy (Deci & Ryan 2000). The greater the extent to which these needs are met by a leader, the higher EE is possible (Schaufeli 2015).

#### **4.4.2 Research question 1.2**

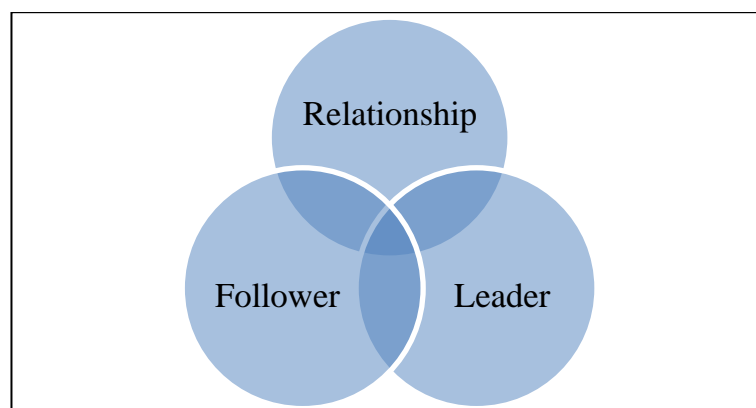
RQ1.2: What influence does *leader-member exchange* have on a techno worker's experience of employee engagement?



This research question focuses on the antecedent of LMX which emerged from the literature review in Chapter two. LMX returned the highest amount of responses from participants in the qualitative interviews of all EE antecedents, indicating it is perceived to have the greatest influence on techno workers' EE. LMX had more than double the responses (218) of social support, the next most frequent antecedent with 97 responses. This demonstrates that while connecting the techno worker to others in the organisation is important, the quality of the leader and direct report relationships and connection are perceived as critical for achieving EE. For instance, one organisation executive noted that, *"I think the manager is huge for (techno workers) because you know the manager is typically the most important tether back to the mothership"* (HRSE2). From a SET perspective, when techno workers experience the benefits of a high quality relationships, feeling backed, trusted and respected, they reciprocate this commitment by demonstrating high EE and its associated outcomes (Cropanzano & Mitchell 2005).

Newer leadership theories such as LMX have evolved beyond the traditional typology of characteristic-based leadership which recognises traits, behaviours and styles (Graen & Uhl-Bien 1995). With this in mind, this analysis focused on the acknowledgement of other levels of leadership operation such as the follower and relationship in what is a more comprehensive representation of the leadership process as described in Figure 4.3 (Graen & Uhl-Bien 1995). The analysis of LMX in the data identified characteristics of dyadic relationships (e.g. trust, respect, mutual obligation) and reciprocal influence between leaders and followers (Graen & Uhl-Bien 1995).

**Figure 4.3 The leader-member exchange domains of leadership**



Source: Graen & Uhl-Bien 1995.

The key themes arising from the 218 responses related to trust, respect, availability, openly sharing, knowing and understanding each other, rapport, being on the ‘same page’ and the manager seeing potential in the techno worker. Several comments illustrated these points: *“The fact he has spent the time to understand what makes me tick...he knows what will drive me”* (TWTM1), while TW3 noted that *“...because we just talk freely and that’s good because I know whatever I say or do, he’s (the manager) not going to dislike me at the end of the day...you have to get to like that person, you have to respect them, and you have to trust them”*. LMX was also the only antecedent that all sample groups of techno workers, managers and HR/Executives achieved double digit responses indicative of the importance of the dyadic relationships. It was evident that the quality of relationship is just as important to the managers of techno workers:

*“I think trust is a big thing when you’ve got people working remote. You’ve got to make sure that they’re getting up and doing the right thing for the business... he might do things differently or do things maybe not exactly the way I would, but I know he’s getting up and doing something you know”* (TWM3).

Whilst reciprocity is at play here, a leaders’ work engagement can have a meaningful impact on that of their followers (Guterman et al. 2017). For instance, a manager of techno workers who also worked remotely himself noted the reciprocal nature of building relationship quality:

*“That goes both ways, not just from (my manager) down or the team up, you know its both. I can get just as engaged from the team’s response as I do from (my manager) being my boss, in fact probably more so. Because you spend more time with those guys and I get my motiation from them”* (TWTM1).

Availability, accessibility and approachability were strong themes throughout the data with all participant comments reflecting the immediacy of the traditional face-to-face working environment that needed to be repeated within the techno working virtual environment. For instance, techno working manager TWTM1 commented that, *“I’m always available, to be always available, I think that’s important...just to say ‘hey I’m*

*there if you've got a problem, reach out at some point, even if it's after hours, there's always a text message and I can call you back*". This is reiterated by techno worker TW7 who suggested that *"just the phone calls offering me advice from time to time is great, whether I ask for it or not...his (manager) input, has value to me"*.

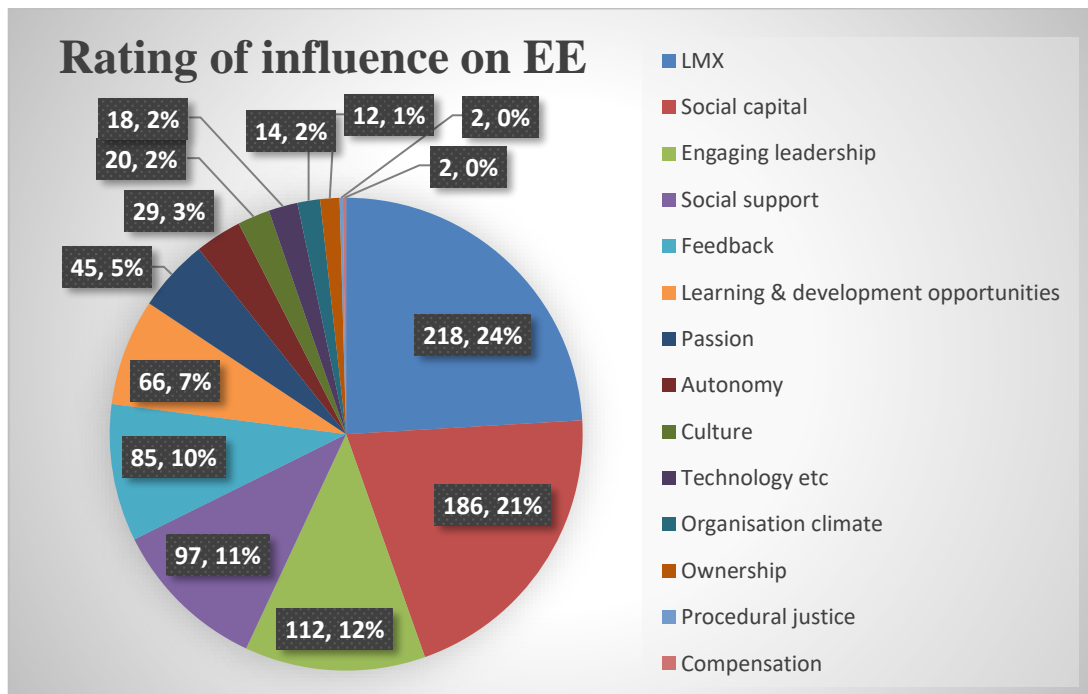
The data also revealed that high quality LMX relationships seem to act as a conduit in connecting techno workers more broadly to their teams and other colleagues, as well as to the organisation. This finding is consistent with current research in that high quality LMX relationships provide for a more resourceful work environment for employees in terms of social support (Breevart et al. 2014). One organisation executive responded that he understood his role in connecting different groups of employees to each other through his relationships. A techno worker manager and remote worker TWTM1 noted similarly, *"I do try to drive that we're all in this together and that the team support each other, reach out"*. Another techno worker TW7 reflects: *"I think the regular calls were really good...just giving me that sense of belonging I suppose, like belonging to the company"*, demonstrating the good rapport with his manager and regular interaction not only has positive outcomes for EE, but through this relationship quality he experiences a greater connection to his employing organisation. It was also evident with another techno worker that she didn't feel she had a quality relationship with her leader with her responses highlighting the degree of micro-management, distrust and a lack of rapport. Interestingly, the data suggests her connections with her broader team were not as strong either nor were they supported or initiated by her manager.

The quantitative survey returned similarly positive results with LMX the second highest influence for techno workers (82%), only two percent less than the other interpersonal antecedent of social support (84%). Social support includes support from managers as well as colleagues, whereas LMX relates to the leader-member dyadic relationship only. The importance of LMX however has been proven to increase the provision of other social resources (Breevart et al. 2014). The LMX quality of relationship is the only formal reporting relationship a techno worker experiences that can determine how engaged they are consistent with the research studies outlined in [Section 2.6.9](#).

#### **4.4.3 Antecedent themes emerging from the data for research question one**

Due to the inductive nature of the primary data collection methodology, themes emerging from the data have become evident. The key themes emerging from the data in order of their frequency rating include social capital, engaging leadership, passion and culture (discussed next). There were also a number of less significant themes which will be collated and discussed finally as contingency factors that influenced the relationship between antecedents and outcomes including compensation, policies and procedural justice, technology and equipment, and ownership. Figure 4.4 (below) includes all antecedent themes emerging from both the literature review and data for research question one.

**Figure 4.4 All antecedent themes for research question one**



#### 4.4.3.1 Social capital

Social capital (SC) emerged as having the second most significant influence on EE in the techno working environment with 21% of responses; LMX had the highest response with 24% of overall influence (Figure 4.4). Interestingly, the top four responses were all interpersonal - third engaging leadership which is unique and separate to LMX, fourth social support. However both LMX and SC are unique to the other constructs, distinguished by their strength and quality of the connection and the reciprocal nature of the relationships. With respect to LMX, the quality of the dyadic nature of the

relationship is critical, however with SC, the strength and quality of the relationship network of the techno worker is the antecedent for EE. The “high trust and facilitating access to resources is both a potential source and effect of SC, along with norms of reciprocity that provide privileged access to resources in the expectation that these will be repaid” (Portes 1998 p. 7).

As noted in [Section 4.4.1.1](#), SC emerges in the techno working environment from the diffusion of online and virtual SS (Lin 2011), becoming a higher order antecedent of EE. Its higher order nature is constituted by three dimensions; structural embeddedness (the properties of the social system and of the network relations as a whole), relational embeddedness (personal relationships people have developed with each other through a history of interactions), and a cognitive dimension (resources providing shared representations, interpretations, and systems of meaning among parties) (Nahapiet & Ghoshal 1998 p. 243-244). Structural embeddedness arises from the obligations, gratitude, respect and trust from institutional membership in a social unit (Coleman 1988) with evidence of this reflected in participant responses:

*“If I didn’t gel with the people in the team, I don’t know whether I’d be able to draw the productivity out of them...that we’re all similar from the core, whether that means we sort of just get it and the rest of it just flows. There’s something like there is a bit of glue in between us that makes it so much easier to talk, you want to go to work and strive to get them to step up and keep going” (TWTM1).*

This participant describes the strength of their team network as the ‘glue’ between them, making working together easier, creating a feeling of EE resulting in ‘productivity’ and ‘stepping up’. There are also numerous references to the relatedness of shared respect, trust and membership as described by HRSE1, whose comment refers to her experiences of working with and supporting techno workers, “*You feel free to communicate with your manager and your team and that everyone’s kind of on the same page so it’s speaking each other’s languages so to speak*”. This strength of relationship and relational embeddedness is also referenced by participants who used the word ‘family’ to describe the strength of the SC bonds, such as TW1 who noted that “*A sense of, for*

*lack of a better word, family. It's sort of an involvement...that's on a more personal level".*

Similarly, TW1 commented that, *"I don't feel like there's anyone on the outer or I don't feel like I don't relate to my team, my peers. Obviously some more than others but we're all kind of on the same page with a lot of things"*. His comment reflects not only the strength and quality of shared connections in his team/network, but also relates strongly to the same 'in group, out group' concept evident in LMX relationships. This is where the varied relationships between a leader and number of different employees can result in some employees being part of an 'out group' who have less than desirable attitudes and relational quality with the leader resulting in diminished provision of resources compared to their 'in group' counterparts (Graen & Uhl-Bien 1995). The strength of SC in this 'in group' of techno workers is described by TWM3 as, *"It's probably too good, sometimes they probably need to let other people in...they can get a bit clingy to each other sometimes and maybe you know, they need to let other people in"*. It seems plausible that the same grouping and banding together of employees would occur with SC as it would with LMX due to their relational similarities, although with SC occurring in a networked capacity rather than a dyadic one.

The nature of the shared systems of meaning are captured in numerous comments from participants including TW1 who noted that, *"the conferences re-instil that sameness, that you know, we're all one, we're on the same page, same sort of journey"*. Many reference the 'connection' and 'commitment' shared across their networks; one techno manager, TWM2, suggested that his techno workers *"feel the same amount of passion...I think people can feed off each other's passion as well"*. While another techno worker manager, TWM1, mirrored the comment of his direct report: *"Nah mate, we're all in this together"*, showing a sense of teamwork, understanding of the shared obligation and meaning of their work.

Participants also noted that building SC occurred not only through work related informational SC, but also 'watercooler' conversation. For instance, TWTM1 suggested that, *"communication has to be way up there...the information from the top starting to filter down"*. Participants noted the social, non-work-related communications and interactions such as *"dialling in for a beer on a Friday"* as TWTM2 commented, or

TW8 who noted that *“when we talk, its holistic it’s not just about work...he asks how am I doing, my family...”*. The need for techno workers to connect and have their colleagues and network really know them, understand them and hear them, enables the stronger connections of social capital to be built. This is summed up by TW3 who suggested that *“You can work alongside them in the trenches and if you send out an email, they don’t take it personally because they know who you are fundamentally”*.

Techno workers who experienced greater social capital had the ability to draw upon further resources similar to the “ability of actors to secure benefits by virtue of membership in social networks or other social structures” (Portes 1998 p. 6). These benefits include having ‘a lot of fun at work’, ‘chatting through challenges’ and gaining support, ‘expanding the group you would usually communicate through greater connectivity with others, receiving more company information and direction, and more opportunities to learn from others to ‘share advice and tips’. Moreover, positive LMX relationships are perceived as a conduit for greater job resources aligned with extant research (Breevart et al. 2014), while stronger SC outcomes helped to increase the overall EE of the techno workers’ experience.

However, it is also similarly important to not blur SC with similar but lower order constructs of team climate and collaboration. These job resources, whilst positively influencing EE, return weaker relationships with EE than SS (Kaiser et al. 2020), whilst are seemingly similar to SC. Team climate and collaboration may be considered lower order constructs than SC as they lack the reciprocal nature and obligation of SC as well as the strength and quality of connection. That is, both team climate and collaboration can occur with transactional interaction but limited relational connection. SC may also mitigate professional isolation by allowing techno workers to feel ‘in the loop’ and part of ‘informal interaction’ which are measures used to define professional isolation. Therefore, the strength and quality of relationships in a techno worker’s network and team are critical to EE outcomes while building social capital in techno working remote environments can also lead to greater benefits through greater access to job resources for those who are part of the shared network.

#### **4.4.3.2 Engaging leadership**

Leadership is one of the least studied antecedents of EE across the literature (Kaiser et al. (2020), although ‘engaging’ leadership emerged from the data of the qualitative interviews with 112 responses, the third highest response rating overall (Figure 4.4 in [Section 4.4.3](#)). Whilst there are many different theories and frameworks of leadership such as trait, behavioural, charismatic, authentic and transformational leadership (Carasco-Saul et al. 2015), specifically ‘engaging leadership’ emerged in the participants’ responses. LMX has been identified separately in the literature and in this thesis because of its unique dyadic relationship construct. Engaging leadership assumes that *engaging* leaders fulfill basic psychological needs of their employees by performing certain leadership behaviours namely strengthening, empowering, connecting and inspiring which increase their follower’s level of engagement (Schaufeli 2015). Effectively, the basic needs of competence, relatedness and autonomy are fulfilled through this unique concept of leadership (Schaufeli 2015) which was exemplified in the participants’ commentary. The comments referred to the clarification of expectations and direction (giving rise to autonomy), coaching, recognition and feedback (enabling competence) and a leader’s ability to connect a techno worker to other team members and colleagues (providing relatedness). Whilst these may be actions and attributes of leaders who exhibit high quality LMX relationships with their followers, the commentary in this category did not specifically refer to the relationship or relationship quality. Hence the notion of engaging leadership was different and not classified as LMX.

Data themes appear to align well with the literature review as noted by one participant: *“My leader gave me a clear vision of where we’re going and how we’re going to do it. He helps me think through stuff, helps you settle down”* (TW4). The clarity of expectations and role clarity has previously been previously referred to by scholars as leaders effectively engaging employees through clarifying roles (Alarcon et al. 2010). For instance, some participants suggested that, *“If a manager can support them with direction, development and guidance on how to go about tasks, they can put that into action and deliver the results”* (TWM2). This comment references the importance of guidance over tasks which was an important leadership behavioural variable found by Xu and Thomas (2011) to enable autonomy and competence that positively influences EE outcomes. Techno workers also felt that the coaching support they received from their managers facilitated EE enabling them to progress through difficulties and



challenges as noted by one participant: *“When I discussed it with him, (he) gave me a couple of solutions that I could work around with, and then I felt like OK”* (TW5). Similarly, TW4 when asked how his leader influenced his own level of engagement noted that *“...he’s (my manager) really analytic, and always asks me the question why. But that’s my favourite question, why”*. These sentiments allude to an engaging leadership coaching style focused on competence and performance improvement rather than elements of care offered through social support.

It is unsurprising that the only formalised reporting relationship into the techno working environment produced a high number of responses, even while formal reporting is not a relational aspect of LMX. HRSE2 describes the importance of this relationship in her comment, *“I think manager (sic) is huge for people in the field”*. In a similar vein, another techno worker relayed a comment from a previous role where they didn’t have that formalised reporting relationship as a techno worker: *“There was no real manager...engagement started to drop off. I started to get bored because you don’t have that direct manager or line manager that you can have daily interaction with”*. They were clearly disengaged which influenced their commitment and performance as discussed by Schaufeli (2015).

Extant scholars note that leadership in general significantly affects employees’ work engagement directly and may mediate relationships (Carasco-Saul et al. 2015). The evidence of engaging leadership as an antecedent of EE within the techno working environment is thus less surprising.

#### **4.4.3.3 Passion**

A techno workers passion directed towards the organisation and associated artefacts returned 45 responses (Figure 4.4 in [Section 4.4.3](#)). Anecdotally, it is accepted that passionate employees are engaged employees (Hagel et al. 2014), although whilst research is yet to fully understand the relationship between passion and EE (Birkeland & Buch 2015), passion has been linked to higher EE outcomes (Ho & Astakhova 2018). Job passion, which can be defined as an employee’s strong inclination for their job role that defines who the individual is (Vallerand et al. 2014), can appear in two forms. The first is the harmonious form stemming from a voluntary internalisation of the job that is

free of external contingencies such as rewards and social acceptance, where employees are freely engaged which facilitates positive emotions and affect (Vallerand et al. 2014). Or the second form of obsessive passion which includes liking or loving one's job because of those contingencies such as rewards, recognition and self-esteem (Vallerand et al. 2014). Both forms were evident in the data. However, four themes emerged under the category of passion; 1) personal alignment of purpose, values and vision, 2) role identity, 3) enjoying the job, and 4) competitive alignment where techno workers were excited by the company performance, growth and market position.

The Savry company operates in a 'trending' and emergent industry which has attracted employees and techno workers that have a 'passion' for their industry, brand and products. This is evident in such comments as, *"I love to sell a product that I believe in and that, you know, I am involved in and passionate about"* says TW1. Similarly, TW3 suggested that, *"The industry is a big draw card for me, that we sell products that change people's lives, literally change people's lives for the better"*, which reflects a sense of alignment of purpose in her work that encourages higher engagement. This sentiment was shared by TWM1: *".... people...who are prepared to have a go and passionate about trying to make a difference"*. The quality of the job and the investment in customers for some participants was *"basically to the passion I have for the brand, then how I care so much about what people think and what is the brand image out there"* (TW5).

Savry operate in a results-based industry in that their products help customers achieve their desired health and fitness results. This results bias is replicated in the competitive nature of their business and as the data illustrates. Techno workers who exhibit obsessive passion are concerned with their own sales results, the company performance, growth and market position. Twenty of the 44 responses suggested that passion was linked with growth: *"I think a desire for success, and I will say it's a lot easier to engage when you're in a growing organisation...our growth brings engagement"* (TWM3). Similarly, TWTM1 noted that what drives his engagement is, *"A willingness to win and succeed and achieve results"* at the company, clearly indicating obsessive passion.

Participant commentary reflected the "great level of passion and care for business results" (TWM1), *"doing something that I'm extremely passionate about in my personal*

life” (TW1), and the passion shown by the team, “*creating a really engaging atmosphere*” (HRSE3). Savry can leverage the passion of their techno workers to influence EE, which is a role-fit determination that can be made during the recruitment process and managed throughout the employment contract.

#### **4.4.3.4 Culture**

Organisation culture can be referred to as the unique systems, symbols and behaviours of an organisation or similarly the core values, assumptions, understandings and norms shared by the members of an organisation (Lopez-Martin & Topa 2019). The influence of cultures on EE and EE outcomes have been investigated in the literature, for example, work family cultures (Maurer et al. 2018), supportive organisational cultures (Wollard & Shuck 2011) and safety cultures (e.g. Sexton et al. 2018). However, organisation culture is not as heavily investigated (Lopez-Martin & Topa 2019). Twenty participants suggested that organisation culture influenced the EE of techno workers (Figure 4.4 in [Section 4.4.3](#)). However, what was most interesting in participant responses was the intersection between passion, culture and social capital.

Nearly all 20 participants reflected how culture influenced engagement:

*“Ultimately its culture, probably such a cliché kind of word but I guess it’s, firstly a love for the brands...working for such a cool company...but that only gets you so far and it becomes about the people I work for and the then direction the company goes in” (TW1).*

Participant TW1 was passionate about the industry, about the brand and company reflecting an obsessive passion for competition and success (‘direction the company goes in’), and the shared norms and assumptions held by all employees as a determinant of culture. This sentiment is represented in much of commentary where job passion has become the cultural norm for techno workers reflecting scholarly findings (Vallerand et al. 2014). Participant comments related to people and culture were equally popular:

*“I know people probably use the word a lot, but culture...the way people interact, the way that people respect each other, the way people may well consider you to be a friend of family, not just a colleague” (TWTM2).*

These references to the ‘people’, are indicative of the strong social relationships and connections typical of social capital, such as respect and the importance and closeness of family. A culture of passion particularly obsessive passion influences techno workers’ EE experiences which positively influences their performance; it may also influence organisation effectiveness (Wollard & Shuck 2011), although this has not been tested in this thesis.

It is evident from the participant responses that the culture, passion for the industry, brand and company, and the level of social capital evident leads to a greater attachment of employees to their roles and to each other. This strengthens the social capital networks where techno workers feel more like family. The intersection of passion and social capital acknowledges their role as lower order constructs and contributors to culture. However, the responses were interpreted at face value and coded accordingly. However, the importance and measures of culture are not perceived uniformly across the organisation and are outside the scope of this thesis. For the purposes of this thesis, passion, culture and social capital are considered unique antecedents that influence the EE experiences of techno workers.

#### **4.4.3.5 Miscellaneous themes and responses to research question one**

Further themes emerged from the primary data although the frequencies of responses were insignificant. They are represented here in summary form only. These emergent themes represent the antecedents of technology, equipment and tools, ownership, compensation, and policies and procedural justice which have also been noted in extant literature as job resources (Bailey et al. 2015; Karasek 1985; Karasek et al. 1998; Bakker 2011; Bakker et al. 2008; Schaufeli et al. 2013).

**Technology, equipment and tools:** This antecedent theme appeared in 18 responses and understandably is considered important to techno workers and their colleagues in

order to support their remote working. However, it was evident that the technology and equipment in itself did not influence EE experiences at the same level as interactions, connections and work activities.

**Ownership:** Twelve responses noted ownership as critical to the EE of techno workers. These responses built on the autonomy of determining work tasks and routines; ownership and accountability was important in reaching theirs and the company's goals within established boundaries.

**Compensation:** Only two responses emerged in the data for compensation which was surprising considering the higher number of responses for obsessive passion aligned to recognition and success. These two responses referred to the importance of adequate compensation, that extra bonuses and incentives were influential factors in achieving EE outcomes.

**Policies and procedural justice:** Here, only two responses were noted from the same techno worker manager. The development of policies to fairly and equitably manage techno workers in remote environment were important. Overall however, policies and procedural justice were not important to techno worker EE experiences.

#### **4.4.4 Summary of responses related to research question one**

Of the 906 responses from the qualitative interviews, 56% of those were consistent with themes emerging from the literature review. The additional 44% of responses were interpreted from the qualitative data set (Figure 4.4 in [Section 4.4.3](#)). LMX overall was perceived to be the most influential antecedent of EE experiences. Social capital and engaging leadership second and third respectively were also very important. Overall, the antecedents with the four highest frequencies were interpersonal/social. This assumes that relationships, support, and connection to others are significant factors that contribute to higher EE experiences within techno working environments. The frequencies of all EE antecedent responses were featured in Figure 4.4 in [Section 4.4.3](#). The quantitative survey results previously illustrated in Table 4.5 in [Section 4.3.2](#) were used to expand on the qualitative findings for research question one.

## 4.5 Research question two (RQ2)

Section 4.5 focuses on the analysis of the data relative to the second research question concerning techno workers' experiences of the state of EE:

RQ2: How do techno workers experience the *state of employee engagement*?

This research question included two sub questions, one which investigated a techno workers' experience of job engagement (JE) and one that focused on a techno workers' experience of organisation engagement (OE):

RQ2.1: What is a techno worker's experience of *job engagement*?

RQ2.2: What is a techno worker's experience of *organisation engagement*?

This research question and sub questions are consistent with the aim of this thesis which explores the EE experiences of techno workers in remote working environments. The analysis of data for this broader question identified not only the established themes from the literature review, JE and OE, but also emergent themes from the data pertaining to the state of EE explored by this question. The themes emerging from the literature review and the data from the analysis of the findings are provided in Table 4.9. This table also details the overall frequencies of the different experiences of the EE states of techno workers.

**Table 4-9 Research question two: experiences of employee engagement themes emerging from the literature review and data**

Emerging from literature review or data	Themes	Quotes	Frequency of responses
Literature	<b>Job engagement</b> – focus of an employee’s engagement directed towards their job.	<p><i>“The passion brought me in and made me want to work, but the next thing will be the value that I add that keeps me in the job” (TW5)</i></p> <p><i>“Job (engagement) is much more like personal achievement. Not the sense of goal of corporation...but my own personal happiness” (TW4)</i></p>	37
Literature	<b>Organisation engagement</b> – focus of an employee’s engagement directed towards the organisation.	<p><i>“...when people ask you these types of questions, ‘who do you work for, what’s work like?’ the way you respond is probably well and truly on the positive side, you tell a good story about your brand, your company and probably more so the people you work with” (TWTM2)</i></p> <p><i>“the opportunity to experience other parts of our business in other regions” (HRSE3)</i></p>	61
Data	<b>Trait engagement</b> – is not a state per se, instead a predisposition for engagement based on an employee’s psychological traits, “inclination or orientation to experience the world from a particular vantage point” (Macey & Schneider 2008 p. 5).	<p><i>“I’m a fairly results driven person which kind of feeds into what I think is being engaged” (TWTM1)</i></p> <p><i>“The specific role that I’m in is very kind of numbers structured, which kind of matches my personality and what I’m after” (TW2)</i></p>	15
Data	<p><b>Social engagement</b> - expression of self-in-role through the experience of connectedness with others (Kahn 1990) established through shared values, attitudes and goals of an employee group (Soane et al. 2012).</p> <p>Harnessing social capital towards the delivery of a shared goal or outcome.</p>	<p><i>“Just a feeling of being part of a team that’s fun to work with, that has fun together, respects one another and you know, comes to work every day, able to take on the next challenge and roll with the punches” (HRSE2)</i></p> <p><i>“The most notable times when you experience engagement is when people feel like they’re part of a project...to be part of that...the end result is something you’ve helped create” (TWTM2)</i></p> <p><i>“By having someone engaged its more of a team environment where you’re coming together and trying to achieve the same result because you’re engaged...not being engaged you’re probably not looking towards that common goal with your colleagues” (TW2)</i></p>	48
<b>TOTAL</b>			<b>161</b>

As part of the semi structured interview process, participants were asked about how they experienced the state of EE aligned with research question two. The frequencies of their

individual responses and group responses are captured in Table 4.10 (below). ‘TW’ refers to the ‘Techno Worker’ participant group, TWM, refers to the group of Techno Worker Managers. TWTM refers to the Techno Workers who are also Techno Worker Managers and finally HRSE refers to the participant group comprising of HR representatives and senior executives. The numbers in each line relate to how many times that participant responded to a construct. The SUM refers to the summation of responses for each participant and the sum of the sample group is the total summation of the number of responses from that particular participant group displayed for comparative purposes.

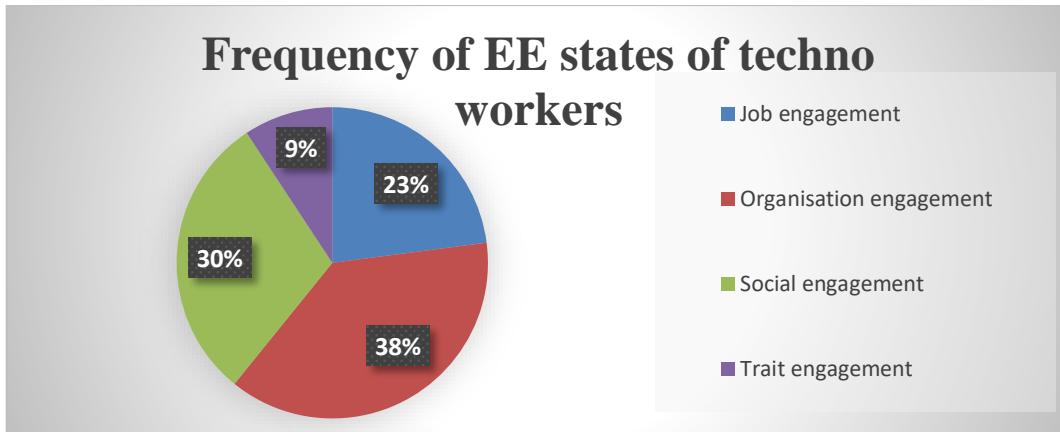
**Table 4-10 Frequency of responses by participant for research question two**

<b>RQ2 Participant</b>	<b>Job engagement</b>	<b>Organisation engagement</b>	<b>Social engagement</b>	<b>Trait engagement</b>	<b>SUM</b>	<b>SUM of sample group</b>
<b>TW1</b>	6	13	7	0	26	94
<b>TW2</b>	1	6	5	1	13	
<b>TW3</b>	4	5	6	0	15	
<b>TW4</b>	3	4	4	1	12	
<b>TW5</b>	3	3	0	0	6	
<b>TW6</b>	2	2	2	1	7	
<b>TW7</b>	1	5	4	0	10	
<b>TW8</b>	0	4	1	0	5	
<b>TWM1</b>	2	1	0	0	3	18
<b>TWM2</b>	1	3	0	1	5	
<b>TWM3</b>	5	4	0	1	10	
<b>TWTM1</b>	4	1	6	4	15	29
<b>TWTM2</b>	3	5	5	1	14	
<b>HRSE1</b>	0	2	4	0	6	20
<b>HRSE2</b>	1	0	2	2	5	
<b>HRSE3</b>	1	3	2	3	9	
<b>Total</b>	<b>37</b>	<b>61</b>	<b>48</b>	<b>15</b>	<b>161</b>	<b>161</b>

Figure 4.5 below captures the participant’s frequency of responses related to the experience of EE within the techno working environment derived from the qualitative investigation. This illustrates the importance of each EE state within a techno working context.



**Figure 4.5 Frequency of all employee engagement states of techno workers**



#### **4.5.1 Research question 2.1**

RQ2.1: What is a techno worker's experience of *job engagement*?

This research question focuses on the state of JE discussed in [Section 2.5.1](#). Job engagement returned the lowest number of responses (37) from the two EE states and the second lowest number of responses overall (23%). This is indicative of its lower relevance to techno workers (Figure 4.5 above). While most research has investigated work and job engagement as a singular EE state (Saks 2019), alternative states of EE provide greater utility in this remote context. Participants noted how JE meant focusing on, and expressing themselves in their role (Kahn 1990) such as 'being motivated in your job', how they 'turn up to work and extend themselves' and 'achieving in their role'. TW1 described JE as not having to experience, "*Groundhog Day*", where doing the same thing every day would get "*extremely boring pretty quick*" if he wasn't engaged. TWTM2 reflected on JE as "*naturally more buzzy (alive, energised) about what you do*", and, "*not just feeling like you're going to work but actually doing something productive in that time*".

The experience of JE was closely aligned to the type of work performed rather than in collaboration with others:

*"...that comes from working by myself in one country maybe. Because I need to do more things, not just one function...I need*

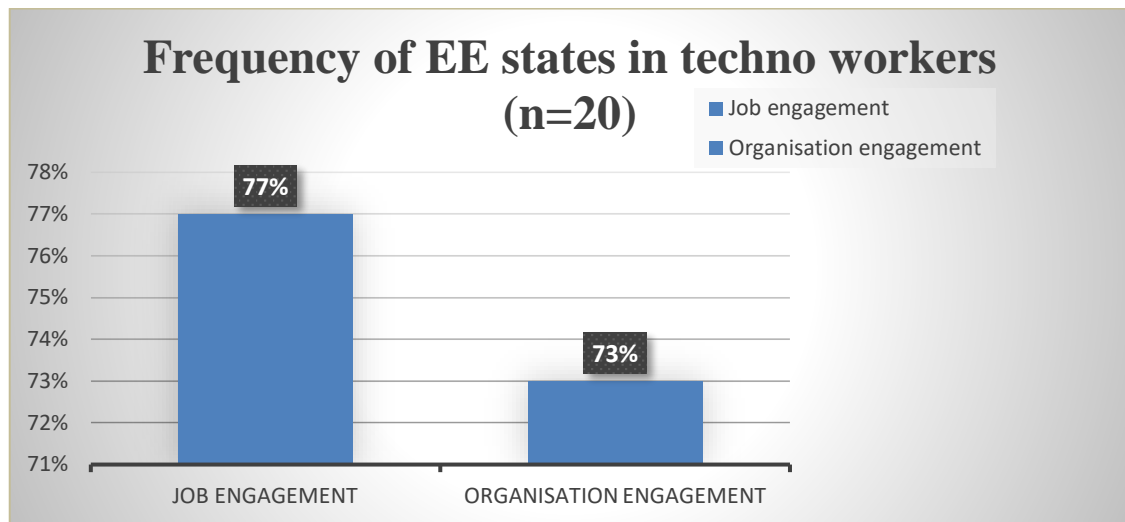
*to take care of all things...the job is much more like a personal achievement” (TWTM1).*

Much JE commentary related to techno workers involving themselves in their personal work tasks such as *“I worked really hard to tick the boxes and got some excellent feedback...a good example of being highly engaged”* (TW7). Higher JE was evident in selling products where workers had a personal connection with and passion *“like a kid in a candy shop when we’ve got new products, its always exciting”* (TW1). This notion of JE being specific to individual work tasks is also referred to by a manager as their demonstration *“of the level of ownership in their roles”* (TWM2). Other managers reflected on the JE of workers as, *“their all rounded approach and comfort level within their role... contributing meaningfully in their role...so that they’re feeling comfortable to assess and make their own decisions”* (TWM1). Participants were cognisant of JE as:

*“...being engaged with the job that I do in itself, so any sort of training I get or information I’m given, products we use...what we sell and what we talk about on a day to day basis”* (TW6).

The quantitative survey by comparison returned a different outcome with 77% of responses related to JE, only slightly higher than the 73% that were returned for OE which is detailed in Figure 4.6 (below). This quantitative result does not explain the richness of the qualitative finding as the participants could only respond to the two EE states in the quantitative survey. It may be explained by the participants interpretation of the questions which may not have been representative of the true experience of organisation engagement. Although this finding supports Saks’ suggestion that, *“more research is needed on organisation engagement to better understand how it differs from work and job engagement”* (2019 p. 34). The primary qualitative data provided a richer understanding of the employee’s focus of their engagement on the organisation and other EE states, therefore it is considered as more representative of techno workers’ actual experiences.

**Figure 4.6 Results of the quantitative survey of the employee engagement states of techno workers**



From the responses to research question 2.1, it is concluded that the state of JE relates exclusively to the individual tasks performed by techno workers in their roles. By comparison, higher OE was experienced when performing work collaboratively with others. Techno workers' experience of JE is not as strong as OE, even though they have closer proximity to their 'jobs' than to their employing organisation. The results of this thesis contest the idea that JE is more reflective of an employee's job or work particularly related to remote or techno workers.

#### **4.5.2 Research question 2.2**

RQ2.2: What is a techno worker's experience of *organisation engagement*?

Overall, the highest frequency of responses for a techno worker's experience of EE related to organisation engagement with 61 responses (38%, Figure 4.5 in Section 4.5). This is surprising as it may be assumed that a techno workers' physical and psychological separation from the organisation may diminish their focus of OE. However all techno workers returned responses for OE, which wasn't the case for any other EE state Table 4.4 in Section 4.3.1.

Participants commonly referred to the company values and culture, the 'happenings' and events of the organisation, new product launches, other region's successes or news

and a sense of being excited by, connected to and inspired by events in their company. These ‘happenings’, as described by the extant Saks (2006) measure, caused techno workers to specifically refer to the company name, ‘Savry’ in their responses, clearly indicating a shift in focus from their role to their employing organisation. This is evident in the comment, *“The company is kind of all encompassing I mean like, I love the company...just wanting to do the best thing for Savry...”* (TW1). Another techno worker noted *“I really like Savry and keeping our number one position in the industry and I can see, I feel we are trying to be more...that is a really big motivation for myself”* (TW4). Another techno worker shares similar views: *“The values of Savry... the team I work with and the product we sell, so our whole story across every brand”* (TW6). This OE focus is very clear with the company name featuring heavily in participant’s responses on EE.

The company Yammer (social media) tool also featured heavily in organisation engagement responses as employees experienced OE with the *“sharing of successes, for all our values, for the awards...(the) sharing of photos and sharing of successes of activations...international stuff...”*, which TW6 says makes her *“feel like you’re part of something big and that helps keep you engaged”*. The shared information on Yammer reflects how techno workers see the overall OE experience. One manager comments on how important the Yammer tool is for EE:

*“Yammer is a great tool...for us, it’s important because we are so sparse... and you need to be weary of that as a manager as well. Cause you do need to ensure you’re engaging with them, because yeah, its tough...we do play a role in making sure we’re engaging”* (TWM3).

The act of keeping informed, being connected to and knowing what’s going on and being aware and engaged in the ‘bigger picture’, what is happening at the highest levels of the organisation, is evidenced by a techno workers’ OE experience(s). This is captured by TW1 when he says, *“The company seems to...have a way of bringing and involving everyone whether it’s competitions, Yammer or Five Point Friday (company newsletter)”*. The employee’s excitement with the organisation’s happenings and events proves why OE is highly relevant to the techno working environment.

The responses also indicate the separation from the organisation (Savry) as a whole is perceived differently from their experiences in role and team. Company artifacts such as the company social media, learning and development opportunities, global communications, culture and the products and brands seem to be associated with, and attributed to Savry, rather than individuals job and immediate team. Participants noted that, “*another great thing about Savry, and even our team on the whole*” (TW7) in relating this to a sense of organising where, “*when I say organisation, I mean my colleagues...and the organisation close to home*” (TWTM2), indicating a separation between local and the more distant organisation. That is, proximity is a relative perception for techno workers. Finally, formal learning and development opportunities are connected with the company rather than the local team or job: “*I love how Savry has all the courses*” (TW1) and, “*the business is investing in me*” (TW3), reflecting the link between training and OE.

Some responses emphasise ‘the people’ of Savry playing an important part of OE such as: “...the team I work with...the story, the values, the people” (TW6). Also, “*when I say organisation, I mean my colleagues...and the organisation close to home*” (TW7). Here, the ‘people’ of Savry *are* the organisation, invoking OE awareness for techno workers. These comments indicate a blurring of the ‘people’ being the organisation which emphasises the role of social capital generated. The relationships embedded within and across the techno working context appear to be important and an emphasis on teams in ‘bringing everyone together’ in the findings is consistent with SC research. This is where trust, respect and shared understandings are reflected in reciprocal relationships in team and community (Murray et al. 2021). Participant responses were reflective of a focus on their job role first, followed by their tasks and starting to build relationships with managers, teams and colleagues. The data was illustrative of a focus on ‘the people’, and greater OE awareness.

The higher frequency of responses pertaining to OE indicated that techno workers are more likely to experience engagement when motivated by organisation events, being part of the organisation, and part of something bigger. Activities associated with OE provide a sense of proximity to the organisation, a sense of belonging that might normally be negated by the isolation of the environment. As “most of what we know

about EE pertains to job or work engagement rather than organisation engagement” (Saks 2019 p.33), this finding suggests that OE artifacts play an important role in how techno workers perceive their role. Prior to this thesis, there was little research of the importance of OE within the techno working context or across other contexts.

### **4.5.3 State of employee engagement themes emerging from the data for research question two**

The inductive qualitative investigation saw an additional state of engagement emerge from the data set, that is, the newer and less common state of social engagement. Also, trait engagement was another type of EE that emerged from the data. social engagement (SE) is discussed next.

#### **4.5.3.1 Social engagement**

Participants saw engagement as connectedness with others through shared values, challenges, achievements and goals, a state known as social engagement (SE). As noted earlier in Chapter four, SE is unique to other constructs such as social support and social capital. SE is defined as 'the extent to which one is socially connected with the working environment and shares common values with colleagues' (Soane et al. 2012 p. 9). It is integral to the expression of self-in-role through the experience of connectedness with others (Kahn 1990), therefore it is a psychological state. Whereas SC is the 'features of social organisation such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit' (Putnam 1995 p. 67), SE by comparison is the deeper experience of these connections. Social engagement is acknowledged in the literature from a systems perspective (Macey & Schneider 2008), working together collectively (Jackson et al. 2006), and through the importance of relatedness common to a self-determination-theory (SDT) based approach to engagement (Deci & Ryan 2000). Whilst relatively uncommon in the EE literature, 48 responses emerged from the data related to SE. In fact, SE was the second strongest state of engagement experienced by techno workers (29%, Figure 4.5 in [Section 4.5](#)). In reading and analysing the participants responses in this thesis, the researcher increasingly realised that SE was linked to shared goals, since the latter was increasingly important to these workers.

Many comments supported the alignment of employees to a direction and attainment of shared goals: “...when you’re all in tune with what’s going on and you’re all in agreement with what’s going on you can work toward the goal and work more efficiently” (HRSE1). Similarly, TWTM1 suggested that “I think the end game needs to be complete with everybody to be heading in the same direction”, a sentiment also shared by TWTM2 where “people feel like they’re part of a project”. He also goes on to share that “performing your role requires the usual expectation that when you ‘enjoy what you’re doing... [one can see how] .... you’re part of it (the team) ... I think that’s the extra five percent...the enthusiasm comes out a little further”. The increased EE experience associated with sharing the goal, the tasks, the achievement with others resonated with the ‘team environment’, ‘sense of team’, and working towards a goal. The SE experience was articulated as:

*“I feel motivated, very motivated just wanting to do your best and not let down the team and achieve the common goal together and do your part in what’s required to achieve that”*  
(TW2).

Shared goals and shared achievement were important to techno workers’ sense of SE experiences as noted by TW4: “It has meaning, sometimes achieving goals not by myself, but as a team, it’s much more important”.

The increasing number of techno workers employed by Savry was resulting in the company initiating more team meetings, learning and development group programs, team goals and competitions that “definitely bring the company into that kind of engagement perspective...prior to that, there’s been a lot more, I guess separation” (TW1). Here, the participant referred to previous solo occasions where he worked remotely and that while his work tasks and KPI’s had not necessarily changed, new collective initiatives had “a much bigger impact on a lot more of a shared experience which I think is really cool”. TW3 similarly reflected on the growing number of techno workers indicating that, “when we were smaller, it made it easier”. The increased SE initiatives such as conferences and team goals enabled a ‘real camaraderie’ within the group.

The SE experiences taken together reflected increased occurrences related to the type of shared interactions from connections, to people, team interactions, the shared values and attitudes and the strong sense of working towards a goal together. Interestingly, the three techno worker managers did not reference SE. Rather, OE featured more prominently for this cohort. However, managers appeared to be more cognisant of the value of shared connections and goals for adding value in techno working contexts.

#### 4.5.3.2 Trait engagement

Trait engagement assumes that employees have particular innate traits that predispose them to being more (or less) engaged. While it is not a state or experience of EE, it emerged from the data as a type of EE within remote environments. With 15 responses (Figure 4.5 in [Section 4.5](#)), trait engagement was the least represented in participant responses. Only three of the eight techno workers mentioned trait engagement (3%), whilst 47% of all trait engagement responses were from techno worker managers (Table 4.11). Managers referred to some of their reporting techno workers being predisposed to working more autonomously and with a higher resilience to withstand remote conditions than other office workers. Interestingly, for the HR and SE group (Table 4.11), trait engagement rated higher than techno workers' ratings. Perhaps the higher ratings reflect the HR and SE groups' perceptions that techno workers had a higher predisposition to remote working than office workers.

**Table 4-11 Frequency of responses by participant group for each engagement state**

RQ2 Participant	Job engagement	Organisation engagement	Social engagement	Trait engagement	SUM of sample group
<b>Techno workers</b>	20, 50%	41, 67%	29, 30%	3, 3%	97, 100%
<b>Techno worker managers</b>	15, 38%	14, 23%	11, 23%	7, 47%	47, 100%
<b>HR &amp; SE</b>	2, 5%	5, 8%	8, 17%	5, 33%	20, 100%
<b>Total</b>	<b>37, 100%</b>	<b>61, 100%</b>	<b>48, 100%</b>	<b>15, 100%</b>	<b>161, 100%</b>

The results in Table 4.11 might suggest that some cohorts believe techno workers have a predisposition for autonomy, the drive to achieve individual results and also diligence



in being able to operate autonomously. One participant suggested that when techno workers have the “*authority to make decisions and create value with their customer*”, *this was more valuable than those who are “a little paralysed by the possibility”* (HRSE2). Some, “*might have a better ability to work autonomously*” (TWTM1), while those who don’t “*can get distracted.... I think there’s a certain mindset to become habitual*” (TWTM2). Another participant suggested that, “*a person who has a high will to win or succeed is probably going to be more engaged*” (TWTM1). Overall, there was a belief by managers that certain ‘traits’ arguably enabled these workers to flourish in remote roles.

#### **4.5.4 Summary of responses related to research question two**

For techno working, different states of EE are more common in shared group and team experiences. This was evidenced by the high number of responses for OE and SE respectively (Figure 4.5 in [Section 4.5](#)). Job engagement was not as important to techno workers. Being connected to others and being part of something bigger was more important. Whilst JE studies have been dominant in extant research, the distinction between job and organisation engagement has not been unequivocal (Saks 2019). The results of this thesis suggest that OE by comparison requires more research. Within the techno working context, organisation artefacts reflected in OE and SE activities together with shared goals were more important than job engagement. In relation to commonly perceived states of engagement e.g. JE, the social and relational aspects of engagement are unique and separate to the way OE has been perceived in prior research. This is a significant contribution to the EE literature from this thesis since while SE has been acknowledged as an element of the EE experience (Soane et al. 2014), SE could be a psychological state in its own right.

#### **4.6 Research question three (RQ3)**

Research question three concerns the consequences or outcomes of EE:

RQ3: What *outcomes* are associated with a techno worker’s experience of employee engagement?

This research question includes two sub questions related to job satisfaction and organisational commitment as follows.

RQ3.1: How does *job satisfaction* emerge as an outcome of EE in techno workers?

RQ3.2: How does *organisation commitment* emerge as an outcome of EE in techno workers?

This research question and sub questions explore techno working experiences when an organisations proximity and context is altered and broadened. As causality could not be determined in this qualitative investigation, participants' perceptions of EE outcomes in relation to the antecedents explored are acknowledged. Relevant themes emerging from the literature review (JS and OC), and themes emerging from the data are illustrated in Table 4.12 (below) which also indicates the overall frequencies of EE outcome responses.

**Table 4-12 Research question three: outcomes of employee engagement themes emerging from the literature review and data**

Emerging from literature review or data	Theme type and focus	Themes	Quotes	Frequency of responses
Literature	<b>Morale</b> - Individual – work related attitudes.	Job satisfaction	<i>“So, engagement can also be beneficial because when we are given an instruction, you’re more willing to say yes and execute it because you enjoy what you’re doing” (TWTM2)</i>	28
Literature	<b>Morale</b> - Individual – work related attitudes.	Organisational commitment	<i>‘Savvy are doing a great job and I wouldn’t be here for five years; I’m hoping for another five’ (TW1)</i>	12
Data	<b>Performance Morale</b> - Individual – work related attitudes.	Achievement satisfaction	<i>“...but you can see the glint in their eye or just the sound of their voice that they’re actually pumped about what they’ve just achieved” (TWTM2)</i>	29
Data	<b>Morale</b> - Individual – wellbeing perceptions.	Wellbeing	<i>“So, to me, it’s your whole general wellbeing from a personal perspective” (TWTM1)</i>	2
Data	<b>Performance</b> - Organisation – performance.	Organisation performance	<i>“So clearly there’s a benefit to the organisation in the engaged people who are looking to have a great level of passion and care for business results” (TWM1)</i>	16
Data	<b>Performance</b> - Individual - Extra role performance.	Innovative work behaviours	<i>“We come away from those interactions then we can kind of, plan differently or add something that we haven’t done before or come away with new ideas and we’re kind of feeling inspired” (TW6)</i>	10
Data	<b>Performance</b> - Individual – In role task performance.	Productivity	<i>“Engaged that you feel like going to work and you’re actually doing something productive in that time” (TWTM2)</i>	25
Data	<b>Performance</b> - Individual - Extra role performance.	Going above and beyond	<i>“It gives me the will to get up earlier to go harder, if they need help on something else to extend myself further” (TWM1)</i>	23
Data	<b>Performance</b> - organisational - Individual – work related attitudes.	Retention	<i>“Longer retention time for starters, you know, not turning over staff as often” (TWM3)</i>	4
<b>Total</b>				<b>149</b>

In this section, JS and OC are presented as important parent disciplines from the literature review. Achievement satisfaction and JS are explained as yielding the highest frequencies, followed by ‘going above and beyond’, ‘productivity’ and ‘organisation

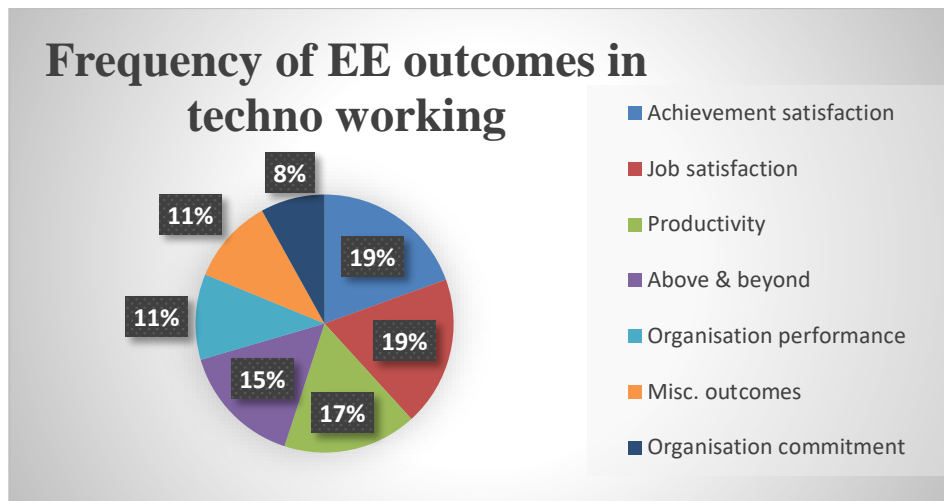
performance’. The other less frequent responses (retention, wellbeing and innovative work behaviours) were included in ‘miscellaneous outcomes’ (Table 4.13). As part of the semi structured interview process, participants were asked a range of questions pertaining to their perception of consequences of their EE experiences. The frequency of responses is illustrated in Table 4.13. The SUM refers to the summation of each participants responses, and these are totaled to 149 EE outcome responses overall.

**Table 4-13 Frequency of responses by participant for research question three**

RQ3 Participant	JS	OC	Achievement satisfaction	Organisation performance	Product ivity	Going above and beyond	Misc.	SUM
TW1	7	3	1	1	2	1	1	16
TW2	3	0	1	0	3	0	0	7
TW3	1	1	2	0	1	0	0	5
TW4	0	0	5	3	0	1	0	9
TW5	4	0	0	0	2	2	0	8
TW6	1	1	2	1	1	1	4	11
TW7	3	2	4	2	3	0	3	17
TW8	0	0	1	1	1	1	0	4
TWM1	0	0	2	1	0	2	0	5
TWM2	0	1	2	0	1	1	0	5
TWM3	2	1	3	0	2	2	2	12
TWTM1	2	2	2	0	6	3	5	20
TWTM2	4	1	2	1	2	1	0	11
HRSE1	0	0	0	2	0	0	0	2
HRSE2	1	0	2	3	0	3	0	9
HRSE3	0	0	0	1	0	5	1	7
<b>Total</b>	<b>26</b>	<b>12</b>	<b>29</b>	<b>16</b>	<b>25</b>	<b>23</b>	<b>16</b>	<b>149</b>

Figure 4.7 below captures the frequencies of perceived EE outcomes as a percentage of all responses.

**Figure 4.7 Frequency of employee engagement outcomes in techno working**



The findings of research question three illustrated in Table 4.14 (below) suggest that the dominant perceived outcome was satisfaction related. Both JS and achievement satisfaction exhibited an individual morale element exemplifying the importance of positive fulfilment. Individually focused EE outcomes were superior over organisationally focused EE outcomes. The results of the state and experience of EE as a result of RQ2 earlier suggest that the collective and broader experiences of EE (such as OE and SE) are favoured over JE. However, for RQ3 here in respect of the consequences and outcomes of EE, the individual outcomes reflect that while EE experiences are mostly collective, the *outcomes* of these experiences are individual. This is substantiated in the literature with SDT (self determination theory) prioritising the basic psychological need of satisfaction for employees (Deci & Ryan 2000). Techno workers would therefore have their basic needs of competence, relatedness and autonomy met creating their immediate satisfaction. However, interestingly, the HRSE participant group were the only group that prioritised organisation performance (Table 4.15 below), which is an organisation focused EE outcome. The HRSE group may not have been cognisant of the importance of job satisfaction for techno workers. Table 4.14 (below) reflects that the participants mostly perceived work related attitudes result from the techno worker's personal experiences of EE.

**Table 4-14 Key findings relating to employee engagement outcome themes, focus and types**

Significant EE Outcomes highest to lowest importance	Outcome importance rate %	Outcome theme	Outcome focus	Outcome type
Achievement satisfaction	29, 19.5%	<b>Performance-Morale</b>	Individual	Work related attitude
Job satisfaction -	28, 18.8%	<b>Morale</b>	Individual	Work related attitude
Productivity	25, 16.8%	<b>Performance</b>	Individual	In role task performance
Going above and beyond	23, 15.4%	<b>Performance</b>	Individual	Extra role performance
<b>Less significant EE outcomes</b>				
Organisation performance	16, 10.7%	<b>Performance</b>	Organisation	Performance measures
Organisational commitment	12, 8%	<b>Morale</b>	Individual	Work related attitude
Innovative work behaviours	10, 6.7%	<b>Performance</b>	Individual	Extra role performance
<b>Conclusion</b>	<b>(+ misc.) 100%</b>	<b>Performance #1</b>	<b>Individual #1</b>	<b>Work related attitudes #1</b>

The findings show a differentiation in perception between participant groups for EE outcomes as highlighted in Table 4.15 (below) where the highest frequency response for each EE outcome is shaded pink and the highest frequency response for each participant group is bolded. Table 4.15 illustrates that techno workers favoured the effects of EE outcomes such as JS and achievement satisfaction which are relative to individual morale. They did not favour the outcome of going above and beyond as much as the manager and HRSE group, perhaps because this outcome could be experienced as a stretch of their role which could in turn become a job demand. Unsurprisingly, those who benefit from techno workers broadening their role scope by going above and beyond, those in management or broader organisation roles, prioritised this EE outcome.

Outcomes associated with EE experiences can be highly subjective in that they are informed by perceptions and proximity. For example, the participant groups containing techno worker managers and HR and senior executives provided commentary on associated outcomes such as organisation performance, productivity and going above and beyond which are more tangible and relative to their proximate location.

**Table 4-15 Average frequency of responses by participant for each significant employee engagement outcome**

RQ3 Participant Group	Job satisfaction	Organisation commitment	Achievement satisfaction	Organisation performance	Productivity	Going above and beyond	Innovative work behaviours
TW	2.375	0.875	2	1	1.625	0.75	0.875
TWM	0.67	0.67	2.33	0.33	1	1.67	0.33
TWTM	1.5	1.5	2	0.5	4	2	0.5
HRSE1	0.33	0	0.67	1.67	0	2.67	0.33

#### 4.6.1 Research question 3.1

RQ3.1: How does *job satisfaction* emerge as an outcome of EE in techno workers?

This research question focuses on the EE outcome of job satisfaction (JS) discussed in [Section 2.7.1](#). Job satisfaction returned one of the highest number of responses (28) from the two EE outcomes emerging from the literature review (JS and OC). It has the second most responses overall behind achievement satisfaction; indicating it is perceived as a prevalent outcome of the EE experiences of techno workers (Figure 4.7 above). Research on the consequences of EE has focused more on *morale* outcomes as previously highlighted. JS, wellbeing and work related attitudes have been considered thus far as aspirational outcomes for organisations (Bailey et al. 2017). Extant studies, as explained in [Section 2.7.1](#), illustrate a positive relationship between EE and JS (Bailey et al. 2017), and this relationship is evident in this thesis' findings.

The majority of commentary for this question related to the experiences of JS pertinent to tasks or elements of a techno worker's role, or in reference to their role on the whole. One participant noted how JS reflected the SE of working with his team on their shared goals and seeing these goals achieved:

*“So it's the (name) and (name's) of the world that have really started to step up and we've been spending a lot of time with*

*those guys but I get a lot of satisfaction out of helping people like that” (TWTM1).*

Another participant noted the feeling of satisfaction from working with others: *“It felt pretty cool working with each other saying alright how about we change this, what about that, that’s what I really thrive on”* (TW1). He goes on to say, *“...if I can do something that helps my peers or the company benefit, then I get satisfaction out of that”*. These statements also relate to the feeling of satisfaction resulting from SE experiences.

Job satisfaction related to feeling positive and upbeat, ‘enjoying the job’ and feeling good about making sales and hitting numbers. Techno workers felt good about knowing they could manage their tasks, knowing their customers and that their bosses were happy. For instance, comments related to having a *‘happier working life’* (TW7), perhaps reflecting that JS was an indicator of fulfillment rather than a motivating force (Macey & Schneider 2008). One manager echoed a similar sentiment when talking about his direct reports and their behaviours: *“Hopefully that says yep, I’m working hard, I love my job, I get up every day, I will work weekends”* (TWM3), noting the importance to him of role satisfaction and higher performance stemming from working hard and working weekends.

#### **4.6.2 Research question 3.2**

RQ3.2: How does *organisation commitment* emerge as an outcome of EE in techno workers?

Organisational commitment returned the lowest number of responses (12, 8%) from the two EE outcomes emerging from the literature review (JS and OC). Organisational commitment was perceived as a low priority for the EE experiences of techno workers (Figure 4.7 in [Section 4.6](#)). This is an interesting finding as the organisational focus aspect of EE, to which commitment is associated, was noted as important in research question two which explored organisation engagement as a state. Although OC was an attitudinal outcome registering lower than job focused attitudes, such as JS, the positive effects of EE on OC can be substantiated by the findings consistent with previous studies (Bailey et al. 2017).



Participant commentary on OC focused on the positive feelings towards the employer (Savry), and towards the teams and colleagues. Commitment sentiments align with the three psychological states of OC (Mowday et al. 1979). For instance, one techno worker captures the relative attachment to and positive feeling for the company (affective commitment) resulting from the motivation to produce work (behavioural commitment) (Mowday et al. 1979) as follows:

*“I mean I love the company, they (his manager and manager’s manager) are a big part of who the company is for me. So it all goes tied up into that bow of just wanting to do the best thing for Savry” (TW1).*

This employee demonstrated his continuance commitment expressing his intention to be loyal and stay with the organisation (Mowday et al. 1979);

*“There’s a confidence behind who the company is and what they do and that’s enough for me to go ‘right I want to be a part of that and I want to, you know, I want to develop with the company” (TW1).*

Other participants share similar sentiments of continuance commitment and growth in a shared future. TW7 suggested that *“If you’re creating jobs in the future, this is what I’d like to do...it shows me that Savry has evolved and actively trying to look at opportunities to grow”*, with the participant clearly interested in being part of that growth. Similarly, TW6 echoed a similar level of commitment: *“I feel committed cause everytime I hear something like that, it ramps up even more commitment because I know there is potential”*. Another techno worker suggested that *“I think I’ve had enough crappy jobs to know that Savry is pretty good. But I love the people” (TW3)*. She expresses her continuance and affective commitment through this comparison and attributes this to the people. The findings demonstrated how OC was perceived by participants as an outcome of EE, but not a focal perspective of the work experience per se consistent with previous extant literature (Shuck et al. 2014).

### **4.6.3 Outcomes of employee engagement themes emerging from the data for research question three**

In total, nine outcomes associated with the experience of EE in techno workers were identified from the qualitative data including the two that emerged from the literature review (JS and OC, Table 4.10, Section 4.5). Four of the seven themes emerging from the data will be discussed here due to the higher frequencies recorded; the other three themes were collated as miscellaneous EE outcomes. The four predominant themes were achievement satisfaction, going above and beyond, productivity and organisation performance. The themes of wellbeing, retention and innovative work behaviours will not be discussed due to their insignificant response rates.

#### **4.6.3.1 Achievement satisfaction**

A new EE outcome emerged as a result of this inductive investigation which has not been observed thus far in existing literature. The outcome of achievement satisfaction returned the highest number of responses in the qualitative interviews with a frequency of 29 (19.5%, Figure 4.7 in [Section 4.6](#)). Unique to job satisfaction, participants particularly linked achievements (achievement satisfaction) to successes and results (whether individual or mostly shared). This related to their feeling of satisfaction, positive feelings associated with their role, and individual level of happiness and contentment. While this may be perceived as JS, it was more specific to the achievement of the company, their team, or themselves personally. This is consistent with previous studies where the need for achievement causes a strong association between performance and satisfaction as a form of intrinsic reward (Steers 1975); however, the construct has not previously been defined in its own right. Using the previous classification of EE outcomes relative to performance and morale, achievement satisfaction spans both categories. For example: *“So achieving certain goals is something I see that’s one hundred percent big engagement and happiness in the organisation”* (TW4). Also, *“I was proud of what I had achieved, I was happy it was noticed”* (TW3). Similarly, TW6 remarked on her achievement of a big sales day as, *“it was something different that gave you that boost because it wasn’t your average work-day”*.

Achievement satisfaction was captured at the macro level. HRSE2 commented that the team's achievement in growing the business, seeing those business results, was "*one of the biggest and most rewarding things here...that's been a very rewarding experience*" for her and her broader team. TWM3 noted that when the task was a challenge, the team, "*didn't go into thinking this was going to be a walk in the park*", alluding to the satisfaction that resulted for him and the team when the task was accomplished. Similarly, TW4 suggested that achievement satisfaction meant "*Sometimes achieving goals not by myself, but as a team, it's much more important*", exemplifying that shared achievement creates positive fulfillment.

Techno workers appeared to be intrinsically driven towards competition and achievement (personality traits, see [Section 4.4.3.3](#)), reflected of achievement satisfaction comments overall. Therefore, it is not surprising that achievement satisfaction was a strong outcome of the EE personal experiences of techno workers.

#### **4.6.3.2 Going above and beyond**

As a form of extra role performance (Bailey et al. 2017), going above and beyond appeared in the data 23 times (Figure 4.7 in [Section 4.6](#)). One participant described this outcome as, "*wanting to extend yourself beyond what a normal workday would be*" (TWTM1). This individual performance outcome suggested that employees do more than what is expected of them in their roles and the organisation reaps the reward of higher output. A number of comments reflected going above and beyond: "*gone over and above*" (TW1), "*that's the extra five percent*" (TWTM2) and employees, "*taking advantage of opportunities outside their title*" (HRSE3). A company executive explained these outcomes and benefits for Savvy: "*The more that people are engaged in their activities, they're going above and beyond what a competitors' employees might be willing to work for to achieve*" (HRSE2). However, whilst going above and beyond can be considered a form of extra role performance, it has not previously been included as a specific behavioural outcome of EE in workplace studies. Extra role performance outcomes also include citizenship behaviour, adaptability and innovative work behaviours (Bailey et al. 2017). Therefore, going above and beyond was a new outcome associated with the experiences of EE. Participants described how going above and beyond their job roles was a specific behavioural outcome of EE. As noted earlier,

participant TWM1 commented for example that, “*Engaged people...have a desire and a want to extend themselves over just their core role*”.

#### **4.6.3.3 Productivity**

Previous studies have identified in role/job/task performance as being positively linked to EE (e.g. Bakker & Demerouti 2008; Bakker et al. 2012). However, these studies utilised the measures of performance appraisals and third-party records and company performance data (Bailey et al. 2017), which is different to the findings presented here. Productivity outcomes were associated with 25 responses, or 17% of responses overall (Figure 4.7 in [Section 4.6](#)). Productivity refers to the activity of the techno workers producing effort, an output, a result or a work task which is viewed positively by the organisation. Participant TWTM2 commented that “...*not just feeling like going to work but actually doing something productive in that time*”. Here, he refers to employees that attend to their work without producing anything tangible.

One manager (TWTM1) alluded to the advantages of helping direct reports: “*If I can help, that influences their mindset and their productivity...*”, suggesting that by virtue of helping his direct reports, they feel engaged which leads to potential higher productivity. Similarly, techno worker TW7 suggested that the interaction with his colleagues through calls and texts - an experience which can be interpreted as social engagement - “*just leads to more productivity*”. Whilst this perceived outcome may be linked to an achievement inclination discussed as achievement satisfaction ([Section 4.6.3.1](#)), productivity is a performance focused outcome not related to or conjoined with employee attitude or morale. Potentially at least, increased productivity can be identified as a unique and differentiated EE outcome associated with the personal experiences of EE.

#### **4.6.3.4 Organisation performance**

Much EE propaganda arising from consulting companies suggests that higher EE outcomes lead to higher company performance (Gallup study 2012). Extant research however suggests that measures such as customer satisfaction (e.g. Coffman 2000), and employee retention and profitability (Witemeyer 2013) have a positive correlation

between EE outcomes and performance. Similarly, this research found that sixteen participants (11% of all responses, Figure 4.7 in [Section 4.6](#)) indicated that improved organisation performance was directly associated with the EE experiences of techno workers. Participant TW1 linked the overall company performance to EE experiences that in his view “can benefit the company”. Participant HRSE2 suggested that performance was associated with the collective engagement efforts of all employees: “*When you have a lot of people working at a very engaged level...you can just simply outperform your competition*”. Here, it appears that in the minds of employees, collective efforts are related to increased performance and competitive advantage.

The organisation performance of Savry is commonly referenced in terms of its financial performance and growth, and in a few instances, customer satisfaction. Participant TW4 noted that “*I’m seeing the growing of our organisation, growing of our business in the last four years*”. Similarly, participant TW8 ties EE to performance success where engaged employees “*contribute to the success of the organisation*”. Participant TWTM2 indicated how engaged employees’ impact Savry’s customers which potentially influences company performance:

*“If you walk in with a smile enjoying your life, I think that naturally flows on to a customer and then their response becomes more positive...that’s a flow on effect of being engaged”.*

Scholars have argued that causal links between EE and organisation performance are not unequivocal, yet higher EE outcomes have been a strong predictor of organisation performance and effectiveness in prior studies (Markos & Sridevi 2010).

#### **4.6.4 Summary of responses related to research question three**

In summarising the responses to research question three, nine effects of EE were identified with five of the nine related to a performance focus (56%), three to a morale or attitudinal focus (33%), and one with both a performance and morale focus (11% of total, Table 4.12, [Section 4.5](#)). The two EE themes from the literature review (JS and OC), attracted varied results with JS proving to be a common outcome of techno

working experiences with the second highest number of responses (26, Figure 4.7 in [Section 4.6](#)), behind achievement satisfaction. This demonstrated that whilst techno workers' engagement experiences occur at the organisational and social levels, the attitudinal effects of EE are individual, and job focused. Organisational commitment returned only 12 responses (Figure 4.7 in [Section 4.6](#)) indicating that techno workers' attitudes do not focus as strongly on the organisation as they do at the job level.

Three new EE outcomes were identified; achievement satisfaction, productivity and going over and above. Whilst all three confirm the extant literature, the engagement outcomes of achievement satisfaction, productivity and going over and above emerged from the data as important new outcomes. Achievement satisfaction as unique to job satisfaction illustrated the importance of individual morale/performance outcomes. Productivity appeared as a unique element of job/in role/task performance where the production of outputs could potentially be the result of increased EE experiences. Finally, going above and beyond appeared was a derivative of extra role performance not identified in EE extant research (Bailey et al. 2017).

#### **4.7 Summary of category data frequency by research question**

In Tables 4.16, 4.17 and 4.18 are the categories of findings which have the highest frequency of responses (over 20 responses) emerging from the qualitative data for each research question. Whilst these frequencies do not explain the data and provide meaning, they did assist the researcher to determine patterns and trends. These frequencies highlight only those themes that are most important to the techno working environment and investigation of this thesis. While a theme raised once may be important, themes raised a multitude of times and their related effects are more visible. For the purpose of drawing conclusions and addressing the research questions, themes highlighted in pink are considered the critical findings relevant to each research question (i.e. RQ1, 2 & 3). These critical and meaningful findings form the basis of the discussion and conclusions for the research questions and research problem which is discussed next in Chapter five.

**Table 4-16 Summary of qualitative responses by category for research question one: How are employers *influencing* the employee engagement of techno workers?**

No. of responses	Category
218	LMX
186	Social capital
112	Engaging leadership
97	Social support
85	Feedback
66	Learning and development opportunities
44	Passion
29	Autonomy

**Table 4-17 Summary of qualitative responses by category for research question two: How do techno workers experience the *state of employee engagement*?**

No. of responses	Category
63	Organisation engagement
48	Social engagement
37	Job engagement

**Table 4-18 Summary of qualitative responses by category for research question three: What *outcomes* are associated with a techno worker’s experience of employee engagement?**

No. of responses	Category
29	Achievement satisfaction
26	Job satisfaction
25	Productivity
23	Going above and beyond

#### **4.8 Summary of chapter four**

In this chapter, the data analysis and findings of the qualitative and quantitative research processes were presented to inform the research problem and answer the research questions. The demographic details of participants were presented followed by the descriptive statistics of the findings arising from both the qualitative and quantitative research processes. The research questions and sub questions were then answered using the primary qualitative data set first and expanded upon by the quantitative data set related to each question. The research sub questions (e.g. 1.2, 2.1) focused the

investigation on the themes emerging from the literature review e.g. job resources, LMX, JE, OE, JS and OC. The findings for the sub questions therefore focused on these themes from the literature review and were explored in both the qualitative and quantitative findings. The qualitative data set provided additional themes that were discussed and explored in Chapter four. Finally, all themes that were relevant from the literature and the data were presented for each research question and summarised in Tables 4.16, 4.17 and 4.18. Chapter five will now turn to the discussion of these results and draw conclusions. Chapter five will resolve the research problem and address the research questions and explain the implications of the findings in the context of the literature.



## CHAPTER FIVE: DISCUSSION AND CONCLUSION

### 5 Introduction

The previous chapter presented the data analysis results according to the three research questions. The purpose of this chapter is to discuss the findings, identify the implications and finally present conclusions about the research problem. That is, *what are the antecedents, outcomes and experiences of EE in techno workers in remote working environments?* This thesis contributes to the body of knowledge on the research problem and aim identified in Chapter one, by exploring the EE antecedents, experiences and outcomes of techno workers in remote working environments.

The literature review in Chapter two detailed the EE parent theories underpinned by SET which determined that EE antecedents, the experience of EE and the outcomes of EE were illustrative of the three dimensions to be explored within the techno working environment. The three research questions were framed on these three dimensions. The literature review of EE antecedents (Section 2.6) highlighted the relevant theories necessary to focus the investigation in a remote context. These theories informed which antecedents were important such as job resources and LMX. The experiences of EE as job engagement was not presumed (Saks 2019), meaning that the thesis adopted a multidimensional approach to exploring EE across techno workers' experiences. Such EE experiences were reflective of techno workers' job role and perceptions of the employing organisation. Finally, two outcomes of EE experiences formed the basis of research question three namely job satisfaction and organisational commitment. Three research questions were formulated to explore the research problem, and these are restated below:

#### **Research question one**

RQ1: How are employers *influencing* the employee engagement of techno workers?

RQ1.1: What influence do job resources have on a techno worker's experience of *employee engagement*?

RQ1.2: What influence does leader-member exchange have on a techno worker's experience of *employee engagement*?

### **Research question two**

RQ2: How do techno workers experience the *state of employee engagement*?

RQ2.1: What is a techno worker's experience of *job engagement*?

RQ2.2: What is a techno worker's experience of *organisation engagement*?

### **Research question three**

RQ3: What *outcomes* are associated with a techno worker's experience of employee engagement?

RQ3.1: How does *job satisfaction* emerge as an outcome of EE in techno workers?

RQ3.2: How does *organisation commitment* emerge as an outcome of EE in techno workers?

Chapter three explained the research methodology as appropriate for the research and provided tests for issues such as internal generalisability, validity and reliability. The methodology section was detailed explaining the how, when and where of the research, how it was performed, and how it was presented. This included the sampling overview of the research participants in both the qualitative interviews and quantitative surveys. The data analysis and findings from both approaches were highlighted in Chapter four. This final chapter now discusses the research questions and themes arising from Chapter two with the findings presented in Chapter four and integrates contemporary literature to support the conclusions drawn. The guiding structure for Chapter five conclusions is now presented (Table 5.1 below). This table illustrates how the results of the thesis are summarised and aligned to each research question and provides the blueprint for the chapter.

**Table 5-1 Guiding structure for Chapter five conclusions**

<b>Research problem</b> - What are the antecedents, outcomes and experiences of EE in techno workers in remote working environments?		<b>Conclusions about research question and research issues: RQ</b>	<b>Section No:</b> 5.1	<b>Key findings</b>
Employee engagement antecedents	<p>RQ1: How are employers influencing the employee engagement of techno workers?</p> <p>RQ1.1: What influence do job resources have on a techno worker's experience of employee engagement?</p> <p>RQ1.2: What influence does leader-member exchange have on a techno worker's experience of employee engagement?</p>	<p>Conclusions about research question 1:</p> <p>Employee engagement antecedents</p>	5.1.1	<p>LMX</p> <p>Engaging leadership</p> <p>Social capital</p> <p>Social support</p>
The state of employee engagement	<p>RQ2: How do techno workers experience the state of employee engagement?</p> <p>RQ2.1: What is a techno worker's experience of job engagement?</p> <p>RQ2.2: What is a techno worker's experience of organisation engagement?</p>	<p>Conclusions about research question 2:</p> <p>The experiences of employee engagement</p>	5.1.2	<p>Organisation engagement</p> <p>Social engagement</p> <p>Job engagement</p>
The outcomes of employee engagement	<p>RQ3: How are employers influencing the employee engagement of techno workers?</p> <p>RQ3.1: How does job satisfaction emerge as an outcome of EE in techno workers?</p> <p>RQ3.2: How does organisation commitment emerge as an outcome of EE in techno workers?</p>	<p>Conclusions about research question 3:</p> <p>The outcomes of employee engagement</p>	5.1.3	<p>Achievement satisfaction</p> <p>Job satisfaction</p> <p>Productivity</p> <p>Going above &amp; beyond</p>
Findings relative to the conceptual model			5.2	
Conclusion about the research problem stated in Chapter one			5.3	

Table 5.1 illustrates that the findings of the overall research questions will be discussed first, followed by conclusions relative to the research sub questions. This ordering provides the overall research question resolution and conclusion of *all* findings first, then the predetermined themes in the sub questions are discussed in brief. The previous chapters provide the foundation in this chapter which is related to addressing the

research questions and overall research problem. The chapter begins by answering the three major research questions. The key findings presented in the last column represent the themes and constructs that contribute to the final conceptual model for this thesis. The theoretical implications of the findings of this thesis are then discussed as well as implications for practice and policy, and finally limitations and implications for further research are proposed.

## **5.1 Conclusions about research issues**

In this section, the results from Chapter four are discussed relevant to the extant literature related to each research question. The focus of this chapter is on the three types of findings: 1) those relating to the themes emerging from the literature review, 2) those that emerged from the data, and 3) those new emergent findings not observed in extant literature. These findings relate to the three research questions regarding EE antecedents, the experience of EE and outcomes associated with EE experiences. Table 5.2 presents a summary overview of the findings.

**Table 5-2 Summary overview of all research findings**

<b>Research questions</b>	<b>Findings related to themes emerging from literature review</b>	<b>Different findings consistent with extant research</b>	<b>New findings not observed in extant literature</b>
<b>EE antecedents</b>	Leader-member exchange	Compensation	Social capital
	Autonomy	Policies/procedural justice	
	Feedback	Technology, equipment and tools	
	Social Support	Culture	
	Organisation climate	Passion	
	Learning and development opportunities	Engaging leadership Ownership	
<b>Experience of EE</b>	Job engagement	Trait engagement	Social engagement (SE as a state)
	Organisation engagement		
<b>Outcomes associated with EE</b>	Job satisfaction	Wellbeing	Achievement satisfaction
	Organisational commitment	Organisation performance	Productivity
		Innovative work behaviours	Going above and beyond
		Retention	
<b>Total no of findings</b>	<b>10</b>	<b>12</b>	<b>5</b>

Overall, all themes from the literature review appeared in the findings at differing levels of visibility and relevance. However, the findings were not limited to these themes with 17 additional themes emerging from the data. These emergent themes in the data (Table 5.2 above) spanned all three research questions. Of these, 12 are consistent with extant literature, while the remaining five are new findings not observed in extant literature. The latter five are unique to this investigation and contribute to the scholarly understanding of EE within techno working. These five new themes consisted of one new antecedent, one new experience of EE and three new outcomes associated with EE within a techno working environment.

This chapter flows from Chapter four in identifying the key findings relative to each research question. It determines how these findings align with the extant research identified in Chapter two and contribute to the overall body of knowledge. The results

for each question will be discussed in relation to the original conceptual model proposed and a new conceptual model will be presented based on the findings.

### **5.1.1 Conclusions about research question one (RQ1) – Employee engagement antecedents**

The overall findings for research question one are listed in Table 5.3 (below). Whilst *all* findings relevant to EE antecedents are listed here, only those deemed relevant in answering the research question and sub questions are discussed in detail. The overall research question is resolved and concluded first, and the EE antecedents summarised relevant to techno working. This is followed by a brief discussion of each sub question. The relevant findings are described in more detail next exemplifying how the participant interview results fit into the body of knowledge and extant research identified in Chapter two.

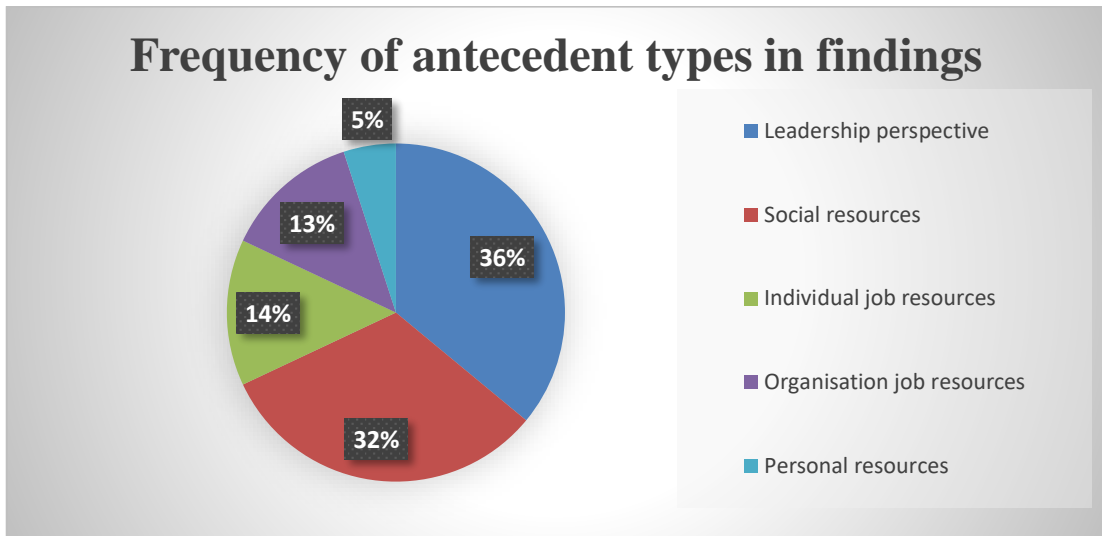
The results highlighted in Table 5.3 (below) illustrate the four main antecedents most relevant in influencing EE in the techno working environment (LMX, EL, SC and SS, indicated with \*). The antecedent level is proposed on the basis of aligned job resources levels and the proposed antecedent types have also been leveraged from the job resources literature (Schaufeli 2015). The antecedent ‘type’ column indicates whether the antecedent is one of two types, structural or social. Social resources consist of the relationships and network an individual has at work that provide support and feedback, whereas structural job resources are mainly the job design (what gets done when and how) aspects that provide opportunities for autonomy, creativity and development (Kerksieck et al. 2019). These levels and types aid the overall categorisation of antecedents in order to draw conclusions.

**Table 5-3 Findings for research question one by antecedent type and level**

<b>Antecedents of EE from highest to lowest influence</b>	<b>Influence success rate %</b>	<b>Proposed antecedent level</b>	<b>Proposed antecedent type</b>
<b>LMX*</b>	24	Leadership	Social
<b>Social capital*</b>	21	Social	Social
<b>Engaging leadership*</b>	12	Leadership	Social
<b>Social support*</b>	11	Social	Social
Feedback	10	Individual	Social
Learning & development opportunities	7	Organisational	Structural (formal) or social (informal)
Passion	5	Personal	Innate
Autonomy	3	Individual	Structural
Culture	2	Organisational	Social
Technology etc	2	Organisational	Structural
Organisation climate	2	Organisational	Social
Ownership	1	Individual	Structural
Procedural justice	0	Organisational	Structural
Compensation	0	Individual	Structural
Total	100%		

The first research questions asked, ‘How are employers influencing the employee engagement of techno workers?’ As per the findings presented in Table 5.3, EE experiences were mainly influenced by two key antecedent levels, leadership and social levels, illustrated in Figure 5.1 (below). The leadership perspective is inclusive of LMX and engaging leadership and the social perspective both social capital and social support. Organisational, individual and personal antecedents did show significant influence. As illustrated in Table 5.3, social type antecedents are prioritised within the techno working environment.

**Figure 5.1 Frequency of antecedent types in findings**



Leadership and social antecedents provide for 68% of EE influence in techno working environments. While other antecedents and antecedent levels demonstrated *some* influence on EE, these were not deemed significant and were not included for discussion. Table 5.4 examines the sensemaking from the significant themes from the data related to the leadership and social perspectives. These perspectives are aligned to the findings for each research question. The sub research questions 1.1 and 1.2 are discussed in further detail in the following sections however their findings are summarised in respect of addressing research question one.



**Table 5-4 Conclusive findings for research question one relating to the antecedents of employee engagement in techno workers**

Research question	Significant emerging theme identified in the data	Sense making of the key findings identified
RQ1 How are employers influencing the employee engagement of techno workers?	<p>Leadership perspective:</p> <ul style="list-style-type: none"> <li>- LMX</li> <li>- emerging leadership</li> </ul> <p>Social perspective:</p> <ul style="list-style-type: none"> <li>-Social capital</li> <li>-Social support</li> </ul>	<p><b>Leadership perspective:</b> the one formalised reporting relationship in the techno working environment has the most significant influence on techno workers' EE, Specifically LMX which focuses on the dyadic relational quality between a leader and follower proved most significant, followed by engaging leadership where leaders inspire, strengthen and connect their followers. Both antecedents rely on the leader-member relationship and connection.</p> <p><b>Social perspective:</b> specifically, social capital and social support influence EE through networked and collective relational and interpersonal connection.</p> <p><b>Conclusion:</b> Dyadic and collective relational (interpersonal/social/leadership) antecedents influence EE in the techno working environment.</p>
RQ1.1 What influence do <i>job resources</i> have on a techno worker's experience of employee engagement?	<p>Job resources that fulfil basic needs -</p> <ul style="list-style-type: none"> <li>-Social support</li> <li>-Feedback</li> <li>-Learning and development opportunities</li> </ul>	<p><b>Social job resources are most influential as they fulfill the basic need of relatedness and may facilitate other job resources:</b> SDT (Deci &amp; Ryan 2000) determines relatedness, competence and autonomy as the basic needs of employees. It is concluded that social support fulfills relatedness, and then helps facilitate feedback and learning and development opportunities to fulfill the basic need of competence. Autonomy is assumed as inherent in the context.</p>
RQ1.2 What influence does <i>leader-member exchange</i> have on a techno worker's experience of employee engagement?	LMX	<p><b>Leader-member relational quality and connectedness is most important:</b> LMX is the most significant antecedent of EE in the techno working environment demonstrating the importance of the dyadic relationship between an employee and their leader in the only formal relationship within the techno working context.</p>

### **5.1.1.1 Research question one: discussion of employer influence of employee engagement antecedents in techno workers**

*Leadership perspective* – The results indicate that ‘leadership’ has the most significant influence on EE in the techno working environment with a combined representation of 36%. The only formal reporting relationship consists of LMX and engaging leadership. High quality *LMX relationships* for techno workers occurred by virtue of their membership in this relationship. That is, the reciprocity and quality of the leadership connection presenting LMX as a higher order construct. *Engaging leadership* influences EE through the provision of resources that fulfil a techno worker’s basic needs. This more basic one-way provision of resources indicates a lack of reciprocity and connective membership, suggesting engaging leadership is a lower order construct of leadership than LMX. Together, and as supported by the extant literature, this formal reporting mechanism is perceived to facilitate job resources and manage job demands which results in higher EE experiences (Schaufeli 2015; Breevart et al. 2014).

LMX is posited as a higher order construct than engaging leadership as followers develop unique exchange relationships with their leader and this relational quality influences the followers work attitudes and behaviours (Breevart et al. 2014). These high-quality exchanges have a greater influence on EE as they go beyond the basic, formal contract and are instead based on trust, mutual obligation and mutual respect, resulting in affective attachment (Breevart et al. 2014), which was illustrative of the responses from techno workers. This reciprocal attachment accounts for the increased EE experiences of techno workers. For instance, the findings indicated that these workers wanted to remain part of the ‘in group’ with their manager retaining their immediate managers trust and respect, not letting them down and enabling an ease of rapport in being able to ‘be themselves’. The impact of this higher order attachment can be observed between the influence factor of the two leadership types with LMX (24%) and engaging leadership (12%, Table 5.3 above). The attachment of LMX also results in the greater provision of resources from the leader to the techno workers (Schaufeli 2015) and the techno workers reciprocate this provision with positive work attitudes, behaviours and results. The positive relationship between LMX and EE has been demonstrated in the literature however LMX has been previously represented as a job resource only. Based on the findings of this thesis, there is a strong association between

LMX as an antecedent of EE potentially extending what we know about EE antecedents and outcomes.

Engaging leadership does not include the affective attachment of LMX however its influence on EE can be attributed to the provision of resources targeted at a techno worker's basic needs (Schaufeli 2015). This aligns to self-determination theory (SDT, Ryan & Deci 2012) which determines these basic needs as autonomy, competence, and relatedness. The responses indicated that resources such as coaching, recognition and feedback from a manager satisfied their competency needs. It was also evident in the data that techno workers' managers facilitated broader connection to other colleagues through the facilitation of team meetings, activities and work tasks, thereby fulfilling their relatedness needs. Finally, whilst autonomy is inherent in the remote techno working environment through isolation, the provision of clear direction and expectations enabled autonomy needs to be successfully fulfilled. The extant literature proves that engaging leadership; inspiring in vision, enabling autonomy, building competence, providing relatedness - fulfills employee needs resulting in higher EE experiences (Schaufeli 2015). Through the formalised reporting relationship, techno workers have their basic needs fulfilled directly by engaging leadership influencing EE experiences (Schaufeli 2015).

It can be concluded however, that the combination of the higher order affective attachment of LMX together with the resource provision accessed through engaging leadership may provide a complimentary antecedent effect to techno workers' EE experiences. Unsurprisingly, the isolation of techno working is considered a job demand most successfully mitigated by a relational/social antecedent (Hobfall 1989), such as leadership. As leadership is one of the least studied antecedents in the EE literature (Kaiser et al. 2020), the findings of this research bolster the empirical leadership and EE knowledge base.

*Social perspective* – The social antecedents of social capital (SC, 21%) and social support (SS, 11%) are highly relevant in influencing EE outcomes for techno workers. This indicates that the basic need of relatedness is a priority, and these social antecedents offer the relational connection and attachment needed to mitigate the isolation of techno working.

Social capital had the greatest influence on EE and as detailed in [Section 4.4.3.1](#), and is posited as a higher order construct to SS. This is because it involves a deeper level of connection and affective attachment to the network promoted by the reciprocal nature of the relationship investment. This means that techno workers formed high quality, ‘in group’ relationships with groups of colleagues that shared similar values, attitudes and goals, and exhibited similar behaviours. These connections between colleagues developed in strength over time, consistent interaction and numerous SC ‘webs’ involving many employees. Company leaders played a large part in building the SC amongst techno workers connecting techno workers to other colleagues, leadership being a feature in its own right enabling the provision of SC to direct reports (Schaufeli 2015). The company leaders and collegiate networks created reciprocal trust and shared accountability to such an extent that workers didn’t want to ‘let other’s down’. Non-work-related SC was evident with strong social groups being formed, e.g. fitness groups and a virtual new father’s chat group. This data suggested that these non-work groups were important in alleviating the isolation factor and other job demands (Hobfall 1989). The organisation for many techno workers was the ‘people’ they worked with. Techno workers suggested that social connections extended to office-based employees and nonwork-related interactions resulting in a worldview of being part of ‘something bigger’.

The construct of social capital is not new, however at the time of publication of this thesis, it had not been investigated as a direct antecedent of EE. Social and interpersonal perspectives have also not featured in the literature although they have been considered as important to engagement (Kahn & Heaphy 2013). Conceptual studies progressed during the Covid-19 pandemic which leveraged extant research identified a category coined as ‘communication’ which includes networking and involvement as reinforcing EE in times of Covid-19 (De-la-Calle-Duran & Rodriguez-Sanchez 2021, Chanana & Sangeeta 2020). Whilst this study was conceptual in nature, the inclusion of these more social and inclusive constructs acknowledges the inherent isolation in the context although does not reference the constructs as specifically as found here in this research. Therefore, this is a significant and specific finding, not only important to this contextual investigation, but also perhaps more broadly in consideration of new ways of working.

Social support exists as a lower order construct to SC as explained in [Section 4.4.1.1](#) as it relies on informational, latent, non-reciprocal support and care between colleagues. In this thesis, social support is considered a foundational component for building social capital (Lin 2011). Complimentary to its functioning is LMX and engaging leadership. Social support could be offered directly by other colleagues or facilitated by a techno worker's leader. Social support has been illustrative of the comfort, care and informational support workers require to perform their roles. Chapter four discussed how social support can act as a buffer to professional isolation, which is prevalent in techno working environments (Hobfall 1989). Here, SS is provided by colleagues through virtual means. Together, SC and SS provide the collective networking and relationships that a techno worker needs to perform their role and get the work done.

Social antecedents and characteristics noted from the data helped facilitate the provision of other antecedents or resources such as tools and equipment, feedback, ownership, organisation climate and learning and development opportunities. Prior studies support this proposition that one level of resourcing helps to facilitate other levels of resourcing called multi-level resourcing (Bakker & Demerouti 2018; Bakker 2015). The findings of this thesis therefore support cross-theory research that shows how individual level attributes also aggregate at the unit or firm level, thus enabling the provision of these other resources at different levels of the organisation (Nyberg et al. 2014).

In resolution of research question one, social antecedent types comprising of leadership and other social characteristics (LMX, EL, SC and SS), influence the EE outcomes of workers in remote environments exemplifying the importance of dyadic and collective relationships.

#### **5.1.1.2 Research question 1.1: discussion of the influence of job resources on a techno worker's engagement**

Research question 1.1 asked 'What influence do job resources have on a techno workers' experience of employee engagement?'. [Section 5.1.1.1](#) on research question one presented details drawn from this sub question therefore only a brief summary specific to the job resources identified in the literature review is provided here.

Overall, job resources influenced the EE experiences of techno workers in different ways. Social support proved most influential of all the job resources which confirms propositions of the importance of social and interpersonal perspectives (Kahn 2007; Kahn & Heaphy 2013). The high level of isolation exacerbates the basic need of relatedness therefore social antecedents become a priority for techno workers. Interestingly, prior research shows that outcomes related to higher social support measures are assumed to involve regular face-to-face interactions with colleagues or supervisors (Hausser et al. 2010; House 1981; LaRocco et al. 1980). However, the results here show that online and virtual social support is highly effective for remote workers.

Individual resources such as feedback and autonomy, whilst having some influence, did not enable techno workers to feel part of something bigger or connected to others. If anything, individual level resources reinforced the immediate isolated context of their job which did not result in better EE experiences. However, SS and perhaps other social antecedents facilitated the provision of feedback, learning and development opportunities, where strong leadership provided the task clarity and direction that enabled adequate autonomy. Organisational level resources similarly were somewhat effective, however lacked the relatedness as an associating factor influencing EE. This is consistent with existing research where organisational resources influence processes at the lower level through other resources (social and individual) rather than directly (Bakker & Demerouti 2018). Scholars have called for more empirical evidence to confirm such associations. Further, structural resources - those attributed to job design such as what gets done and how it gets done - did not feature prominently in this context as indicated in the far-right column of Table 5.3 in [Section 5.1.1](#).

This thesis concludes that of the identified job resources, only the influence of SS was most important in influencing techno workers' EE experiences. Social level resources were more successful than individual and organisational level resources.

### **5.1.1.3 Research question 1.2: discussion of the influence of LMX on a techno worker's engagement**

The final part of research question one pertains to LMX. Research question 1.2 asked ‘What influence does leader-member exchange have on a techno workers’ experience of employee engagement?’ As detailed in [Section 5.1.1.1](#), in relation to research question, LMX was the most significant antecedent of EE within the techno working environment. This confirms emerging literature themes that highlighted the importance of the dyadic relationship quality between an employee and their leader. This was the only formal relationship in the techno working context. This confirms the idea that organisations must develop and nurture EE activities in remote working environments which require a two-way relationship between an employer and an employee (Robinson et al. 2004). The fact the LMX was a significant antecedent of EE adds to existing knowledge (Breevaart et al. 2014). The findings related to leadership in this thesis contribute to the small body of knowledge linking leadership to EE which partially informs a gap that scholars have identified (Shuck & Heard 2012; Carasco-Saul et al. 2015). The strong link between LMX and EE helps to answer the research question that LMX plays a critical role in enhancing the EE experiences of techno workers.

#### **5.1.1.4 Summary of research question one: antecedents of employee engagement in techno workers**

Research question one asked how employers influence EE within the techno working environment. While the extant literature on EE antecedents is not always clear and is the subject of disagreement and contention (Saks 2006; Shuck 2011; Bailey et al. 2017), this research draws an important conclusion about how to cultivate an engaged workforce within a remote context. Based on the literature of EE, this thesis proposes two antecedent levels and four construct measures on which future interventions can be based. The results confirm that antecedents with a relatedness and connection focus, specifically leadership and social antecedents, have an influential association within the techno working context. The behavioural context highlighted the importance of the formal reporting relationships, weaving in the importance of social connections and networks. The constructs were characterised by deep, reciprocal connections and affective attachment. Most relevant were LMX showing a positive association with EE and social capital providing similar collective relatedness. These higher order constructs were complimented by lower order dimensions such as engaging leadership, which has not been a priority research area in extant studies (Schaufeli 2015), and social support

which has mainly been dominant in the Job Content Questionnaire with proven links to EE (Karasek 1985; Karasek et al. 1998).

The fact that leadership and social antecedents were pivotal to influencing the EE experiences of remote workers supports Kahn's (2007) original proposition. It confirms the importance of the social and interpersonal perspectives (Kahn & Heaphy 2013). Formal leadership plus higher order LMX relationships were most prevalent. The more collective and networked social job resources of SS and SC were also significantly responsible for higher EE experiences, second to leadership. Taken together, the need for organisations to focus on the development of dyadic leadership-employee and social relationships for techno workers is an important contribution to the current body of EE knowledge. While no empirical studies of these relationships exist, conceptual papers (Pattnaik & Jena 2021; Baez 2021) note that interventions such as mindfulness and gamification are important for better EE results for remote workers. While the latter may be the case in some contexts, the findings of this thesis lend support to the success of different social type antecedents in influencing EE outcomes. Given that these results were based on pre-Covid-19 data suggests that they are free of other biases influencing remote workers. The identification of social capital as a new and unresearched antecedent of EE provides an opportunity for future scholars and practitioners to explore which EE interventions are more relevant in a post Covid-19 environment.

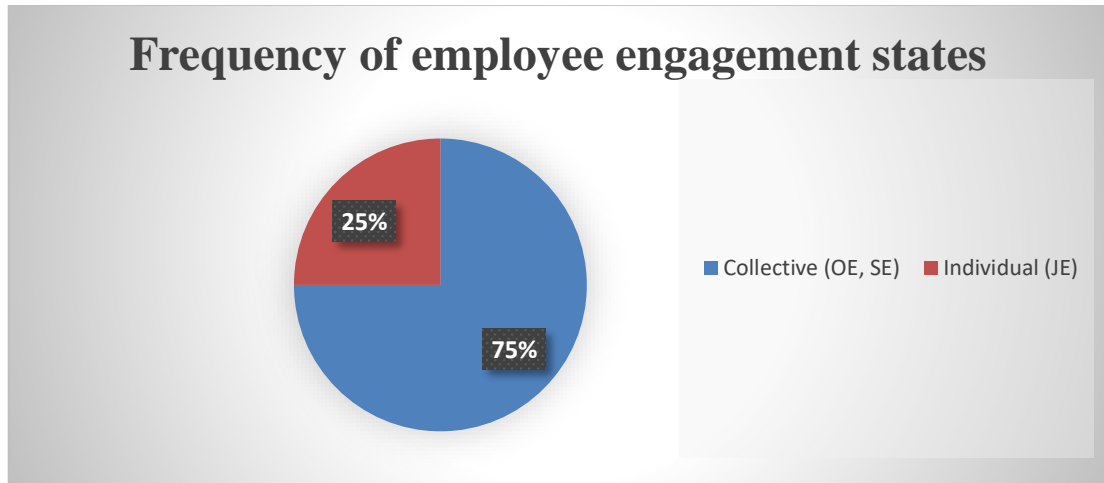
### **5.1.2 Conclusions about research question two (RQ2) – the experience and state of employee engagement**

The results in Chapter four indicate that the predetermined multidimensional state of employee engagement is highly relevant to remote workers. Three states of EE were evidenced in the data and discussed in Chapter four namely, OE, SE and JE. Job and organisation engagement are the basis of a large body of research in the extant literature (e.g. Saks 2006 & 2019; Farndale et al. 2014). The third new and influential state was social engagement. Taken together, OE and SE in respect of remote workers are collective experiences of EE broadly focused on the organisation and on the social networks developed. This is unlike the more individual aspect of JE which focused only on the techno workers' job role. Figure 5.2 illustrates the difference between individual and collective EE to aid the discussion and resolution of research question two. Trait



engagement is not included here as it not a state of EE, however it emerged as an insignificant finding in Chapter four.

**Figure 5.2 Frequency of employee engagement states**



Collective states of EE account for 75% of all the EE experiences of techno workers with individual states namely JE only accounting for 25% of all EE experiences. Table 5.5 illustrates the sense making related to the significant emerging themes from the data in relation to research question two. The sub research questions 2.1 and 2.2 are discussed in further detail in the following sections.

**Table 5-5 Conclusive findings for research question two relating to the experience and state of employee engagement in techno workers**

Research question	Significant emerging theme identified in the data	Sense making of the key findings identified
RQ2 How do techno workers experience the <i>state of employee engagement</i> ?	<p>Collective EE experiences: 109 responses.</p> <p>Social engagement: 48 responses.</p>	<p><b>Multidimensional engagement:</b> techno workers experienced multidimensional EE with three engagement focuses emerging in the findings; OE, SE and JE.</p> <p><b>Collective employee engagement experiences are most significant:</b> the results indicate that collective engagement experiences connecting techno workers more broadly to the organisation and others (OE and SE, 75%) were more prevalent than JE (25%) which has an individual job role focus.</p> <p><b>Social engagement:</b> emerged as a new and important experience of EE within the MDA.</p>
RQ2.1 What is a techno worker's experience of <i>job engagement</i> ?	Job engagement: 37 responses.	<b>Not a significant EE experience:</b> whilst the context implied a primary focus on the job role, this experience of EE was not prevalent.
RQ2.2 What is a techno worker's experience of <i>organisation engagement</i> ?	Organisation engagement: 61 responses.	<b>Dominant experience of employee engagement:</b> organisation engagement emerged as the most significant EE experience for techno workers.

**5.1.2.1 Research question two: discussion of a techno worker's experience of employee engagement**

The discussion and conclusion to be drawn from research question two overall are now discussed inclusive of the findings of the two sub research questions. As per the key findings presented in Table 5.5 (above), conclusions are drawn about the participant responses related to the multidimensional aspects of EE, and the new emergent EE experience of social engagement (SE).

### *Multidimensional engagement*

Techno workers experienced multidimensional EE experiences relative to their job, the organisation and socially as previously discussed. The isolation of techno working was presumed to influence organisation engagement more than any other engagement type. However, while both JE and OE were important, JE was less significant. The results substantiated the fact that the unique difference between JE and OE, identified in extant research (Saks 2006), had not received enough focus by scholars. While most studies have explored job/work engagement, the results of this thesis suggest that the multidimensional approach plus a stronger focus on OE is required in future studies (Saks 2019). Given that the multidimensional approach has also only investigated JE and OE (e.g. Saks 2006 & 2019; Farndale et al. 2014), this research is the first empirical study to include a third dimension (social engagement) to the multidimensional approach.

### *Collective employee engagement experiences are most significant*

Research question two asked how techno workers experience the *state of employee engagement*. The collective EE experiences of OE and SE were more important than the individual EE experiences of JE for techno workers in respect of RQ2. This is different to the emphasis on job engagement in much of the literature. Together, OE and SE accounted for 75% of all EE experiences illustrating that remote and isolated workers experience more collective EE influences than more proximal JE experiences.

Drawing from research question one, LMX emphasised the importance of social and relational antecedents that buffered the professional isolation. Techno workers identified strongly with the organisation and their teams and colleagues, which resulted in the stronger inclination towards these more collective states. Across both the EE antecedents and EE experiences, there was a significant emphasis of the collective, interpersonal and social factors mitigating against the experiences of isolation.

This finding makes a significant contribution to extant EE theory and knowledge. That is, there is a preference for the collective EE states over individual states. This collective sense of EE may have been present and relevant in traditional EE findings however not as poignant due to the inherent collective nature of the working environment with everyone being co-located. The greater influence of collective EE results are aligned

with Saks (2006) findings for stronger OE over JE as OE is the collective representation of EE. Overall, this is a positive finding to encourage greater investigation into collective forms of EE as called for by Saks (2006 & 2017). Based on the review of the literature in Chapter two, only four studies have used the OE measure (Saks 2019).

### *Social engagement*

The results of this thesis are the first to identify social engagement as a state and experience of EE. Participants referred to an experience of EE that was different to the extant measures of JE and OE. This new experience of EE was characterised by shared values, attitudes and behaviours, which is similar to the definition provided by Soane et al. (2012). In addition, shared goals galvanised the network of techno workers and colleagues such that shared outcomes were critical to the overall SE experience. The ISA measure comprised three aspects of engagement one being SE while the others were represented by the psychological aspects. By comparison, SE in this thesis was added to the MDA of EE, with SE as a separate state of EE. This is similar to the way in which JE relates to the work role and focus on the job. Similarly, OE is distinguished from SE given it concerns an employee's role as a member of the organisation. Social engagement acknowledges the social nature of work where an employee's EE focus is on the networks and teams, they work with to achieve set goals and outcomes. This new EE focus between the individual and organisation recognises the role of the team and the importance of the collegiate social network that influences EE outcomes.

In summary, SE emerged as another dimension of EE separate to OE and JE. The researcher saw this as an added factor within the multidimensional approach to EE. Social engagement is thus considered as a unique EE dimension and proposed measure since it relates to shared attitudes, values, behaviours and goals. This critical finding answers calls from theorists to acknowledge the social nature of work (Kahn & Heaphy 2013) and supports the claim that employee socialisation practices mitigate the negative effects of distributed work (Mann & Holdsworth 2003), to which techno working is similar. This SE finding addresses the call to move the concept of employee engagement forward by, “*building* on the key advantage of the focus on employees, their beliefs, values, behaviours, and experiences at work in a way not seen before the mainstream *efforts*” (Purcell 2014 p. 251). Finally, it may also contradict previous claims of distributed work studies which suggested that employees removed from the physical

work environment, office structure and social atmosphere were less engaged (O'Neill et al. 2009). However further research is required to explore these associations.

### **5.1.2.2 Research question 2.1: discussion of a techno worker's experience of job engagement**

Research question 2.1 asked what is a techno workers experience of *job engagement*? Job engagement (JE) was explored in Chapter two as a well-known construct of EE (Saks 2006 & 2019; Bailey et al. 2017). As illustrated in Table 5.5 in Section 5.1.2, JE had a weak presence within the techno working environment, less than OE and SE. This was a surprising outcome given that it was presumed to be important because of the close proximity of the job to the context explored. Although techno workers are closer to their job than their employing organisation, the physical and psychological separation is expected to produce salient differences in the experiences of ambiguity and role conflict (Sardeshmukh et al. 2012). It was expected that such experiences might influence more negatively a remote workers role. However, as noted, the collective factors of OE and SE were more important to techno working than precedence over JE.

This finding supports calls to differentiate OE from JE (Saks 2019). This sub question was developed to understand the presence of the most common EE state commonly referenced in the literature. The findings suggest that JE is still relevant, but not to the same extent as the collective EE states such as OE and SE. Taken together, this differentiation between individual and collective states of EE is an important contribution to the EE literature and the body of knowledge.

### **5.1.2.3 Research question 2.2: discussion of a techno worker's experience of organisation engagement**

Research question 2.2 asked what is a techno worker's experience of *organisation engagement*? In Chapter two, the discussion explored why OE is an aspect of the multidimensional approach to EE. Research question 2.2 accordingly explored a techno worker's experience of OE. It was posed that OE may not be as relevant for techno workers because of their psychological and physical distance from their employing organisation. That is, the researcher expected that the organisation's reputation may not

be as salient to remote workers where the experience of JE may be favoured. However, OE emerged as the most significant state of EE experienced by techno workers dominated SE and JE respectively. This finding suggests a stronger inclination towards collective experiences together with a stronger psychological presence, connects their job role to something bigger outside their immediate context, such as the organisation. This finding is highly informative for employers as OE strategies have proven to be a strong predictor of all EE outcomes (Saks 2006). Extant studies have found OE is related to the antecedents of perceived organisational support and procedural justice (Saks 2006). While this thesis cannot categorically prove a direct relationship between OE and higher EE outcomes, the findings are indicative of a strong association between leadership and social antecedents that influences the overall level of OE techno worker experiences.

The discussions in Chapter four highlight how different OE experiences culminate in techno workers getting involved in organisational happenings and ‘coming alive, feeling exhilarated and captivated by their organisation which confirms original OE studies by Saks (2006) and others.

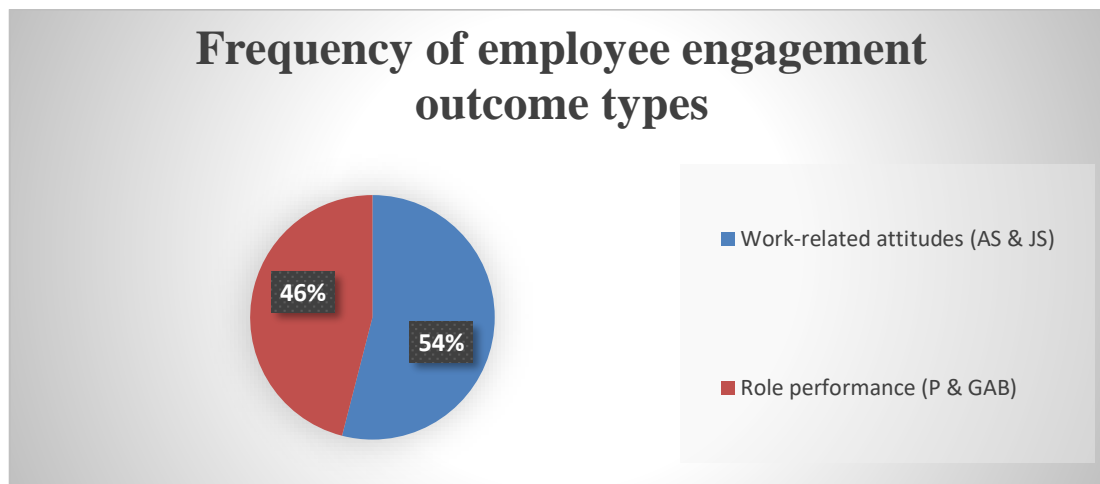
#### **5.1.2.4 Summary of research question two: the experience of employee engagement**

In summary, the findings of sub questions 2.1 and 2.2 help to find answers to research question two. Based on the themes from the EE literature and the data, the findings suggest that workers experiences are multidimensional consisting of organisation, social engagement and job engagement. Employers and scholars need to develop interventions that target more than just the performance of a remote worker’s job role and JE. The JE impetus is common in the literature (Saks 2019) and the main source of focus for some large engagement management practices such as the Gallup methodology. Techno workers favour a stronger psychological presence within their organisation and within their social relationships that connects them to the organisation’s collegiate networks. Finally, SE emerged as a new experience of EE specific to techno workers. It is defined specifically and separate to JE and OE in that it is a collective experience of engagement where the focus is on the relationships and connections forged such as shared behaviours, attitudes, values and common goals.

### 5.1.3 Conclusions about research question three (RQ3) – The outcomes of employee engagement

The findings in Chapter four indicated that the outcomes associated with EE in techno working were achievement satisfaction (AS), job satisfaction (JS), productivity and going above and beyond. These outcomes all had an individual focus (Table 4.14, Section 4.6) and the outcome types were split between the work-related attitudes of AS and JS, and the job performance types of productivity (P) and going above and beyond (GAB). Whilst other outcomes were evident, these are not deemed significant enough for discussion and resolution of the research question. Figure 5.3 depicts the outcome types relevant to the discussion and resolution of research question three.

**Figure 5.3 Frequency of employee engagement outcome types**



Work related attitudes account for 54% of outcomes associated with EE in techno working, only slightly more than role performance outcomes (46%, Figure 5.3). Further, both these work-related attitudes are related to personal satisfaction. Table 5.6 (below) refines these findings to draw conclusions aligned to research question three. The sub research questions 3.1 and 3.2 derived from the themes emerging from the literature review, are next discussed, however their findings are summarised in contribution to the overall resolution of research question three.

**Table 5-6 Conclusive findings for research question three relating to the outcomes of employee engagement in techno workers**

Research question	Significant emerging theme identified in the data	Sense making of the key findings identified
<p>RQ3 What <i>outcomes</i> are associated with a techno worker’s experience of employee engagement?</p>	<p><b>Individually focused outcomes prevail</b></p> <p><b>Work-related attitudes (Personal satisfaction = job satisfaction + achievement satisfaction)</b></p> <p><b>Individual attitudes and role performance are significant outcomes</b></p> <p><b>Achievement satisfaction</b></p>	<p><b>Individually focused EE outcomes are dominant:</b> these outcomes associated with EE accounted for over 85% of EE outcomes experienced in the techno working environment as demonstrated in Table 4.14 in Section 4.6.</p> <p><b>Work-related attitudes pertaining to personal satisfaction are most significant:</b> the combination of job satisfaction and achievement satisfaction accounted for 54% of all outcomes associated with EE demonstrating the prominence of individual work-related attitudes of satisfaction in this context.</p> <p><b>Role performance is also a significant outcome of EE:</b> role performance outcomes account for 46% of significant outcomes associated with EE.</p> <p><b>New emergent outcome of achievement satisfaction (19.5%):</b> this new construct emerged as differentiated from job satisfaction in that it had a defined achievement focus and was the most significant outcome in this context.</p>
<p>RQ3.1 How does <i>job satisfaction</i> emerge as an outcome of EE in techno workers?</p>	<p>Job satisfaction 18.8%</p>	<p><b>Job satisfaction was a significant outcome associated with EE:</b> job satisfaction resulted as the second most prevalent outcomes associated with EE with a total of 18.8% of all responses.</p>



Research question	Significant emerging theme identified in the data	Sense making of the key findings identified
RQ3.2 How does <i>organisation commitment</i> emerge as an outcome of EE in techno workers?	Organisational commitment 8%	<b>Organisational commitment is not a significant outcome of EE in techno working:</b> Organisational commitment garnered 8% of all responses deeming organisation focused work-related attitudes irrelevant.

### 5.1.3.1 Research question three: discussion of the outcomes associated with a techno worker's experience of employee engagement

Research question three pertains to the outcomes associated with techno workers' experience of EE. Four key findings emerged from the data collated in [Chapter four](#) and these are now discussed in exploring the answers to this question.

#### *Individual focused EE outcomes are dominant*

As shown in Table 4.14 ([Section 4.6](#)), outcomes associated with EE that have an individual focus, whether morale or performance based, accounted for over 85% of all outcomes associated with EE in the techno working environment. This finding may be explained by SDT (Deci & Ryan 2000), which suggests that techno workers need their basic needs met and become more satisfied when this occurs. The prioritisation of self over others is observed here with individual focused EE outcomes dominating. Furthermore, these outcomes can be determined more immediately due to their proximity to the individual. Organisational-focused outcomes are less proximal and perhaps not as available to techno workers due to their remoteness. For example, they may not be aware of their personal impact on the company performance. Individual focused associated EE outcomes are most typical in this context with the individual focus aligning to the isolated nature of the context.

#### *Work-related attitudes pertaining to personal satisfaction are most significant*

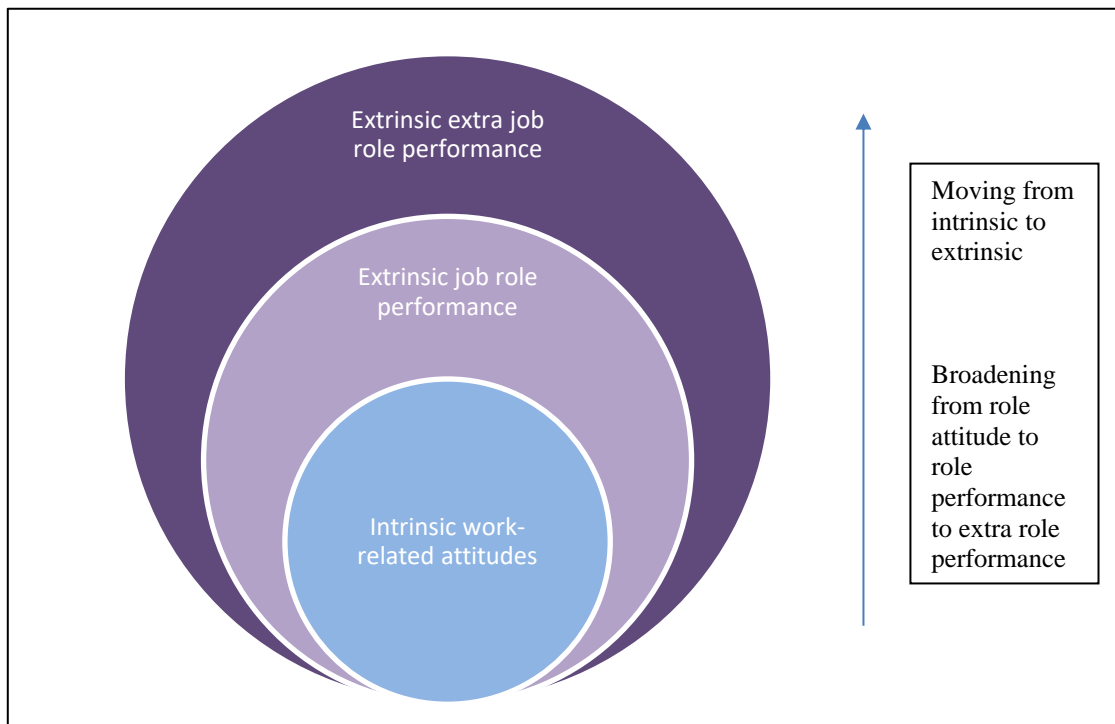
The two most resonant outcomes associated with EE experiences were job satisfaction and achievement satisfaction. Combined, they accounted for over 54% of all significant outcomes demonstrating the prominence of individual work-related attitudes of satisfaction. Consistent with SDT, the individual prioritisation of satisfying basic needs

can also explain this finding (Deci & Ryan 2000). The participants' responses concluded that when techno workers experience EE, they are satisfied with their jobs and achievements, which is deemed positive for morale. This aligns with the extant literature which links EE to work related attitudes (Bailey et al. 2017), although some studies have found the association unclear (Hoigaard et al. 2012).

*Role performance is also a significant outcome of EE*

Table 4.14 (Section 4.6) shows the four most significant outcomes associated with EE experiences for techno workers. They are in order, the work-related attitudes of 1) AS and 2) JS, followed by the role performance outcomes of 3) productivity and 4) going above and beyond. Together, these four outcomes account for 70.5% of all associated outcomes of EE. Interestingly, their attitude towards their work is most important, followed by performance in their work role, and then performance extraordinary to their role. This hierarchy builds in three stages from individual intrinsic attitudes concerning the role, to the extrinsic nature of their role, then to broader than their role demonstrated in Figure 5.2 (Section 5.1.2). These findings show that individual attitudes related to satisfaction are further complimented by in-role and extra-role performance outcomes providing techno workers with the positive attitudes to motivate their work and also the personal and organisation results to meet expectations. This is illustrated pictorially in Figure 5.4 (below) potentially helping employers how to predict the relationships between EE experiences and associated outcomes, from attitudinal to performance based.

**Figure 5.4 Broadening importance of associated outcomes of employee engagement in techno working**



*New emergent outcome of achievement satisfaction*

Achievement satisfaction is a new construct that was most commonly associated with EE experiences in the techno working environment. This combined performance-morale associated outcome emerged unique to job satisfaction with a specific achievement focus. As explained in [Section 4.6.3.1](#), achievement satisfaction can be defined as a unique feeling of satisfaction in one's role linked to the individual or collective achievement of results and successes. Accounting for 19.5% of all responses, this combined associated outcome resolves previous concerns about morale-based EE outcomes. Theorists have argued that attitudinal EE outcomes such as job satisfaction wrongfully assume that happy employees are high productivity employees (Saari & Judge 2004). This debate is resolved by the emergence of this new construct which subjectively indicates that an employee's happiness in their role is connected to how productive they are through what is achieved or achievement motivation.

### **5.1.3.2 Research question 3.1: discussion of job satisfaction as an outcome of employee engagement in techno workers**

How does *job satisfaction* emerge as an outcome of EE in techno workers? This sub question concerned the investigation of job satisfaction associated with the experience of EE within the techno working environment. Job satisfaction returned the second highest response rate (18.8%) just below achievement satisfaction (19.5%), proving its strong association with the experiences of EE within techno working context. Extant literature has previously determined the positive relationship between EE and job satisfaction (e.g. Biswas & Bhatnagar 2013), however studies have been predominantly quantitative cross-sectional studies (Bailey et al. 2017). Therefore, this investigation is unique in presenting a positive EE association from the qualitative approach in this thesis.

It is also important to consider what actually constitutes job satisfaction within this context made possible through the qualitative investigation. Elsewhere, JS actually represents several related attitudes with theorists claiming that JS has different dimensions. These are noted in the seven-dimension INDSALES model (Churchill et al. 1974), the five-dimension JDI model (Smith et al. 1969), and other four-dimensional models that have emerged across the literature (Wood et al. 1986; Munir & Rahman 2016). These models include the dimensions of benefits, co-workers' support, managerial support, and career development support (Munir & Rahman 2016). They also include satisfaction with supervision, policies, promotion and advancement, co-workers, customers and overall job satisfaction (Smith et al. 1969; Wood et al. 1986; Munir & Rahman 2016), all of which were noted in the responses from participants. However, the analysis of these dimensions does pose the question as to whether achievement satisfaction may actually be a dimension of overall job satisfaction.

This feeling of being satisfied at work or in their job may also be important in techno working for another reason. Researchers have proven that there is a relationship between job satisfaction and life satisfaction where most commonly job satisfaction spills into life satisfaction and vice versa for most employees (Judge & Watanabe 1994). Life satisfaction is defined as, “[A]n overall assessment of feelings and attitudes about one’s life at a particular point in time ranging from negative to positive”, of which job

satisfaction may be a contingent (Buetell 2006). As techno workers most commonly work and live in the same space within their homes, the continuity of physical and psychological work and home environments may enable greater opportunities for satisfaction to blur or spill, therefore greater incidences of holistic satisfaction. However, satisfaction blurring or spilling can also go the other way with discontentment at work spilling into the home environment. Although this research is unable to determine causality with EE resulting in job satisfaction, the perceptions offered by participants indicate a strong association and prior research (Judge & Watanabe 1994) lends to explain the possible benefits for the techno working context.

### **5.1.3.3 Research question 3.2: discussion of job satisfaction as an outcome of employee engagement in techno workers**

Research question 3.2 asked how does *organisation commitment* emerge as an outcome of EE in techno workers? The final sub question relates to the organisational commitment (OC) associated with the EE experiences of techno workers. Organisational commitment is a common EE outcome investigated in extant research with a positive link found across nine studies (Bailey et al. 2017). This qualitative investigation found that while OC was an outcome associated with the EE experiences of techno workers, the association was not strong accounting for only 8% of all responses. The most significant outcomes associated with EE were individually focused on satisfaction and performance rather than organisationally focused such as OC or organisation performance. Whilst EE antecedents and experiences have predominantly been collectively focused, outcomes associated with EE are predominantly individually focused. This suggests that the greater collective EE experiences such as OE and SE are different to EE outcomes. OC registered low response rates across all participant groups. This finding is consistent with an extant study that found the continuous succession of distributed working decreased organisational commitment and increased professional isolation (de Vries et al. 2019). Whilst this thesis excluded the causality measurement of professional isolation and OC, professional isolation was highly prevalent in techno working with an average incidence of 80%. Therefore, the weak association of EE with OC underpinned by extant findings would suggest that OC is unmeaningful in this context.

Previous studies have concluded that remote working negatively impacts the organisational elements of commitment, whilst job elements are not impacted (de Vries et al. 2019). This calls into question the employee's experience of the organisation which may be substantially altered by the constancy of separation. Further, extant research shows OE resulted in higher JS than OC (Saks 2006), which is also supported by this research where job focused attitudes resonated more strongly as a result of EE experiences than organisational focused attitudes.

#### **5.1.3.4 Research question three summary: the outcomes of employee engagement in techno working**

In resolving research question three overall, this research draws four important conclusions about the outcomes associated with the EE experiences of techno workers; 1) individually focused outcomes are prioritised, 2) work-related attitudes of satisfaction draw the strongest association with EE experiences, 3) role performance outcomes are also strongly associated with EE and finally 4) a new outcome associated with EE emerged in this context defined as achievement satisfaction. Significantly, individual work-related attitudes were dominant (70.5%) with achievement satisfaction and JS reaping the strongest associations with EE in techno working contributing to extant EE theory. Further investigation is warranted into the emergent construct of achievement satisfaction which refines the focus of job satisfaction as the achievement of goals, expectations and successes related to the job which can be individual or collective. Of the two predetermined outcomes of EE emerging from the literature review, JS is relevant in the techno working environment, with OC returning a weak association not worthy of further investigation. The overall theoretical contribution of this thesis with respect to research question three is that techno workers experience individually focused outcomes of EE experiences and these attitudes are complimented by individual performance outcomes.

## **5.2 Findings relative to the conceptual model**

Chapter one introduced a conceptual model and main variables which were further explained in Chapter two. A revised conceptual model (Figure 5.5) is now presented below incorporating the findings from Chapter four which have been discussed and

concluded above in Chapter five. The model below depicts only the constructs deemed meaningful and significant in line with the findings discussed.

**Figure 5.5 Conceptual model depicting main variables**

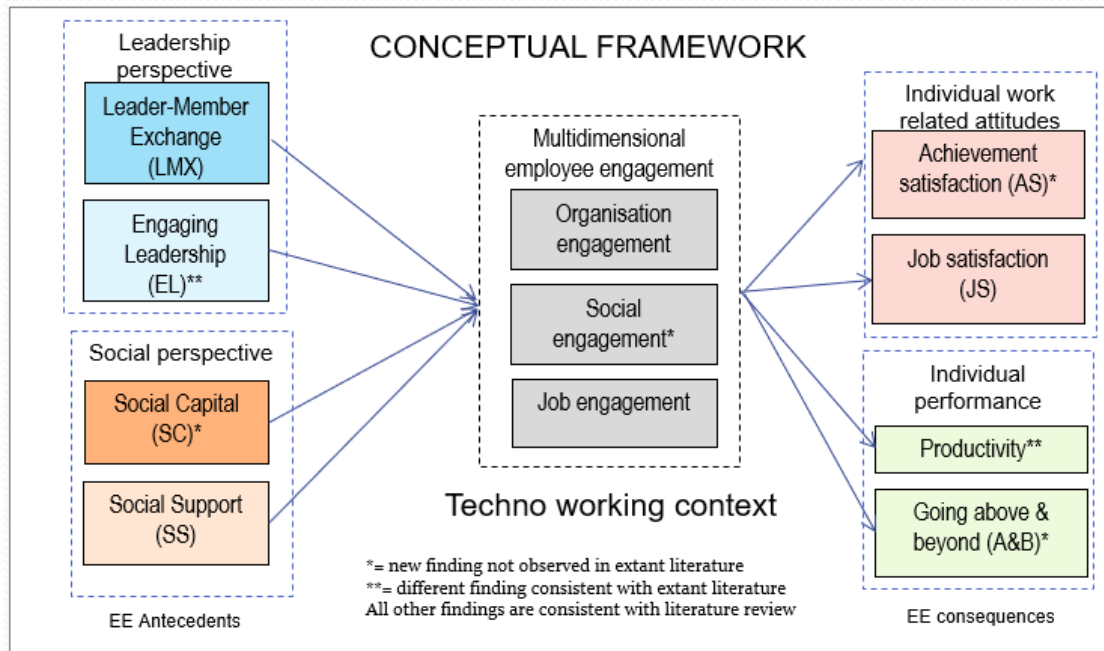


Figure 5.5 depicts the antecedents of EE, the multidimensional experience of EE and the associated outcomes of EE experiences within the techno working context. The relationships illustrated are based on the overall findings and discussions and conclusions related to the research problem and the research questions. The antecedents of LMX and SC appear darker in the model as the higher order constructs representing the leadership and social perspectives against the lighter coloured lower order constructs of SS and EL, all of which influence multidimensional components of EE in this context. The three dimensions of EE are represented by OE, the new dimension of SE and the most common EE state investigated in the literature, job engagement (Saks 2019). The experiences of EE are associated with two types of EE outcomes: 1) individual work-related attitudes related to satisfaction (AS and JS), 2) individual performance outcomes (productivity and going above and beyond), both which add to the extant EE literature and emergent in this research. The findings in Figure 5.5 contribute to scholarly extant research about the emerging findings of a multidimensional approach to EE when SE is added as an additional EE dimension to be explored. For instance, future empirical

research should explore how the multidimensional approach to EE is influenced when SE is added.

The conceptual model in Figure 5.5 proposes that two leadership and two social antecedents are influential within the remote working context. The thesis found that these relational and interpersonal antecedents buffer the inherent physical and psychological isolation of the techno working context. The context is significantly influenced by the association between the multidimensional EE dimensions discussed such as the collective experiences of EE. Organisation and social engagement were a counterpoint to the individualised nature of the work role and had a significant influence on the experiences of workers. Finally, as an addition to how existing research conceptualises various EE relationships, the consequences of EE experiences illustrated in Figure 5.5 relate to individual work-related attitudes and performance outcomes as distinct from the JE findings in extant EE studies.

These four antecedents are included as the most meaningful contributors to EE in techno working. Multidimensional EE is justified through the strong representation of OE, SE and JE, whilst the four proposed outcomes associated with EE experiences were the most significant of all outcomes recorded and warranted included in this conceptual model.

### **5.3 Conclusion about the research problem stated in Chapter one**

The research problem outlined in Chapter one is restated here:

*‘What are the antecedents, outcomes and experiences of EE in techno workers in remote working environments?’*

The research problem determined that the investigation would be underpinned by social exchange theory (SET) and focus on three themes 1) EE antecedents, 2) the experience of EE and, 3) the outcomes associated with EE. These themes then informed the three research questions and the basis for the semi structured interview questions and quantitative survey.



The research results showed that employers are influencing the EE experiences of techno workers in a positive sense through social and interpersonal organisational artefacts. These are reflected in both dyadic and networked social and interpersonal relationships at varying levels. The leadership perspective captures the dyadic nature of the only formal reporting relationship in the techno working context through two leadership antecedents, LMX and engaging leadership. LMX exemplifies the higher order reciprocal leader-member relationship required while engaging leadership refers to a unilateral relationship between a manager and employee's basic needs. Networked social relationships such as SC and SS are the collective antecedents creating the sense of belonging in community (social capital), which is important as techno workers are separated by time and space. The experience of EE for techno workers emerged from a multidimensional approach of EE where OE and SE were dominant, with JE less significant. Within the techno working context, organisation artefacts reflected the leadership and social perspective antecedents (LMX, EL, SC and SS). Out of these, the OE and SE experiences of techno workers emerged strongly to overcome the isolation of the context by encouraging stronger connection and relatedness.

The proposed research model in Figure 5.5 illustrates the relationships between the antecedents and the EE outcomes in respect of satisfaction and performance more broadly. It was discussed how the findings were associated with social and interpersonal antecedents and their consequences were distinctly individual. In answering the research problem, there was a positive association between EE and consequences of work related attitudes of satisfaction and satiation focused on one's role. This was complimented by individual performance outcomes related to productivity and going above and beyond one's own role. These findings were related more at the individual level similar to extant research (Bailey et al. 2017). This is significant in helping to answer the research problem in relation to how the antecedents of LMX, engaging leadership, social capital and social support, influence the multidimensional engagement experiences of techno workers with consequences of satisfaction and performance in a techno working context.

#### **5.4 Implications for theory**

The findings of this thesis draw attention to a number of important implications for theory about EE, EE strategies and remote working.

#### *Advancing EE contextually*

As extant EE research has focused on employees working in traditional workplaces with little focus or interest on the setting within which the studies take place (Bailey et al. 2017), this thesis addresses this limitation of EE context. The findings of this research demonstrate the importance of contextual EE research in that holistically, they are differentiated from extant research and unique to the techno working context. This thesis has specifically identified the importance of collective organisational artefacts and social and interpersonal factors in engaging remote employees who are separated from the organisation and others physically and psychologically, leading to EE consequences that are individually focused. This is a significant contribution to the literature as theorists have called for contextual research to better understand differences in job types and job settings (Bailey et al. 2017). The findings of this thesis potentially help academics and practitioners to better understand the links between antecedents and findings within remote or techno working contexts.

With the predicted rise of remote working post the Covid-19 pandemic (Global Workplace Analytics 2020), these findings not only significantly inform extant EE theory, but also provide important insights about remote and techno working environments. The latter is becoming the typical employment context for global employers and employees. Whilst previous studies have investigated new ways of working such as remote, distributed and teleworking (see De vries 2019; Sardeshmukh et al. 2012; Masuda et al. 2016; Ugargol & Patrick 2018; Brummelhuis et al. 2012), these studies focused on these practices as mediators of EE or temporary work practices. Prior studies have not focused on social capital and engaging leadership for instance as important antecedents that lead to higher job satisfaction and job performance. Therefore, the contribution of this thesis extends scholarly understanding of EE beyond the traditional workplace. A significant contribution to the EE body of knowledge more generally is that the experiences of employees within this specified context are significantly influenced by LMX and engaged leadership as well as social support and social capital. These antecedents are thus different to prior research on how the job is

designed and how this leads to employees feeling more or less engaged (Bailey et al. 2017; Bakker et al. 2007).

*Advancing the application and understanding of multidimensional EE*

Theorists have stated that it would also be “useful to know more about the locus of individuals’ engagement, for instance, are people engaged with their job, their work team, their organisation...?” (Bailey et al. 2017, p. 46). This limitation has been addressed in the findings of this research illustrating that a multidimensional EE approach will be experienced by techno workers in respect of the extant OE and JE states and the newly emerging state of social engagement. The collective focuses of EE (OE and SE) proved most dominant in the techno working environment followed by JE. This collective focus of EE facilitates the nature of belonging and connection to the organisation and others that is required by techno workers in their otherwise isolated separation. The experience of JE was not a prominent as it lacked the ability to connect techno workers to the broader organisation and their colleagues reinforcing their isolation and proximity to their job roles. This is an extraordinary finding and contribution to the literature in that OE activities, which is under-represented and researched in the literature (Bailey et al. 2017; Saks 2019; Guest 2014), was rated highly by techno workers. Furthermore, the thesis found the emergence of a third state within the MDA, that is, social engagement as having similar influence as the more popular states of JE and OE (Saks 2006 & 2019).

This third state of SE defined by the shared social attributes of values, attitudes and behaviours can be differentiated from the other collective focus of EE, OE (Soane et al. 2012). However, the findings of this thesis suggest that the SE construct should include an additional defining element related to shared goals and achievements. This is also a significant finding given that it is different to the SE construction of the ISA engagement measure where SE is a facet of EE not a state in its own right (Soane et al. 2012). The additional SE variable emerged from the data as an important social factor that contributed to the overall sense of EE findings related to techno working. This new finding makes a significant contribution to the EE body of knowledge and addresses theorists’ concern about the social nature of work and EE (Kahn 1990). To date, SE has not been conceptualised to any great extent. The distinction of these engagement states in this thesis justifies the multidimensional and multi focused nature of EE. It also

addresses the blurring and uncertainty between JE and OE states better informing “findings that are difficult to interpret and generalise” (Saks 2019 p. 34), as discussed in Chapter two.

#### *Advancing the leadership perspective and the role of leaders and EE*

Leadership has been widely underexplored within the EE literature (Carasco-Saul et al. 2015), although the few extant studies have found positive associations between leadership and EE (Breevart et al. 2014). Leadership perspectives emerged in the findings as being the most important antecedents in the techno working environment which is a significant finding. Specifically, LMX has been considered an antecedent of EE in its own right which extends prior research where EE was considered as a job resource only (Breevart et al. 2014). The construct of engaging leadership, which is a relatively new concept, emerged in the findings of this research. This not only advances scholarly understanding of the influence of leadership on EE, but significantly informs how engaging leadership is related to the EE perceptions of employees in a techno working context. The researcher is not aware of similar qualitative studies.

The two leadership concepts revealed in the findings presented the opportunity for comparison. The findings revealed that the relational quality of LMX and its reciprocal feature suggested that LMX was a superior leadership perspective to the more transactional, unilateral and lower order concept of engaging leadership. This differentiation suggests that this is a possible contribution to leadership theory even while the data set was not representative of general leadership theories. With two differentiated concepts of leadership emerging as key antecedents of EE in this research, leaders play an influential role in the formal reporting EE relationships in this context.

#### *The pertinent role of social and interpersonal factors in remote working*

Social and interpersonal factors are critical to EE in the techno working environment as they enable the connection and sense of belonging required to satisfy techno workers’ innate basic need of relatedness. Whilst theorists have understood the importance of these factors in influencing EE, they have been notably absent in the literature (Kahn & Heaphy 2013; Schaufeli 2013), with these findings advancing scholarly understanding in relation to social factors in the extant EE literature. Overall, social and interpersonal factors that are dyadic (LMX and engaging leadership) or network based (social capital

and social support) were found to represent meaningful findings in respect of work related attitude (AS and JS) and individual performance (productivity and going above and beyond). These factors act in such a way that they buffer and mitigate the isolation of the techno working environment by providing techno workers with leadership and collegiate social conduits. Social capital and LMX can be considered higher order constructs defined by their high quality functions associated with reciprocity and relational depth. Social support more generally and engaging leadership specifically are more unilateral and transactional. However, they provide necessary social and interpersonal support within the techno working environment. To date, the EE antecedent of social capital has not been considered as a feature of the EE literature. The findings of this thesis suggest however that it has an influence on the EE activities within a techno working context.

#### *Individually focused outcomes*

This research indicates that whilst the findings for EE antecedents and experiences were dominated by collective, social and interpersonal constructs enabling a sense of connection and belonging for techno workers, the consequences of these EE experiences were focused entirely on the individual. The contrast of these findings is particularly interesting and prompts further investigation about EE experiences and their consequences for future research. The implications of this finding is that individually-focused outcomes need to be better understood by organisations in how to leverage their proximal focus in geographic and remote work environments.

### **5.5 Implications of the results for methodology**

Along with the theoretical implications, this research also has implications for methodology. These findings will now be briefly addressed.

#### *Understanding EE through induction*

The inductive nature of this research makes a major contribution to the EE literature by 1) identifying the combination of leadership and social antecedents leading to EE for employees in remote techno working environments, 2) discovering that techno workers experience a multidimensional state of EE wherein the collective experiences of EE are preferred such as OE and SE over the less significant JE, and 3) the outcomes speak

to the individual rather than organisational focus with work related attitudes relating to satisfaction and individual performance. The qualitative causes of EE are bolstered by this research. The interpretation of data from the interviews provides insights into the employees' experiences of remote working. The adoption of interpretivism for this investigation has enabled the emergence of new findings and information not common in positivist investigations, such as the development of a new relational model (Figure 5.5 in [Section 5.2](#)). Thus, the qualitative research provided greater empirical clarity around key EE antecedents and how these lead to EE experiences and outcomes within a remote work context in this case specific investigation. This also contributes ideas towards developing a positivist and pragmatic investigation to better identify causation and correlation, understand these relationships and their broader generalisability and replicability.

#### *Real findings from real situations*

Previous EE research has focused on the traditional nature of work in traditional workplaces which has resulted in theory and outcomes bringing in to question their transferability and generalisability. Furthermore, the few studies released during and post the Covid-19 pandemic that have focused on remote working have either been conceptual in nature or taken a positivist approach in applying extant literature and theory to a new phenomenon (De-la-Calle-Duran & Rodriguez-Sanchez 2021; Chanana & Sangeeta 2020). As discussed previously, this is a limitation of the literature in the sense that the setting and context have been overlooked within extant literature, and often noted as a limitation worthy of investigating (Bailey et al. 2017). Moreover, rather than translating theory and concepts from these traditional studies into new contexts such as techno working, this investigation started with a qualitative and inductive lens so as not to guide or limit the findings. In this regard, this thesis contributes to theory and methodology in the sense that it addresses a methodological gap providing for real results from a real organisation in which techno working is located. The implications for practice will be discussed next.

## **5.6 Implications for practice**

As the techno working context is under-researched and growing in prevalence (Global Workplace Analytics 2019), this research provides specific contributions to better

understand how this new way of working can be fostered by similarly situated organisations. The participants acknowledged the unique nature of the techno working environment granting them the opportunity to participate in the survey instrument. Techno workers commented on the value they obtained from sharing their thoughts and perceptions about their jobs, about the organisation, and from gaining a better understanding about the value of their EE experiences. The contribution of this thesis to practice is that the ontology of knowledge in respect of EE within this context is significantly advanced.

Various HR practices identified in this research can help organisations, managers, and employees to better understand why remote employees are engaged or disengaged. A critical role of any organisation is to provide a working environment that boosts the potential of individual employees, regardless of their working context. The implications for different stakeholder groups are summarised below with organisations, HR departments, managers and employees identified as collectively playing active roles in enhancing the EE experiences of techno workers.

### ***For organisations***

Organisations should educate and train their managers/leaders about the importance of their leadership role in facilitating social and interpersonal factors. This specific training and education should aim to develop **leaders** who:

1. Understand how to develop quality relationships with their direct reports and maintain in group relationships based on LMX theory;
2. Understand and exhibit the style of engaging leadership where they focus on the basic needs of employees and how to best fulfill these needs by addressing competence and relatedness, as well as managing autonomy appropriately in remote working environments; and
3. Facilitate the behaviour of aligning techno workers and other colleagues to shared goals and expectations in order to influence social engagement.

Organisations should educate and train their techno workers and other employees about the importance of social and interpersonal relationships that lead to the EE experiences of techno workers. This specific training and education should aim to develop **techno workers** who:

4. Understand the benefits of building a quality reciprocal relationship with their manager and leveraging resources through maintaining in group relationships based on LMX theory;
5. Understand the importance of engaging in lateral social and interpersonal relationships and networks through formal work team meetings, project tasks and collaborations, but also through informal social opportunities with other colleagues;
6. Acknowledge the value and importance of receiving and providing social support and building strong social networks that allow time and space to progress important interactions as part of everyday working.

Organisations need to invest in collective platforms, tools, technologies and communications that encourage and facilitate networking, collaboration, connection and relationship building. This may include:

7. Employee messenger services such as Yammer, video conferencing, online collaboration tools and other social technologies;
8. Regular systematised and on-demand organisation wide communications that ensure techno workers are aware of the happenings of the organisation so they can feel, 'part of something bigger';
9. Promoting and embedding the shared values of the organisation in ways that these are shared between *all* employees including techno workers;
10. Ensuring techno workers have access to the tools and equipment required to access the organisation and other employees with ease.

***For HR departments and managers***

HR departments and managers need to design job roles where:

11. Techno workers and other employees are provided time and space for important social and interpersonal interactions as part of everyday working which invariably may act as learning and development opportunities;
12. Techno workers can work with other employees on projects, tasks and collaborations towards shared goals;
13. Training and learning opportunities can be derived from consistent collective and social interactions.



HR departments and managers may also consider:

14. Ensuring person-job fit for techno workers by considering the remote and highly autonomous context; and
15. Customising the recruitment and selection processes to ensure the appointment of appropriate managers for techno workers and remote working teams. This could include consideration of LMX elements to ensure the potential of quality leader-member relationships.

***For managers and leaders***

Managers and leaders need to consider all of the above and in addition:

16. Their role in facilitating cross-lateral social and interpersonal relationships and networks for their direct reports by virtue of holding team meetings, encouraging collaboration, and designing work roles where techno workers need to work with other colleagues; and
17. The need to be approachable and available to techno workers in a way that reflects the informality and immediacy of face-to-face co working.

***For techno workers***

Before assuming techno working positions, employees need to:

18. Understand the benefits of building quality reciprocal relationships with their manager and colleagues in order to derive the benefits of high quality LMX and social capital relationships;
19. Engaging in initiatives, collaborations and shared tasks, but also understanding their role in collaborating on shared goals and expectations where possible;
20. Seeking out opportunities to network, socialise and work with other colleagues whether this be formally or informally; and
21. Ensuring they have a good social support system in place so that if they feel isolated or unsure, they can reach out and seek support;

While organisations are at a loss to know how to cultivate increased engagement across their workforces (Gallup 2017), this research accelerates the identification of interventions that can make a real difference to employees, but also specifically those working remotely which is a growing trend post the Covid-19 pandemic. With current research at odds as to which antecedents lead to higher EE outcomes for employees

generally (Saks 2006; Bakker 2011), the results of this thesis and their implications for practice provide the specificity required to engage remote workers. This information has not been empirically tested within extant research to the researcher's knowledge. The results of this thesis may potentially make a broader contribution to the knowledge about how organisations can best facilitate remote working globally. The results of this research can be published in the management and human resources literature as well as general and practitioner publications.

## **5.7 Further contributions of this thesis**

In addition to the contributions to the EE body of knowledge and delivering practical solutions and strategies, this thesis contributes to the wider environment through offering social and economic contributions to society as a whole.

### **5.7.1 Economic contribution**

The economic contributions of this thesis are both individual and organisational with positives relating to higher employee morale and reduced commuting costs for employees. In addition, operational efficiencies can be gained by employers together with the financial benefits associated with EE consequences and attitudes. In consideration of the growing trend to this type of work globally and the impact of the Covid-19 pandemic on remote working, the timing of this research will support organisations in better managing and maintaining remote workforces contributing to individual, organisational and broader societal benefit.

As this research demonstrates, organisations can influence EE experiences of remote employees with individual economic implications. As organisations continue to engage remote employees, these workers economically benefit from reduced commuting costs and also have the benefit of residing in locations that meet their financial needs knowing they can work remotely. There are proven morale and wellbeing benefits associated with reduced commutes creating greater work life balance, suggesting that employees may have reduced costs related to illness, stress and anxiety (Courtney 2020). Further individual gains arise from increased access to work for employees due to open geographic locations where opportunities are not limited (Courtney 2020). This can

offer higher earning potential and the ability for workers to access more customers that in turn drive worker productivity.

The findings of this thesis contribute to the economic gains with organisations knowing how to better engage these workers. By increasing the EE experiences of techno workers, organisations not only stand to generate greater productivity and revenue growth (Delaney & Royal 2015), but the consequences of EE within the techno work context produce further indirect financial benefits also. These include reduced lost time due to illness, reduced expenditure on health care due to higher morale in the employee base and greater retention of employees due to reduced turnover (Witemeyer 2013; Bakker et al. 2005; Schaufeli & Bakker 2004; Grigsby 2013; Tims et al. 2013). Whilst employers will need to invest in equipment and technologies to better support remote workers, the cost savings associated with reduced office spaces and rents, as well as decreases in work-place costs such as lighting, heating, stationery and consumables could be substantial. Organisations also can leverage workforces outside their usual location by broadening their talent pool. This approach can also be applied to accessing an increased customer base through their broadened distributed remote workforce.

From a societal perspective, the economic contributions of encouraging employers to employ techno workers is evident. The issues facing regional areas such as unemployment, underemployment, de-industrialisation and wealth inequity can be mitigated as techno working provides increased job opportunities and prosperity different to city centres (Regional inequality in Australia and the future of work 2018). The strategies for regional job stabilisation and quality restoration are buoyed by techno working in that geographical and physical boundaries are reduced if not totally removed by this new way of working, creating a geographically equal playing ground within states and countries. Techno working can also provide greater equality of opportunity by removing the commuting and travel, leading to greater work life balance. That is, increased quality time with family may provide opportunities to work remotely for people who have previously not participated in the workforce (Courtney 2020). This may result in higher workplace participation rates for females, those with disabilities and people with caring responsibilities who can access meaningful work whilst remaining at home and this overall increased workforce participation enhances

economic growth (Working for Australia's future: Increasing participation in the workforce 2005).

There are also economic benefits related to the environment namely the reduction in emissions by reduced commuting but also the minimising of large infrastructure projects associated with large scale people movements. These projects are often costly and have great social and environmental impact and may not be necessary with the increased incidence of remote working. Moreover, as evidenced through the Covid-19 pandemic, community health can be managed, and viral transmission minimised.

### **5.7.2 Social contribution**

Influencing the EE of techno workers impacts positively on organisations in terms of morale, company culture and operations. In turn, social and societal contributions are evident in that organisations may reap the benefits of improved productivity, efficiencies, innovation and increased employee retention. Furthermore, as techno workers are often working in their homes with home and work coexisting, it may be assumed that these benefits may also bleed from work into the home environment (Courtney 2020).

Extant research showed that the consistency of remote working had negative impacts on EE (de Vries et al. 2019), however this contextual research has demonstrated how EE activities can be influenced in techno working environments as employers consider more sustainable ways of working. As a social contribution, the increased flexibility in working environment offers employees the opportunity to meet personal and family needs which can also be a major factor in attracting top talent across all industries and may result in higher workplace participation rates for females, those with disabilities and people with caring responsibilities.

## **5.8 Limitations and implications for further research**

The limitations of this research were detailed in [Section 1.10](#), and those limitations related to the research methods addressed in [Section 3.5.1](#) linked to case study research.

The measures to overcome these limitations were addressed in those sections with other possible limitations identified.

As a singular case study was progressed for this thesis, the research limits the participants to techno workers, their managers and the HR and senior executives of Savry Industries. As only one case study organisation was investigated, it is not clear whether these findings could be leveraged across other organisations and industries. Participants were located globally although there was a predominance of Asia Pacific employees. It is not clear whether the findings have applicability more broadly across *all* other countries, however the large variance in participant locations provides the likelihood for greater generalisability and transferability of findings. Finally, the case study organisation is considered a large multi-national, therefore it is unknown if the research findings have applicability in small and family businesses as those types of operations are known to include dissimilar internal dynamics and systems and technologies than larger companies (Boxer et al. 2014).

Limitations in the methodology relate to the subjectivity of the researcher in relation to the coding and analysis of the data, and insider knowledge. From the large amount of rich data available from the participant interviews, this thesis contains a portion of that data collected. Other researchers without an insider perspective may have interpreted and analysed the same data with a different perspective resulting in supplementary results. The embedded case study allowed for expansion of the qualitative data by the quantitative survey results, however a purist mixed methods approach would have allowed for a different set of correlations and causality to be drawn.

Another limitation to consider is that this research was progressed prior to the Covid-19 pandemic. At this time, techno working was not as common as post Covid-19, therefore attitudes and behaviours may have changed as a result of Covid-19 forcing many employees into techno working which is now more common. However, the thesis investigation has been free from the complexities of a global pandemic.

The scope of this thesis, whilst providing significant findings also provides a platform for possibilities for future research. The recommendations for future research are

identified below. Opportunities to widen the cohort of investigation include the following:

- Techno workers from a greater variety of countries and regions;
- Techno workers from a range of different organisations;
- Techno workers who perform a wider range of occupations; and
- Techno workers compared and contrasted against employees of the same organisation in traditional working environments.

Further opportunities arose from the data of participant responses which might enable future research such as;

- Understanding person-role fit for techno working;
- The impact of team engagement on EE for techno workers;
- The importance of company culture and passion alignment for techno workers;
- Impact of informal social networking groups for techno workers;
- The impact of intermittent face to face interaction for techno workers;
- How the remote home environment may influence the EE experiences of techno workers; and
- Further investigation of the relationship between higher order social and leadership constructs and their influence on EE (LMX and social capital).

It would also be interesting to test the findings of this thesis in a post Covid-19 context to understand the impact of the pandemic, but also the changes in attitudes as to how remote working is now viewed. It may be useful in the future to undertake a study of organisations utilising these proposed strategies and recommendations to test their usefulness and success in terms of changing behaviours. The findings of this thesis present the opportunity for a quantitative investigation to explore the constructs of the conceptual model to understand causality and determine correlations.

The limitations do not detract from the significance of the findings and overall robustness and strength of the thesis. This section offers explanations of how to overcome limitations and the researcher offers suggestions of ways in which those

limitations can provide a basis for future research all which are summarised in Table 5.7 below.

**Table 5-7 Summary of limitations and further research suggestions**

Limitations	Further research suggestions
As the researcher is an employee of the case study company investigated, therefore the research entails a potential bias.	Progressing this research with an independent researcher will allow for a distancing of interpretation and analysis of the data with a different perspective to an insider researcher resulting in supplementary results.
The qualitative methodology includes researcher participation in case selection, interviewing and interpretation, and the results being researcher dependent due to the divergence of findings caused by subjectivity.	A quantitative investigation could be pursued informed by the findings of this research to contribute to the development of new theory and provide greater objectivity.
Generalisability is also a common concern in qualitative case studies as analytical generalisation and replication must be applied as the case does not represent a quantitative sampling unit (Yin 2009).	Further research should progress to test replicability to understand if duplicate results can be collected using the same procedures, but new data is collected. Further studies should also progress to test generalisability using these same procedures to understand whether the results of this study apply in contexts with other populations.
The research is limited to the phenomenon of techno working in a case study focused on techno workers of a global company and their relevant managers, senior executives and HR representatives.	Further research may include testing of the same procedures using a broader and wider sample group with different participant categories.
As only one case study organisation was investigated, it is not clear whether these findings could be leveraged across other organisations and industries.	Further research may include testing of the same procedures: <ul style="list-style-type: none"> <li>- Across a range of different organisations and industries</li> <li>- Widening the research to include multiple case study organisations</li> </ul>
Participants were located globally although there was a predominance of Asia Pacific employees. It is not clear whether the findings have applicability more broadly across <i>all</i> other countries, however the large variance in participant locations provides the likelihood for greater generalisability and transferability of findings	Further studies should also progress to test generalisability using these same procedures to understand whether the results of this study apply in contexts with other populations. Suggestions include: <ul style="list-style-type: none"> <li>- Techno workers from a greater variety of countries and regions;</li> <li>- Techno workers from a range of different organisations;</li> <li>- Techno workers who perform a wider range of occupations; and</li> <li>- Techno workers compared and contrasted against employees of the same organisation in traditional working environments.</li> </ul>

<b>Limitations</b>	<b>Further research suggestions</b>
Finally, the case study organisation is considered a large multi-national, therefore it is unknown if the research findings have applicability in small and family businesses as those types of operations are known to include dissimilar internal dynamics and systems and technologies than larger companies (Boxer et al. 2014).	Progress research to understand replicability and generalisability across small and family businesses as those types of operations are known to include dissimilar internal dynamics and systems and technologies than larger companies (Boxer et al. 2014).
This research was progressed prior to the Covid-19 pandemic. At this time, techno working was not as common as post Covid-19, therefore attitudes and behaviours may have changed as a result of Covid-19 forcing many employees into techno working which is now more common. However, the thesis investigation has been free from the complexities of a global pandemic.	Progress research to understand replicability and generalisability post Covid-19 in the same organisation and across different organisations for comparison.
The embedded case study allowed for expansion of the qualitative data by the quantitative survey results.	Progress replication of this research using a purist mixed methods approach to allow for correlations and causality to be drawn.

## 5.9 Conclusion

With only 13% of employees worldwide engaged at work (Harter & Mann 2016), and the positive outcomes of EE justified (e.g. Delaney & Royal 2015; Grigsby 2013; Tims et al 2013; Witemeyer 2013), further investigation about understanding the antecedents of EE is warranted. However, with a recent global report announcing that the global workforce post Covid-19 will move to spend multiple days per week working from home (Global Workplace Analytics 2020), the precise nature of EE antecedents for the techno work context needs to be understood. The context is distinct from the large repository of existing knowledge pertaining to traditional organisations and ways of working (e.g. Shuck 2011; Saks 2006; Truss et al. 2012; Macey & Schneider 2008).

Recognising that techno working is a specific and unique context, the physical and psychological separation from the traditional workplace assumes salient differences in the experience of work and EE. Underpinned by SET, this thesis has explored the EE antecedents, experiences and outcomes of techno workers in remote working environments. This theory building/theory testing research demonstrated that the inherent isolation of the phenomenon is buffered by social, interpersonal and collective organisational artefacts which increase the EE experiences of techno workers. Employing the empirical lens of the techno workers' lived experiences has facilitated contributions to the extant research in the areas of EE antecedents, experiences of the



state of EE and outcomes associated with EE. Here, the findings have justified the contextual analysis of EE, as *context does matter*. Using empirically tested and proven EE theories, this thesis has studied the antecedents, experiences of EE and their consequences that are different from traditional workplaces. That is, the extant EE literature is specifically not fit for purpose.

Post the Covid-19 pandemic and immediate rise in remote working, organisations can perpetuate the continuance of remote working for their employees understanding the specific strategies and interventions they can employ to ensure the delivery of positive EE outcomes for both individual employees and the organisation. This thesis includes the design of a conceptual model related to EE in techno working environments. It includes implications for practice related to the strategies and support mechanisms that organisations can adopt. The results of this thesis offer a major contribution to the EE body of knowledge and remote working practices globally. The thesis contains suggestions for further research where this research can be utilised as a basis for future inquiry.

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## **7 Appendices**

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## Appendix A: Ethics approval

**OFFICE OF RESEARCH**  
Human Research Ethics Committee  
PHONE +61 7 4631 2690| FAX +61 7 4631 5555  
EMAIL [human.ethics@usq.edu.au](mailto:human.ethics@usq.edu.au)



3 April 2018

Miss Marnie Gibson

Dear Marnie

The USQ Human Research Ethics Committee has recently reviewed your responses to the conditions placed upon the ethical approval for the project outlined below. Your proposal is now deemed to meet the requirements of the *National Statement on Ethical Conduct in Human Research (2007)* and full ethical approval has been granted.

Approval No.	H18REA057
Project Title	How are employers encouraging high employee engagement in satellite working environments?
Approval date	21 March 2018
Expiry date	21 March 2021
Status	<b>Approved with standard conditions</b>

The standard conditions of this approval are:

- (a) responsibly conduct the project strictly in accordance with the proposal submitted and granted ethics approval, including any amendments made to the proposal;
- (b) advise the University (email: [ResearchIntegrity@usq.edu.au](mailto:ResearchIntegrity@usq.edu.au)) immediately of any complaint pertaining to the conduct of the research or any other issues in relation to the project which may warrant review of the ethical approval of the project;
- (c) promptly report any adverse events or unexpected outcomes to the University (email: [ResearchIntegrity@usq.edu.au](mailto:ResearchIntegrity@usq.edu.au)) and take prompt action to deal with any unexpected risks;
- (d) make submission for any amendments to the project and obtain approval prior to implementing such changes;
- (e) provide a progress 'milestone report' when requested and at least for every year of approval;
- (f) provide a final 'milestone report' when the project is complete;
- (g) promptly advise the University if the project has been discontinued, using a final 'milestone report'.

For (d) to (g) forms are available on the USQ ethics website:

<https://www.usq.edu.au/current-students/academic/higher-degree-by-research-students/conducting-research/human-ethics/forms-resources>

Please note that failure to comply with the conditions of approval and the *National Statement (2007)*, may result in withdrawal of approval for the project.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Nikita Kok', written in a cursive style.

**Mrs Nikita Kok**  
Ethics Officer

**Appendix B:** Interview protocol template



**How are employers encouraging employee engagement in techno working environments?**

<b>Interview protocol template</b>		Interview No.
Date and time		
Name of informant		
Function		
Phone		Email
Position Title		
Demographics	Participant Group	
Location		
Ethics		Information Provided/Consent gained (signed form)
Length of interview		
Interview language	English	
Documentation		
Progress of interview		
Setting and atmosphere (e.g. quiet / noisy, interruptions, convenience)		
Immediate impression (e.g. how the interview went)		
Depth of interview / lack of information		
Usability of interview guide		
Particular observations / special occurrence		
Interviewer reflection		

**Participant demographic details**

1. What is your gender? a) Female b) Male	2. What is your age? (in years) a. Under 25 b. 26-35 c. 36-45 d. 46-55 e. 55+
-------------------------------------------------	----------------------------------------------------------------------------------------------

<p>3. What is your length of service in this organisation? (in years)</p> <p>a. 1 year or less  b. More than 1 year but less than 2 years  c. More than 2 years but less than 5 years  d. More than 5 years but less than 10 years  e. More than 10 years but less than 15 years  f. Over 15 years</p>	<p>4. Is English your first language?</p> <p>a) Yes  b) No</p>
<p>5. What is your highest level of <b>completed</b> education?</p> <p>a. High school  b. Technical qualification/associate degree (1-2 years)  c. Bachelor’s Degree  d. Post graduate qualification  e. Doctorate</p>	<p>6. What is your work location?</p> <p>a. North America  b. Asia Pacific  c. Latin America  d. Europe  e. Middle East or Africa  f. Latin America</p>
<p>7. Which function/department are you working in?</p> <p>a. Sales/commercial  b. HR  c. Executive  d. Marketing  e. Finance  f. Other</p>	<p>8. What is your work environment?</p> <p>a. a techno working environment (home office/in the field)  b. a corporate office or worksite</p>
<p>9. What is your length of service as a techno worker?</p> <p>a. 1 year or less  b. More than 1 year but less than 2 years  c. More than 2 years but less than 5 years  d. More than 5 years but less than 10 years  e. More than 10 years but less than 15 years  f. Over 15 years  g. I have never worked as a techno worker at this organisation</p>	<p>10. Do you report to a Manager in -</p> <p>a. a techno working environment (home office/in the field)  b. a corporate office or worksite</p>
<p>11. How many people report to your Manager and are in your immediate work team? ‘Team’ represents how many people report to your manager along-side you, how many in your team including you?</p> <p>a. 1, just me  b. 2, me and one other  c. 3  d. 4  e. 5  6 +</p>	<p>12. What is your management level?</p> <p>a. Individual contributor, no direct reports  b. Middle level Manager (direct reports overseeing a function)  c. Regional leadership (Global Leadership Team)  f. d. Executive leadership (Executive Leadership Team)</p>



<p>13. If you have direct reports, what environment do your direct reports work in?</p> <p>a. all in techno working environments</p> <p>b. in a corporate office</p> <p>c. in both techno working and corporate environments</p> <p>d. I don't have any direct reports</p>	<p>14. What is your Manager's work location?</p> <p>a. Asia Pacific</p> <p>b. North America</p> <p>c. Latin America</p> <p>d. Europe</p> <p>e. Middle East</p> <p>f. Africa</p> <p>Please indicate their country -</p>
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

## Interview guide – techno workers

### Introduction

- Thanks for the opportunity to conduct an interview for 45 minutes to 1 hour.
- Introduction of the researcher and the project - I am working on a research project for a university doctorate that encompasses looking at what the company is doing to enhance the engagement of employees who work in techno working environments. By techno working environments I am referring to those employees who carry out ALL of their work in a remote location away from a traditional organisation office, i.e. those that may work in the field or work from home.

The company is focused on engaging all their employees, so I'd like to get your views on what engagement is to you and how engaged you are, and how you feel the company is encouraging engagement in employees who are in remote working environments. I am trying to understand the experiences of employees working remotely, and how the company can best help them, and also the managers, teams and others who work with them to optimise their engagement.

I am looking at these perspectives from different levels within the company and I know that you have participated in the previous survey and provided valuable information. So, I am pleased that you are willing to speak to me today.

Your answers will remain anonymous and I will not identify them to anyone within our organisation. I intend on using the information you provide me to guide my studies in terms of learning what organisations can do to engage remote employees to gain better employee commitment and engagement.

- Please refer to the participant information sheet provided which I have sent through to you.
- I can confirm I have received your signed consent form (to be signed by the participant)
- This video interview will be recorded for transcription purposes. The recording will be stored safely and securely on a password protected computer and not available to anyone except the researcher. The interview will be transcribed and then you will only be identified through code.

- After our interview or at any time, you may review the transcription to ensure accuracy and clarity.
- During the interview you may stop at any time, or ask questions, or choose to not answer a question. Also, there is no right or wrong answer.

### **Research Question**

How do employers create employee engagement (EE) in techno working environments?

1. RQ1: How does the quality of leader-member exchange (LMX) relationships between the leader and the subordinates influence high EE in techno working environments?
2. RQ2: How do job resources influence high EE in techno environments in relation to:
  - Autonomy;
  - Learning and development opportunities;
  - Social support;
  - Feedback; and
  - Organisation climate.
3. RQ3: How does the organisation influence high organisational commitment?
4. RQ4: How does the organisation influence high job satisfaction?

### **Interview Questionnaire**

- 1) Understand what employee engagement means to the participant -
  - a. What does employee engagement mean to you?
    - i. What does it look like?
    - ii. How does it feel?
    - iii. What do you believe creates employee engagement?
    - iv. What do you believe are the outcomes of EE?
  - b. What is their experience of EE?
    - i. Can you describe a time that you feel best explains how and when you experienced employee engagement at this company? (If none, at another place of employment?)
    - ii. How did it feel?
    - iii. What effect has being engaged had on you?
    - iv. What things do you believe influenced your engagement?
- 2) Understand whether the leader influences engagement -
  - a. What is the quality of the relationship with your Manager?
  - b. How does the relationship with your Manager influence your EE?
  - c. What do you like best about working with your Manager?
  - d. What do you dislike?
- 3) Understand whether Job-demands and resources (JDR) influences engagement -
  - a. What things does your manager do to influence engagement?
  - b. How does the organisation influence your engagement?

- c. How do your colleagues and team influence your engagement?
  - d. What else may contribute to your engagement?
  - e. How is receiving feedback important to your engagement?
  - f. How is the support from team members and colleagues important to your engagement?
  - g. How are learning and development opportunities important to your engagement?
  - h. How is autonomy important to your engagement?
  - i. How is the climate within the team and organisation important to your engagement?
- 4) Understand how the organisation contributes to job satisfaction and organisational commitment –
- a. What makes you want to work at our company?
    - i. Can you describe what you like best here?
    - ii. What do you dislike?
  - b. What makes you want to work in this job?
    - Can you describe what you like best?
    - What do you dislike?
  - c. Describe what the organisation currently does to influence employee engagement?
    - i. How is this applicable to you?
  - d. What would you change in order to have a more engaged experience in your job?
  - e. What would you change in order to have a more engaged experience in the organisation?
- 5) Describe what things have had the biggest impact on your engagement?
- a. Feeling satisfied in your job?
  - b. Feeling committed and connected to the company?
- 6) Did I miss any EE aspect that you would like to address?

## **Conclusion**

You've been great responding to my enquiries today. I really appreciate the time you spent speaking with me. As I go through my notes, would you mind if I came back to you if I need to clarify or follow-up on a response? Thanks again.

## Appendix C – Survey questionnaire, uploaded to Lime Survey

### **Employee Engagement in Techno Working Environments Survey instrument for upload into Lime Survey platform**

(The information below will appear on screen 2 in the online platform;  
following the participant information presented in the first screen)

#### **SURVEY INSTRUCTIONS**

- Choose only one answer for each question – the one that best fits your opinion.
- Do not spend a lot of time on each question. If you don't know how to respond to a question or do not have an opinion on a question, either mark "Don't Know/Not applicable" or skip that question.
- Think carefully and be honest with your responses.
- Please answer each question to the best of your ability with the options provided.

#### **TERMS/DEFINITIONS**

When answering the survey questions, please consider the following:

- "Organisation" refers to the Savry business unit only.
- "My team" refers to the immediate team that you work with including the people report to your manager along-side you.
- "My Manager" refers to the person to whom you report directly to and who does your annual performance appraisal (PDP).

## Part 1 – Participant Profile

For the following questions, please click your response.

<p>1. What is your gender?</p> <ul style="list-style-type: none"> <li>c) Female</li> <li>d) Male</li> </ul>	<p>2. What is your age? (in years)</p> <ul style="list-style-type: none"> <li>a. Under 25</li> <li>b. 26-35</li> <li>c. 36-45</li> <li>d. 46-55</li> <li>e. 55+</li> </ul>
<p>3. What is your length of service in this organisation? (in years)</p> <ul style="list-style-type: none"> <li>a. 1 year or less</li> <li>b. More than 1 year but less than 2 years</li> <li>c. More than 2 years but less than 5 years</li> <li>d. More than 5 years but less than 10 years</li> <li>e. More than 10 years but less than 15 years</li> <li>f. Over 15 years</li> </ul>	<p>4. Is English your first language?</p> <ul style="list-style-type: none"> <li>c) Yes</li> <li>d) No</li> </ul>
<p>5. What is your highest level of <b>completed</b> education?</p> <ul style="list-style-type: none"> <li>a. High school</li> <li>b. Technical qualification/associate degree (1-2 years)</li> <li>c. Bachelor’s Degree</li> <li>d. Post graduate qualification</li> <li>e. Doctorate</li> </ul>	<p>6. What is your work location?</p> <ul style="list-style-type: none"> <li>a. North America</li> <li>b. Asia Pacific</li> <li>c. Latin America</li> <li>d. Europe</li> <li>e. Middle East or Africa</li> <li>f. Latin America</li> </ul>
<p>7. Which function/department are you working in?</p> <ul style="list-style-type: none"> <li>a. Sales/commercial</li> <li>b. HR</li> <li>c. Executive</li> <li>d. Marketing</li> <li>e. Finance</li> <li>f. Other</li> </ul>	<p>8. What is your work environment?</p> <ul style="list-style-type: none"> <li>a. a techno working environment (home office/in the field)</li> <li>b. a corporate office or worksite</li> </ul>
<p>9. What is your length of service as a techno worker?</p> <ul style="list-style-type: none"> <li>a. 1 year or less</li> <li>b. More than 1 year but less than 2 years</li> <li>c. More than 2 years but less than 5 years</li> <li>d. More than 5 years but less than 10 years</li> <li>e. More than 10 years but less than 15 years</li> <li>f. Over 15 years</li> <li>g. I have never worked as a techno worker at this organisation</li> </ul>	<p>10. Do you report to a Manager in -</p> <ul style="list-style-type: none"> <li>a. a techno working environment (home office/in the field)</li> <li>b. a corporate office or worksite</li> </ul>

<p>11. How many people report to your Manager and are in your immediate work team? ‘Team’ represents how many people report to your manager along-side you, how many in your team including you?</p> <p>g. 1, just me  h. 2, me and one other  i. 3  j. 4  k. 5  6 +</p>	<p>12. What is your management level?</p> <p>a. Individual contributor, no direct reports  b. Middle level Manager (direct reports overseeing a function)  c. Regional leadership (Global Leadership Team)  1. d. Executive leadership (Executive Leadership Team)</p>
<p>13. If you have direct reports, what environment do your direct reports work in?</p> <p>a. all in techno working environments  b. in a corporate office  c. in both techno and corporate environments  d. I don’t have any direct reports</p>	<p>14. What is your Manager’s work location?</p> <p>a. Asia Pacific  b. North America  c. Latin America  d. Europe  e. Middle East  f. Africa</p> <p>Please indicate their country -</p>

## Part 2 – Engagement Survey

Please respond to each question in terms of how it applies to your current job and your Manager that you directly report to.

For the following questions, please click your response.

No.	Question	Rarely	Occasionally	Sometimes	Fairly often	Very often
1	Do you know where you stand with your manager ...do you usually know how satisfied your manager is with what you do?					
2	How well does your manager understand your job problems and needs?					
3	How well does your manager recognise your potential?					
4	Regardless of how much formal authority					

	he/she has built into his/her position, what are the chances that your manager would use his/her power to help you solve problems in your work?					
5	Again, regardless of the amount of formal authority your manager has, what are the chances that he/she would 'bail you out' at his/her expense?					
6	I have enough confidence in my manager that I would defend and justify his/her decision if he/she were not present to do so.					
7	How would you characterise your working relationship with your manager?					

No.	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
8	Sometimes I am so into my job that I lose track of time.					
9	Being a member of this organisation is very captivating.					
10	This job is all consuming; I am totally into it.					
11	One of the most exciting things for me is getting involved with things happening in this organisation.					
12	I am highly engaged in this job.					
13	I am really not into the "goings-on" in this organisation.					

14	My mind often wanders, and I think of other things when doing my job.					
15	Being a member of this organisation makes me come 'alive.'					
16	I really "throw" myself into my job.					
17	Being a member of this organisation is exhilarating for me.					

No.	Question	Never	Rarely	Sometimes	Often	Very often
18	When it is necessary, I can ask my colleagues for help					
19	Do you get along with your co-workers?					
20	Do you have conflicts with your co-workers?					
21	In your work, do you feel appreciated by your co-workers?					
22	Are your co-workers friendly towards you?					
23	Is there a good atmosphere between you and your co-workers?					
24	Have there been any unpleasant occurrences between you and your co-workers?					

No.	Question	Never	Sometimes	Often	Always
25	I am able to decide myself how to execute my work				
26	I can resolve problems arising in my work				
27	Do you have influence on the pace of work?				
28	I have influence in the planning of my work activities				



29	Can you interrupt your work for a short time if you find it necessary to do so?				
30	Can you decide the order in which you carry out your work on your own?				
31	Can you personally decide how much time you need for a specific activity?				
32	Does your work offer you the possibility of independent thought and action?				
33	Does your job offer you opportunities for personal growth and development?				
34	Does your work give you the feeling that you can achieve something?				
35	My work offers me the opportunity to learn new things				
36	I get information/feedback from my manager about how well I do my job				
37	Do you receive sufficient information on the results of your work?				
38	Does your work give you the opportunity to check on how well you are doing your work?				
39	Do your colleagues inform you about how well you are doing your work?				
40	I get enough feedback about the quality of my performance				
41	Does your organisation give you opportunities to follow training schemes and/or courses?				
42	Does your job give you the opportunity to be promoted?				

No.	Question	Never	Rarely	Sometimes	Often	Very often
43	The work climate in my team is tense and competitive, everyone looks after his or her own best interest					
44	The work climate in my team is encouraging and supportive of new ideas					

45	The work climate in my team is prejudiced and clinging to old ways					
46	The work climate in my team is relaxed and friendly					
47	The work climate in my team is strained and quarrelsome					

No.	Question	Rarely	Sometimes	Undecided	Often	Most of the time
48	I feel left out on activities and meetings that could enhance my career					
49	I miss out on opportunities to be mentored					
50	I feel out of the loop					
51	I miss face-to-face contact with co-workers					
52	I feel isolated					
53	I miss the emotional support of co-workers					
54	I miss informal interaction with others					

**Thank you very much for participating in this survey. Your contribution is valued and appreciated.**

I am seeking volunteers to participate in a one-on-one research interview related to this survey and your experience of engagement. If you are interested in participating in this confidential interview, please contact [marniegibson@outlook.com](mailto:marniegibson@outlook.com) for further details. Your participation is welcomed and again, very appreciated!

