# Coping with a Downturn

The addition of meaningful work to the JD-R Model in the context of the downturn in the Western Australian mining industry

Gita Vischer: 3861570

Master's Thesis: SHRM

# Coping with a downturn

The addition of meaningful work to the JD-R Model in the context of the downturn in the Western Australian mining industry

**Name: Gita Vischer**

**Student number: 3861570**

**Master: Strategic Human Resource Management**

**Department: Bestuurs- en Organisatiewetenschap**

**University: Utrecht University**

**Supervisor: Dr. Wouter Vandenabeele**

**Second reader:**

**Research organization: Fortescue Metal Group**

**Place: Utrecht**


**Preface**

It is done. My Master's thesis is complete after almost nine months of researching and writing. This was a journey for me that began during my exchange when I decided to extend my stay and conduct my Master's thesis in Western Australia. However, this challenge was not without its obstacles. Writing my thesis abroad required using LinkedIn to build a professional network in Australia to find a company where I could conduct my research. This exciting experience also included writing my thesis in English as opposed to my native language, Dutch. Looking back on this choice, I am glad I made the decision to challenge myself to write the thesis in an unfamiliar international environment. I learned so much about myself, the other side of the world, and a industry I barely knew anything about. With these gained insights and experiences, I am ready to finish my time as a students and excited to apply my theoretical knowledge into practice. It is time to find my passion and to start my working career.

This thesis definitely confirmed my interest in Human Resources. This is why I would like to commemorate the support I received from some people that pushed me to challenge myself. First of all, I would like to thank my amazing boyfriend Jeremy that I met during my exchange in Western Australia. Without him in my life I would never have taken this unique opportunity to conduct my Master's thesis abroad. He always supported and stimulated me to keep moving forwards to reaching my goals. Furthermore, I would like to take the opportunity to thank both of my parents for their help and support during my research. They were always available to listen to me and to give me advice if I needed it. Thirdly, I would like to thank my Master's mentor Wouter Vandenabeele. The six or seven hour time difference between the Netherlands and Australia did not damper the critical feedback and flexibility received during \our cooperation. Finally, I would like to thank the research organization supervisor Blair Mcglew who supported me from within the organization by providing me great insights about the organization and thinking with me about the research.

Gita Vischer

**Abstract**

The mining industry in Western Australia went through a period of long term stability, followed by one of the biggest booms in 2012 as the commodity prices drastically increased. In mid-2015, the commodity market crashed leading to a downturn in the mining industry. This had a huge impact on the labor market resulting in high numbers of layoffs and an increase in workload for the layoff survivors. Current study applied the extended Job Demands-Resources model to examine the employee experience in times of an economic downturn. This is done by applying the constructs of meaningful work and job autonomy as job resource, and the concepts of work overload and job insecurity as job demands.

This led to the central question of this study: *"To what extent do meaningful work, job autonomy, work overload, and job insecurity influence the processes of burnout and work engagement in the JD-R model in the Western Australian mining industry, and to what extent are these relationships moderated by the job resources meaningful work and job autonomy and the job demands work overload and job insecurity?"* This question has been investigated by executing a quantitative cross-sectional study. An online survey was sent to approximately 400 employees working at the offices of the mining organization Fortescue Metals Group in Western Australia. In total, 121 employees participated in the study (N=121).

Current study found new insights about the working of the Job Demands-Resources model in the context of Western Australia. The results display a positive direct relationships to between the factors of meaningful work and work engagement, job autonomy and work engagement, and work overload and burnout. The relationship between job insecurity and burnout was not found to be present. Furthermore, no moderator effects were found in current study. The lack of moderating effects are in contrast with the insights gained from previous studies. Therefore, questions can be asked whether the Job Demands-Resources model is as open and flexible as proposed in the academic literature. Future research could focus on increasing insights about the Job Demands-Resources model.

# Table of Contents

# 1. Introduction

What do Dubai, Houston, and Edmonton all have in common? These cities from all over the world located in the United Arab Emirates, the United States, and Canada all experienced the same problem Western Australia is going though right now: a downturn in the economy from relying completely on their resources (Allan-Petale, 2017). Current study examines how different categories of work characteristics influence the processes of burnout and work engagement in times of an economic downturn.

## 1.1 Outline of research

This first chapter introduces the research and addresses the reason, problem statement, the scientific, organizational and social relevance, and the purpose and main question of the study.

### 1.1.1 Mining boom and bust

Mining has always been one of the most important industries for the (West) Australian economy. In 2011 and 2012, Australia, and especially Western Australia, experienced one of the biggest booms in its history as the prices of commodities like iron ore and coal dramatically increased. The primary reason for this rise in price was the strong demand for mineral resources from the world's largest developing countries, China and India (Prepare for Australia, 2017). During the booming years, mining investment accounted for around two-thirds of economic growth in Australia. This led to record expansion of jobs and large increases in remuneration and benefits for employees. In mid-2015 the commodity market crashed and this resulted in the downturn of the mining industry in Western Australia (Letss, 2016). To remain competitive, organizational downsizing and organizational restructuring has been an inevitable consequence of this crisis. Western Australia, and especially the mining industry, now faces a weaker labor market demand, reduced working hours, and a high unemployment rate. For the first time in decades, the unemployment rate in Western Australia rose above national levels. This forced Western Australians to adjust to the new climate in the labor market where full-time jobs with a permanent contract cannot be taken for granted anymore (Young, 2016).

### 1.1.2 Impact on employees

The modern workplace has shifted towards placing more emphasis on work intensification (Pocock, 2005). Work intensification occurs through employees extending the hours spent on their career to handle the larger demands of their job. It has been shown through a study by Spurgeon (2003) that negative health outcomes can start to arise when employees exceed 48-50 hours of work per week. This factor can become even more significant in an organization following a reduction in staff as employees work harder to compensate for fewer co-workers. Downsizing is a common method used by organizations to manage a downturn in economic conditions where they reduce the number of employees. This is one of the methods companies in Western Australia have incorporated into their strategy to compensate for the decrease in mineral resources prices.

The increased emphasis on work intensification along with the impact of the economic downturn in the Western Australian mining industry have increased the demands placed on the employees that are still working in the mining industry. Oftentimes, this occurs with far-reaching consequences for the health of these employees. Although downsizing is often considered to be a quick way for organizations to reduce their labor costs, this method can negatively influence the trust relationship between employer and employee, along with the attitude and behavior they exhibit in their role (Uen, Chen, Chen & Lin, 2016). Therefore, it is not only the employees that are laid off from the organization that are affected by the downturn in the Western Australian mining industry, but also the employees that remain working in the mining industry. Those employees are termed "layoff survivors" (Brockner, 1988) and are a central element in this study.

A study by Matz-Costa, Pitt-Catsouphes, Besen & Lynch (2009) assessed the impact that the economic downturn may have on employee perceptions of their employment experiences. Moreover, this study found that employees experience more job insecurity and work overload in times of an economic downturn. More work will have to be done by fewer people and employees may be more stressed and overworked due to the fear of job loss and not having an income at all. In order to have a job, some people may tolerate more than they normally would if the economy was stable and the job market less competitive (Matz-Costa et al., 2009).

Noer (2009) uses the term "layoff survivor sickness" to describe emotions and concerns survivors may experience, which often involves: guilt, anxiety, depression, reduced motivation,

distrust, and anger. These emotions and concerns can result in negative reactions such as increased stress and poor health experienced by layoff survivors. In the current study these negative reactions are perceived as similar to the construct of burnout.

Burnout is a concept that is not new to the mining industry, but has become more prevalent due to the downturn in the mining sector. In addition, fatigue and exhaustion are for many years identified as critical issues for the mining industry that can result in higher attrition, lower productivity, and detrimental effects on employee health (Mccartney & Demarco, 2015). Factors that can contribute to this are job insecurity, high workload, and shift work (Mccartney & Demarco, 2015).

Despite the mining downturn, mining remains a major part of Western Australia's economy. Organizations are facing a lot of changes in the workplace in order to keep their heads up. Therefore, gaining insight into factors influencing the layoff survivors' level of burnout and work engagement during an economic downturn would be useful.

### 1.1.3 Importance of work

Work plays a central role in a person's life and experiencing work that is meaningful is perceived as the most important aspect for many employees (Cascio, 2003). Furthermore, the experience of meaningful work, which is intrinsic, is shown to outscore extrinsic factors of a career such as wage, job security, promotions, and hours. A similar outcome is found in a study by Chalofsky & Krishna (2009), who showed that six out of the top ten contributors of job satisfaction are intrinsic and motivational, namely: opportunities to use skills and abilities, relationship with immediate supervisor, the work itself, meaningfulness of job, and flexibility to balance life and work issues. Moreover, the Kelly Global Workforce Index supports the conclusions of this study as more than half the participants in the study would trade off a lower wage or lower position in exchange for more meaningful work (Kelly Services, 2009). Meaningful work is established as an important topic for employees. Therefore, organizations should try to improve their employee's experience of meaningful work (May, Gilson & Harter, 2004).

This factor grows in importance when placed into the context of the downturn in the Western Australian mining industry. A previous study by Holbecke and Springnett (2004) found that people who experienced a downsizing often seemed to question the meaning and purpose of

work in their lives. This finding was true for both the people that lost their jobs and the layoff survivors that remained with the company. Fostering the experience of meaningful work could possibly prevent employees from burning out and disengaging from their career following a downsizing.

Another core dimension of work that is oftentimes emphasized in the literature is the level of autonomy employees' perceive to have on their job. It has been shown in previous studies that job autonomy plays a crucial role in the lives of employees. An interesting insight about the concept it that it has the highest impact on the employee's attitude towards the job itself (Hackman & Oldham, 1976). More specifically, Thompson & Prottas (2005) found that job autonomy is related to the perceptions of the employee that the organization is supportive. Most likely, this concept is expected to be highly valued by employees in times of an economic downturn when employees oftentimes experience an increase in working hours and work pressure. Autonomy is often described in the literature as a way to increase the employee's level of work satisfaction, because it helps employees managing their required job demands and to reduce the work stress (Gallie, 2005).

Past studies applied a range of models to studying the effects discussed in this section. This, study has chosen to use the JD-R model to conceptualize the constructs of burnout and engagement in combination with job demands and job resources.

## 1.2 Relevance of the study

This part of the study focusses on the contribution of the current study to certain areas. This is done by highlighting the studies scientific relevance, practical relevance, and organizational relevance.

### 1.2.1 Scientific relevance

Meaningful work is a relatively new concept in the field of Human Resources and lacking research. It has been shown to be a highly-valued feature of employment, leading to various benefits for individuals and employers, such as high levels of engagement, performance, and job satisfaction. However, Bailey and Madden (2016) and Lips-Wiersma, Wright & Dik (2009)

emphasized the lack of research about the "dark side" of managing meaningful work which can have negative consequences such as employee burnout. This may occur when meaningfulness is lacking or, when the employees see the employers as manipulating their meaningfulness to increase the organizational performance (Bailey & Madden, 2016). Thus, meaningful work can be interpreted by the employee from both a positive and negative perspective. There is limited empirical evidence to suggest and fully understand meaningful work's influence on the processes of burnout and engagement (Johnson & Jiang, 2017). Therefore, this study contributes to the existing literature by focusing on both the positive and negative consequences of experiencing meaningful work.

Furthermore, meaningful work is seen in the literature as an important work characteristic but, there is a debate in the literature whether meaningful work can be managed. Having a feeling of meaningful work has been shown to result in an increase in employee motivation (May et al, 2004). Moreover, Cartwright & Holmes (2006), argue that organizations need to pay closer attention to understanding the employee's deeper need of meaningful work in order to increase the employee's motivation. However, although the concept is perceived to be important, creating meaningful work in an individual is complicated. Steger & Dik (2010) claim that individuals can create meaningful work and Bailey et al, (2016) suggest that meaningful work can be found within in a job. However, Lips-Wiersma & Morris (2009) argue that the act of trying to regulate an individual's level of meaningful work can result in the meaningful work being restricted. Furthermore, Michaelson (2011) argues that individuals cannot fully control their levels of meaningful work due to the assignment of work and those working conditions. The result is that meaningful is important to an individual due to the increased intrinsic motivation it creates. However, there is doubt whether the concept can be regulated by management. Therefore, it is important for an organization to understand the individual conditions under which meaningful work can occur rather than creating systems to try and increase the level of meaning an individual experiences within their work.

The JD-R model is an established scientific model that is used in current study as a framework to examine the effects of certain job demands and job resources on the outcomes of burnout and work engagement. According to Schaufeli & Taris (2013), the majority of the studies researching the JD-R model found evidence that the inner workings of the model exist in a practical setting, such as a workplace. Even though a variety of studies found evidence to

support the model, there are also some points of criticism regarding the model. This criticism is primarily focused on the openness of the model since there are countless job demands and job resources that can fit into the model. The model is very open and many aspects can be applied as job demands and job resources in different situations. This results in consequences for the model's ability to be applied to generalized contexts. In contrast, this is also an advantage of the model and makes the model unique in studying concepts in a variety of contexts. Therefore, this study will attempt to increase the applicability of the model by applying a new combination of variables in a new context. Furthermore, this study provides insight into the JD-R model and whether this model is as flexible as suggested in previous studies.

Another contribution of the model includes the application of the JD-R model into the mining industry, even though the model has been applied to the mining industry in previous studies. However, the target group of those studies were the employees working in the mines itself. For example, a study by Oldfield and Mostert (2007) researched the employees working in the South African mining sector and applied the JD-R model in the context of ill-health in terms of the work-home interference. This study concluded that the sector is mostly driven by performance, which results in an increase in job demands and a lack of available resources leading to employee health problems. This is an interesting insight to the present study as the respondents in current study are also found to be driven by performance and working long hours, especially in times of an economic crisis. Current study focuses on the usability of the JD-R within a different context.

The mining industry is a major industry around the world and the sector has been widely studied. However, the research is primarily focused on the employees working in the fly in, fly out (FIFO) line of work. For example, Yuan and Tetrick (2015) applied the model to the Chinese mining industry in the context of the moderator relationship between job characteristics and safety performance. However, this study gathered data from blue collared FIFO works and not the white collared employees working in the office environment. These are the employees that work consecutive shifts for weeks at a time and need to fly and live at the mining site. Working in the mines is considered to be a challenging and stressful career. Albrecht & Anglim (2017) did research about FIFO employees and their impact on the motivation and wellbeing of those employees. They recommended that to preserving the FIFO worker's wellbeing, employers should ensure optimal levels of job autonomy, workload, and emotional demands. Although

these FIFO employees are experiencing unique working conditions, the employees working at the office in the mining sector are also important to consider.

Lips-Wiersma et al. (2016) researched if there are differences in how important meaningful work is across blue-, pink- and white-color workers. The findings indicate that the extent to which people actually experience their work as meaningful differs across occupations. White-color employees seemed to find their work more meaningful than blue- and pink-color workers. However, workers in general want their work to matter to their inner selves. When focusing on current study, FIFO employees can be perceived as blue-color workers and working in the office environment as the white-color occupations. Pink-color jobs refer to employees working in the hospitality, retail, health care, and in administration roles (Lips-Wiersma et al., 2016). More knowledge is welcome about white color employees working in the mining sector, especially in times of a downturn. This period of a company's business cycle is usually filled with an increase in layoffs and job stress Dragano, Verde & Siegrist, (2005). The effect these layoffs can have on the laid off employees is widely studied. However, what is less studied is the influence of those factors on the layoff survivor's risk to burn out and their level of work engagement.

Layoff survivors are often left working under conditions of increased stress due to the higher job insecurity and workover load they face. In a study by Towers Watson (2013) it was shown that following a layoff period, the employees that remained would take on extra tasks to cope with the decrease in employees. According to this study, this could lead to health problems for the employee. Furthermore, another study by Dragano, Verde & Siegrist, (2005) found that if the organization continued to experience economic downturn conditions, the employee's job insecurity persists or gets worst which results in an increase in job stress. Therefore, the present study is important in gaining insight into which job resources, such as meaningful work, can successfully moderate the relationship between job demands and the negative outcome of burnout.

Finally, the economic downturn in Western Australia is a relatively recent event and therefore, has not been thoroughly studied. Besides, most research is focused on the 2008 global financial crisis. Western Australia is particularity unique as the economy is not very diversified and the state is relatively isolated from the rest of the country and the world (WA today, 2017). Over the past couple of years, the mining industry in Western Australia has been characterized

by an increase in layoffs due to the economic downturn leading to more employee stress. A study by Beehr (2000) had examined a different economic crisis's effect on employees and found that the crisis had resulted in employees working more than they have need to in the past in order to keep their jobs. Therefore, the study will provide a unique contribution to the literature by applying a study to a unique labor market under a new economic downturn situation.

### 1.2.2 Organizational relevance

Employers are more than ever focused on having fully engaged employees due to the challenges occurring in Western Australia's economy. Fully engaged employees who see their work as meaningful provide benefits to both the organization and the employee. According to a study by consultancy firm Towers Perrin (2003), having highly engaged employees increases organizational success and helps organizations retain their most valued employees. Even more, a study showed that people who have jobs that are personally meaningful are more engaged than those who are not (Stairs & Galpin, 2010). To illustrate this, a study by Bakker and Demerouti (2008) found that engaged workers demonstrate a motivation to put in the extra effort to go beyond their job requirements if necessary. This oftentimes has the results of those employees experiencing positive emotions, such as happiness, joy, and enthusiasm. These employees tend to experience better health, create their own job resources and transfer their engagement to others. Highly engaged employees are especially found to be important in times of an economic crisis (Baruch & Hind, 1999).

Another contribution of this study is gaining insight into ways cope with negative employee outcomes such as burnout. Burnout has been linked in the literature to outcomes such as poor employee health, absentee, lower work performance, and turnover (Fairlie, 2011). This might lead to a decrease of the organizational productivity and dissatisfaction among employees leading to negative financial outcomes. It is therefore important for an organization to ways to prevent and manage employees from burning out. Prevention is particularly important as it has been shown that employees often have difficulties with recovering from burnout and may take a longer time to return to the labor market once employees experience high levels of burnout.

The employee experience is another relevant aspect of this study. When an organization is experiencing an economic crisis, the organization may shift their focus from the needs of the

employees to staying competitive to survive. This is important to the study as an economic crisis has been shown in previous studies to influence an organizations' perception of job security which, can influence the employee's perception of their job security (Matz-Costa et al., 2009. The employee's experience is a multi-faceted concept that can affect the employee's level of productivity and result in negative consequences for the organization. Therefore, by gaining insight in how today's economic downturn might affect employees working in the mining industry, an organization can focus on managing the employee's which could benefit the organization.

Furthermore, the employee's perception of an organization is expected to play a crucial role for the future, especially when layoffs have been taken place. Many organization do not have a method for dealing with employees who 'survived' the layoffs (Robbins, 1999). This point is further emphasized as Western Australian mining organizations experienced booming times for many years and were not prepared for the unexpected mining downturn. The organization was focused on the expansive booming business model and not prepared for the Human Resources policies related to a downturn in the commodity market. This is important as research suggests that employees who survived a layoff may be more likely to experience changes in their mental health and their well-being (Noer, 2009). Such consequences can be decreased job satisfaction, decreased job performance and higher rates of absence and sick days. According to Robbins (1999), organizations are often involved in assisting individuals who lost their job with outplacement services, severance pay, or psychological counseling. However, Robbins found that the policies directed towards the remaining employees are often forgotten. Management could possibly assume that the remaining staff will be motivated and engaged since they still remain their jobs. However, they often experience an increased workload, feelings of sadness and guilt, and confusion over their new roles (Noer, 2009). Therefore, in the light of this study, it is crucial that Human Resources professionals take an active role in finding out the needs of employees and take an active role in preventing the potential issue of burnout and low levels of work engagement.

A last relevant aspect is the need to pay attention work overload as a job demand (Robbins, 1999). Australian mining organizations often have to do more with less in order to remain competitive, which could lead to an increase in the workload of the workers. Studies have linked work overload with a decrease of employee health and employee well-being (Britt, Castro,

& Adler, 2005). A decrease in employee health and well-being may result in lower productivity following a round of layoffs, and lead to counterproductive consequences to the original goal of lean management. Therefore organizations should focus more on the effect that changing job demands have in the current organizational climate, how those demands may influence employee health, and how those job demands relate to job resources.

### 1.2.3 Social relevance

Although the downturn in the mining industry has significantly affected the mining industry, the industry itself remains a major part of Western Australia's economy. Research into the effect on employees working in the industry has a big influence on Western Australia as mining is a major employer in the state. A study of how burnout and engagement can be influenced can impact a major industry in the state and lead to insight that can reduce the prevalence of these elements. The government of Western Australia is already attempting to address the fallout of the mining downturn, especially the health-related concerns. This is socially significant as in the mining industry, employees tend to experience more stress and the burnout then in other sectors. This can lead to more absenteeism and a higher turnover rate. A burned-out employee may not only experience negative influences in their work, but also in other aspects of their life. The mining sector in Western Australia is known to be a major contributor of resources to many other aspects of society through volunteering and employee initiatives outside of work. A burned-out employee may feel less engaged in these processes leading to an overall decrease in those supporting aspects of society. In addition, burnout effects influences both the organization and the individual employee, as well as the society as a whole. The Australian economy currently loses an estimated $10 billion per year to mental stress and fatigue (Private Properties, 2017). It is therefore important to focus on gaining new insight and practical solutions to prevent workers from burning out and being disengaged. The results of the current research may provide insight for other professions in other industries experiencing an increase in mental and physical workload.

## 1.3 Context of the organization

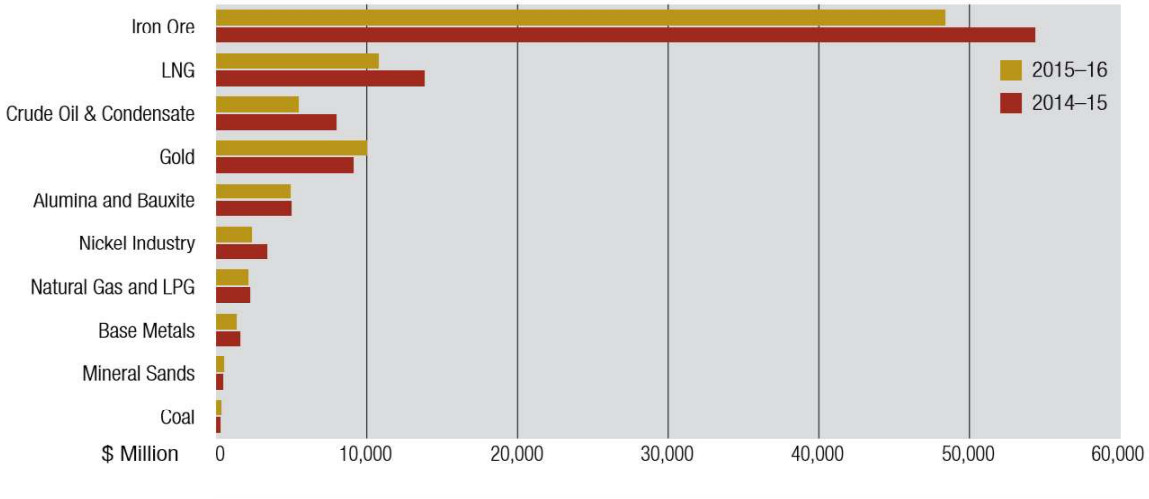
The state economy of Western Australia was going through a transition after experiencing one of the biggest booms in its history in 2011 and 2012 (ABC News, 2017). The downturn in the economy has had a major impact on many mining companies around the world. In Australia, the state of Western Australia is an interesting economy to focus on in this research. The state's economy is not very diversified and heavily reliant on the mining sector together with the petroleum industry. Iron ore is the highest value commodity for the state and world's largest exporter of iron ore (Statistics Digest, 2015-2016).

Due to high supply and weak demand, the iron ore prices dramatically decreased throughout 2015-16. Despite the lower iron ore prices, iron ore continued to be Western Australia's most valuable commodity and the iron ore sector remained the state's largest employment sector (Statistics Digest, 2015-2016). The iron ore prices have the ability to fluctuate enormously in a short period of time depending on the demand of the Asian market.

The three major producers of Australia's iron ore are Rio Tinto, BHP Billiton and Fortescue Metals Group. This study will be executed at the organization Fortescue Metals Group (FMG). FMG is a global leader in the iron ore industry who operates in the Pilbara, Western Australia (fmgl.com.au), with a total of almost 4000 employees.

Figure: 1

*Major Commodities by value in WA. Source: DMP*




Based on a conversation with the head of the Organization Development Strategy team (13-04-2017) can be concluded that employees who remained working at the corporate office of the mining organization were facing workplace changes such as staff cuts and organizational restructuring due to the economic downturn in Western Australia. Therefore, some of the workers might work longer hours (+/- 60 hours), have a higher workload, and their job security might have decreased. Those consequences are also visible in the outcomes of the annual Safety Excellence and Culture Survey, which is executed since 2014. Factors such as experienced Management Credibility, Perceived Organizational Support, and Organizational Value for Safety increased enormous. Current study will focus on exploring what factors predict better outcomes for these individuals, with the purpose of increasing employee engagement and preventing workers to burnout.

## 1.4 Research question

Current study is grounded in the JD-R model of Demerouti, Bakker, Nachreiner and Schaufeli (2001) and examines how certain job demands, along with certain job resources, may influence the outcomes of burnout and engagement of layoff survivors working in various hierarchical job positions at the corporate office of a mining organization in Western Australia. Job insecurity

and work overload have been selected as two relevant job demands for job survivors, and meaningful work and autonomy are seen as two salient job resources in this study. The central question in this study is:

"*To what extent do meaningful work, job autonomy, work overload, and job insecurity influence the processes of burnout and work engagement in the JD-R model in the Western Australian mining industry, and to what extent are these relationships moderated by the job resources meaningful work and job autonomy and the job demands work overload and job insecurity?*

This central question is answered through answering eight sub-questions:

**Direct relationships:**

1) To what extent is there a relationship between meaningful work and work engagement?
2) To what extent is there a relationship between job autonomy and work engagement?
3) To what extent is there a relationship between work overload and burnout?
4) To what extent is there a relationship between job insecurity and burnout?

**Indirect relationships:**

5. A) To what extent does meaningful work moderate the relationship between work overload and burnout?
   B) To what extent does meaningful work moderate the relationship between job insecurity and burnout?
6. A) To what extent does job autonomy moderate the relationship between work overload and burnout?
   B) To what extent does job autonomy moderate the relationship between job insecurity and burnout?
7. A) To what extent does work overload moderate the relationship between meaningful work and work engagement?
   B) To what extent does work overload moderate the relationship between job autonomy and work engagement?

8. A) To what extent does job insecurity moderate the relationship between meaningful work and work engagement?
   B) To what extent does job insecurity moderate the relationship between job autonomy and work engagement?

## 1.5 Reading guide

The research question described above is answered on the basis of scientific literature and an empirical study. The scientific background of the various concepts in the research questions are discussed in the theoretical framework, which is chapter 2. The conceptual model that results from this forms the basis for the execution of the quantitative research. Furthermore, chapter 3 and 4 is focused on the implementation and the results of the research. Finally, the results are presented and discussed based on the data that is collected and the finding from previous studies (chapter 5). This last chapter also provides a general conclusion of the study.

# 2. Theoretical Framework

The goal of the theoretical framework is to provide a theoretical background in order to demonstrate an understanding of theories and concepts based on prior research that are relevant to the study. Therefore, this chapter defines, discusses and describes the relationships between the different concepts. The chapter leads to the formulation of different expectations for this study. The focus in current study will be on applying the concept of certain job demands and job resources into the Job Demands-Resources model within the context of the Western Australian mining industry. The central components in this study are: work engagement and burnout, the JD-R model, meaningful work, job autonomy, job insecurity, and work overload.

## 2.1 Work Engagement

Different studies confirm the positive effect engagement has on both the organization and the employee, such as a good health and better performance (Demerouti et al., 2001). Engaged employees tend to be energetic and have a strong connection with their work activities along with the perception that they can handle the demands of their job (Schaufeli, Bakker & Salanova, 2006). However, in the context of academic literature, the concept of work engagement has multiple definitions and therefore, it is important to -on one definition of engagement. In the literature, a distinction has been made between the concept of work engagement and employee engagement. Work engagement refers to the relationship an employee has with his or her work. In contrast, employee engagement is a broader term referring to different subcategories of engagement, such as an employee's relationship with the organization. This category of engagement tends to be more behavioral in nature (Bakker, Schaufeli, Leiter and Taris, 2008). For the purposes of this study the concept of engagement will refer to the academic definition for work engagement.

The concept of work engagement evolved in the mid 1990's and was conceptualized by Kahn (1990) as "the individuals' attachment to their work role" (p. 121). Work engagement can be defined as "a positive, fulfilling work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli, Salanova, Gonzalez-Roma & Bakker, 2002, p. 74). Vigor

refers to approaching work with a sense of high energy, mental resilience, investment, and persistence an individual brings to their work. Dedication refers to the significance, enthusiasm, inspiration, pride, and challenge felt with work. Absorption refers to the focus an individual feels when working. When engagement is experienced by an employee, time tends to pass quickly and the sense of attachment an individual experiences with their work deepens making it difficult to detach from their work (Schaufeli et al., 2001).

## 2.2 Burnout

The concepts of job stress and burnout are often seen as similar constructs. However, academic literature makes a clear distinction between the two concepts. Job stress occurs when an individual's job resources cannot meet their job demands. It is the adaption process that an individual experiences alongside mental and psychical symptoms. In contrast, the concept of "burnout" is used to refer to long-term situation where the job demands and the job resources are out of balance. It is the final step in the process an individual goes through before they breakdown from long-term job stress (Brill, 1984). The current study will focus on the concept of burnout.

The concept of burnout was independently developed in America by two researchers: Maslach and Freudenberger. However, Maslach is often seen as leading researcher in the topic of burnout and in terms of the academic literature, the most commonly used definition of burnout is that of Maslach & Jackson (1986). Maslach and Jackson (1986) define the concept of burnout as "a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that can occur among individuals who do 'people work' of some kind" (p. 1). This is the definition the current study will use when discussing the concept of burnout.

The concept of burnout can be broken-down into three dimensions (Maslach, 1986). The first dimension of burnout is emotional exhaustion. Emotional exhaustion is the most central dimension and is expressed by extreme physical fatigue. When this state occurs, people experience feelings of emptiness due to the high efforts they exert threw their work. The second dimension of burnout is cynicism. This means that the person distances themselves from the stressors related to the job. The final dimension is a reduction in personal ability. This dimension is shown when an individual feels as if they can no longer function properly and contribute in a

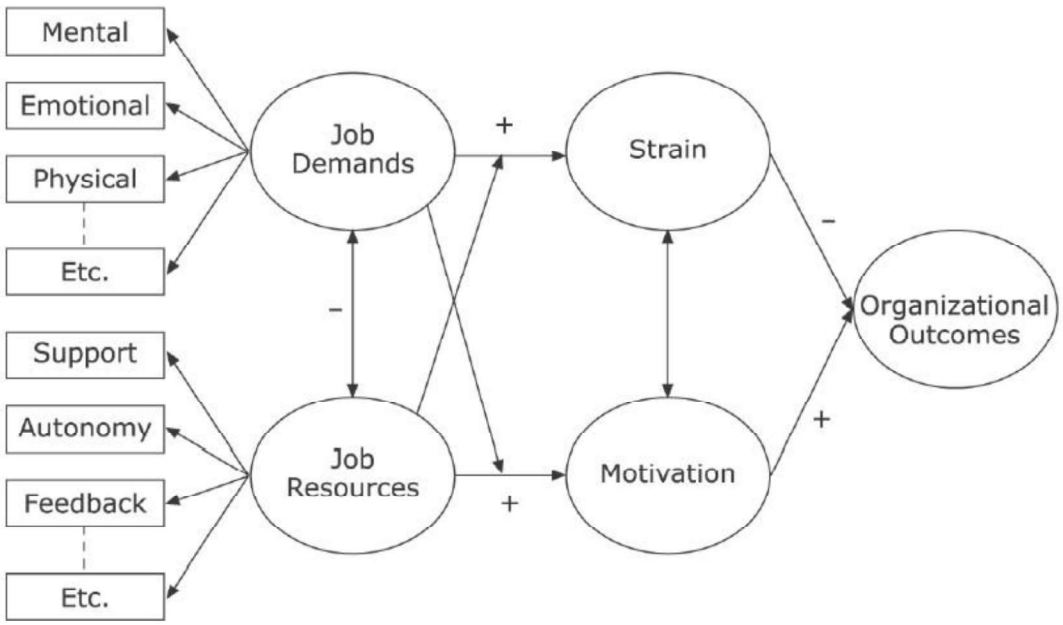
valuable way to their work. These three dimensions are used in academic literature to examine the concept of burnout. However, the current study will focus on the dimension of emotional exhaustion developed by Maslach and Jackson (1986) as this is the most commonly used dimension.

## 2.3 The JD-R model

Burnout and work engagement are central concepts used in the Job Demands-Resources model (JD-R model). The JD-R Model is an occupational stress model developed by Demerouti et al. (2001) that is created as an alternative model to measure employee well-being. The model is used in current study to measure relevant factors in the Western Australian mining industry in times of an economic downturn. In this section, the model will be explained and the variables measured in this study will be placed into the model. An illustration of the model is presented in figure 2.

Figure: 2

*The Job Demands-Resources model*



The underlining premises of the JD-R model is that every occupation has its own working characteristics which can be allocated into two groups: "job demands" and "job resources". Demerouti et al. (2001) defines both job demands and job resources as aspects of a job that are physical, psychological, social, or organizational. However, job demands are aspects of a job that "require sustained physical and/or psychological (i.e., cognitive or emotional) effort and are therefore associated with certain physiological and/or psychological costs" (p. 501). In contrast, job resources are aspects of a job that either, "(1) reduce job demands and the associated physiological psychological costs; (2) are functional in achieving work goals; (3) stimulate personal growth, learning and development" (Demerouti et al., 2001, p. 501). Schaufeli and Taris (2013) expand on this definition by stating that job resources, have an extrinsic motivational role shown through the motivation to achieve work goals, or an intrinsic motivational role shown through the drive to satisfy basic human needs for autonomy, relatedness, and competence. Therefore, the theoretical framework for the current study will categorize the variables examined in this study as either job demands or job resources based on these definitions.

The original JD-R model study by Demerouti et al. (2001) includes an underlying psychological process that leads to job strain. This process is labelled as: "the health impairment process". This is a state in which the individual's job resources have been diminished by long term overload. This process is expanded on in a study by Schaufeli & Taris (2013) in which they state that the concept of burnout can lead to a lack of energy and health problems for individuals. Schaufeli & Bakker (2004) expanded the original JD-R model beyond the exhaustion process by adding the "motivational process". This process refers to job resources that lead to high work engagement and other benefits. Job resources have been shown to help employees deal with the demanding aspects of their work. Furthermore, a study by Hakanen, Schaufeli & Ahola (2008) tested both the exhaustion process and motivation process by studying Finnish dentists using a combination of various job demands and job resources. This study demonstrated the ability of the JD-R model to predict burnout and engagement over a period three years through the two processes. Therefore, the exhaustion process and motivation process in the JD-R model and central to the relationships that will be examined between the constructs of job demands and job resources and their outcomes of burnout and work engagement, respectively.

The JD-R model applies the assumption that the outcomes of burnout and engagement are independent dimensions. This is in contrast to previous studies that stated that engagement

was the positive antithesis of burnout. This results in the two outcomes having bipolar characteristics of each other that lie on opposite ends of the same continuum (Maslach & Jackson, 1986). Furthermore, the experience of work engagement can prevent a burnout and even transform it into positive outcomes, such as an increase in commitment and productivity. However, Schaufeli & Bakker (2004) criticize this perspective and report that work engagement and burnout are independent dimensions. They acknowledge that both dimensions are strongly related, but they provide the counter argument that less engaged employees do not necessarily experience signals of burnout. Furthermore, burned out employees are also not less engaged by definition. This lack of a direct relationship between the outcomes found by Schaufeli and Bakker (2004) is central to the JD-R model and is the relationship that is applied to the current study.

Since the two outcome variables are perceived as independent of each other, an indirect relationship can exist between the variables. This is developed in an extended version of the JD-R model which introduced an indirect relationship through two "interaction effects". These interaction effects are applied within the model leading to the outcomes of burnout and work engagement (Bakker & Demerouti, 2008). The first interaction effect refers to job resources buffering the relationship between job demands and burnout. An example of this interaction effect is that job demands are experienced by employees as less stressful when the right job resources are present in their work. The second interaction effect occurs when the relationship between job resources and work engagement is mediated by job demands (Bakker & Demerouti, 2008). Job demands are expected to influence the employee's energy and consequently the energetic component, the dimension of vigor, of work engagement. This relationship becomes stronger when more stressors are present at the job, as long as the job resources are greater than the job demands (Bakker & Demerouti, 2008). This could be interpreted by employees' perceiving the job as being fulfilling. Therefore, the two interaction effects will be examined in the current study.

In the current study, job insecurity and work overload have been selected as two relevant job demands. Job insecurity is perceived in the literature as a physical job demand and work overload as a mental job demand (Bakker & Demerouti, 2008). The concepts of job insecurity and work overload are expected to increase in times of an economic downturn and therefore have a crucial role in current study. Furthermore, the concepts meaningful work and job autonomy are

used in this study as two relevant job resources. It is expected that both concepts gain importance for employees when an economic downturn is occurring. In the following section, a theoretical framework is provided where the main concepts are defined and linked to each other.

## 2.4 Meaningful work

In academic literature, articles on the topic of meaningful work have recently increased in popularity due to employees perceiving the concept as an important aspect in their career. The academic literature on the concept of meaningful work has been written about extensively but, lacks a universal definition. A popular definition in the literature is provided by Steger & Dik (2010) who define meaningful work as a "general sense that work matters, makes sense, is significant, and is worth engaging in at a deep, personal level" (p. 3). A more recent study by Bailey, Madden, Alfes, Shantz & Soane (2017), describe meaningful work as being unique to the individual and their relationship contributing to something beyond their self-interest. For the purposes of this study, the more frequently used academic definition provided by Steger & Dik (2010) will be incorporated into this study.

There are two alternative groups of research to describe the concept of meaningful work: "meaning of work" (MOW International Research Team, 1987) and "meaningfulness". To understand and conceptualize the concept of meaningful work, it is crucial to make a distinction between the two categories, as those categories are often used interchangeably in the literature. Pratt & Ashford (2003) describe "meaning" as the result of what work means to someone and can be linked to the sense-making process. This area of research is more focused on the environment and context in which an individual experiences meaning and associated with the type of meaning an individual will experience. The concept of "meaningfulness" on the others hand is more focused on the amount of significance perceived by an individual Rosso et.al (2010). This area of research is more focused on subjective experience and oriented in the area of psychology. The focus of the current study will be both categories using the umbrella term "meaningful work" to describe both concepts.

There are two popular frameworks that create subcategories of meaningful work. One of the frameworks that is popular in the literature on meaningful work was created by Lips-Wiersma (2002). The study found four dimensions to measure meaningful work: developing the

inner self, unity with others, expressing full potential, and serving others. In particular, the distinction between the "self" and "the other" is often emphasized when describing the concept. Those dimensions represent tensions between the need to meet the needs of the "self" and the need to meet the needs for the "others" and, the need for "being" reflection and the need for "doing" (action). An imbalance within the model can result in less meaningful work and the more dimensions are experienced, the greater the level of meaningful work.

Another popular framework to categorize the sub facets of meaningful work was created by Steger, Dik & Duffy (2012) building off the work of Rosso et.al (2010). In their study, they state that meaningful work consists of three core components: psychological meaningfulness, meaning making through work, and greater good motivations. Psychological meaningfulness (PM) uses the work of Rosso et.al (2010) to describe the area of meaningfulness. Meaning making (MM) through work describes finding broader meaning in life and to help understand ourselves and the world around us which is labelled. Greater goods motivation (GG) describes the idea that meaningful work occurs if their work activities are significant and make a positive contribution for others (Steger et al., 2012). GG aligns with the "other" category in the framework created by Lips-Wiersma (2002). In order to experience a high level of meaningfulness at work, all three dimensions of meaningful work need to be present (Steger et al., 2012). For the purposes of the current study, the three category framework created by Steger et.al (2012) is a better fit. Therefore, this framework will be used in the current study to measure the concept of meaningful work.

According to the JD-R model, job resources can have both an intrinsic and extrinsic motivational role (Schaufeli & Taris, 2013). The role is supposed to be intrinsic when job resources foster growth, learning and development of employees and extrinsic when the job resources are used as an instrument to reach goals. Renard & Snelgar (2016), found that employees perceiving their work to be meaningful, flexible, challenging, varied and enjoyable is intrinsically rewarding. Intrinsic rewards seem to have a greater effect on the motivation of individuals compared to traditional performance management systems that are focused on extrinsic rewards (Renard & Snelgar, 2016). Furthermore, intrinsically rewarding work has been shown to increase psychological well-being and competence (Renard & Snelgar, 2016). Therefore, it is likely that meaningful work will have a role in the JD-R model as a job resource.

## 2.5 Job Autonomy

Job autonomy is a widely researched concept in the academic literature surrounding job design and has previously been applied into the context of the JD-R model. The concept is an important work characteristic that has been shown in previous studies to influence the well-being of employees and personal accomplishment (Maslach et al., 2001). A study by Karasek (1998) provided a possible explanation for this by suggesting that high levels of job autonomy provides employees more opportunities to deal with stressful situations. The most popular definition of job autonomy is defined as "the degree to which the job provides substantial freedom, independence, and discretion to the employee in scheduling the work and in determining the processes to be used in carrying it out" (Hackman & Oldham, 1980, p. 79). Therefore, this is the definition that the current study will incorporate when researching the concept of job autonomy.

## 2.6 Economic downturn

An economic downturn refers to a slowdown in economic activity. During an economic downturn, an organization may be forced to reduce the use of its assets to survive the decreased demands for its products or services. Reducing the human assets at an organization is a common and quick method of responding to an economic downturn. Mishra and Mishra (1994) state that this can be done by either reducing the number of job roles, the salaries of the employees, or the number of employees employed at the organization. Furthermore, the study proposes that the downsizing of labor can potentially lead to unintended consequences for both the laid off employees and the employees that remain working at the organization. The employees that remain working at an organization are referred to as layoff survivors and are the focus of the study into the effects of the economic downturn.

Layoff survivors change in their experience of workplace stress due to variety of reasons. Mccartney & Demarco (2015) claim that this increase in workplace stress is due to the reduction in employees, done with the purpose of cutting costs, combined with the increased pressure to boost the productivity of the organization. This is important as according to a study by Towers Watson (2013), employees regard the stress they experience through their job as the most detrimental factor to their health. Moreover, the level of engagement employees experience

appears to decrease in times of an economic crisis (Matz-Costa et al., 2009). Based on previous studies, the economic downturn should have an effect on both the outcomes of engagement and burnout. To study the economic downturn's impact on the model, the current study will apply two concepts that are experienced by employees as a result of an economic downturn: an increase in workload and job insecurity (Dragano et al., 2005). This can be applied to the JD-R model since the crisis is an external factor to the organization that effects the internal environment of the organization which, can be examined through the perspective of the employees.

### 2.6.1 Work Overload

The concept of work overload is a work stressor that represents the perceived pressure of employees regarding the amount of work and task heaviness. This is important to the conditions present during an economic downturn as the employees that remain working at the organization following a downsizing in the labor force oftentimes get confronted with a rise in responsibilities. Beehr (2000) suggests that downsizing can result in an increase in work overload through: longer hours, pressure to work overtime, doing tasks in addition to the regular work and at a faster pace. Leung & Chang (2002) reported that work overload can result in problems for the employee if the workload is greater than the amount of time and resources that is necessary to complete the work. The consequence is that the same amount of work is required to be completed by fewer employees, which could lead to the experience of work overload. Therefore, work overload is a good job demand to apply to the JD-R model in the context of an economic downturn.

In the academic literature, workload is perceived as a dynamic concept with two main areas of overload present in the academic literature. Therefore, it is crucial to make a distinction between two areas of overload: subjective workload and the objective workload. According to Jacobs & Dodd (2003), burnout is predicated by the subjective workload rather than the objective workload. The subjective workload refers to the employees' perception of time pressure and having too many things to do and not enough time to accomplish those things. Objective workload on the other hand refers to the number of hours of paid work (Jacobs & Dodd, 2003). The current study will primarily be focused on the subjective workload that is perceived by the employees that remain working at the organization.

### 2.6.2 Job Insecurity

The concept of job insecurity is a well-studied concept in the academic literature. Although job insecurity is an often research concept, the literature is inconclusive on how to define and measure the construct of job insecurity. Greenhalgh & Rosenblatt (1984) define job insecurity as a "perceived powerlessness to maintain desired continuity in a threatened job situation" (p. 438). However, according to Hellgren, Sverke & Isaksson (1999), job insecurity has a quantitative and qualitative dimension which, are independent of one another. The quantitative element regards the threat of losing the job itself. In line with this distinction, De Witte (1999) defines job insecurity as the perceived fear about the continuation of the job itself. Conversely, the qualitative element refers to the fear of losing important aspects of the job. Rosenblatt & Ruvio (1996) described job insecurity as a multifaceted term and defined this concept as having concerns about relevant features and characteristics of the job. For the purpose of this study, job insecurity is defined according to the quantitative definition of Hellgren et al. (1999) in which job insecurity is defined as the threat of losing the job itself.

The experience of job insecurity is perceived as a common risk for employees that may result from any type of changes in working conditions (Rosenblatt and Ruvio, 1996). Employees worry about losing their job is concerning to an organization as experiencing job insecurity in a job is stressful and turns out to negatively influence the behavior and attitudes of employees at work (De Witte, 1999). Research shows that job insecurity can be interpreted by the employees in two ways: experiencing a fear of job loss and, the possibility of actually losing the job. Experiencing a fear of job loss is seen as the affective dimension of job insecurity (De Witte, 2005). In contrast, the possibility of actually losing the job is labelled as the cognitive dimension of job insecurity (De Witte, 2005). A combination of the affective dimension and the cognitive dimension together create the experienced level of job insecurity. Therefore, the concept of job insecurity can be perceived as a job demand which, can have a negative impact on employees.

## 2.7 Direct relationships

In this paragraph, the expected direct relationships are theoretically examined. Based on this information, the first four hypotheses of this study are formulated.

### 2.7.1 Meaningful work and work engagement

The concepts of "meaningful work" and "work engagement" are sometimes perceived as similar concepts. Both concepts aim to "fulfil the human spirit" (May et al., 2004) and to foster well-being at work. However, the difference between the concepts is that work engagement is a state of mind, whereas meaningful work has an existential significance (Lips-Wiersma & Wright, 2012). Moreover, a study by consulting firm Towers Perrin (2003) found that experiencing meaningful work forms the foundation of the employee's experience of engagement. The study reported that meaningful work accomplishes this by contributing to the employee's need for a sense of personal inspiration and accomplishment. Therefore, the two constructs can be seen as independent constructs, when placed into the context of the JD-R model.

Previous studies have come to the conclusion that the employees' experience of meaningful work leads to positive outcomes for both the employee and the organization. Meaningful work is found to be one of the crucial factors that is positively related to work engagement. It is found that the employee's level of engagement increases when the employees perceive their work as meaningful (Cartwright & Holmes, 2006; Stringer & Boverie, 2007). Another study compared meaningful work characteristics to other work characteristics in terms of their influence on engagement, and found that meaningful work characteristics had the strongest relationship with engagement (Fairly, 2011). The Social Exchange Theory (SET) provides an explanation how meaningfulness might influence the concept of work engagement. This theory suggests that employees might feel obliged to "repay" the employer after receiving job resources. The reason for this is that the job resources may satisfy their psychological needs for meaningfulness at work which in turn may encourage them to give back something to the employer. An example of this could be providing higher levels of organizational commitment or engagement. This theory is in line with the study of Albrecht (2013), who argued that work engagement arises when the individuals' need of meaningful work is satisfied. Therefore, the literature indicates that the two well studied concepts are independent constructs with a positive relationship existing between them. In this study, it is proposed that:

H1: Meaningful work is positively related to work engagement.

### 2.7.2 Job autonomy and work engagement

Previous studies have focused on the direct relationship between job autonomy and work engagement. In the following three studies, job autonomy was treated as a job resource and work engagement was the outcome variable. A study by Vera, Martinez, Lorente & Chambel (2016) examined the direct effect of job autonomy on nurse's levels of work engagement. The results of the study demonstrated a positive direct relationship between job autonomy and work engagement. Another study of Xanthopoulou et al. (2009) conducted research on employees working at a Greek fast food restaurant testing daily levels of job autonomy. The article proposed that on days when there were more job autonomy was present, employees turned out to be more engaged. In addition, the longitudinal study of Llorens, Schaufeli, Bakker & Salanova (2007) among university students found a positive reciprocal relationship between job autonomy and work engagement. Through this study, evidence was found that job autonomy predicts future work engagement, and work engagement predicts future job autonomy.

An explanation for the existence of the direct relationship can be found by using the self-determination theory (SDT: Deci & Ryan). According to this theory, three basic psychological needs are required for employees in order for an employees' health and efficient functioning. One of these basic needs refers to the needs of autonomy. Moreover, Ryan & Deci (2002) found that are more likely to have high engagement scores when their basic psychological needs are satisfied. Another study by Van den Broeck (2013) built off this explanation and found a positive link between the degree of fulfillment of the basic psychological needs and the health and well-being of employees at work influencing the level of burnout and engagement (Van den Broeck, 2013). Therefore, the academic literature indicates that a positive direct relationship should exist between the job resource of job autonomy and the outcome variable of engagement. It is proposed that:

H2: Job autonomy is positively related to work engagement.

### 2.7.3 Work overload and burnout

Based on previous studies, the job demand work overload has been shown to be positively associated with burnout. A study of Greenglass, Burke & Fiksenbaum (2001) found that

workload is related to all three dimensions of burnout. The result show that workload was positively related to emotional exhaustion, emotional exhaustion led to cynicism, and cynicism was negatively associated with professional efficacy. This study focused on nurses employed in hospitals that experienced restructuring and downsizing leading to an increase in workload. Therefore, the current study will focus on emotional exhaustion when studying the relationship between work overload and burnout.

According to Halleberg, Johansson & Schaufeli (2007), workload is in particular positively associated with emotional exhaustion, which is the main (stress) component of burnout. This means that employees reporting high levels of workload reported high levels of emotional exhaustion. When this is happening, too many demands exhaust the energy of the employee in a way that recovery is not possible (Maslach, Schaufeli & Leiter, 2001). Another reason to experience emotional exhaustion may be the wrong kind of work, for example when an employee lacks the required skills or when the feelings of an employee do not match with emotions they have to express for their job (Maslach et al., 2001). This finding is further shown through a study by Ksenia (2012) that found that negative effects may arise, such as nervousness, anxiety, frustration, pressing, or annoyance, when an individual exceeds the limit of personal capabilities when performing work tasks. This situation can arise in layoff survivors that have an increase in responsibilities following a downturn. Therefore, based on the literature examining the link between work overload and burnout, it is proposed that:

H3: Work overload is positively related to burnout.

### 2.7.4 Job insecurity and burnout

Previous studies have reported that experiencing job insecurity has a positive relationship with an employee's level of burnout. In the study by Sverke et al. (2002), the perception of job insecurity was found to result in work stress and, consequently a reduction in the overall health of employees. Moreover, Van Vuuren (1990) considers job insecurity to be a work stressor and found links with the occurrence of psychological distress, anxiety, and depression. Furthermore, Hu & Schaufeli (2010) linked the occurrence of a downturn to feelings of job insecurity. The study found that the experience that employees have of going through a downsizing in the past

can result in anticipation of a downsizing occurring again in the future. This has been shown to result in employees experiencing the outcome of burnout. In more detail, De Cuyper, Handaja & De Witte (2007) focused on both quantitative and qualitative job insecurity. The scholars reported that both types of job insecurity are negatively associated with psychological well-being, which is an interesting finding as current study measures quantitative job insecurity. According to these studies, the level of burnout is significantly higher in jobs that report high job insecurity. Therefore, based on previous literature, it is proposed that:

H4: Job insecurity is positively related to burnout.

## 2.8 Indirect relationships

In this paragraph the indirect relationship of this study are theoretically examined and formulated. It is proposed that the indirect relationships act as a moderator.

### 2.8.1 Meaningful work and burnout

The concept of meaningful work has not been applied in previous research to the JD-R model. However, academic literature discussing the relationship between the two constructs does exist. Some of these studies focused on the effect job stress can have on the job resource of meaningful work. Lips-Wiersma and Morris (2009) studied the relationship that stress can have on a loss of existential meaning. Although existential meaning is not the same as meaningful work, this variable results in a similar outcome. In the study of Lips-Wiersma & Morris (2009), a portion of the study's respondents reported finding their work to be "pointless". This experience is similar to the outcomes discuss when people experienced the construct of burnout. In addition, Fairlie (2011) found that higher levels of exhaustion, which is the central component of the construct of burnout, was reported in people with a lower level of meaningful work. This finding is corroborated in a previous study by May et al. (2004) who found that meaningless work is often related to the feelings of burnout, apathy, and detachment from one's work. This indicates that when an individual experiences lower levels of meaningful work, the individual would be expected to experience high levels of burnout.

Other studies discussing the relationship between meaningful work and stress focused on the effect of meaningful work on stress. According to Britt, Adler & Bartone (2001), the experience of meaningful work can improve a person's ability to handle stress. Furthermore, a study by Maslach et al. (2001) suggests that people may be able to accept greater workload and higher job insecurity caused by the economic downturn if they perceive their work as valuable and if they see their work as important. Following the practices of the JD-R model, this suggests a type of interaction effect occurring between the job resource of meaningful work, and the outcome of burnout. This suggests that high levels of meaningful work should result in a moderator effect occurring, which can lead to in an increased ability to handle stressful situations. Therefore, it is expected that the concept of meaningful work acts as a job resource and will moderate the relationship between the job demands, of work overload and job insecurity, and burnout. It is proposed that:

H5a: Meaningful work has a moderating effect on the positive relationship between work overload and burnout and decreases the strength of this relationship.

H5b: Meaningful work has a moderating effect on the positive relationship between job insecurity and burnout and decreases the strength of this relationship.

### 2.8.2 Job autonomy and burnout

Job autonomy and its relationship with the concept burnout has been well studied by academics. Prior to the creation of the JD-R model, the study of Karasek (1985) showed through the Job Demand and Control Model (DCM) that job demands often result in job strain when crucial job resources, such as a lack of job autonomy, are not present. This means that the positive relationship between workload and strain decreases when there is high job autonomy. Furthermore, this link is further corroborated in an article by Maslach et al. (2001) who found that levels of burnout increased for individuals who reported lower levels of autonomy. This idea aligns with the revised JD-R model where is suggested that the job resources are not directly related with burnout (Schaufeli & Bakker, 2004). The model suggests that the relationship between job autonomy and burnout occurs through a moderating effect. Therefore, it is expected

in current study that job autonomy will moderate the relationship between the two job demands (work overload and job insecurity) and burnout.

H6a: Job autonomy has a moderating effect on the positive relationship between Work overload and burnout and decreases the strength of this relationship.

H6b: Job autonomy has a moderating effect on the positive relationship between job insecurity and burnout and decreases the strength of this relationship.

### 2.8.3 Work overload and work engagement

A relationship between the concepts of work overload and work engagement has been shown in previous studies to exist. However, the literature does not describe a direct relationship to be present between the two constructs. The modified JD-R model by Bakker & Demerouti (2008) claims that the positive relationship between job resources and work engagement is moderated by job demands such as work overload. Furthermore, Mauno et al. (2006) found that some types of job demands, such as workload, time pressure, cognitive demands, are positively related to work engagement. In addition, Crawford, Lepine & Rich (2010) reported that the relationship between job resources and work engagement is especially high when employees perceive the job demands as challenging. However, this relationship between job resources and work engagement decreases when the job demands are perceived as hindrances by employees. Using the JD-R model, this leads to the expectation that job demands will buffer the relationship between the job resources of meaningful work and job autonomy, and work engagement. Therefore, it is proposed that:

H7a: Work overload has a moderating effect on the positive relationship between meaningful work and work engagement and decreases the strength of this relationship.

H7b: Work overload has a moderating effect on the positive relationship between job autonomy and work engagement and decreases the strength of this relationship.

### 2.8.4 Job insecurity and work engagement

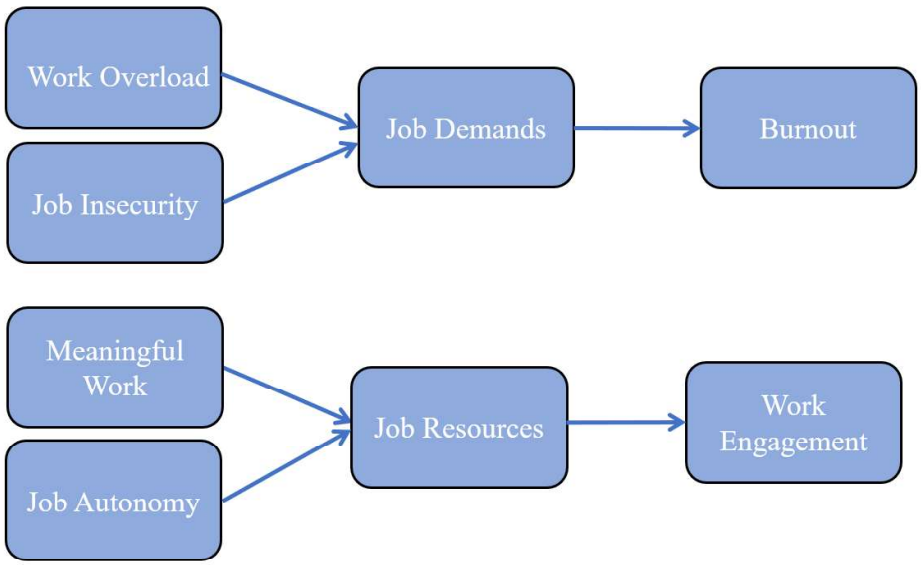
The variable of job insecurity has been shown in a couple of studies to be negatively associated with the concept of work engagement (Mauno et al., 2006). A study by Vander Elst et al., (2013) found that job insecurity can act as a stressor, which can negatively influence the outcome of work engagement. Furthermore, the study Bosman, Rothman & Buitendach (2005) found that employees working in a government organization who experience job insecurity, experience less work engagement. In these studies, job insecurity is found to negatively relate to work engagement. However, when following the JD-R model, job insecurity is indirectly related to the outcome of work engagement. The model proposed that job resources reduce the job demands though an interaction effect (Bakker & Demerouti, 2008). Under the assumption that job insecurity is a demand and that meaningful work and job autonomy both act as a job resource, one would expect that:

> H8a: Job insecurity has a moderating effect on the positive relationship between meaningful work and work engagement and decreases the strength of this relationship.

> H8b: Job insecurity has a moderating effect on the positive relationship between autonomy and work engagement and decreases the strength of this relationship.

Figure: 3

*Conceptual model*



# 3. Methodology

In this chapter, the focus is on the methodology that is used to answer the questions of this research. First of all, the design of the research is discussed in paragraph 3.1. In this paragraph is explained which methodology is chosen and how the data is collected. Second, the respondents of the study are described in paragraph 3.2 by using descriptive statistics. Third, the measure instruments are demonstrated in paragraph 3.3. This paragraph also focuses on the validity and the reliability of this study. And finally, the techniques how to analyze the data are described in paragraph 3.4.

## 3.1 Research Design

A quantitative cross-sectional study is conducted in order to test the hypothesis as presented in the theoretical framework. Based on the timeframe of this study, there is chosen to create an online survey to collect the data to measure the research model of this study. Large groups of respondents are easier to approach by using an online survey. The choice for an online survey, and thus for quantitative research, derives from the need to clarify the various assumed relationships within this study. Quantitative research is based on numerical data which makes it possible to chart the outcomes and to test these hypothesis. If the sample is representative and large enough, the results can be generalized for the whole research population.

The population approached in this study are people working at Fortescue Metal Group. This is a major Western Australian mining corporation with approximately 4000 employees working in Western Australia. The respondents that are targeted for this survey are working at the office in one of the following locations: Perth, Port and Rail, Cloudbreak, Christmas Creek, Solomon, or 'other'. This group of respondents was chosen since the employees who remained working in the office environment faced an increase in layoffs and consequently changes in their work environment due to the economic downturn (Conversation with the head of the Organization Development Strategy team, 13-04-2017). The most relevant factors found in this study to play a crucial role are: the level of burnout, work engagement, workload, job insecurity, meaningfulness in work, and job autonomy.

The survey is digitalized with the online tool "Qualtrics". After completing the survey, a pilot is tested by five people to fine-tune the usability of the study in order to receive more reliable results. On the 12th of July, an e-mail is sent out to Fortescue's employees with a link to the online survey. The survey is sent to approximately 400 employees working at one of the offices in Western Australia and was active for three weeks.

## 3.2 Respondents

In total, 121 employees participated in the study (N=121). In the table below are the descriptive statistics of the participants presented. Some remarkable descriptive statics about the respondents are found in this study. First of all, based on the table below can be stated that most of the respondents that filled in the survey are men (80.1%) and a smaller group (19.2%) are women. This is not surprising, since the resource sector is known to be a male dominated industry. The results of the question regarding the age range indicates that the respondents range from the age group 25-34 (minimum) years old until older than 65 years (maximum). No respondents were found to be younger than 25 years old. Most people are in the range of 35-44 years group (37.4%), 45-54 years group (27.3%), and 24-32 years group (23.2%). A small percentage of the respondents is in the 55-64 years group (11.1%) and only 1 respondent is older than 65 (1%). Furthermore, the hierarchical job position ranges from general/group manager (6.3%), manager (16.7%), superintendent (28.1%), specialist (11.5%), supervisor (36.5%) and 1 respondent answered the option 'other' (1%). However, this one person did not provide his job title in the open text. Therefore, this option 'other' is removed as an option.

Table: 1

*Descriptive statistics of respondents*

| Variable | | N | % |
|---|---|---|---|
| Gender | Men | 80 | 80.8 |
| | Women | 19 | 19.2 |
| | Total | 99 | 100 |
| | Missing values | 22 | |
| Age | 25-34 years old | 23 | 23.2 |
| | 35-44 years old | 37 | 37.4 |
| | 45-54 years old | 27 | 27.3 |
| | 55-64 years old | 11 | 11.1 |
| | Older than 65 | 1 | 1 |
| | Total | 99 | 100 |
| | Missing values | 22 | |
| Job title | General/group managers | 6 | 6.3 |
| | Manager | 16 | 16.7 |
| | Superintendent | 27 | 28.1 |
| | Specialist | 11 | 11.5 |
| | Supervisor | 35 | 36.5 |
| | Other | 1 | 1 |
| | Total | 96 | 100 |
| | Missing values | 25 | |
| Job location | Perth | 35 | 35.4 |
| | Cloudbreak | 13 | 13.1 |
| | Christmas Creek | 16 | 16.2 |
| | Solomon | 13 | 13.1 |
| | Port and Rail | 12 | 12.1 |
| | Other | 10 | 10.1 |
| | Total | 99 | 100 |
| | Missing values | 22 | |
| Years working at organization | 6 months - 1 year | 1 | 1 |
| | 1 - 2 year | 4 | 4.1 |
| | 3 - 5 years | 33 | 33.7 |
| | 6 - 10 years | 57 | 58.2 |
| | More than 10 years | 3 | 3.1 |
| | Total | 98 | 100 |
| | Missing values | 23 | |

| | | | |
|---|---|---|---|
| Average working hours | 31 - 40 hours | 2 | 2 |
| | 41 - 50 hours | 32 | 32.7 |
| | 51 - 60 hours | 29 | 29.6 |
| | 61 - 70 hours | 11 | 11.2 |
| | More than 70 hours | 24 | 24.5 |
| | Total | 98 | 100 |
| | Missing values | 23 | |
| Working hours at most | | | |
| | 11 - 15 hours | 1 | 1 |
| | 16 - 20 hours | 1 | 1 |
| | 41 - 50 hours | 12 | 12.2 |
| | 51 - 60 hours | 29 | 29.6 |
| | 61 - 70 hours | 19 | 19.4 |
| | More than 70 hours | 36 | 36.7 |
| | Total | 98 | 100 |
| | Missing values | 23 | |

## 3.3 Measures

In order to test the sub questions, and consequently the central question of this study, an online survey is created with the online program Qualtrics. The survey consists in total of six sub-themes. The decision has been made to first test the research model and afterwards questions targeted to gather general information about the respondent. The reason for this is that completed parts of the survey can still be used when the surveys are incomplete.

In the paragraph below, the different factors and the surveys that fit with the measurement of the factors are explained and discussed. Also, the focus in this paragraph is on the validity and reliability of the measure instruments. The reliability, or the precision and accuracy, is determined by a reliability analysis (the Cronbach's alpha coefficient). To ensure that the validity, which means that the study measures what needed to measured, existing measurement scales have been used as much as possible in their original form. Finally, some example questions of the different measure instruments are presented.

### 3.3.1 Work engagement

As described in the theoretical framework, work engagement is defined as "a positive, fulfilling work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli, Salanova, Gonzalez-Roma & Bakker, 2002). These are the three central components of work engagement. For the purpose of this study, work engagement is assessed with the 9-item Utrecht Work Engagement Scale (UWES-9) of Schaufeli, Bakker & Salanova (2006), which is a shortened version of the 24-item Utrecht Work Engagement Scale (UWES-24). This shortened 9-item scale is chosen since the validity and the test-retest reliability of the scale are demonstrated to be good (Schaufeli & Bakker, 2004), with the Cronbach's alpha ranged from 0.85 to 0.92 in studies conducted in different countries. This aligns with the results of current study, since an overall Chronbach's Alpha of 0.90 is reported, which is considered to be an excellent alpha. In order to have reliable outcomes, the alpha should be greater than 0.70.

The UWES-9 consists in total of nine items. The three subscales (vigor, dedication and absorption) are measured with three different items. Since the measurement is not unidimensional and consists of three subscales, it is necessary to report the individual Cronbach's alphas. The vigor scale is found to be 0.84, the dedication scale 0.83, and the absorption scale 0.70. The subscales of the UWES-9 are mixed with the burnout scale to avoid response bias. The original UWES-9 is measured through a 7-point Liker scale. However, current study has chosen to include a 5-point Likert scale ranging from: "0=never, 1=sometimes, 2=rarely, 3=about half of the time, 4=most of the time, and 5=always". The reason for this is that distances between the options are smaller and expected to be more noticeable for the respondent.

Table 2:

*Items from the Utrecht Work Engagement Scale (UWES-9)*

| **Subscale** | **Item** |
|---|---|
| Vigor | At my work, I feel bursting with energy |
| | At my job, I feel strong and vigorous |
| | When I get up in the morning, I feel like going to work |
| Dedication | I am enthusiastic about my job |

| | |
|---|---|
| | My job inspires me |
| | I am proud on the work that I do |
| Absorption | I feel happy when I am working intensely |
| | I am immersed in my work |
| | I get carried away when I'm working |

### 3.3.2 Burnout

The concept of burnout was measured with a shortened version of the Maslach Burnout Inventory (MBI) Scale. The MBI scale is a tool used to assess burnout and consists in total of 22 items and three subscales: emotional exhaustion, depersonalization, and personal accomplishment. Burned out from work is characterized by feelings of fatigue and exhaustion, and this is seen as a central aspect in current study. Moreover, this study aimed to create a short survey in order to get enough responses. Therefore, the decision has been made to limit the survey by assessing the concept of burnout with the Dutch version of the MBI scale consisting of five different items. The Chronbach's Alpha in current study turns out to be 0.87, which is considered as high. This value is higher than 0.70, which means that the scale represents high internal consistency.

The original MBI Likert scale of this measurement consists of 7-points. However, to avoid ambiguity in the survey, the concept of emotional exhaustion is measured through a 5-point Likert scale ranging from: "1=never, 2=sometimes, 3=about half of the time, 4=most of the time, 5=always".

Table 3:

*Items from the Maslach Burnout Inventory (MBI)*

| **Subscale** | **Item** |
|---|---|
| Emotional exhaustion | I feel mentally exhausted from my work |
| | I feel used up at the end of the workday |
| | I feel fatigued when I get up in the morning and have to face another day of work |

I think I work too much

I feel burned out from my job

### 3.3.3 Meaningful Work

As discussed in the theoretical framework, meaningful work is defined as work that matters, makes sense, is significant, and is worth engaging in (Steger & Dik, 2010). To measure this construct, Steger et al. (2012) developed the 10-item Work and Meaning Inventory (WAMI) Scale. The scale includes three sub dimensions of meaningful work: the degree to which people find their work to have significance and purpose (positive meaning), the contribution work makes to finding broader meaning in life (meaning making), and the desire and means for one's work to make a positive contribution to the greater good (greater good motivation) (Steger & Dik, 2010). There are 10 items created asking about how a person sees the role of work in his or her life. These items can be divided in three subscales: "positive meaning", "meaning making", and "greater good motivation". The scores added together represent the overall Meaningful Work score. The scale was initially validated in a sample of American employees and the Cronbach's alpha of the original scale ranged from 0.87 to 0.89 (Steger et al., 2012). The current Chronbach's Alpha is 0.87 and falls within this range, which means that there is a high internal consistency.

The WAMI scale consists of ten items and the items were scored on a 5-point Likert scale: "1=absolutely untrue, 2=mostly untrue, 3=neither true nor untrue, 4=mostly true, 5=absolutely true".

Table 4:

*Items from the Work and Meaning Inventory (WAMI)*

| **Subscale** | **Item** |
|---|---|
| Positive meaning | I have found a meaningful career |
| | I understand how my work contributes to my life's meaning |
| | I have a good sense of what makes my job meaningful |
| | I have discovered work that has a satisfying purpose. |

| | |
|---|---|
| Meaning making | I view my work as contributing to my personal growth |
| | My work helps me better understand myself |
| | My work helps me make sense of the world around |
| Greater good motivation | My work really makes no difference to the world |
| | know my work makes a positive difference in the world |
| | The work I do serves a greater purpose |

### 3.3.4 Job Autonomy

Need for autonomy was measured with the validated Dutch Work-Related Basic Need Satisfaction Scale (W-BNS) developed by Van den Broeck, Vansteenkiste, De Witte, Soenens, & Lens, which contains 18-items in total. The scale assesses the extent to which respondents experience that each of the three universal needs are satisfied at work. Those three basic psychological needs are: autonomy, competence and relatedness. The three basic psychological needs are related, but distinct factors with their own reliable subscale. The need for autonomy subscale consists of 6-items and is related to the individuals initiating activities, making decisions and choices independently at work. The Cronbach's alpha in current study is found to be 0.82, which is acceptable.

The items were scored on a 5-point Likert scale, where 1=strongly disagree, 2=somewhat disagree, 3=neither agree nor disagree, 4=somewhat agree, and 5= strongly agree. Higher scores indicate that the respective needs are satisfied to a larger degree.

Table 5:

*Items from the Work-Related Basic Need Satisfaction Scale (W-BNS)*

| **Subscale** | **Item** |
|---|---|
| Job autonomy | I feel like I can be myself at my job |
| | At work, I often feel like I have to follow other people's commands |
| | If I could choose, I would do things at work differently |
| | The tasks I have to do at work are in line with what I really want to do |
| | I feel free to do my job the way I think it could best be done |

In my job, I feel forced to do things I do not want to do

### 3.3.5 Work Overload

The concept of work overload represents the perceived pressure of employees regarding the amount of work and task heaviness. Caplan, Cobb, French, Van Harrison, and Pinneau developed the Job Overload Scale (JOS) to measure the construct, which is similar to work overload. The authors used 11-items to assess job overload. This scale focuses on the employee's perceptions of quantitative job overload (the perceived pace and amount of work). The Cronbach's alpha ranged in various studies from 0.72 to 0.81. The Cronbach's Alpha of current study is found to be good with a score of 0.85. This means that the internal consistency is current study is greater than in previous studies.

The JOS consists in total of eleven items which are obtained on a 5-point Likert scale. For the purpose of this study is chosen to only use seven out of the eleven items for this study. The reason for this is that the other four items are ambiguous and partly overlap. Furthermore, the purpose of this survey is to be as short as possible in order to receive more response. Therefore, the four questions from the original version of the scale are seen as irrelevant for this study. The responses for the seven items are obtained on a 5-point Likert scale where: "1=hardly any, 2=a little, 3=some, 4=a lot, and 5=a great deal".

Table 6:

*Items from the Job Overload Scale (JOS)*

| **Subscale** | **Item** |
|---|---|
| Job overload | How much slowdown in the workload do you experience? |
| | How much time do you have to think and contemplate? |
| | How much workload do you have? |
| | What quantity of work do others expect you to do? |
| | How much time do you have to do all your work? |
| | How many projects, assignments, or tasks do you have? |
| | How many lulls between heavy workload periods do you have? |

### 3.3.6 Job Insecurity

Hellgren, Sverke & Isaksson (1999) made a distinction between quantitative job insecurity and qualitative side of job insecurity. Quantitative job insecurity was defined in the theoretical framework as a "perceived powerlessness to maintain desired continuity in a threatened job situation" (Greenhalgh & Rosenblatt, 1984). Qualitative job insecurity on the other hand was described as the threat to the continuity of important job features (Greenhalgh & Rosenblatt, 1984), such as the opportunity for career development, job content, and salary trends. For the purpose of this study, job insecurity was measured with only the quantitative dimensions. The alpha of current study also turns out to be 0.79. This score is seen as acceptable, since it is greater than 0.70. Deleting item 2 *("There is a risk that I will have to leave my present job in the year to come"*) could increase the Cronbach's alpha to 0.82. However, the scale consist in total of three items and the increase is limited. Therefore, the decision has been made to leave this item within the job insecurity scale.

The quantitative job insecurity scale measures the degree of concern and uncertainty about the future existence of employment (Hellgren, Sverke & Isaksson, 1999). The items were scored on a 5-point Liker scale ranging from: "1=strongly disagree, 2=somewhat disagree, 3=neither agree nor disagree, 4=somewhat agree, 5=strongly agree".

Table 7:

*Items of the Quantitative Job Insecurity Scale*

| **Subscale** | **Item** |
|---|---|
| Quantitative job insecurity | I am worried about having to leave my job before I would like to |
| | There is a risk that I will have to leave my present job in the year to come |
| | I feel uneasy about losing my job in the near future |

### 3.3.7 Control Variables

In this study are several control variables tested: gender, age, job location, job title, years working at the organization, employment contract, average working hours per week, and working hours at most. These variables were included in order to interpret the results correctly and to determine the impact they might have on the expected relationships of current study. However, the decision has been made to delete the control variable 'type of contract', since all of the respondents have a permanent employment contract.

## 3.4 Data Analysis

The statistical analyses was performed using the software program "Statistical Package for the Social Sciences" (SPSS) version 24. First of all, the data gathered in Qualtrics is transferred to SPSS and the test surveys are deleted. After this, there has been focused on the reliability of the individual variable with an internal consistency analysis, which labelled as the Cronbach's alpha. The means (M) and standard deviations (SD'S) of the different variables are calculated and a descriptive analysis was done to gain insight in the group of respondents. These statistics are used for paragraph 3.2 "respondents".

After exploring the data, some statistical data analysis techniques were done in SPSS. Those analyses determined whether or not a hypothesis can be rejected or accepted. In addition, this decision is dependent on the causality and significance of a relationship. Significance refers to the unlikeliness that an outcome is coincidental as there is always a chance of unreliability. The significance level (alpha) can be described as the probability of rejecting the hypothesis when it is true and is used to determine the degree of unreliability. This score is desired to be as small as possible.

Furthermore, a correlation analysis (Pearson's R) has been done to analyze the relationships between the concepts. A correlation between two variables reflects the strength and direction of the underlying relationship, and this also refers to the significance of a relationship. Next, a regression analyses is used to investigate whether the dependent variable (Y) is predicted by one or more independent variables (X).

The first four hypothesis of this study are tested using a simple linear regression. This means that it is expected that there is only one independent variable present. However, the control variables are also added in the analysis to test if they have an effect on the expected relationship.

In order to test the moderator effect of the other eight hypothesis of this study, a multiple linear regression analysis is executed. The model van Baron & Kenny (1986) is used to test the moderator-effects of this study. This model is based on the idea that there is a moderation when the direction or the strength of the relationship between the independent (X) a dependent variable (Y) is influenced by the moderating variable (Z). Baron & Kenny (1986) use a path diagram where there are three causal paths that feed into the outcome variable: the impact of the predictor, the impact of a moderator, and the interaction or product of these two. This is also called a "three-way interaction effect" (Dawson, 2014). The moderator hypothesis is supported if the interaction is significant.

# 4. Results

In this chapter are the results of this study described. In section 4.1, the descriptive results of this study are discussed 1 by reporting the means and standard deviations of variables from the conceptual model. In section 4.2, the correlation matrix is presented which outlines the relationships between the different variables. In section 4.3, the outcomes of the regression analyses are explained. These analyses are described following the different hypotheses of this study. Based on the results of this study, each hypothesis will be retained or rejected.

## 4.1 Correlation analysis

A correlation analyses was executed to measure the strength and the direction of the relationship between variables. The results of the correlation analyses are showed in the table below. The analyses consists of the central variables in the research model and the control variables. The central variables in this study are: work engagement, burnout, meaningful work, work overload, job insecurity, and job autonomy. The control variables are: gender age, job location, job title, years working at the organization, average working hours, and working hours at most. In addition, the means (M) of the scales and the standard deviation (SD) of the variables are included in the table below.

### 4.1.1 Descriptive results

The factors of the research are all measured on a 5-points Likert scale. In the table below are the descriptive statistics presented of the mean concepts in this study. The survey was completed by 121 employees of FMG with the 99 of the respondents answering all of these measurements. Except for the concepts burnout and job insecurity, the mean (M) scores of the scales are relative high. Moreover, a remarkable finding when observing these statistics is that the standard deviations (SD) of the measurement of job insecurity. This standard deviations is relative different compared to the numbers of the standard deviations of the other five measurements.

This implies that the given answers of the respondents regarding this scale are spread out more than the other measurements.

### 4.1.2 Correlations

From the table below (table 8) it can be concluded that there are significant negative and positive correlation present in this study. First of all, there are significant negative correlations found between the variables work engagement and burnout ($r = -0.24$, $p \leq 0.05$), burnout and meaningful work ($r = -0.26$, $p \leq 0.01$), work engagement and job insecurity ($r = -0.31$, $p \leq 0.01$), job insecurity and job autonomy ($r = -0.37$, $p \leq 0.01$), and burnout and job autonomy ($r = -0.59$, $p \leq 0.01$).

Moreover, there are significant positive correlations found between the variables work engagement and work overload ($r = 0.23$, $p \leq 0.05$), burnout and work overload ($r = 0.25$, $p \leq 0.05$), work engagement and meaningful work ($r = 0.60$, $p \leq 0.01$), work engagement and job autonomy ($r = 0.51$, $r \leq 0.01$), and meaningful work and job autonomy ($r = 0.51$, $p \leq 0.01$).

The control variables (gender, age, job location, job title, years at organization, average working hours, and working hours at most) in the current study are also included in the correlation matrix. Both significant negative and significant correlations are found when including these variables. A negative correlation is reported between the variables age and burnout ($r = -0.22$, $p \leq 0.05$), job location: Christmas Creek and job autonomy ($r = -0.20$, $p \leq 0.05$), job location: other and work overload ($r = -0.30$, $p \leq 0.01$), job title: manager and job insecurity ($r = -0.24$, $p \leq 0.05$), job title: supervisor and work engagement ($r = -0.21$, $p \leq 0.05$), job title: supervisor and meaningful work ($r = -0.23$, $p \leq 0.05$), job title: supervisor and job autonomy ($r = -0.29$, $p \leq 0.01$), and average working hours and job autonomy ($r = -0.32$, $p \leq 0.01$). Furthermore, a significant positive relationship is found between job location: Christmas Creek and burnout ($r = 0.24$, $p \leq 0.05$), job location: Port and Rail and work engagement ($r = 0.21$, $p \leq 0.05$), job title: general/group manager and job title and job autonomy ($r = 0.22$, $p \leq 0.05$), job title: manager and job autonomy ($r = 0.27$, $p \leq 0.01$), job title: supervisor and burnout ($r = 0.25$, $p \leq 0.05$), average working hours and burnout ($r = 0.26$, $p \leq 0.01$), and job title: general/group manager and meaningful work ($r = 0.34$, $p \leq 0.01$).

Besides the correlations mentioned in the previous paragraph, some of the control variables significantly correlate with each other. However, only the variables job location: Perth and average working hours ($r = -0.54$, $p \leq 0.01$), and average working hours and working hours at most ($r = 0.53$, $p \leq 0.01$) strongly correlate with each other. Most likely, the reason for this last high correlation is that both variables are a sub variable of working hours. The other significant correlations between the control variables that are present in this study are either moderate or weak.

Table 8:

*Correlation table including mean (M) and standard deviation (SD)*

| Correlations | N | M | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 Gender | 99 | 1.19 | 0.40 | 1.00 | | | | | | | | | | | | | | | | | | | | | | |
| 2 Age | 99 | 4.29 | 0.98 | -0.15 | 1.00 | | | | | | | | | | | | | | | | | | | | | |
| 3 Job location: Perth | 121 | 0.29 | 0.46 | 0.28** | 0.23* | 1.00 | | | | | | | | | | | | | | | | | | | | |
| 4 Job location: Cloudbreak | 121 | 0.11 | 0.31 | -0.19 | -0.03 | - | 1.00 | | | | | | | | | | | | | | | | | | | |
| 5 Job location: Christmas Creek | 121 | 0.13 | 0.34 | -0.08 | -0.08 | - | - | 1.00 | | | | | | | | | | | | | | | | | | |
| 6 Job location: Solomon | 121 | 0.11 | 0.31 | -0.04 | -0.15 | - | - | - | 1.00 | | | | | | | | | | | | | | | | | |
| 7 Job location: Other | 121 | 0.08 | 0.28 | 0.01 | 0.14 | - | - | - | - | 1.00 | | | | | | | | | | | | | | | | |
| 8 Job location: Port and Rail | 121 | 0.10 | 0.30 | -0.10 | -0.21* | - | - | - | - | - | 1.00 | | | | | | | | | | | | | | | |
| 9 Job title: Other | 121 | 0.01 | 0.09 | 0.21* | -0.03 | - | - | - | - | - | - | 1.00 | | | | | | | | | | | | | | |
| 10 Jot title: General/Group Manger | 121 | 0.05 | 0.22 | 0.09 | 0.27** | - | - | - | - | - | - | - | 1.00 | | | | | | | | | | | | | |
| 11 Job title: Manager | 121 | 0.13 | 0.34 | 0.07 | -0.02 | - | - | - | - | - | - | - | - | 1.00 | | | | | | | | | | | | |
| 12 Job title: Superintendent | 121 | 0.22 | 0.42 | 0.05 | 0.00 | - | - | - | - | - | - | - | - | - | 1.00 | | | | | | | | | | | |
| 13 Job title: Specialist | 121 | 0.09 | 0.29 | 0.07 | 0.06 | - | - | - | - | - | - | - | - | - | - | 1.00 | | | | | | | | | | |
| 14 Job title: Supervisor | 121 | 0.29 | 0.46 | -0.20* | -0.14 | - | - | - | - | - | - | - | - | - | - | - | 1.00 | | | | | | | | | |
| 15 Years working at organization | 98 | 4.58 | 0.67 | 0.00 | 0.22* | 0.26** | -0.03 | -0.01 | -0.21* | -0.09 | -0.05 | 0.06 | 0.03 | 0.28** | -0.20 | 0.03 | -0.11 | 1.00 | | | | | | | | |
| 16 Average working hours | 98 | 7.23 | 1.21 | -0.31** | -0.13 | -0.54** | 0.25* | 0.42** | 0.10 | -0.21* | 0.13 | -0.10 | -0.12 | -0.16 | -0.14 | -0.23* | 0.46** | -0.21* | 1.00 | | | | | | | |
| 17 Working hours at most | 98 | 7.71 | 1.31 | -0.21* | -0.18 | -0.35** | 0.25* | 0.27** | -0.01 | 0.02 | -0.06 | -0.13 | 0.02 | -0.05 | -0.20 | -0.17 | 0.33** | -0.02 | 0.53** | 1.00 | | | | | | |
| 18 Work engagement | 107 | 3.89 | 0.67 | 0.08 | 0.05 | 0.07 | -0.08 | -0.06 | -0.05 | -0.15 | 0.21* | -0.08 | 0.16 | 0.18 | 0.00 | -0.01 | -0.21* | -0.04 | 0.09 | 0.05 | 1.00 | | | | | |
| 19 Burnout | 104 | 2.55 | 0.87 | -0.03 | -0.22* | -0.09 | 0.00 | 0.24* | -0.09 | -0.15 | -0.04 | -0.11 | -0.15 | -0.17 | -0.07 | 0.01 | 0.25* | -0.16 | 0.26** | 0.15 | -0.24* | 1.00 | | | | |
| 20 meaningful work | 104 | 3.92 | 0.61 | 0.04 | 0.02 | 0.09 | -0.05 | -0.06 | 0.04 | 0.07 | -0.02 | -0.05 | 0.34** | 0.12 | -0.05 | 0.07 | -0.23* | 0.01 | -0.05 | 0.03 | 0.60** | -.257** | 1.00 | | | |
| 21 Work overload | 102 | 3.94 | 0.63 | 0.01 | -0.09 | 0.09 | -0.07 | 0.08 | -0.02 | -0.30** | 0.10 | -0.04 | 0.03 | 0.09 | -0.01 | -0.14 | -0.02 | -0.13 | 0.18 | 0.17 | 0.23* | .252* | 0.02 | 1.00 | | |
| 22 Job insecurity | 101 | 2.96 | 1.12 | -0.06 | 0.11 | -0.09 | 0.12 | -0.05 | -0.06 | 0.15 | -0.02 | -0.06 | -0.07 | -0.24* | 0.01 | 0.00 | 0.14 | -0.08 | 0.06 | 0.10 | -0.31** | 0.13 | -0.17 | -0.18 | 1.00 | |
| 23 Job autonomy | 99 | 3.43 | 0.81 | -0.05 | 0.06 | 0.17 | -0.18 | -0.20* | 0.02 | 0.07 | 0.07 | -0.03 | 0.22* | 0.27** | -0.02 | -0.02 | -0.29** | 0.07 | -0.32** | -0.15 | 0.51** | -.590** | .511** | -0.15 | -.365** | 1.00 |

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

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

## 4.2 Linear regression analysis

As described in the previous chapter, the linear regression analysis assesses whether one or more independent variables explain the dependent variable. The analysis are described following the hypothesis of this study. The control variables: age, job title, and average hours are included when running the analysis. In order to provide interesting insights, some of the options of the control variables are grouped together. For the variable age, the answer options 1 until 3 are grouped together since no one answered to be younger than 25 years old, and the last two options are grouped together because only one person filled in to be older than 65 years old. For the variable average hours, no person answered to work on average less than 31 hours per week and only two people work between 31 – 40 hours on average per week, and only eleven people answered to work on average between 61 – 70 hours per week. Therefore, there is chosen to combine the answer options 1 until 6 and 8 together with 9.

### 4.2.1 Meaningful work and work engagement

The 1st hypothesis in this study is: 'meaningful work is positively related to work engagement', where work engagement is the dependent variable and meaningful work the independent variable. A multiple linear regression analysis is conducted to test if there exists a significant relationship between the variables.

In the table below (table 9), the results of the simple linear regression analysis are displayed. Also, the control variables age, job title and average working hours are included in the analysis. Job title is a dummy variable: 8=other, 9=general/group manager, 10=manager, 11=superintendent, 12=specialist, 13=supervisor. The table shows that the regression model with the independent variable meaningful work and the dependent variable work engagement is significant ($F(8, 89) = 9.57$, $p \leq 0.01$). Moreover, this model has an explained variance of 46% ($R^2 = 0.46$), which means that 46% of the work engagement score is explained by the variable meaningful work.

The unstandardized beta coefficients (β) represent the amount by which the dependent variable changes if we change the independent variable by one unit and keeping other

independent variables constant. The table below show that meaningful work has a significant positive relationship with work engagement ($\beta = 0.69$, $p \leq 0.01$).

Table 9:

*Linear regression analysis with work engagement as the dependent variable and meaningful work as the independent variable*

| | Model 1 |
|---|---|
| | ß |
| Age | 0.06 |
| Job title: Other | -0.04 |
| Job title: General manager/Group manager | -0.03 |
| Job title: Manager | 0.31 |
| Job title: Superintendent | 0.18 |
| Job title: Specialist | 0.10 |
| Average working hours | 0.17* |
| Meaningful work | 0.69** |
| N | 98 |
| F (df) | 9.57**(8, 89) |
| $R^2$ | 0.46 |
| Adj $R^2$ | 0.41 |

*Note 1.* ** Significance at a significance level of 0.01
* Significant at a significance level of 0.05

*Note 2.* Job title is a dummy variable with: 8=other, 9=general/group manager, '10=manager', '11=superintendent', '12=specialist', '13=supervisor'

### 4.2.2 Job autonomy and work engagement

The 2nd hypothesis is: 'job autonomy is positively related to work engagement'. A multiple linear regression analysis is done to measure this effect. The results of this analysis are showed in the table below (table 10). The model displays that the regression model with job autonomy as the independent variable and work engagement as the independent variable is significant ($F(8, 89) = 6.91$, $p \leq 0.01$). The regression model shows that 38% of the work engagement score can be explained by the variable job autonomy ($R^2 = 0.38$). Moreover, the unstandardized beta coefficient shows that job autonomy has a significant positive relationship with work

engagement ($\beta = 0.46$, $p \leq 0.01$). Also, the control variable average working hours is significant positive related with work engagement ($\beta = 0.31$, $p \leq 0.01$).

Table 10:

*Linear regression analysis with work engagement as the dependent variable and job autonomy as the independent variable*

| | Model 1 |
|---|---|
| | ß |
| Age | 0.03 |
| Job title: Other | 0.06 |
| Job title: General manager/Group manager | 0.37 |
| Job title: Manager | 0.30 |
| Job title: Superintendent | 0.26 |
| Job title: Specialist | 0.36 |
| Average working hours | 0.31** |
| Job autonomy | 0.46** |
| N | 98 |
| F (df) | 6.91**(8, 89) |
| $R^2$ | 0.38 |
| Adj $R^2$ | 0.33 |

*Note 1.* ** Significance at a significance level of 0.01
* Significant at a significance level of 0.05

*Note 2.* Job title is a dummy variable with: 8=other, 9=general/group manager, '10=manager', '11=superintendent', '12=specialist', '13=supervisor'

### 4.2.3 Work overload and burnout

The 3rd hypothesis is: 'work overload is positively related to burnout', where work overload is the independent variable and burnout the dependent variable. To test this effect, a multiple linear regression analyses is used. The results of this analyses are displayed in the table below (table 11). The outcomes of the regression model show that there is a significant relationship ($F(8, 89) = 2.72$, $p \leq 0.01$. The results depict that 20% of the burnout score can be explained by the variable work overload ($R^2 = 0.20$). The unstandardized beta coefficient demonstrates that work

overload is significant positive related with burnout (β = 0.30, p ≤ 0.01). Moreover, average working hours is negative positive related with burnout (β = -0.50, p ≤ 0.05).

Table 11:

*Linear regression analysis with burnout as the dependent variable and work overload as the independent variable*

| | Model 1 |
|---|---|
| | ß |
| Age | -0.13 |
| Job title: Other | -0.91 |
| Job title: General manager/Group manager | -0.51 |
| Job title: Manager | -0.50* |
| Job title: Superintendent | -0.19 |
| Job title: Specialist | 0.07 |
| Average working hours | 0.15 |
| Work overload | 0.30* |
| N | 98 |
| F (df) | 2.72**(8, 89) |
| $R^2$ | 0.20 |
| Adj $R^2$ | 0.12 |

*Note 1.* ** Significance at a significance level of 0.01
* Significant at a significance level of 0.05

*Note 2.* Job title is a dummy variable with: 8=other, 9=general/group manager, '10=manager', '11=superintendent', '12=specialist', '13=supervisor'

### 4.2.4 Job insecurity and burnout

The 4th hypothesis is: 'job insecurity is positively related to burnout', with job insecurity as the independent variable and burnout as the dependent variable. A multiple linear regression model is done to examine the effect of this relationship. The results of the analyses are demonstrated in the table below (table 12). The model shows that there is significant positive relationship (F(8, 89) = 2.11, p ≤ 0.05). Also, 16% of the burnout score can be explained by the variable job insecurity ($R^2$ = 0.16). The unstandardized beta coefficient demonstrates that work job insecurity does not have a significant relationship with burnout (β = 0.06, ns).

Table 12:

*Linear regression analysis with burnout as the dependent variable and job insecurity as the independent variable*

| | Model 1 |
|---|---|
| | ß |
| Age | -0.15 |
| Job title: Other | -0.83 |
| Job title: General manager/Group manager | -0.38 |
| Job title: Manager | -0.36 |
| Job title: Superintendent | -0.14 |
| Job title: Specialist | 0.09 |
| Average working hours | 0.21 |
| Job insecurity | 0.06 |
| N | 98 |
| F (df) | 2.11*(8, 89) |
| $R^2$ | 0.16 |
| Adj $R^2$ | 0.08 |

*Note 1.* ** Significance at a significance level of 0.01
* Significant at a significance level of 0.05

*Note 2.* Job title is a dummy variable with: 8=other, 9=general/group manager, '10=manager', '11=superintendent', '12=specialist', '13=supervisor'

### 4.2.5 Meaningful work and burnout

Hypothesis 5.a states: 'meaningful work has a moderating effect on the positive relationship between work overload and burnout and decreases the strength of this relationship'. A multiple linear regression analysis is conducted to test if there is a moderation effect present. Based on model 3 in the table below (table 13) can be concluded that meaningful work has no significant moderation effect on the positive relationship between work overload and burnout ($\beta = 0.03$, ns). Moreover, when considering the explained variance in the table, model 1 explains 15% ($R^2 = 0.15$), model 2 24% ($R^2 = 0.24$), and model 3 24% ($R^2 = 0.24$) of the outcome variable of burnout. However, the change in the F-ratio for model 3 is not significant (Sig. F change = 0.92) indicating that there is not a significant increase in the variance explained in model 3 compared to model 2. Therefore, the conclusion can be made that meaningful work does not have a

moderating effect on the relationship between work overload and burnout and hypotheses 5.a can be rejected.

Hypothesis 5.b is: 'meaningful work has a moderating effect on the positive relationship between job insecurity and burnout and decreases the strength of this relationship'. A linear regression analysis is done to test the moderator effect. In the table below (table 14) is shown that meaningful work does not have a significant moderator effect on the positive relationship between job insecurity and burnout (β = -0.01, ns). Moreover, the explained variance of model 1 is 15% ($R^2$ = 0.15), model 2 20% ($R^2$ = 0.20), and model 3 20% ($R^2$ = 0.20) of the outcome variable of burnout. However, the change in the F-ratio for model 2 and model 3 are not significant (Sig. F change = 0.07 and 0.93) indicating that there is not a significant increase in the variance explained in model 2 and 3 compared to model 2. Therefore, the conclusion can be made that meaningful work does not have a moderating effect on the relationship between job insecurity and burnout and hypotheses 5.b can be rejected.

Table 13:

*Regression analysis for the moderation effect of meaningful work on the relationship between work overload and burnout*

| | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| | ß | ß | ß |
| Age | -0.14 | -0.15 | -0.15 |
| Job title: Other | -0.90 | -0.93 | -0.93 |
| Job title: General manager/Group manager | -0.43 | -0.15 | -0.15 |
| Job title: Manager | -0.42 | -0.37 | -0.37 |
| Job title: Superintendent | -0.16 | -0.14 | -0.14 |
| Job title: Specialist | 0.06 | 0.19 | 0.19 |
| Average working hours | 0.20 | 0.17 | 0.17 |
| Work overload | | 0.29* | 0.20 |
| Meaningful work | | -0.33* | -0.43 |
| Work overload x meaningful work | | | 0.03 |
| N | 98 | 98 | 98 |
| F (df) | 2.34*(7, 90) | 3.11**(9, 88) | 2.77**(10, 87) |
| Sig. F Change | 0.03 | 0.01 | 0.92 |
| $R^2$ | 0.15 | 0.24 | 0.24 |

| | | | |
|---|---|---|---|
| Adj $R^2$ | 0.09 | 0.16 | 0.15 |

*Note 1.* ** Significance at a significance level of 0.01
* Significant at a significance level of 0.05
*Note 2.* Job title is a dummy variable with: 8=other, 9=general/group manager, '10=manager', '11=superintendent', '12=specialist', '13=supervisor'

Table 14:

*Regression analysis for the moderation effect of meaningful work on the relationship between job insecurity and burnout*

| | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| | ß | ß | ß |
| Age | -0.14 | -0.17 | -0.17 |
| Job title: Other | -0.90 | -0.87 | -0.87 |
| Job title: General manager/Group manager | -0.43 | -0.04 | -0.04 |
| Job title: Manager | -0.42 | -0.25 | -0.26 |
| Job title: Superintendent | -0.16 | -0.09 | -0.09 |
| Job title: Specialist | 0.06 | 0.20 | 0.20 |
| Average working hours | 0.20 | 0.23* | 0.22* |
| Job insecurity | | 0.04 | 0.09 |
| Meaningful work | | -0.32* | -0.29 |
| Job insecurity x meaningful work | | | -0.01 |
| N | 98 | 98 | 98 |
| F (df) | 2.34*(7, 90) | 2.49**(9, 88) | 2.22*(10, 87) |
| Sig. F change | 0.03 | 0.07 | 0.93 |
| $R^2$ | 0.15 | 0.20 | 0.20 |
| Adj $R^2$ | 0.09 | 0.12 | 0.11 |

*Note 1.* ** Significance at a significance level of 0.01
* Significant at a significance level of 0.05
*Note 2.* Job title is a dummy variable with: 8=other, 9=general/group manager, '10=manager', '11=superintendent', '12=specialist', '13=supervisor'

### 4.2.6 Job autonomy and burnout

Hypothesis 6.a is: 'job autonomy has a moderating effect on the positive relationship between work overload and burnout and decreases the strength of this relationship'. A multiple linear regression analysis is done to test the moderator effect. In the table below (table 15) is shown that job autonomy does not have a significant moderator effect on the positive relationship between work overload and burnout (β = -0.20, ns). However, the explained variance of model 1 is 15% ($R^2 = 0.15$), model 2 43% ($R^2 = 0.43$), and model 3 44% ($R^2 = 0.44$) of the outcome variable of burnout. However, the change in the F-ratio for model 3 is not significant (Sig. F change = 0.14) indicating that there is not a significant increase in the variance explained in model 3 compared to model 2. Therefore, the conclusion can be made that job autonomy does not have a moderating effect on the relationship between work overload and burnout and hypotheses 6.a can be rejected.

Hypothesis 6.b is: 'job autonomy has a moderating effect on the positive relationship between job insecurity and burnout and decreases the strength of this relationship'. A linear regression analysis is done to examine the moderator effect. In the table below (table 16) shown that job autonomy does not have a significant moderator effect on the positive relationship between job insecurity and burnout (β = 0.01, ns). Moreover, the explained variance of model 1 is 15% ($R^2 = 0.15$), model 2 42% ($R^2 = 0.42$), and model 3 42% ($R^2 = 0.42$) of the outcome variable of burnout. However, the change in the F-ratio for model 3 is not significant (Sig. F change = 0.94) indicating that there is not a significant increase in the variance explained in model 3 compared to model 2. Therefore, the conclusion can be made that job autonomy does not have a moderating effect on the relationship between job insecurity and burnout and hypotheses 6.b can be rejected.

Table 15:

*Regression analysis for the moderation effect of job autonomy on the relationship between work overload and burnout*

| Model 1 | Model 2 | Model 3 |
|---|---|---|
| ß | ß | ß |

| | | | |
|---|---|---|---|
| Age | -0.14 | -0.15* | -0.15* |
| Job title: Other | -0.90 | -1.09 | -1.04 |
| Job title: General manager/Group manager | -0.43 | -0.02 | 0.00 |
| Job title: Manager | -0.42 | -0.11 | -0.08 |
| Job title: Superintendent | -0.16 | -0.13 | -0.13 |
| Job title: Specialist | 0.06 | 0.06 | 0.10 |
| Average working hours | 0.20 | 0.04 | 0.04 |
| Work overload | | 0.18 | 0.88 |
| Job autonomy | | -0.57** | 0.25 |
| Work overload x job autonomy | | | -0.20 |
| N | 98 | 98 | 98 |
| F (df) | 2.34*(7, 90) | 7.25**(9, 88) | 6.83**(10, 87) |
| Sig. F Change | 0.03 | 0.00 | 0.14 |
| $R^2$ | 0.15 | 0.43 | 0.44 |
| Adj $R^2$ | 0.09 | 0.37 | 0.38 |

*Note 1.* ** Significance at a significance level of 0.01
* Significant at a significance level of 0.05

*Note 2.* Job title is a dummy variable with: 8=other, 9=general/group manager, '10=manager', '11=superintendent', '12=specialist', '13=supervisor'

Table 16:

*Regression analysis for the moderation effect of job autonomy on the relationship between job insecurity and burnout*

| | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| | ß | ß | ß |
| Age | -0.14 | -0.15* | -0.15 |
| Job title: Other | -0.90 | -1.19 | -1.19 |
| Job title: General manager/Group manager | -0.43 | 0.01 | 0.00 |
| Job title: Manager | -0.42 | -0.11 | -0.11 |
| Job title: Superintendent | -0.16 | -0.13 | -0.13 |
| Job title: Specialist | 0.06 | 0.02 | 0.02 |
| Average working hours | 0.20 | 0.05 | 0.05 |
| Job insecurity | | -0.08 | -0.06 |
| Job autonomy | | -0.63** | -0.62* |
| Job insecurity x job autonomy | | | -0.01 |
| N | 98 | 98 | 98 |

| | | | |
|---|---|---|---|
| F (df) | 2.34*(7, 90) | 7.08**(9, 88) | 6.30**(10, 87) |
| Sig. F Change | 0.03 | 0.00 | 0.94 |
| $R^2$ | 0.15 | 0.42 | 0.42 |
| Adj $R^2$ | 0.09 | 0.36 | 0.36 |

*Note 1.* ** Significance at a significance level of 0.01
* Significant at a significance level of 0.05
*Note 2.* Job title is a dummy variable with: 8=other, 9=general/group manager, '10=manager', '11=superintendent', '12=specialist', '13=supervisor'

### 4.2.7 Work overload and work engagement

Hypothesis 7.a is: 'work overload has a moderating effect on the positive relationship between meaningful work and work engagement and decreases the strength of this relationship'. A multiple linear regression analysis is done to examine the moderator effect. In the table below (table 17) is shown that work overload does not have a significant moderator effect on the positive relationship between meaningful work and work engagement ($\beta$ = -0.09, ns). Moreover, the explained variance of model 1 is 14% ($R^2$ = 0.14), model 2 49% ($R^2$ = 0.49), and model 3 49% ($R^2$ = 0.49) of the outcome variable of work engagement. However, the change in the F-ratio for model 3 is not significant (Sig. F change = 0.57) indicating that there is not a significant increase in the variance explained in model 3 compared to model 2. Therefore, the conclusion can be made that work overload does not have a moderating effect on the relationship between meaningful work and work engagement and hypotheses 7.a can be rejected.

Hypothesis 7.b is: 'work overload has a moderating effect on the positive relationship between job autonomy and work engagement and decreases the strength of this relationship'. A linear regression analysis is done to examine the moderator effect. In the table below (table 18) is shown that work overload does not have a significant moderator effect on the positive relationship between job autonomy and work engagement ($\beta$ = 0.13, ns). Moreover, the explained variance of model 1 is 14% ($R^2$ = 0.14), model 2 44% ($R^2$ = 0.44), and model 3 45% ($R^2$ = 0.45) of the outcome variable of work engagement. However, the change in the F-ratio for model 3 is not significant (Sig. F change = 0.23) indicating that there is not a significant increase in the variance explained in model 3 compared to model 2. Therefore, the conclusion can be made that work overload does not have a moderating effect on the relationship between job autonomy and work engagement and hypotheses 7.b can be rejected.

Table 17:

*Regression analysis for the moderation effect of work overload on the relationship between meaningful work and work engagement*

| | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| | ß | ß | ß |
| Age | 0.02 | 0.06 | 0.06 |
| Job title: Other | -0.09 | -0.05 | -0.04 |
| Job title: General manager/Group manager | 0.74* | -0.08 | -0.07 |
| Job title: Manager | 0.58** | 0.27 | 0.26 |
| Job title: Superintendent | 0.30 | 0.16 | 0.16 |
| Job title: Specialist | 0.36 | 0.11 | 0.13 |
| Average working hours | 0.21** | 0.13* | 0.13* |
| Meaningful work | | 0.69** | 1.04 |
| Work overload | | 0.18* | 0.51 |
| Meaningful work x work overload | | | -0.09 |
| N | 98 | 98 | 98 |
| F (df) | 2.08*(7, 90) | 9.27**(9, 88) | 8.31**(10, 87) |
| Sig. F Change | 0.05 | 0.00 | 0.57 |
| $R^2$ | 0.14 | 0.49 | 0.49 |
| Adj $R^2$ | 0.07 | 0.43 | 0.43 |

*Note 1.* ** Significance at a significance level of 0.01
* Significant at a significance level of 0.05

*Note 2.* Job title is a dummy variable with: 8=other, 9=general/group manager, '10=manager', '11=superintendent', '12=specialist', '13=supervisor'

Table 18:

*Regression analysis for the moderation effect of work overload on the relationship between job autonomy and work engagement*

| | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| | ß | ß | ß |
| Age | 0.02 | 0.04 | 0.05 |

| | | | |
|---|---|---|---|
| Job title: Other | -0.09 | 0.07 | 0.04 |
| Job title: General manager/Group manager | 0.74 | 0.27 | 0.25 |
| Job title: Manager | 0.58** | 0.21 | 0.19 |
| Job title: Superintendent | 0.30 | 0.23 | 0.23 |
| Job title: Specialist | 0.36 | 0.38 | 0.35 |
| Average working hours | 0.21** | 0.27** | 0.27** |
| Job autonomy | | 0.49** | -0.04 |
| Work overload | | 0.27** | -0.19 |
| Job autonomy x work overload | | | 0.13 |
| N | 98 | 98 | 98 |
| F (df) | 2.08*(7, 90) | 7.62**(9, 88) | 7.05**(10, 87) |
| Sig. F Change | 0.06 | 0.00 | 0.23 |
| $R^2$ | 0.14 | 0.44 | 0.45 |
| Adj $R^2$ | 0.07 | 0.38 | 0.38 |

*Note 1.* ** Significance at a significance level of 0.01
* Significant at a significance level of 0.05

*Note 2.* Job title is a dummy variable with: 8=other, 9=general/group manager, '10=manager', '11=superintendent', '12=specialist', '13=supervisor'

### 4.2.8 Job insecurity and work engagement

Hypothesis 8.a is: 'job insecurity has a moderating effect on the positive relationship between meaningful work and work engagement and decreases the strength of this relationship.' A multiple linear regression analysis is done to examine the moderator effect. In the table below (table 19) is shown that job insecurity does not have a significant moderator effect on the positive relationship between meaningful work and work engagement ($\beta = 0.06$, ns). Moreover, the explained variance of model 1 is 14% ($R = 0.14$), model 2 49% ($R^2 = 0.49$), and model 3 50% ($R^2 = 0.50$) of the outcome variable of work engagement. However, the change in the F-ratio for model 3 is not significant (Sig. F change = 0.44) indicating that there is not a significant increase in the variance explained in model 3 compared to model 2. Therefore, the conclusion can be made that job insecurity does not have a moderating effect on the relationship between meaningful work and work engagement and hypotheses 8.a can be rejected.

Hypothesis 8.b is: 'job insecurity has a moderating effect on the positive relationship between job autonomy and work engagement and decreases the strength of this relationship.' A linear regression analysis is done to examine the moderator effect. In the table below (table 20) is

shown that job insecurity does not have a significant moderator effect on the positive relationship between meaningful work and work engagement (β = -0.01, ns). Moreover, the explained variance of model 1 is 14% ($R^2$ = 0.14), model 2 39% ($R^2$ = 0.39), and model 3 39% ($R^2$ = 0.39) of the outcome variable of work engagement. However, the change in the F-ratio for model 3 is not significant (Sig. F change = 0.44) indicating that there is not a significant increase in the variance explained in model 3 compared to model 2. Therefore, the conclusion can be made that job insecurity does not have a moderating effect on the relationship between job autonomy and work engagement and hypotheses 8.b can be rejected.

Table 19:

*Regression analysis for the moderation effect of job insecurity on the relationship between meaningful work and work engagement*

| | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| | ß | ß | ß |
| Age | 0.02 | 0.07 | 0.07 |
| Job title: Other | -0.09 | -0.16 | -0.16 |
| Job title: General manager/Group manager | 0.74* | -0.09 | -0.08 |
| Job title: Manager | 0.58** | 0.21 | 0.24 |
| Job title: Superintendent | 0.30 | 0.15 | 0.15 |
| Job title: Specialist | 0.36 | 0.06 | 0.08 |
| Average working hours | 0.21* | 0.16* | 0.16* |
| Meaningful work | | 0.67** | 0.50* |
| Job insecurity | | -0.11* | -0.34 |
| Meaningful work x job insecurity | | | 0.06 |
| N | 98 | 98 | 98 |
| F (df) | 2.08*(7, 90) | 9.49**(9, 88) | 8.57**(10, 87) |
| Sig. F Change | 0.06 | 0.00 | 0.44 |
| $R^2$ | 0.14 | 0.49 | 0.50 |
| Adj $R^2$ | 0.07 | 0.44 | 0.44 |

*Note 1.* ** Significance at a significance level of 0.01
* Significant at a significance level of 0.05

*Note 2.* Job title is a dummy variable with: 8=other, 9=general/group manager, '10=manager', '11=superintendent', '12=specialist', '13=supervisor'

Table 20:

*Regression analysis for the moderation effect of job insecurity on the relationship between job autonomy and burnout*

| | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| | ß | ß | ß |
| Age | 0.02 | 0.04 | 0.04 |
| Job title: Other | -0.09 | 0.00 | 0.00 |
| Job title: General manager/Group manager | 0.74* | 0.35 | 0.35 |
| Job title: Manager | 0.58** | 0.26 | 0.26 |
| Job title: Superintendent | 0.30 | 0.25 | 0.24 |
| Job title: Specialist | 0.36 | 0.34 | 0.34 |
| Average working hours | 0.21* | 0.30** | 0.30** |
| Job autonomy | | 0.43** | 0.45* |
| Job insecurity | | -0.05 | -0.03 |
| Job autonomy x job insecurity | | | -0.01 |
| N | 98 | 98 | 98 |
| F (df) | 2.08*(7, 90) | 6.21**(9, 88) | 5.53**(10, 87) |
| Sig. F Change | 0.06 | 0.00 | 0.92 |
| $R^2$ | 0.14 | 0.39 | 0.39 |
| Adj $R^2$ | 0.07 | 0.33 | 0.32 |

*Note 1.* ** Significance at a significance level of 0.01
* Significant at a significance level of 0.05

*Note 2.* Job title is a dummy variable with: 8=other, 9=general/group manager, '10=manager', '11=superintendent', '12=specialist', '13=supervisor'

# 5. Discussion

This chapter focusses on interpreting the results found in the study. The chapter begins with describing whether the null hypothesis is rejected or accepted. If a hypothesis was found to be rejected, a possible explanations for the lack the expected relationship is provided. In the next section, some critical notes on the current study are discussed. This is followed by a section discussing the scientific relevance and practical implications that emerged from the results of this study. Lastly, follow-up possibilities for future research are outlined with the chapter finishing with a general conclusion of the study.

## 5.1 Evaluation of hypotheses and findings

To answer the central question of this study, some analyses are conducted regarding the JD-R model. In line with the expectations of this study, it can be concluded that there is a positive relationship between meaningful work and work engagement as stated in the first hypothesis (H1). This indicates that when an employee perceives his or her work to be more meaningful, the employee will perceive themselves as having a higher engagement with their work. Secondly, the work-related resource job autonomy is found to have a positive relationship with work engagement (H2). This finding is in line with the expectations of this study and implies that when an employee experiences more autonomy in their job, this person will see themselves as being more engaged with their work. Furthermore, the results of this study show that there is a positive relationship between work overload and burnout (H3). This means that experiencing more work overload leads to people perceiving a higher risks to burnout. Employees that survived a layoff due to a crisis are expected to have more work tasks, which means that the same amount of work needs to be done by less people. This might lead to a higher risk of burnout complaints. However, no significant direct relationship is found in the current study between the constructs of job insecurity and burnout (H4). This is a critical finding due to two reasons. First, the scale used to measure the concept job insecurity is a proven and well-studied scale. Therefore, it was a reliable measure of the construct that has been demonstrated to

accurately reflect an individual's level of job insecurity. Secondly, job insecurity was previously found to be an established job demand in the JD-R model were it was shown to have a direct relationship with burnout. However, in the current study job insecurity is not found to be a predictor of burnout.

The first reason for the lack of direct relationship in the present study is that the construct of job insecurity is simply not related to the outcome of burnout. However, based on the extensive prior research conducted into job insecurity, this finding not probable. The second explanation is that the context of the study had an influence on one of the causes of job insecurity. This explanation is grounded in the observation that the responses to the job insecurity scale used in this study had a large dispersion around the mean. These levels of job insecurity were not found to be related to the employee's level of burnout. A possible explanation for this can be found by examining the antecedents of job insecurity. A study by Ito & Brotheridge (2007) stated that job insecurity can be influenced though the concepts of locus of control (LOC) and organizational change. LOC refers to the perception an individual has about events that occur in their life. The employee can be more influenced by an external LOC, caused by factors in the environment, or internal, caused by their individual behavior (Keim, Landis, Pierce & Earnest, 2014). Individuals with an external LOC are expected to feel less in control of situations they are in and therefore, experience a greater level of job insecurity than individuals with an internal LOC. Under regular business conditions, the external LOC might not be a material factor in the employee's perception of job insecurity. The interesting aspect of the current study is that the Western Australian mining industry is experiencing an economic downturn. This means that organizations in Western Australia, and especially mining organizations, are undergoing a lot of changes to cope with the turbulent times. This can result in the external LOC becoming more influential to the employee, resulting in higher job insecurity. Since this stress is not internal, the scope of the job insecurity that is reported may be outside of the measurability of the JD-R model. This forms a possible explanation for the lack of direct relationship found in the current study.

Furthermore, in the current study there are no significant interaction effects found. Therefore, hypothesis 5.a, 5.b, 6.a, 6.b, 7.a, 7.b, 8.a, and 8.b are all rejected. This variable was found to have no influence at all within the model. Therefore, questions can be asked whether this variable is an actual job demand.

A reason for the lack of interaction effects found in the JD-R model could be due to the job demands and job resources used in this study not 'matching' with each other. This argument is based on the study of de Jonge & Dormann (2006), who stated that there is a higher chance of a moderator effect when the job resource corresponds with the type of job demand. According to this study, this is especially the case for an emotional or a physical match. The job demands of job insecurity and work overload, and the job resources of meaningful work and job autonomy, are all mental constructs. However, job insecurity is found to be a multidimensional construct resulting in both a mental and emotional construct. Therefore, the type of job demands are not completely the same as the type of job resources. This could be the reason the model with its interaction effects does not work.

These eight outcomes together provide an answer to the overarching research questions of this thesis. The study has shown that the concepts of meaningful work, job autonomy, and work overload have a significant direct influence on the two outcome variables of work engagement and burnout. However, job insecurity is not significantly related to burnout. Furthermore, there are no interaction effects present in the model.

Figure 4:

*Overview of rejected/accepted hypotheses*

| | **Rejected** | **Accepted** |
|---|---|---|
| **Hypothesis** | | |
| 1: Meaningful work is positively related to work engagement. | | X |
| 2: Job autonomy is positively related to work engagement. | | X |
| 3: Work overload is positively related to burnout. | | X |
| 4: Job insecurity is positively related to burnout. | X | |
| 5a: Meaningful work has a moderating effect on the positive relationship between work overload and burnout and decreases the strength of this relationship. | X | |
| H5b: Meaningful work has a moderating effect on the positive relationship between job insecurity and burnout and decreases the strength of this relationship. | X | |

| | | |
|---|---|---|
| 6a: Job autonomy has a moderating effect on the positive relationship between work overload and burnout and decreases the strength of this relationship. | X | |
| 6b: Job autonomy has a moderating effect on the positive relationship between job insecurity and burnout and decreases the strength of this relationship. | X | |
| 7a: Work overload has a moderating effect on the positive relationship between meaningful work and work engagement and decreases the strength of this relationship. | X | |
| 7b: Work overload has a moderating effect on the positive relationship between job autonomy and work engagement and decreases the strength of this relationship. | X | |
| 8a: Job insecurity has a moderating effect on the positive relationship between meaningful work and work engagement and decreases the strength of this relationship. | X | |
| 8b: Job insecurity has a moderating effect on the positive relationship between autonomy and work engagement and decreases the strength of this relationship. | X | |

## 5.2 Scientific Reflection

The concept of meaningful work is found to be a relatively new topic within the area of HR. The current study had the purpose of expanding the research into this area by providing quantitative support of its relationship with other factors. Previous studies stated that there is limited empirical research conducted to fully understand the working of the concept of meaningful work and its influence on the processes of burnout and work engagement (Johnson & Jiang, 2017). This study contributes to this work by placing meaningful work as a job resource into the JD-R model. The findings revealed that meaningful work can be seen as a strong predictor for the outcome variable work engagement. Moreover, the findings regarding the outcome of burnout in regards to meaningful work are limited due to the lack of moderating effects found in the model.

However, job autonomy, work overload, and job insecurity, which have been previously shown to have indirect relationships present in the model, also did not show indirect relationships in the current study. Therefore, this finding may be due to the context under which the study took place rather than the applicability of meaningful work into the JD-R model.

Furthermore, the study aimed to increase the applicability of the JD-R model into a broader environment. A study by Bailey (2016) suggested that white collar workers were more likely to experience the construct of meaningful work rather than blue collar workers such as FIFO workers. This is why the study applied the model into the context of the Western Australian mining industry and concentrated on office workers instead of focusing on the employees working in the mines. The results of the study indicate that the JD-R model is more complex than is proposed in previous studies. This study found that the job demands and job resources did not respond as expected based on the academic literature, as job insecurity did not have a direct relationship with burnout and, there were no indications of interaction effects found in the model. This industry distinct itself as being a performance driven industry where the employees work long hours, especially in times of an economic downturn. This created a unique condition for the JD-R model to be applied under and the results and the unexpected results can be used to better understand the relationships that exist between the components of the model.

Another contribution of this study is the focus on the perspective of the layoff survivors working in the Western Australian mining sector that are facing a downturn due to the recent crash of the commodity market. This change in the economy has resulted in an increase in layoffs and other consequences for the employee such as working longer hours. The current study found that the concept of work overload is directly related to the outcome of burnout. Furthermore, the study is interesting to the academic literature due to the dispersion of the job insecurity scale. The scales impact in the JD-R model decreased due to the conditions faced by employees in the study. Therefore, this situation is interesting to researchers studying the construct of job insecurity as the conditions of this study resulted in abnormal responses to this scale.

## 5.3 Limitations

The study faced some limitations event though some interesting outcomes were found. Therefore, the results must be interpreted with some caution. This study was conducted as a cross-sectional research study meaning that the data is collected at one specific point in time. Although the findings of this study found significant relationships to be present, the findings cannot be interpreted as cause and effect relationships. Therefore, it is not possible to describe causal statements about the relationships which, presents a limitation to the results. To accomplish this, a longitudinal research study would have to be conducted to provide insights into the characteristics of employees in this context. This context is employees that are working at a mining organization experiencing burnout complaints and high levels of work engagement. However, based on the results of the current study, it can be assumed that certain variables are associated with each other.

Another limitation of this study is the research population of the study and the sample size that was collected from that population. The research is conducted at only one mining organization in Western Australia and the number of respondents that completed the survey at the organization was relatively low (N = 121). The sample size used for the groupings of the control variables were too small to show a significant difference between the different groups that were studies. Therefore, future research would need to be done with a larger sample size. Moreover, another limitation of the study is the skewed distribution of the research population. The vast majority of respondents are male (80.8%) and are middle aged (34 – 45 years). However, this division is typical in this sector since this industry is known to consist of a male-dominated workforce of an older demographic. A consequence of a small and homogenous research population is that the results are not generalizable for a big population. Therefore, it is questionable whether the group of employees can sufficiently represent the employees working in the offices of the Western Australian mining industry. To provide more generalizable insights, it would be necessary to collect a larger sample size of employees working in the office environment of the mining industry with more mining organizations in different countries. It is possible that employees working in different countries or having job position with less autonomy may experience different levels of burnout.

Another limitation of this study could be the changes in the workplace due to the layoffs that resulted from the economic downturn. The may have resulted in a decrease in performance and increase hours working which, could have resulted in a greater amount of instability of the employees in the workplace. This may have affected the ability of the conceptual model to result in the expected relationships. Another explanation for the lack of relationship found in this study could be that the respondents provided socially desirable answers and did not want to report their perceptions of job insecurity and their burnout complaints. Although the anonymity of the participants was guaranteed, it may be that the employees did not answer these questions honestly due to the false belief that their managers or the HR team would view their results. Although many steps were taken to communicate that the research study was independent to the HR team and that the raw data would not be seen by the HR team, the employees may have still had doubts about the study. This could have impacted the results of the study.

## 5.4 Practical implications

An important insight discovered through the study is that the job resources of meaningful work and job autonomy are directly related to work engagement but, do not have a positive moderating effect on the relationship between the job demands, of work overload and job insecurity, and burnout. This is an important insight to the company as the company cannot apply the theoretical framework of the modified JD-R model as stated in the academic literature. The reason for this is threefold. Firstly, the company cannot address the problems associated with the job demands simply by increasing the job resources. This is important to the HR team as trying to increase job resources to decrease the effects of job demands is shown through the current study not to have a moderating effect. Therefore, the issues caused at the company in regards to burnout can only be addressed by directly attempting to decrease the job demands for the constructs of work overload. Secondly, the lack of moderator effect also has consequences for the relationship between job demands and the outcome of work engagement. An increase in job demands is shown not to impact the relationship between the job resources and work engagement. Therefore, if the company would like to increase work engagement, then they do not have to account for the moderating effect of job demands.

Thirdly, the factor of job insecurity was found not to have a direct relationship with the outcome of burnout. Although a direct relationship was not found, many employees at the company still scored high on the job insecurity scale. A solution to address the issues surrounding job insecurity is to increase transparency with those employees. A study by Keim, Landis, Pierce & Earnest (2014) found that organizational communication is important in times of change and uncertainty to reducing the perception of job insecurity in employees. This can be done by communicating and addressing the insecurities felt by those employees. For example, a lot of the employees at the mining company have high paying roles and a very particular set of skills. They might have families and loans, such as a mortgage, car, or boat, and without a career option, this may result in serious financial problems for them. Furthermore, since the entire mining industry is undergoing problems, the employees may feel like they are without an option to transfer their specific skill set to another company or industry. This might result in the employee feeling a lot of insecurity and personal stress that is not shown through the construct of burnout in the current study. Therefore, by addressing the job insecurity, the company may be able to decrease the perception of job insecurity of employees.

It is found that the employees that work in office positions at a mining company are experiencing high work overload scores on average. This indicates that it may not necessary only be employees that work "on-site" or fly-in fly-out, that experience the most work overload leading to burnout. A lot of work is being done by the HR team to mitigate the negative consequences of "on-site" workers. The recommendation based on this study is to recognize that office workers are also feeling the effects of high work overload and those job demands need to be addressed by the HR team. This can be done by discovering what the stressors and needs are of office workers in these positions. This may lead to the HR team improving the working conditions that these employees face and reducing the work overload faced by these employees. It may be that some of the tasks these managers are doing are inefficient or could spread to other departments that face less work overload. Or, the HR team could increase resources placed into training or technology that can reduce the workload, especially for redundant tasks, which could result in a decrease in reported work overload.

The research into meaningful work is still in its infancy. However, this study demonstrates how important of a factor it is to employees as a job resource. Overall, meaningful work accounted for 46% of the work engagement score compared to job autonomy, which

accounted for 36% of the work engagement scale. Moreover, as stated by Stringer & Boverie (2007), focusing on increasing the meaningful work levels would be useful to the organization as they found that organizations can maintain a competitive position in current market by increasing the level of engagement of employees. High levels of meaningful work seems especially relevant for the organization where this study is conducted at, since the mining industry currently faces a lot of change and restructuring in order to remain competitive. The implication for the company is that they will now have another factor that they can use to increase work engagement. This means that the HR team can create HR policies directed at improving meaningful work, and can back up the need to implement those policies using the quantitative findings found in this study. This may improve the likelihood that the HR team will receive funding and resources from the executive team to implement those meaningful work policies. This may result in an increase in meaningful work policies taking shape in the workplace which, is expected to lead to an increase in levels of work engagement.

## 5.5 Suggestions future research

Taking into account the limitations of this research, some following recommendations for follow-up research can be made. First of all, future research could focus on other relevant factors influencing the outcomes of burnout and work engagement in order to predict the performance of employees working in the mining sector. Future research could especially focus more on the employees working on the operational aspects of the business, such as the supervisors and the superintendents.

Moreover, most of the constructs in this study are measured with self-perception questions. This means that the focus of the survey is on how respondents experience their level of burnout, work engagement, job autonomy, etc. It might be that the answers to the questions have a socially desirable character, which could negatively influence the reliability of the research when people provide desired responses. A suggestion for future research is to use additional measurements to increase the reliability.

In addition to remedying the methodological constraints of this study, follow-up research could focus on the development of insights regarding the JD-R model. Schaufeli & Taris (2013) wrote a critical review where they highlighted some of the model's limitations. For example, the

authors indicated that the JD-R model should be seen primarily as a basic model describing which job demands for example influence the level of burnout and work engagement. However, the authors stated that the model does not focus on these relationships. Additional research is needed to test these relationships with existing theories. Schaufeli & Taris (2013) argued that the separation between work-related resources and demands needs to be more thought out. The lack of a work-related resource or an excess of a work related resource can both cause stress. Moreover, it is crucial to make a distinction between obstructing and challenging job demands.

Moreover, future research could look into the openness and application of the JD-R model and whether this model can actually be used as a framework in every context. For example, research could focus more on the type of industry, occupation, organizational context etc. More research should be done into the generalizability of the model. Furthermore, the question surrounding the usability of the JD-R model in certain extreme cases of economic environments can be investigated. The current study was undertaken in the context of a downturn where employees were being laid-off across the industry. And, the findings found that the model's reliability decreased in this circumstance. Another interesting study would be to examine the model's reliability in the context of an industry experiencing rapid growth, the polar opposite of a downturn. It would be interesting to see if future research would find that the JD-R model becomes less reliable in this type of economic environment. If so, this would indicate that the JD-R model has an effective range which, is experienced under normal economic conditions. And, outside of this effective range the model can no longer be reliably used.

Last, the finding that there is a lack of a direct relationship between job insecurity and burnout presents the question for future researchers whether job insecurity can have both a controllable and uncontrollable component, since job insecurity is unavoidable in current situation. Factors that an employee can control (such as their performance, punctuality, or their fit within a company) may result in a fit within the JD-R model possibly leading to burnout as the employee works harder or stresses about not meeting the expectations of the company. Therefore, it makes sense that an employee will work harder or longer hours to meet the underperforming aspects of their job and mitigate the risk of job insecurity.

## 5.6 Conclusion

The study was designed to examine the relationship between the constructs of meaningful work, job autonomy, work overload, and job insecurity on the processes of burnout and work engagement. The extended JD-R model was used to test the moderator effect on the process between the individual constructs and the outcomes. The study was executed using an online survey targeted towards employees working in an office environment at a Western Australian mining organization.

The purpose of the study was to contribute to the existing knowledge of the JD-R model. Although the hypotheses of the research were not all accepted, more insight was gained into the JD-R model in a changing work environment as a consequence of the crash of the commodity market in Western Australia. The results showed that there is a significant direct relationship between meaningful and work engagement, job autonomy and work engagement, and work overload and burnout when the model is applied to this study's context. However, no direct relationship between the construct of job insecurity and burnout, and no moderator effects were found in this study. The JD-R model is extremely popular and a lot of studies found support for the model. However, considering the results found in current study, questions can be asked regarding the openness and usability of the JD-R model in certain industrial and economic contexts.

# 6. Appendix

Appendix 1:

*Letter to the employees*

Hello,

My name is Gita Vischer and I am a master's student in Strategic Human Resource Management conducting research as a requirement of my master's program. Fortescue has offered to assist me with my research and I am hoping that you will take 5 minutes out of your day to help me out by contributing your opinions to my study found here:

https://usbo.eu.qualtrics.com/jfe/form/SV_d1iJubxVh48mIEB

This study examines how Western Australian employees at a major mining organization experience aspects of their work environment. The responses you provide will be anonymous and confidential. Your identity can not be tracked back to you with the information collected in this study. The survey will remain open until July 28.

I hope you will help me out by contributing to the study. If you have any questions or you would like to receive more information about the study, please contact me by e-mail: gita.vischer@live.nl.

Thank you and good luck!

Gita Vischer

Appendix 2:

*Survey Fortescue Metals group*

# Survey Fortescue Metals Group

**Introduction**

Thank you for clicking on the link to fill in the 5 - 10 minute survey! The survey consists of 6 sections: your experiences at work, your career, your job tasks, the continuation of your job, your job circumstances, and some general questions. The answers you provide will be used anonymous and confidentially so that your identity cannot be tracked back to you. There are no wrong answers, it is all about your honest opinion. Good luck!

**Section 1: Work Experience**

The statements below regard your experiences at work. Select how often each statement applies to you. Please respond with your honest opinion as there are no good or bad answers. The options vary from 'never' to 'always' (5-point Likert scale).

At my work, I feel bursting with energy.
At my job, I feel strong and vigorous.
I am enthusiastic about my job.
My job inspires me.
When I get up in the morning, I feel like going to work.
I feel happy when I am working intensely.
I am proud of the work that I do.
I am immersed in my work.
I get carried away when I am working.
I feel mentally exhausted from my work.
I feel used up at the end of the workday.
I feel fatigued when I get up in the morning and have to face another day of work.
I think I work too much.
I feel burned out from my job.

**Section 2: Career**

In this section, think about your job in terms of how you perceive your overall career. Select how true each statements is for you. Please respond with your honest opinion as there are no good or bad answers. Your answer can vary from 'absolutely untrue' to 'absolutely true' (5-point Likert scale).

I have found a meaningful career.
I view my work as contributing to my personal growth.
My work really makes no difference to the world.
I understand how my work contributes to my life's meaning.
I have a good sense of what makes my job meaningful.
I know my work makes a positive difference in the world.
My work helps me better understand myself.
I have discovered work that has a satisfying purpose.
My work helps me make sense of the world around me.
The work I do serves a greater purpose.

**Section 3: Job Tasks**
In this part, think about the work tasks that your job requires you to do. Select how often each statement applies to you. Please respond to the questions with your honest opinion as there are no good or bad answers. The options vary from 'hardly any' to 'a great deal' (5-point Likert scale).

How much slowdown in the workload do you experience?
How much time do you have to think and contemplate?
How much workload do you have?
What quantity of work do others expect you to do?
How much time do you have to do all your work?
How many projects, assignments, or tasks do you have?
How many lulls between heavy workload periods do you have?

**Section 4: Job Continuation**
The statements below regard your perceptions about the continuation of your job. Select how much you agree with the following statements. Please respond with your honest opinion as there are no good or bad answers. The options vary from 'strongly disagree' to 'strongly agree' (5-point Likert scale).

I am worried about having to leave my job before I would like to.
There is a risk that I will have to leave my present job in the year to come.
I feel uneasy about losing my job in the near future.

**Section 5: Job Circumstances**
The second last block of statements regard your experiences of your job circumstances. Select how much you agree with the following statements. Please respond with your honest opinion as there are no good or bad answers. The options vary from 'strongly disagree' to 'strongly agree' (5-point Likert scale).

I feel like I can be myself at my job.
At work, I often feel like I have to follow other people's commands.
If I could choose, I would do things at work differently.
The tasks I have to do at work are in line with what I really want to do.
I feel free to do my job the way I think it could best be done.
In my job, I feel forced to do things I do not want to do.

**Section 6: General Questions**

The final series of questions will be used to analyze the responses. Those questions are not meant to identify you personally or your responses. I would like to emphasize that the responses will remain anonymous and the results will be aggregated.

What is your gender?

- Male
- Female

What is your age?

- Under 18
- 18 – 24 years
- 25 – 34 years
- 35 – 44 years
- 45 – 54 years
- 55 – 64 years
- Older than 65

Which Fortescue location do you primarily work in?

- Perth
- Port and Rail
- Cloudbreak
- Christmas Creek
- Solomon
- Ohter

Which of the following best describes your job title>

- General/group manager
- Manager
- Superintendent
- Specialist
- Supervisor
- Other

Approximately how long have you been working at FMG?

- Less than 6 months
- 6 months – 12 months
- 1 – 2 year
- 3 – 5 year
- 6 – 10 year
- More than 10 years

What type of employment contract do you have?

- Permanent
- Temporary
- Contract

On average, how many hours do you put in a week?

- Less than 10 hours
- 10 – 15 hours
- 16 – 20 hours
- 21 – 30 hours
- 31 – 40 hours
- 41 – 50 hours
- 51 – 60 hours
- 61 – 70 hours
- More than 70 hours

At most, how many hours will you work in a week?

- Less than 10 hours
- 10 – 15 hours
- 16 – 20 hours
- 21 – 30 hours
- 31 – 40 hours
- 41 – 50 hours
- 51 – 60 hours
- 61 – 70 hours
- More than 70 hours

Thank you for participating in this study!

# 7. References

Albrecht, S. L. (2013). *Work engagement and the positive power of meaningful work*. In Advances in positive organizational psychology (pp. 237-260). Emerald Group Publishing Limited.

Albrecht, S. L., & Anglim, J. (2017). Employee engagement and emotional exhaustion of fly‐in‐fly‐out workers: A diary study. *Australian Journal of Psychology.*

Allan-Petale, D. (2017). *The future of WA's economy: Life beyond mining.* Consulted on the 10th of April through: http://www.watoday.com.au/wa-news/wa-election-2017/the-future-of-was-economy-life-beyond-mining-20170214-guctwv.html

Bailey, C., & Madden, A. (2016). What makes work meaningful or meaningless. *MIT Sloan Management Review*, 57(4), 53.

Bailey, C., Madden, A., Alfes, K., Shantz, A., & Soane, E. (2017). The mismanaged soul: Existential labor and the erosion of meaningful work. *Human Resource Management Review*, 27(3), 416-430.

Bakker, A. B., & Demerouti, E. (2008). Towards a model of work engagement. *Career development International,* 13(3), 209-223.

Bakker, A. B., Schaufeli, W. B., Leiter, M. P., & Taris, T. W. (2008). Work engagement: An emerging concept in occupational health psychology. Work & Stress, 22(3), 187-200.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, 51(6), 1173.

Baruch, Y., & Hind, P. (1999). Perpetual Motion in Organizations: Effective Management and the Impact of the New Psychological Contracts on" Survivor Syndrome". *European Journal of Work and Organizational Psychology*, 8(2), 295-306.

Beehr TA 2000. Perceived situational moderators of the relationship between subjective role ambiguity and strain. J of App Psych, 61: 35-40.

Brill, P. L. (1984). The need for an operational definition of burnout. *Family & Community Health*, 6(4), 12-24.

Britt, T. W., Adler, A. B., & Bartone, P. T. (2001). Deriving benefits from stressful events: The role of engagement in meaningful work and hardiness. *Journal of occupational health psychology*, 6(1), 53.

Britt, T. W., Castro, C. A., & Adler, A. B. (2005). Self-engagement, stressors, and health: A longitudinal study. *Personality and Social Psychology Bulletin*, 31(11), 1475-1486.

Brockner, J. (1988). The effects of work layoffs on survivors: Research, theory, and practice. *Research in organizational behavior*, 10, 213-255.

Cartwright, S., & Holmes, N. (2006). The meaning of work: The challenge of regaining employee engagement and reducing cynicism. *Human Resource Management Review*, 16(2), 199-208.

Cascio, W. F. (2003). *Changes in workers, work, and organizations*. Handbook of psychology.

Chalofsky, N., & Krishna, V. (2009). Meaningfulness, commitment, and engagement: The intersection of a deeper level of intrinsic motivation. *Advances in Developing Human Resources*, 11(2), 189-203.

Crawford, E. R., LePine, J. A., & Rich, B. L. (2010). Linking job demands and resources to employee engagement and burnout: a theoretical extension and meta-analytic test.

De Cuyper, N., Handaja, Y., & De Witte, H. (2007). Objectieve versus subjectieve jobonzekerheid: Welzijns-en gedragsgevolgen van herstructurering en gepercipieerde onzekerheid bij werknemers.

De Jonge, J., & Dormann, C. (2006). Stressors, resources, and strain at work: a longitudinal test of the triple-match principle. *Journal of applied psychology*, 91(6), 1359.

Witte, H. D. (1999). Job insecurity and psychological well-being: Review of the literature and exploration of some unresolved issues. European Journal of work and Organizational psychology, 8(2), 155-177.

De Witte, H. (2005). Job insecurity: Review of the international literature on definitions, prevalence, antecedents and consequences. *SA Journal of Industrial Psychology*, 31(4), 1-6.

Deci, E. & Ryan, R. M. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary educational psychology*, 25(1), 54-67.

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied psychology*, 86(3), 499.

Dragano, N., Verde, P. E., & Siegrist, J. (2005). Organisational downsizing and work stress: testing synergistic health effects in employed men and women. *Journal of Epidemiology & Community Health*, 59(8), 694-699.

Fairlie, P. (2011). Meaningful work, employee engagement, and other key employee outcomes: Implications for human resource development. *Advances in Developing Human Resources*, 13(4), 508-525.

Gallie, D. (2005). Work pressure in Europe 1996–2001: Trends and determinants. *British journal of industrial relations*, 43(3), 351-375.

Government of WA (2016). *Western Australian mineral and petroleum statistics digest 2015-16.* Consulted on the 3rd of May through: http://www.dmp.wa.gov.au/Documents/About-Us-

Careers/Stats_Digest_2015-16.pdf

Greenglass, E. R., Burke, R. J., & Fiksenbaum, L. (2001). Workload and burnout in nurses. Journal of community & applied social psychology, 11(3), 211-215.

Greenhalgh, L., & Rosenblatt, Z. (1984). Job insecurity: Toward conceptual clarity. *Academy of Management review*, 9(3), 438-448.

Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. *Organizational behavior and human performance*, 16(2), 250-279.

Hakanen, J. J., Schaufeli, W. B., & Ahola, K. (2008). The Job Demands-Resources model: A three-year cross-lagged study of burnout, depression, commitment, and work engagement. *Work & Stress,* 22(3), 224-241.

Hallberg, U. E., Johansson, G., & Schaufeli, W. B. (2007). Type A behavior and work situation: Associations with burnout and work engagement. Scandinavian Journal of Psychology, 48(2), 135-142.

Hellgren, J., Sverke, M., & Isaksson, K. (1999). A two-dimensional approach to job insecurity: Consequences for employee attitudes and well-being. *European Journal of Work and Organizational Psychology*, 8(2), 179-195.

Holbeche, L., & Springett, N. (2004). *In search of meaning at work. Roffey Park Institute*, Horsham.

Hu, Q., Schaufeli, W. B., & Taris, T. W. (2011). The Job Demands–Resources model: An analysis of additive and joint effects of demands and resources. Journal of vocational behavior, 79(1), 181-190.

Ito, J.K. & Brotheridge, C.M. 2007. 'Exploring the predictors and consequences of job insecurity's components', Journal of Managerial Psychology, 22: 40 - 64.

Jacobs, S. R., & Dodd, D. (2003). Student burnout as a function of personality, social support, and workload. *Journal of college student development*, 44(3), 291-303.

Johnson, M. J., & Jiang, L. (2017). Reaping the benefits of meaningful work: The mediating versus moderating role of work engagement. *Stress and Health*, 33(3), 288-297.

Ksenia Zheltoukhova 2012. *Taking the Strain: The Impact of Musculoskeletal Disorders on Work and Home Life.* Consulted on the 2nd of May through: www.vra-uk.org/node/212.

Letts, S. (2016). *Mining industry to lose 50,000 more jobs as boom comes to an end: NAB.* Consulted on the 21st of April through: http://www.abc.net.au/news/2016-06-10/mining-boom-halfway-down-the-mining-cliff/7500700

Lips-Wiersma, M. (2002). The influence of spiritual "meaning-making" on career behavior. *Journal of Management Development,* 21(7), 497-520.

Lips-Wiersma, M., & Morris, L. (2009). Discriminating between 'meaningful work' and the 'management of meaning'. *Journal of Business Ethics,* 88(3), 491-511.

Lips-Wiersma, M.S. and Wright, S. (2012), "Measuring the meaning of meaningful work: development and validation of the comprehensive meaningful work scale (CMWS)", *Group & Organization Management,* Vol. 37 No. 5, pp. 655-685.

Lips-Wiersma, M., Wright, S., Wright, S., Dik, B., & Dik, B. (2016). Meaningful work: Differences among blue-, pink-, and white-collar occupations. *Career Development International*, 21(5), 534-551.

Leung, A. S., & Chang, L. M. (2002). Organizational downsizing: Psychological impact on surviving managers in Hong Kong. *Asia Pacific Business Review*, 8(3), 76-94.

Llorens, S., Schaufeli, W., Bakker, A., & Salanova, M. (2007). Does a positive gain spiral of resources, efficacy beliefs and engagement exist?. Computers in human behavior, 23(1), 825-841.

Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of management journal*, 33(4), 692-724.

Keim, A. C., Landis, R. S., Pierce, C. A., & Earnest, D. R. (2014). Why do employees worry about their jobs? A meta-analytic review of predictors of job insecurity.

Kelly Services (2009). *Kelly Global Workforce Index: February 2009.* Consulted on the 12th of May through: www.kellyservices.com

Maslach, C., & Jackson, S. E. (1986). *MBI: Maslach Burnout Inventory.* Manual Research Edition. Palo Alto: University of California.

Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. Annual review of psychology, 52(1), 397-422.

Matz-Costa, C., Pitt-Catsouphes, M., Besen, E., & Lynch, K. (2009). The difference a downturn can make: Assessing the early effects of the economic crisis on the employment experiences of workers. *Boston, MA: The Sloan Center on Aging and Work at Boston College*.(Issue Brief No. 22).

Mauno, S., Kinnunen, U., & Ruokolainen, M. (2006). Exploring work-and organization-based resources as moderators between work–family conflict, well-being, and job attitudes. *Work & Stress*, 20(3), 210-233.

May, D. R., Gilson, R. L., & Harter, L. M. (2004). The psychological conditions of meaningfulness, safety and availability and the engagement of the human spirit at work. *Journal of occupational and organizational psychology,* 77(1), 11-37.

Mccartney, C., Demarco, S. (2015). *Balance or burnout? Managing fatigue in the modern workplace.* Consulted on the 2nd of May through: https://www.claytonutz.com/knowledge/2015/august/

balance-or-burnout-managing-fatigue-in-the-modern-workplace.

Michaelson, C. (2011). Whose responsibility is meaningful work?. *Journal of Management Development*, 30(6), 548-557.

Mishra, A. K., & Mishra, K. E. (1994). The role of mutual trust in effective downsizing strategies. *Human Resource Management*, 33(2), 261-279.

MOW International Research Team. 1987. *The meaning of working*. London: Academic Press

Noer, D. M. (2009). *Healing the wounds: Overcoming the trauma of layoffs and revitalizing downsized organizations.* John Wiley and Sons.

Oldfield, G., & Mostert, K. (2007). Job characteristics, ill health and negative work-home interference in the mining industry. *SA Journal of Industrial Psychology*, 33(2), 68-75.

Pocock, B. (2005). Work-life balance in Australia: Limited progress, dim prospects. *Asia Pacific Journal of Human Resources*, 43(2), 198-209.

Pratt, M. G., & Ashford, B. E. (2003). Fostering meaningful-ness in working and at work. In K. Cameron, J. Dutton,& R. Quinn (Eds.), Positive organizational scholarship (pp.309–327). San Francisco, CA: Berrett-Koehler.

Prepare for Australia (2017). *Mining in Australia.* Consulted on the 11th of April through: http://www.prepareforaustralia.com.au/employment-australia/industry-reports/mining-oilgas.aspx

Renard, M., & Snelgar, R. J. (2016). How can work be designed to be intrinsically rewarding? Qualitative insights from South African non-profit employees. *SA Journal of Industrial Psychology*, 42(1), 1-12.

Robbins, S. P. (1999). Layoff-survivor sickness: A missing topic in organizational behavior. *Journal of Management Education,* 23(1), 31-43.

Rosenblatt, Z., & Ruvio, A. (1996). A test of a multidimensional model of job insecurity: The case of Israeli teachers. *Journal of organizational behavior*, 587-605.

Rosso, B. D., Dekas, K. H., & Wrzesniewski, A. (2010). On the meaning of work: A theoretical integration and review. *Research in organizational behavior*, 30, 91-127.

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi - sample study. Journal of organizational Behavior, 25(3), 293-315.

Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and psychological measurement*, 66(4),

Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness studies,* 3(1), 71-92.

Schaufeli, W., & Taris, T. (2013). Het Job Demands-Resources model: overzicht en kritische

beschouwing. *Gedrag & Organisatie*, 26(2), 182-204.

Spurgeon, A. (2003). *Working time: Its impact on safety and health.* International Labour Office Bureau International du Travail.

Stairs, M., & Galpin, M. (2010). *Positive engagement: From employee engagement to workplace happiness.* In Oxford handbook of positive psychology and work.

Steger, M. F., & Dik, B. J. (2010). *Work as meaning: Individual and organizational benefits of engaging in meaningful work.* Oxford handbooks.

Steger, M. F., Dik, B. J., & Duffy, R. D. (2012). Measuring meaningful work: The work and meaning inventory (WAMI). *Journal of Career Assessment,* 20(3), 322-337.

Stringer, C., & Boverie, P. (2007). The role of meaning in work: A study of the transformational power of meaningful work. *Transformative Learning: Issues of Difference and Diversity*, 305.

Thompson, C. A., & Prottas, D. J. (2005). Work-family culture: key to reducing workforce-workplace mismatch?.

Towers, P. (2003). *Working today: Understanding what drives employee engagement*. Towers Perrin: Stamford CT.

Uen, J. F., Chen, S. Y., Chen, H. C., & Lin, C. T. (2016). The effect of employer's moral obligation violation on survivor's commitment: The mediating role of justice climate. *Personnel Review*, 45(2), 214-231.

Vander Elst, T., De Cuyper, N., Baillien, E., Niesen, W., & De Witte, H. (2016). Perceived control and psychological contract breach as explanations of the relationships between job insecurity, job strain and coping reactions: towards a theoretical integration. Stress and Health, 32(2), 100-116.

Vera, M., Martínez, I. M., Lorente, L., & Chambel, M. J. (2016). The role of co-worker and supervisor support in the relationship between job autonomy and work engagement among Portuguese nurses: A multilevel study. Social Indicators Research, 126(3), 1143-1156.

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009). Work engagement and financial returns: A diary study on the role of job and personal resources. *Journal of occupational and organizational psychology,* 82(1), 183-200.

Young, E. (2016). *Life after the mining boom: where 22,000 WA workers will go next.* Consulted on the 20th of April through: http://www.watoday.com.au/wa-news/life-after-the-mining-boom-where 22000-wa-workers-will-go-next-20161020-gs6u94.html

Yuan, Z., Li, Y., & Tetrick, L. E. (2015). Job hindrances, job resources, and safety performance: The mediating role of job engagement. *Applied ergonomics,* 51, 163-171.