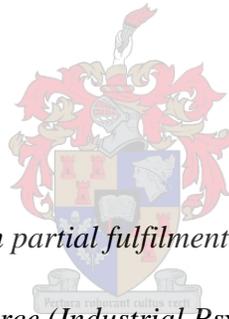


# **THE RELATIONSHIPS BETWEEN ENGAGEMENT, BURNOUT AND PERFORMANCE IN AN E-COMMERCE RETAIL COMPANY**

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for the degree of Masters of Commerce (Industrial Psychology) in the Faculty of Economic  
and Management Sciences at Stellenbosch University*

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## DECLARATION

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## ABSTRACT

It is the role of the Industrial Psychologist and the Human Resources function within a company to contribute positively to an organisation's competitive advantage. Human capital should be viewed and managed as a critical success factor within this context. The probability of attaining success over competitors could be addressed through focussing on the impact of employee performance on competitive advantage. With reference to the organisational life cycle, the e-commerce industry in South Africa seems to be in its infancy. It is in this stage when attaining high levels of performance from employees is of critical importance. In this lies the key for building and growing a competitive advantage that would set one organisation apart from the other – where one organisation would survive the infancy stage and another would drown in the quest to match the demands posed by the relevant industry and its customers.

There is minimal Industrial or Organisational Psychology research that has tested hypotheses in the e-commerce industry. This contributed to the decision to implement this research in the e-commerce industry. The e-commerce industry is growing rapidly, and performance therefore is a key factor for success in any e-commerce company in South Africa.

The focus of this study was to review the Job Demands Resources model (JD-R model) within the e-commerce retail industry in South Africa in order to add to the knowledge base regarding human behaviour at work, with specific reference to engagement, burnout and performance.

The research question of the study was formulated regarding which “state of wellbeing” would increase performance. The JD-R model makes provision for evaluating this question in a structured manner. The JD-R model indicates that performance is influenced by work engagement/burnout (wellbeing). It also indicates that there are certain job demands, job resources and personal resources that will influence wellbeing.

The study was facilitated through the use of an *ex post facto* correlational research design. A sample of 117 workers was chosen from the e-commerce retail industry to participate in the study. Participation was voluntary, the data was collected specifically for the purpose of this study, and all responses were treated confidentially. The measurements that were used included key performance indicators (KPIs), the Utrecht Work Engagement Scale (UWES), the Maslach Burnout Inventory – General Survey (MBI-GS), the Job Characteristics Scale, and the HEXACO model. The literature review formed a logical argument that culminated in a theoretical

model as well as a set of hypotheses with reference to the various dimensions in the JD-R model. The results showed that:

- a) Engagement has a significant positive influence on performance.
- b) Job resources (advancement, personal growth and organisational support) have a significant positive influence on engagement.
- c) Job resources (advancement, personal growth and organisational support) have a significant negative influence on burnout.
- d) Personal resources (extraversion) have a significant negative influence on burnout.
- e) Personal resources (conscientiousness) have a significant positive influence on engagement.
- f) Personal resources (agreeableness) have a significant negative influence on burnout.

The following hypotheses were not supported:

- a) Burnout has a significant negative influence on performance.
- b) Personal resources (extraversion) have a significant positive influence on engagement.
- c) Personal resources (emotionality) have a significant positive influence on engagement.
- d) Personal resources (emotionality) have a significant negative influence on burnout.
- e) Personal resources (conscientiousness) have a significant negative influence on burnout.
- f) Personal resources (agreeableness) have a significant positive influence on engagement.
- g) Job demands (job overload) have a significant negative influence on engagement.
- h) Job demands (job overload) have a significant positive influence on burnout.
- i) Job demands (job insecurity) have a significant negative influence on engagement.
- j) Job demands (job insecurity) have a significant positive influence on burnout.

Attention was also paid to future research considerations, recommendations to the managers of employees and to the limitations of the study.

## OPSOMMING

Dit is die rol van die Bedryfsielkundige en die Menslike Hulpbronne funksie in maatskappye om 'n positiewe bydrae tot 'n organisasie se mededingende voordeel te maak. Menslike kapitaal moet beskou en bestuur word as 'n kritiese sukses faktor in hierdie konteks. Die waarskynlikheid om sukses bo die kompetisie te behaal kan aangespreek word deur om fokus te plaas op die impak wat werknemersprestasie het op mededingings voordeel. Met verwysing na die organisatoriese lewensiklus blyk die e-handelbedryf in Suid-Afrika om in sy beginstadium te wees. Dit is in hierdie stadium waar die bereiking van hoë vlakke van prestasie van werknemers van kritieke belang is. Hierin lê die sleutel vir die vordering en groei van 'n mededingende voordeel van een maatskappy bo 'n ander - waar die een organisasie die beginstadium sou oorleef en die ander onder die druk van die versoeke/eise van die betrokke bedryf en sy kliënte sou swyk.

Daar is 'n beperkte hoeveelheid navorsing wat gevind kon word in die veld van Bedryfsielkunde wat hipoteses in die e-handelbedryf toets. Hierdie bevinding het bygedra tot die besluit om hierdie navorsingstudie oor die e-handelbedryf voort te sit. Die e-handelbedryf toon vinnige groei, en prestasie is dus tans 'n belangrike faktor vir sukses in enige e-handelmaatskappy in Suid-Afrika.

Die fokus van hierdie navorsingstudie was om die "Job Demands Resources model (JD-R model)" in die e-kleinhandelbedryf in Suid-Afrika toe te pas om sodoende by te dra tot die huidige kennis beskikbaar ten opsigte van menslike gedrag by die werk, met spesifieke verwysing na werksbegeestering, uitbranding en prestasie.

Die navorsingsvraag van die navorsingstudie is geformuleer rondom die aanname dat die "toestand van welsyn" prestasievlakke sal verhoog. Die primêre doel van die navorsingstudie was om deur middel van die toepassing van die JD-R model in die e-kleinhandelbedryf, by te dra tot die beskikbare kennis ten opsigte van menslike gedrag by die werk, met spesifieke verwysing na werksbetrokkenheid, uitbranding en prestasie. Die JD-R model maak op 'n gestruktureerde wyse voorsiening vir die evaluering van hierdie verhoudings. Die JD-R model dui aan dat prestasie beïnvloed word deur werksbetrokkenheid/uitbranding (welsyn). Dit dui ook dat daar sekere werksvereistes, werks-hulpbronne en persoonlike hulpbronne is wat welstand beïnvloed.

Die navorsingstudie is gefasiliteer deur die gebruik van 'n *ex post facto* korrelasie-ontwerp. 'n Steekproef van 117 werkers is uit die e-kleinhandelbedryf gekies om aan die studie deel te neem. Deelname was vrywillig, die data is spesifiek ingesamel vir die doel van hierdie navorsingstudie en alle data is as vertroulik hanteer. Die volgende metingsinstrumente is gebruik: kern prestasie aanwysers (KPA's), die Utrecht Work Engagement Scale (UWES), die Maslach Burnout Inventory – General Survey (MBI-GS), die Job Characteristics Scale, en die HEXACO model. Die literatuuroorsig vorm 'n logiese argument wat lei tot 'n teoretiese model, sowel as 'n stel hipoteses met verwysing na die verskillende dimensies soos gevind in die JD-R model. Die resultate toon:

- a) Werksbetrokkenheid het 'n beduidende positiewe invloed op prestasie.
- b) Werkshulpbronne (bevordering, persoonlike groei en organisatoriese ondersteuning) het 'n beduidende positiewe invloed op werksbetrokkenheid.
- c) Werkshulpbronne (bevordering, persoonlike groei en organisatoriese ondersteuning) het 'n beduidende negatiewe invloed op uitbranding.
- d) Persoonlike hulpbronne (ekstroversie) het 'n beduidende negatiewe invloed op uitbranding.
- e) Persoonlike hulpbronne (pligsgetrouheid) het 'n beduidende positiewe invloed op werksbetrokkenheid.
- f) Persoonlike hulpbronne (eenstemmigheid) het 'n beduidende negatiewe invloed op uitbranding.

Die volgende hipoteses was nie aanvaar nie:

- a) Uitbranding het 'n beduidende negatiewe invloed op prestasie.
- b) Persoonlike hulpbronne (ekstroversie) het 'n beduidende positiewe invloed op werksbetrokkenheid.
- c) Persoonlike hulpbronne (emosionaliteit) het 'n beduidende positiewe invloed op werksbetrokkenheid.
- d) Persoonlike hulpbronne (emosionaliteit) het 'n beduidende negatiewe invloed op uitbranding.
- e) Persoonlike hulpbronne (pligsgetrouheid) het 'n beduidende negatiewe invloed op uitbranding.
- f) Persoonlike hulpbronne (eenstemmigheid) het 'n beduidende positiewe invloed op werksbetrokkenheid.

- g) Werksvereistes (oorlading) het 'n beduidende negatiewe invloed op werksbetrokkenheid.
- h) Werksvereistes (oorlading) het 'n beduidende positiewe invloed op uitbranding.
- i) Werksvereistes (werkonsekerheid) het 'n beduidende negatiewe invloed op werksbetrokkenheid.
- j) Werksvereistes (werkonsekerheid) het 'n beduidende positiewe invloed op uitbranding.

Aandag is ook geskenk aan toekomstige navorsings oorwegings, aanbevelings aan die bestuurders van werknemers asook aan die beperkinge van die navorsingstudie.

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## CHAPTER 1

### INTRODUCTION

#### 1.1 Background to the study

The world of work, as experienced by the employee, is in a cycle of constant change. The fundamental elements of business are constantly challenged and then altered or redesigned by the ever turbulent external environment and its needs (Brousseau, Driver, Eneroth & Larsson, 1996). In most circumstances it is expected of employees to adapt to these changes for the benefit of the business and with regard to profitability and growth. However, the goal of striving for higher performance (at the level of employee and business profitability) within a company does not change. The ways and means might change, but attaining a higher level of performance remains the goal. Unfortunately, it is sometimes found that the ways and means of increasing profitability/growth are implemented to the detriment of the employee (Turner, Barling & Zacharatos, 2002). This act, of chasing higher performance or profitability without making the wellbeing of the employees (utilised to attain the higher levels of profitability) a focus point in the process, turns out to be a negative cycle, destroying employee relationships, productivity, morale and, ultimately, performance.

The level of productivity in South Africa is alarming. In 2012, South Africa was ranked 28<sup>th</sup> in a productivity ranking done by Nation Master (2012). The Work Competitiveness Yearbook (WCY) of 2014 rated 60 industrialised and emerging economies on various pillars/factors affecting competitiveness in order to rank all 60 economies. The WCY is recognised worldwide as the leading report on competitiveness, according to Monyemangene (2012). It is recorded by the WCY for 2014 that South Africa was ranked 52<sup>nd</sup> for competitiveness. Although Monyemangene (2012) stated that SA had shown improvement in terms of its competitiveness, as it had ranked 53<sup>rd</sup> for competitiveness in 2013, this year's ranking is still alarming and indicates that there are definite productivity and competitiveness problems to be addressed in SA. According to the WCY 2014, the top countries were 1) USA, 2) Switzerland, 3) Singapore, 4) Hong Kong and 5) Sweden. According to the African Competitiveness Report 2013, the Global Competitiveness Index of South Africa's profile shows that South Africa ranked 134<sup>th</sup> out of 144 countries on productivity as part of the seventh pillar contributing to competitiveness, being labour market efficiency. In general, organisations strive to attain higher productivity rates from their employees, as this can contribute positively to wealth and ultimately help to improve the sustainability, performance and competitiveness of the organisation. It falls within the scope of

Industrial/Organisational (I/O) psychology to investigate the reason(s) for South Africa's productivity and competitiveness status (seen as a problem in the country), as this is related to workforce output, development and performance. Employee productivity (and performance) problems should be addressed through interventions tailored to the many factors that could be affecting the effectiveness of these interventions, such as the South African workforce demographics and company culture. By influencing and ultimately increasing employee productivity, South Africa's productivity ranking could be addressed in the long run.

According to a global study of 6 000 businesses, published by Grant Thornton (2012), an independent accounting and consulting company, 9% of reported stress is caused by low levels of work/life balance. Viewing statistics like these emphasises the importance of addressing the factors, such as stress, that could influence performance. These industry problems affect organisations as well as the workforce. Companies drive their employees to work "harder", causing them to neglect their work/life balance and wellbeing. Global studies highlight that poor work/life balance leads to stress in employees. This consequently lowers their performance.

Bakker and Bal (2010) conducted a study on the link between performance and engagement. They found that engagement is predictive of performance. This finding is in line with the findings of various other studies within the domain of I/O psychology. In the studies of Halbesleben and Wheeler (2008) and Schaufeli, Taris and Bakker (2006) it was found that engagement is a predictor of in-role and extra-role performance, while Harter, Schmidt and Hayes (2002) found that engagement is positively related to business unit performance. Organisational profitability is linked to employee wellbeing and engagement, as employee health and wellbeing are regarded as important determinants of employee and organisational performance (Herbert, 2011; Xanthopoulou, Bakker, Demerouti & Schaufeli, 2009b).

Schaufeli, Salanova, González-Romá, and Bakker (2002) are of the opinion that engagement and burnout can be seen as two distinct mental states that are negatively correlated. According to these authors, engagement represents the positive antipode of burnout. Engagement is defined as a positive state of mind, categorised by vigour, dedication and absorption (Schaufeli et al., 2002). According to Maslach, Schaufeli and Leiter (2001), burnout is the prolonged response to chronic emotional and interpersonal stressors on the job. Burnout is categorised by three dimensions, namely emotional exhaustion, personal accomplishment and depersonalisation (Maslach et al., 2001).

Demerouti and Cropanzano (2010) state that engagement should be valued in organisations, as it contributes to the bottom line. Elkington (1999) seconds this by stating that an organisation's bottom line should include its employees or, stated differently, society and the surrounding environment. In order for organisations to have a better understanding of their competitive advantage in the market and to manage it better, they should acknowledge that their bottom line includes more than just profitability. It includes their employees, as their employees definitely have an impact on the organisation's performance and sustainability (Elkington, 1999).

Within I/O psychology, human capital is referred to as an organisation's most influential and valuable asset. It is for this reason that talent attraction and retention are still actively pursued by organisations. Companies like Google (known for their innovation and competitive advantage in the market place) actively attract talent through their attractive, creative, supportive and colourful working environment. Their people operations department (commonly known as human resources) focuses on creating a colourful culture that will not only attract talent, but also retain them as employees at Google (called Googlers) and they are highly valued by the company (Google, 2014). The wellness of employees therefor affects their performance and, ultimately, the overall performance within an organisational context. Organisations should consider the worth added to company performance by a talented and engaged employee.

In the framework provided by Danna and Griffin (1999, as cited by Brough, O'Driscoll, Kalliath, Cooper & Poelmans, 2009) of the antecedents and consequences of wellbeing, it is clear that the wellbeing of employees not only will have an impact on the individual involved, but also on the organisation. Danna and Griffin's (1999) meta-analysis formulated a description of work-related health and wellbeing in terms of two conceptualisations. The first conceptualisation is related to physical health and is defined in terms of illness and symptoms. The second conceptualisation is associated with mental, psychological and psychosocial wellbeing. The outcomes of occupational health and wellbeing can thus be categorised in terms of individual consequences (e.g. physical, psychological and behavioural) and organisational consequences (e.g. monetary costs, productivity, absenteeism). Within I/O psychology research, the phenomenon of work engagement, burnout and workaholism are seen to form part of employee wellbeing. All three outcomes have an impact on the individual and the organisation. Taking the double-sided consequences of occupational health and wellbeing into consideration, wellbeing is not viewed only from an organisational perspective.

From an employee perspective, having an occupation is a very important aspect of an individual's life. Serving in one's job entails the fulfilling idea that one plays a specific role in society. Killinger (2006) describes work as forming part on an employee's identity and contributing to employee wellbeing. Being engaged in a job will thus contribute more than only financial benefit to an employee. Engagement at work or in a job would also provide structure in the life of the employee; provide opportunities for individuals to interact with one another; and influence an employee's self-respect and self-confidence (Machlowitz, 1980).

The discipline of I/O psychology can only manage the behaviour of employees through a thorough understanding of the various variables in the complex network affecting human behaviour. Work engagement and burnout (viewed as two kinds of employee wellbeing (Schaufeli, Taris & Rhenen, 2008)) form part of the Job Demands-Resource model (JD-R model) defined by Bakker and Demerouti (2007). The JD-R model shows that human behaviour is set out in a complex network of variables. It is proposed in the JD-R model that wellbeing (work engagement and burnout) is influenced by a wide variety of job characteristics, and that employee wellbeing/burnout and the job characteristics can influence the different levels of output or performance (Hu, Schaufeli & Taris, 2011). By using the JD-R model of engagement and burnout, organisations thus can monitor and influence the performance of workers by maintaining a healthy balance between the profitability of the company and the wellbeing of the employees.

The "get big fast" (GBF) strategy dominated the early years of e-commerce businesses. This strategy revolves around the principles of pricing products/services low and marketing heavily, so as to build market share and the user base (Oliva, Sterman & Giese, 2003). These principles were grounded in the belief that there are significant sources of increasing returns favouring large players and early entrants. The use of the GBF strategy was rewarded by the capital market in the early 2000s, but has since collapsed, leading to the failure of many newly created e-businesses (Oliva et al., 2003). This phenomenon was termed the rise and fall of the dot coms, but is not something that happened only in those times and under those circumstances. Many companies that run after rapid growth face this risk of being unable to fulfil the expectations set by the rapid growth to external parties (Oliva et al., 2003). The consequences (positive and negative) of this aggressive approach to growth and increased performance form part of the history of click-and-mortar companies. It is this embedded, aggressive strategy of chasing growth and performance that continues to influence newly founded e-businesses, even if only indirectly. This poses a problem to start-up businesses within the e-commerce industry.

Even though scepticism and negative feedback have been left behind by the many failed websites (tracked by “Dot Com Flop Trackers” at that time), e-commerce has grown rapidly over the past ten years (Oliva et al., 2003). Bizcommunity.com (2012) states that MasterCard Worldwide revealed through an online shopping survey that the tendency to do online shopping has increased in South Africa and shows great potential for growth in the future. The survey revealed that, according to the respondents, online shopping in South Africa grew from 44% in 2009 to 58% in 2011. Currently there even is an awards programme, managed by uAfrica.com, awarding South African e-commerce companies for their growth and performance in the market. The South African eCommerce Awards are awarded annually to companies at the South African eCommerce Conference and focus on the areas of best customer service, website usability, shopping process, e-commerce website, e-commerce mobile website and South Africa’s favourite e-commerce website (<http://www.ecommerceawards.co.za/>). Again, the importance of growth and performance in this industry is encouraged and promoted – sometimes to the detriment of the wellbeing of the employees.

The rise and fall of the dot coms poses some critical questions to investors, managers and theorists. Why is it that the GBF strategy, pursued by so many (sometime with so much aggression and force, as if it was impossible to fail), failed for so many? What were the pitfalls faced by the companies that rushed after performance and growth in this manner? Why did some click-and-mortar companies survive, when others could not? The question that underlies this study seems to align with the questions asked in this situation. What drives the positive performance of companies that survive? It can be concluded that the e-commerce industry is demanding and that different performance levels and levels of occupational wellbeing are experienced between workers within a company and between workers of different companies in this industry. Many demands are thus made on the resources of organisations and workers alike.

A comprehensive model that could be employed to investigate the performance levels and occupational wellbeing of e-commerce employees is the Job Demands-Resources model. It is the purpose of this study to attend to these questions and problems posed above by the e-commerce industry through the use of the JD-R model as theoretical framework to test the relationships between job demands, job resources, personal resources, wellbeing and performance. It is argued that, by applying the JD-R model within this sector, insight will be gained with regard to the factors impacting occupational well-being and employee performance, which can be viewed as two areas in need of additional attention within the e-commerce

industry. The majority of research done on the JD-R model and employee engagement has been conducted in the helping (service) professions (nursing, ministry and teaching). Extending the use of the JD-R model to other sectors like e-commerce would profit research and practice alike. The robustness of the JD-R model was tested in a study done by Llorens, Bakker, Schaufeli and Salanova (2006). The conclusion that they came to was that the basic structure of the JD-R model is maintained in different settings, even when it is applied in different national or occupational contexts, using different manners of gathering information and using (slightly) different measures to assess the key factors of the model (Llorens et al., 2006). In research done by Llorens, Schaufeli, Bakker and Salanova (2007), the aim was to investigate whether personal resources mediate the relationship between task resources and engagement, and whether or not engagement in effect increases personal and job resources. The sample group for this study, which also made use of the JD-R model, consisted of Spanish university students. The findings suggest that engagement increases efficacy beliefs and that this, in turn, increases job resources (Llorens et al., 2007).

In a study by Xanthopoulou, Bakker, Demerouti and Schaufeli (2009a), the longitudinal relationships between the factors within the JD-R model was tested in an electrical engineering and electronics company. The sample group came from the Netherlands and the employees taking part in the study came from three different departments, namely Human Resources, Commercial and Economic Management. The results of the study proved all hypotheses using the JD-R model. The proven robustness of this model supports its use in other countries and industries.

The JD-R model posits that employee wellbeing (work engagement and burnout) is predicted by a specific combination or ratio of job resources, job demands and personal resources, which ultimately influence the level of performance (Bakker, 2011). It is the purpose of this study to test the JD-R model in the e-commerce retail sector in order to investigate the link between wellbeing (engagement and burnout) and performance. Would it be beneficial for companies to invest time and resources in the variables that drive performance and what are the core elements affecting these variables related to performance?

## **1.2 Research-initiating question**

The question asked when contemplating these e-commerce industry problems, and the possible implementation and effectiveness of the various strategies, focused on increasing performance in a beneficial manner for both the industry and the workforce, is “what drives performance?”.

The question can be extended to question the benefit that lies within promoting those factors that drive performance from a company's perspective. If it is known what factors drive performance effectively, would it be beneficial for a company to invest time and resources in enhancing those factors that are found to increase performance levels and to eliminate or subdue those factors that decrease performance? More specifically, why do some employees get bored and burn out at work when others are enthusiastic and energised by their work?

Although the JD-R model has yielded value for various organisations and employees when significant job demands and resources are monitored and influenced in order to enhance work performance, the current study asks why variance in work performance exists between different workers in different workplaces. The effects of salient resources and demands on engagement, burnout and performance will thus be tested.

### **1.3 Purpose and objectives of the study**

The purpose of this proposed study was to test the JD-R model in order to answer the question, what drives performance? The purpose of the study thus was to test the validity of specific components of the JD-R model using a sample of e-commerce employees. The scope of the study was limited to the direct effects in the stated model. Demerouti and Bakker (2011) analysed the challenges for future research linked to the JD-R model. Their paper highlights the number of new directions into which research focusing on the JD-R model could go. They encourage researchers to "expand their research horizon to conduct research within the Job Demands-Resource model" (Demerouti & Bakker, 2011, p. 8).

The objectives of the proposed study were to:

- Investigate what drives performance, in terms of the JD-R model, within a sector that has undergone intense growth recently. The focus was on the link between performance and occupational wellbeing (being engagement and burnout) and the variables (job resources, personal resources and job demands) in the JD-R model.
- Recommend interventions in line with the JD-R theory to increase performance levels by focusing on engagement and burnout levels of employees.
- Investigate the salient antecedents of variance in engagement, burnout and performance.

#### **1.4 Summary**

The overall purpose of this section was to present the background to the study, its research-initiating question, and the purpose and objectives, as well as to provide the rationale behind the study. By utilising the JD-R model, this study in essence focuses on what causes job stress and what motivates workers in the e-commerce industry.

## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Introduction

It is the purpose of this chapter to provide an argument that is systematic, structured and reasoned in nature and elaborate on the structural model emanating from the argument in a response to the research initiating question in this study. In order to empirically evaluate the model, concrete definitions of the various latent variables found in the structural model should be formulated. The theoretical argument built in this chapter is underpinned by research done on the various latent variables, the relationships between the variables, as well as on the Job Demands-Resources model.

Previous theories linked to occupational wellbeing and performance are highlighted and discussed to set the theoretical framework of the study. This chapter presents the JD-R model and its proposed structural model and attendant hypotheses derived from the literature. However, a brief history of relevant theories related to the development of the JD-R model will first be presented, as early theories and models of work motivation and job stress guided the thinking related to the formulation of the JD-R model. These early theories and models include Scientific Management, the Hawthorne studies and resultant human relations theory, the Demand-Control model of Karasek, the Effort-Reward Imbalance model, the Two-Factor theory of Herzberg, and the Job Characteristics model. Over the past few decades, studies have shown that job characteristics (referring to job demands and resources) lead to work engagement (Bakker & Demerouti, 2014). Previous studies done on engagement (e.g. Halbesleben & Buckley, 2004; Taris & Feij, 2004) have led to a list of probable antecedents of performance and occupational wellbeing, but Bakker and Demerouti (2014) state that the theoretical development of these variables has been narrow.

In the past, studies done on work engagement and how to promote it have made use either of the list of antecedents of performance and occupational wellbeing mentioned above, or have relied on either one of the two job stress models, namely the Demand-Control model (DCM; Karasek, 1979) and the Effort-Reward Imbalance model (ERI; Siegrist, 1996). Two other influential models with regard to job stress and work motivation are the Two-factor theory (Herzberg, 1966) and the Job Characteristics model (Hackman & Oldham, 1980). The Hawthorne Studies, known to be the beginning of the modern behavioural management

movement, confirmed the importance of personal relations (personal feelings or human relations) in industrial settings like the workplace (Roethlisberger & Dickson, 1939).

In order to formulate a better understanding of the foundations/roots of the JD-R model, and the JD-R theory as an extension of the JD-R model, a discussion of these job stress models, job design theories and the historic background to these research domains follows.

## **2.2 Historic development of the JD-R model**

### **2.2.1 Scientific management**

Smith and Babbage (in Bakker & Demerouti, 2014) state that the division of labour could be used as a mechanism to increase worker efficiency as well as productivity. They said that breaking work into distinct jobs encourages and motivates specialisation and simplification. This allows workers to become more highly skilled and perform their tasks with more efficiency. According to Smith and Babbage, the efficiency gains takes place due to:

- Workers not needing to switch between various tasks;
- The distractions being reduced as a result of fewer work elements that need their attention; and
- Workers recognising various smaller ways in order to further increase efficiency.

Taylor (1911) and Gilbreth (1911) were the first to document an attempt to design jobs in line with the principles mentioned above. Taylor (1911) termed this approach to efficiency “Scientific Management”. This approach focused on specialisation and simplification as measures of enabling staffing difficulties and ultimately decreasing training requirements.

According to Taylor (1911) and Gilbreth (1911), a critical element of these approaches of simplification and specialisation is the fact that it lies within the power of management to decide in what way work should be divided and designed. It is also within management’s power to institute control mechanisms, for example training and supervision, in order to ensure that their jobs are being done according to management’s requirements and standards. Although the limitations found within these approaches as part of Scientific Management are well documented, many of these core principles still underlie modern work design (Cherns, 1978; Wall & Martin, 1987). Due to the rigid search for efficiency through the implementation of this approach, many regarded this approach to be a depressing and degrading management style. The task performer hardly experienced any form of satisfaction due to the responsibilities being

so simple and repetitive. Other dysfunctional behavioural consequences in the workplace that were noted due to the application of the Scientific Management approach were that of: fading alertness at work; a lowered sensitivity to sensory inputs; and reduced muscular co-ordination. It was noted that employees more often engaged in behaviours such as daydreaming and finding excuses to take regular breaks due to their boredom (Hackman & Oldham, 1980).

According to Scientific Management Theory, it is through simplification and specialisation that stress- and motivation-related problems are addressed, as employees would be able to perform more efficiently and thus experience decreased stress levels. This principle differs from what was later founded in the JD-R model.

What is observed, in contrast, is that, due to the tasks being simple, unchallenging and routine work, there is higher employee dissatisfaction, higher levels of absenteeism and high staff turnover. It is argued that the implementation of the approach did in fact not increase profitability and motivation. The critique of Scientific Management Theory contributed to the inclusion of job resources and demands in the JD-R model in an attempt to guard against leaving employees feeling bored and demotivated.

### **2.2.2 Hawthorne studies and resultant human relations**

The idea that personal feelings, otherwise called human relations, will effect performance is an old one and dates back to the work done by Elton Mayo in 1933 (Rotemberg, 1994).

The attraction found between people in the workplace (the personal feeling or human relations referred to above) should not necessarily be seen as the same as altruism, although these two terms do have some link with one another (Rotemberg, 1994). The one reason for the link is that, if a person is altruistic towards a co-worker, he or she naturally enjoys the company of this other person. The interaction taking place between these two individuals will provide the altruist the opportunity to be generally nice to the other person. The altruist in this case will be able to gain from the generated happiness. The second reason for referring to the link between attraction and altruism is that it is seen as beneficial to be altruistic towards those co-workers you find yourself attracted to (Rotemberg, 1994).

The Hawthorne Studies started in the year 1924 in Illinois, at the Hawthorne plant of Western Electric. The study was conducted in four stages. In the first stage, the researchers examined the relationship between illumination and performance output/productivity. The focus was on the amount of lighting the participants were exposed to and how it related to productivity. The

conclusion was drawn that there were other variables besides illumination that influenced increased productivity. With the control and test group the performance increased, and it was found that illumination does not affect productivity significantly (Hodgetts & Hegar, 2008), but that other factors also play a role.

In the second stage, the researchers decided to only assess female workers. The female workers were told not to focus on their productivity levels and were ensured that this was not the factor being assessed. They were told that they needed to work at their regular pace. It was found that, when opportunities were allowed in which they could create relationships with each other, their productivity increased. Rest breaks were also introduced, as well as shorter workdays and workweeks. With the introduction of both of these changes in the workplace, the output of the participants increased. Upon the restoration of the original working conditions, however, it was found that the output remained relatively high. Productivity did not go down significantly as expected. It was therefore concluded that working conditions cannot be the only reason for productivity to increase (Hodgetts & Hegar, 2008).

In the third stage, the researchers turned their focus to human relations. In this stage, interviews were conducted with the participants. The information gathered focused on the effect that supervision had on the work environment. Even though the confidentiality of the data gathered was ensured, the nature of the questions turned out to be the reason for the stereotypical and guarded answers provided by the participants. Due to the standard answers received from the participants, the manner in which the questions in the interviews were structured had to be changed so as to be more indirect. The conclusion drawn from the data evaluation was that other team members did in fact influence performance. In order to attend to these findings in a more systematic manner, a fourth stage had to be introduced.

In the fourth stage, observations were made of the participants. The participants were all in one type of work situation and all worked together in one room. No change was brought about in their working conditions. The observations included that there were two cliques in the participant group within this one room. Each clique has its own set of norms and rules to which the members of the clique had to conform. In order for a member to fit into the clique, the clique member had to work according to these norms, even if it was to the detriment of his/her own and the company's performance. An informal production norm was also identified, and it was perceived that the output produced by the members was strengthened in some way.

Three conclusions were derived from the four stages of the Hawthorne Studies. The first one stated that an organisation ought not to be seen as only a formal structure that could be set out in an organogram. The workplace should also be viewed and understood as a social network in which people interact. Within this social setting, people look for acceptance from others, grant approval to others and find enjoyment in the work done due to the social exchange taking place when at work. The social interaction process taking place should not be underestimated.

The second conclusion was that people will tend to act differently when they are aware of the fact that they are being observed or “watched”. The third conclusion was that the quality of the supervision had an effect on the quality and quantity of the work being produced by the employees being supervised (Hodgetts & Hegar, 2008). Due to the Hawthorne Studies, a lot of interest was created in the Human Relations Theory. It should be noted that not all the findings of the study brought clarity to the field of I/O psychology and actually caused misunderstandings. In some cases the findings were queried and seen as limitations to the theory.

One of the findings of the Hawthorne Studies was based on happiness and productivity. It was stated that happy workers were seen to be productive workers. Behaviourists attacked these statements by labelling the findings naïve. The attack was so strong that the term “human relations” is now seen as being so stigmatised that some colleges refrain from using the term; they now prefer to refer to Organisational Behaviour (Hodgetts & Hegar, 2008).

The other misunderstanding was with regard to participation. The view on participation changed and it is now understood that employees not only want to be treated well, but also to be used well. People feel the need to want to contribute through their participation (Hodgetts & Hegar, 2008).

It was thought that motivation- and stress-related problems could be addressed through implementing what was learned from these three conclusions described above. It was found, however, that it is not sufficient to address these problems by:

- viewing an organisation as a social network in which people can look for acceptance and grant approval to others while interacting;
- noting that people act differently when they are aware that they are being observed; and
- ensuring that the quality of the supervision granted is of a high level, as it is said that this has an effect on the quality on the work produced.

With reference to an earlier comment made on a finding of this study as being too naïve, this theory views human behaviour at work in too much simplicity. Although the Hawthorne Studies, unlike Scientific Management, focused on a wider scope of elements affecting motivation and performance at work, it was still not wide enough and the need for a study or model that incorporates a holistic view of the various elements affecting performance, motivation and stress was necessary.

### **2.2.3 Two-factor theory**

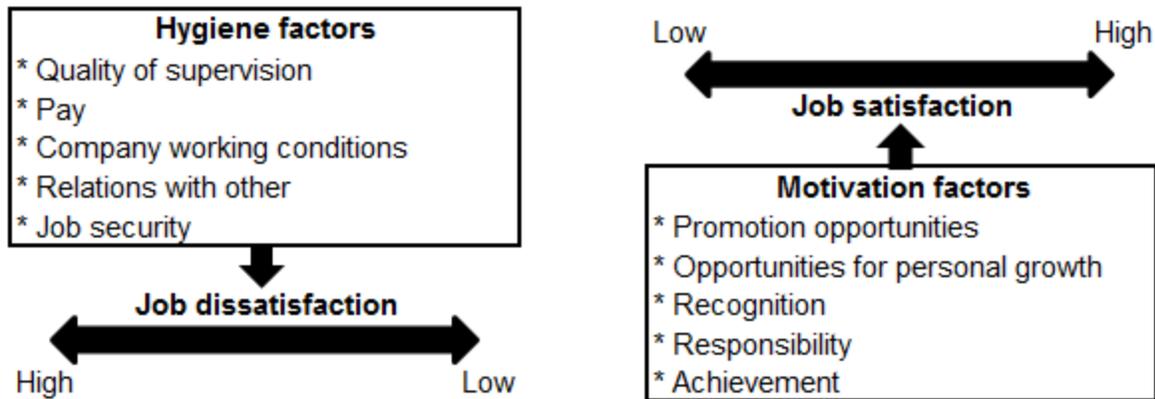
The two-factor theory of Herzberg suggests that employee satisfaction and motivation are driven by two sets of circumstances. These circumstances are seen to be independent from one another and are referred to as hygiene factors and motivator factors (Herzberg, Mausner & Snyderman, 1959).

It is argued that, in the absence of hygiene factors within a work context, employees will be unsatisfied at work. Hygiene factors are also known as dissatisfiers. An example of this would be that, where the quality of supervision or job security is low, employees will experience more job dissatisfaction.

Motivator factors are also known as satisfiers and, in the presence of these factors, employees feel good about their jobs. According to the two-factor theory, without the presence of the motivator factors, employees will perform their responsibilities on a required level; but with the presence of motivator factors, employees are likely to increase their efforts in exceeding the expected standard of performance at work (Herzberg et al., 1959). An example would be that, by adding recognition or promotion opportunities to a role, job satisfaction will increase.

Problems related to stress and motivation are addressed according to Herzberg's theory by ensuring that the employees are exposed to the right amount and combination of motivator and hygiene factors.

Although the theory has been challenged on the basis of the validity of distinguishing between the motivator and hygiene factors, the work of Herzberg has made researchers as well as HR practitioners aware of the potential to intervene in work contexts by addressing job satisfaction and motivation through job enrichment and job redesign (Grant, Fried & Juillerat, 2010). See Figure 2.1 for a representation of the two-factor theory model.



**Figure 2.1 Two-factor theory model**

Source: Collins (2014)

#### **2.2.4 Job Characteristics Model (JCM)**

The Job Characteristics Model is said to examine employees' responses to their jobs. Responses like sickness, absenteeism and job satisfaction are then seen as functions of job characteristics that are moderated by individual characteristics (Roberts & Glick, 1981). It is said that the Job Characteristics Model assumes that there is a linear relationship between wellbeing and job characteristics. The main job characteristics are:

- Skills variety;
- Task significance;
- Task identity;
- Feedback; and
- Autonomy (Hackman & Lawler, 1971).

Skill variety (vertical enrichment) is defined as the breadth of skills to be used in one's job (Hackman & Lawler, 1971) and the number of procedures and different activities involved in one's work (Morris & Venkatesh, 2010). It is said that, due to the elimination of boredom of work through skill variety, the perception of the meaningfulness of work is enhanced (Behson, Eddy & Lorenzet, 2000). Skills variety can be enhanced through the use of job enlargement and rotation, whereas job enlargement refers to combining work-related activities (so as to enhance the complexity of tasks), and job rotation refers to giving employees the opportunity to perform different jobs through using a variety of skills.

Task significance is defined as the perceived impact that one's job or responsibilities have on the lives/work of others (be these individuals at/outside the workplace) (Hackman & Lawler, 1971). As people have an inherent need to contribute to the welfare of the lives of others (Bremner & Carrière, 2011), managers play a very important role in highlighting the importance, the social utility as well as the purpose of work for employees (Morin & Gagné, 2009). In order to satisfy this need to contribute within people, an employee's work responsibilities should involve a satisfactory level of task significance (Morin, 2008). It is said that tasks and duties that have a social purpose would enhance the meaningfulness of work (Stone & Gueutal, 1985; Morin & Cherre, 1999, as cited in Morin, 2008).

Task identity refers to one's opportunity to complete a piece of work to the full (Hackman & Lawler, 1971). Humphrey, Nahrgang and Morgeson (2007) note that task identity assists employees in identifying the tangible results obtained upon the completion of tasks and duties within work responsibilities. By doing so, it is said that employees are more capable of understanding how their efforts contribute to the effective functioning of the broader system (be it a section of a business or the full business) of which they form part. One's understanding thereof makes work meaningful (Bremner & Carrière, 2011).

The job characteristic of feedback refers to the amount of information received with reference to the effectiveness of one's performance at work and with reference to its goals and progress (Hackman & Lawler, 1971). Employees value it being knowledgeable about their progress (Humphrey et al., 2007). Through the confirmation of employees' competencies and their developmental areas, work would seem to become more meaningful (Chu & Mondejar, 2011; Humphrey et al., 2007).

Autonomy is described as the degree to which one's job provides an extensive amount of freedom and the independence to direct one's behaviour to goals at work (Hackman & Lawler, 1971). In order for this to be possible or be enhanced, Lee (2008) advises managers to refrain from micro-managing. Autonomy plays an essential part in providing meaning to work (Deems, 1997, as cited in Chalofsky, 2003).

By combining these five core job characteristics, a Motivating Potential Score (MPS) can be calculated for a job. This score can be used as an index of how likely a job is to affect an individual's behaviours and attitudes (Your Coach, 2013). The calculation can be done by using the five main job characteristics described above:

$$\text{MPS} = [(\text{Skill Variety} + \text{Task Identity} + \text{Task Significance}) / 3] \times \text{Autonomy} \times \text{Feedback}$$

These core job characteristics influence job satisfaction as well as intrinsic work satisfaction. This is done through the achievement of the three critical psychological states (CPSs, Hackman & Lawler, 1971). These critical psychological states are called:

- Experienced *meaningfulness* of work,
- Experienced *responsibility* for the outcomes; and
- *Knowledge of results/outcome* of the work activities (Hackman & Lawler, 1971).

Meaningfulness is derived from referring to the skills variety, task identity and task significance. Responsibility as a psychological state can be derived from autonomy, and knowledge of outcome can be derived from feedback. These three psychological states are said to influence work outcomes such as absenteeism, job satisfaction and motivation at work.

In response to one of the disadvantages of Herzberg's Two-Factor Model, the Job Characteristics Model added an individual difference factor to the model. Since the Job Characteristics Model was introduced, many changes have been noted in the work environment. Oldham and Hackman (2010) suggest that the areas more fruitful for development in work design are social motivation and job crafting. According to the JCM, motivation- and stress-related problems at work can be managed by attending to the main job characteristics. The Job Characteristics Model places focus on the organisation's responsibility to manage job characteristics in order to enrich jobs, and does not refer to the influence that the employee could have on enriching jobs. Job crafting refers to the fact that employees have some control over their own roles within organisations (Oldham & Hackman, 2010). The Job Demands Resources Model, however, does make provision for this.

### **2.2.5 The Demand-Control Model (DCM)**

Research done in the field of occupational health has focused on viewing and researching job strains (health complaints, exhaustion and dissatisfaction) as a result of a disequilibrium between the demands faced by employees and the resources at their disposal within the workplace to manage these demands (Bakker & Demerouti, 2007). The DCM accounts for this thinking process and is founded on the psychosocial characteristics of work, such as the psychological demands of work and what is said to be a combined measure of task control and skill use (Karasek 1976, 1979; Karasek & Theorell, 1990).

According to the DCM, job strains are viewed as a result of high levels of job demands and low levels of job control (Karasek, 1979). The DCM was developed for work environments in which the stress levels are chronic, but not life threatening from the onset. The DCM can be applied in order to predict stress-related illness risks, as well as the active or passive behavioural correlates of jobs. Previously, the DCM was applied mainly in epidemiological studies of chronic diseases (such as coronary heart diseases) (Karasek, 1979). Empirical evidence shows that the specific combination of high levels of job demands and low levels of job control or decision latitude would lead to predicting psychological strains and/or illnesses (Karasek, 1979).

The DCM encompasses two different hypotheses, namely the strain hypothesis and the buffer hypothesis. The strain hypothesis concludes that the combination of high job demands and low job control would lead to adverse job strains, leading to psychological strains such as anxiety and depression. These stress-like reactions will occur when arousal is created due to challenging tasks, coupled with the restriction of not being able to make decisions.

The buffer hypothesis (also referred to as the active learning hypothesis) concludes that job control can moderate/buffer the negative effect/outcomes of high job demands on occupational wellbeing (De Jonge & Kompier, 1997; Van der Doef & Maes, 1999). In this case, learning and development are the predicted outcomes of the combination of demands and decision latitude. Through the growth and learning encouraged by the setting, work productivity is enhanced.

The literature provides substantial support for the strain hypothesis, but unfortunately the same cannot be said for the buffer hypothesis (Bakker & Demerouti, 2007). Figure 2.2 is a representation of the DCM and the four psychosocial categories of work, namely:

- High-strain jobs;
- Passive jobs;
- Low-strain jobs; and
- Active jobs (Wright, 2010).

The DCM can be applied to divide jobs and their associated stress levels into these four different categories in line with their particular demand-control combination.

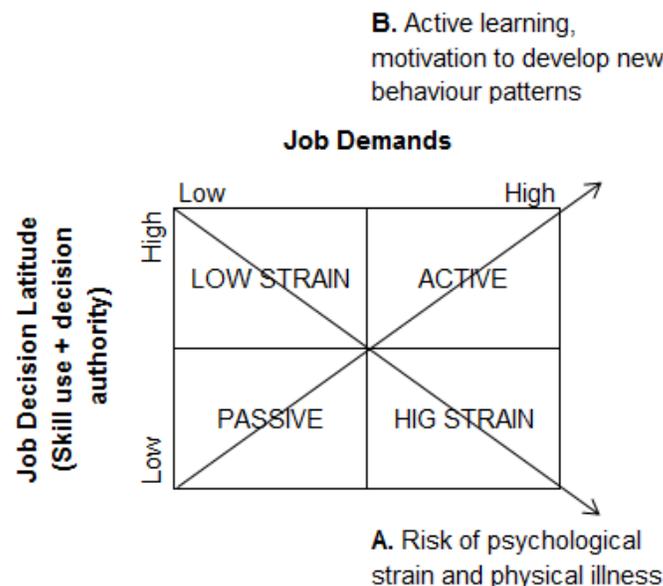
If a job would fall into the high strain job category, it is said that the job is characterised by high demands and low decision latitude (taking skill use and decision authority into consideration). These working environments are often seen to be inflexible and rigid in that employees do not

have the ability to take control over their stress at work. As a result, jobs falling into this category will lead to high levels of mental and physical illness.

Jobs falling into the passive category are said to be low in job decision latitude as well as in job demands. These types of jobs are often defined as unchallenging, unskilled and irrelevant. These jobs leave employees feeling unsatisfied, leading them to feel bored, and could lead to mental and physical illnesses.

Low-strain jobs are categorised by low job demands and high job decision latitude. These jobs therefore bring forth few psychological demands and high levels of control on the job. People employed in jobs falling into this category are expected to have higher levels of job happiness and health.

Active jobs are categorised by high demands and high job decision latitude. These jobs offer employees responsibilities that are challenging and relevant, in an environment that is flexible and in which decision making is possible. Stress levels are reduced for employees filling jobs falling into this category due to the possibility of continuously learning new skills because the environment fosters problem solving.



**Figure 2.2 Demands Control Model**

Source: (Wright, 2010)

Previous studies have applied the DCM in order to explain occupational wellbeing in the context of high job demands (Karasek, 1979; Karasek & Theorell, 1990). Although the DCM has attained a prominent position in literature, mixed empirical evidence is documented with regard to the model and its hypotheses (De Jonge & Kompier, 1997; De Lange, Taris, Kompier, Houtman, & Bongers, 2003; Taris, Kompier, De Lange, Schaufeli, & Schreurs, 2003; Van der Doef & Maes, 1999).

The most common conceptual criticism noted is that the DCM is too simplistic in nature and fails to capture the complexity of work when dealing with motivation- and stress-related problems at work (Bakker, Van Veldhoven & Xanthopoulou, 2010). The model fails to capture the complexity of the work environment as it only refers to control as a resource used to cope with demands at work. According to Johnson and Hall (1988), social support from colleagues or supervisors can also play an important part in being a resource to cope with job demands. It was the deemed failure of the DCM to accommodate the complexity of the working environment that accounted for the starting point of the JD-R model (Bakker & Demerouti, 2007).

### **2.2.6 The Effort-Reward Imbalance model (ERI)**

Siegrist's ERI model takes a different stance in relation to the structure of work than the DCM. Instead of referring to the control element in the structure of work, the ERI model focuses on rewards (Siegrist, 1996). In contrast to the DCM, the ERI model is grounded in the idea that job strain is a product flowing from an imbalance between efforts and rewards (Bakker & Demerouti, 2007). Within the context of the ERI model, effort refers to extrinsic demands felt in the workplace and the intrinsic motivation to attend to these demands, whereas rewards refers to factors such as salary, esteem (respect and support), career opportunities and job security.

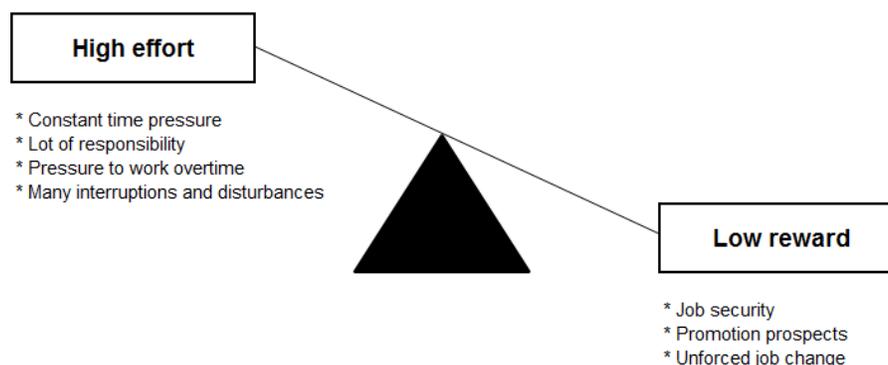
By utilising the ERI when addressing stress- and motivation-related problems at work, the ERI suggests that the ratio between efforts and rewards should be taken into consideration.

It was found that the imbalance between efforts (costs) and rewards (gains) were more frequently experienced with employees who were over- (or excessively) committed to their work roles (Kinman & Jones, 2008). According to Siegrist (2001), individuals who are overly committed to their responsibilities at work would respond inflexibly to situations where there is inequity between efforts and rewards. These individuals would more likely be prone to experience strain in the situation than an individual who is less committed. The basic assumption of this model is that high levels of effort and low levels of reward would lead to risk

factors for burnout and cardiovascular health (Bakker & Demerouti, 2007). The perceived imbalance between the two factors would lead to stress being experienced and will compromise occupational wellbeing in the long run (Siegrist, 2005).

A main differences between the ERI and the DCM is the personal element identified in the ERI model and the fact that the ERI model acknowledges the importance of taking a wider scope of job conditions (such as pay and career growth opportunities) into consideration (Kinman & Jones, 2008). The ERI model acknowledges that personality can also play a role in the interaction found between effort and rewards (Bakker & Demerouti, 2007). The psychological component, referring to the need to control, is added to the ERI model. For the purpose of factor analysis, two variables were identified, namely vigour and immersion. Vigour refers to a state of active effort with high levels of probability to receive positive feedback. Immersion refers to a state of exhaustion; where exhaustive coping reflects a frustrated, but continued, effort that is linked to negative feelings (Wigger, 2011).

An advantage of the application of the ERI model lies in that the ERI model expands the concept of control (as it is typically used in the DCM), as it includes job security and upward mobility (prospects for promotion). The limitation of the model, however, that the model only predicts the effects of the job conditions on cardiovascular heart diseases. The model lacks in the area of not hypothesising explicitly the effects of job conditions on psychological functioning, learning patterns and motivation (Wigger, 2011). Figure 2.3 provides a presentation of the ERI model.



**Figure 2.3 Effort-Rewards Imbalance model**

Source: Gilbert-Ouimet et al. (2014)

### **2.2.7 Conclusion and critique of the job stress and motivation models and theories**

The aforementioned models and theories have four overlapping problems, as set out by Bakker and Demerouti (2014). Bakker and Demerouti (2014) mention that these earlier models have mostly ignored each other's literatures and point out, in this regard, the JD-R theory, as an extension of the JD-R model, attempts to combine the literatures.

The four problems are linked to (a) the one-sidedness of the attention given to job stress or work motivation, (b) the simplicity of the models and theories, (c) the static character of the models, and (d) the limited flexibility of the models.

In summary, the DCM and the ERI both have evidence of weaknesses and strengths. Research done on these models seems to be very restricted in the sense that it incorporates a limited list of wellbeing antecedents (refer to the argument regarding the complexity of human behaviour made in Chapter 1). This list also proves to be limited in its possibility to be applicable in a wide variety of occupations (Bakker & Demerouti, 2007).

In contrast to the problems stated above, the JD-R model can be applied to a variety of occupations, as it acknowledges the fact that different occupations and working environments would foster different summations of job characteristics. The JD-R model also incorporates the positive outcomes obtained from the blend of job characteristics in a role. The JD-R model focuses on both the positive and negative sides of wellbeing – engagement and burnout. Since it considers both sides of wellbeing and is adaptable, the JD-R model can be used within a variety of occupational settings to manage occupational wellbeing (engagement and burnout) and performance (Bakker & Demerouti, 2007). As mentioned previously, this conclusion leads to the acceptance of using the JD-R model to explore a different environment to what it is generally used for, namely the e-commerce industry. The critique mentioned on the aforementioned theories and models supports the fact that the JD-R model should be utilised for assessing the relationships between job demands, job resources, personal resources, wellbeing and performance.

It is often seen that models and theories revolving around motivation do not take the literature regarding job stress into account. It is evident, however, that job stress significantly relates to work motivation (Bakker & Demerouti, 2014).

The DCM and ERI both also focus solely on the negative side of wellbeing (burnout, job strain and ill health) as the outcome variables mentioned and incorporated into the research and models (Bakker & Demerouti, 2007).

The second critique is that the models are perceived to be fairly simple. Bakker and Demerouti (2014) points out that the models and theories do not accommodate or consider other viewpoints.

In essence, the basic assumption embedded in the DCM and ERI models is that job strains (and in extreme cases, burnout) are the product of the interaction between high levels of job demands and low levels of either resources or rewards (Bakker & Demerouti, 2007). This assumption emphasises the simplicity of the models. This simplicity can be viewed as both a weakness and a strength of the job stress models. Bakker and Demerouti (2014) also confirm this statement, but see it mostly as the models' weakness. As stated previously, human behaviour cannot be seen as a random act; the behaviour of mankind is embedded in a complex nomological network of variables that need to be borne in mind when it is researched. The simplicity of these models does not correspond with this statement that human behaviour is complex. These models account for only a few variables to depict the complexity of the working environment and mankind's behaviour in this context. It is said by Bakker and Demerouti (2014) that the simplicity of the models does not do justice to the reality.

The models deem to be static in nature. In the DCM, autonomy is said to be the most important resource for employees. The reason for this being the most important resource, however, is unclear (Johnson & Hall, 1988). Bakker and Demerouti (2014) ask whether it is not possible that, in other work environments, other totally different job resources could be termed as the most important resources for employees. Is it not possible that, in e-commerce, inspirational leadership would count as the most important resource for employees, instead of autonomy?

It seems as if some job demands are again highlighted in the ERI as the most important job resources, while other aspects are neglected (Bakker & Demerouti, 2014). The Job Characteristics model focuses exclusively on five specific core characteristics. Although Hackman and Oldham had sufficient reason to highlight these five characteristics as the core characteristics or job resources for enrichers of one's work environment, Bakker and Demerouti (2014) state that it is fairly easy to identify other valuable job resources.

The last piece of critique refers to the fact that the nature of a job is constantly and rapidly changing. What was previously viewed as a contemporary job is rapidly becoming more and more complex. The influence of modern information technology on jobs is becoming increasingly evident and important for one to execute one's job, as it affect the functioning of the job (Demerouti, Derks, Ten Brummelhuis & Bakker, 2012).

The changing nature of jobs means that the work environment addressed by these models four or five decades ago (when these models were developed) has changed drastically. Nowadays, in order to retain employees, companies sometimes are forced to provide employees with alternative working conditions, due to the negotiating power situated within the employee. It would be ignorant to say that only these few factors identified in the four models need to be taken into consideration when describing the complexity of the contemporary job today (Bakker & Demerouti, 2014). Theories and models that are more flexible in the way in which they can accommodate relevant factors for the specific industry will be a more realistic representation of the reality at hand.

### **2.3 Job Demands-Resources theory**

The number of studies done on the JD-R model has increased during the past decade (Bakker & Demerouti, 2007; Demerouti & Bakker, 2011). Many new studies, new meta-analyses and propositions on the JD-R model have been added to the domain of Industrial Psychology (Nahrgang, Morgeson & Hofmann, 2011). Due to these additions to its research base, the model has matured into a theory (Bakker & Demerouti, 2014).

With the utilisation of the JD-R model, arguments, explanation and predictions can now be made regarding occupational wellbeing (including burnout, engagement, motivation and employee health). The JD-R theory can also be used to predict and understand job performance, with the view of performance as a consequence of wellbeing.

Due to the JD-R theory being an extension of the JD-R model, the fundamental building blocks of the JD-R theory and the JD-R model correspond (e.g. flexibility, having two processes and personal resources). The theories and models that went before the JD-R model and theory led the JD-R theory to incorporate the motivational and stress theory trends. Where it was previously perceived that HR practitioners are those focusing on interventions that are built on the stress theories and I/O psychologists/consultants are encouraging interventions that are built on motivational theories, the JD-R theory can assist in setting out interventions that have

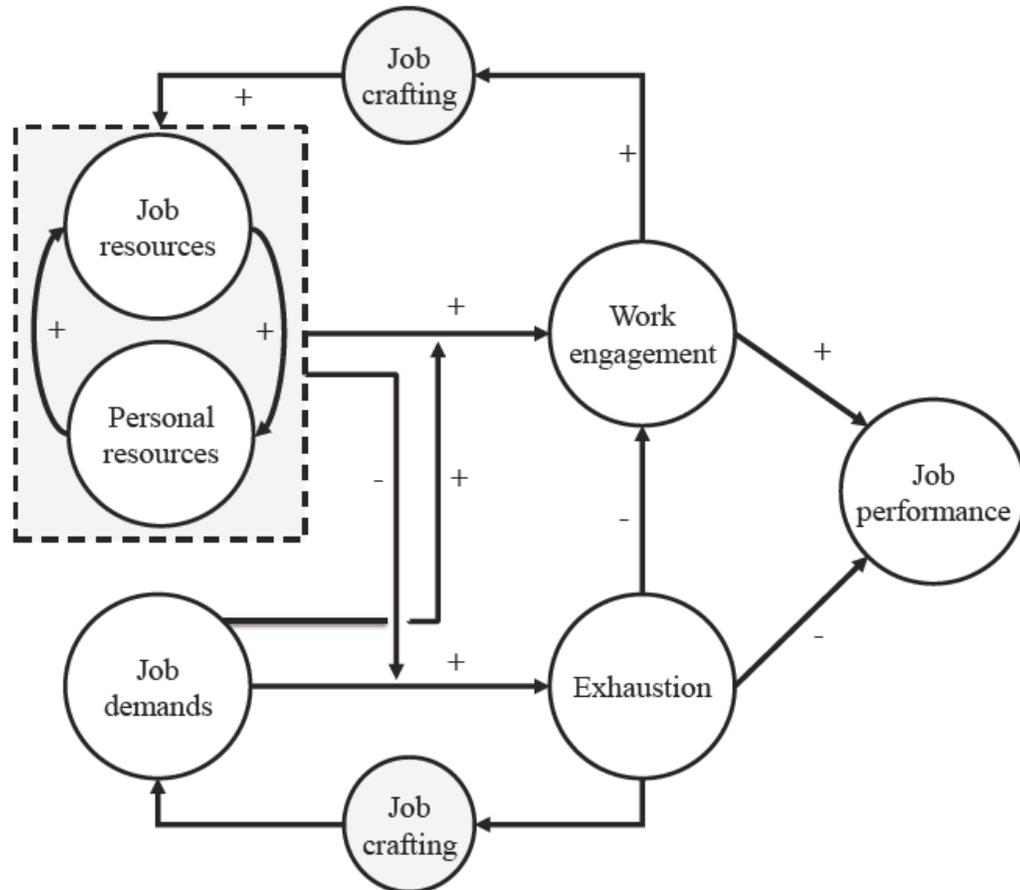
both the stress and motivational theories as foundation. The utilisation of this theory in the industry could have the potential of returning the power to the HR department to act as a strategic player in an organisation.

#### **2.4 Job Demands-Resources model (JD-R model)**

Demerouti and her colleagues introduced the JD-R model to I/O psychology in 2001 (Hakanen & Roodt, 2010). The first study on engagement (making use of the engagement measurement, the Utrecht Work Engagement Scale), followed one year after the introduction of the JD-R model (Schaufeli et al., 2002), after which studies on engagement made use of the JD-R model (as a theoretical basis) more frequently than any other model (Hakanen & Roodt, 2010).

With the increasing research base on the JD-R model, the model has been used to predict work enjoyment and organisational commitment (Bakker et al., 2010), burnout (Demerouti, Bakker, Nachreiner & Schaufeli, 2001), engagement (Bakker, Hakanen, Demerouti & Xanthopoulou, 2007), job performance (e.g., Bakker, Demerouti & Verbeke, 2004) and connectedness (Lewig, Xanthopoulou, Bakker, Dollard & Metzger, 2007). In order to establish a stable foundation for the study to take place, a theoretical overview of the JD-R model was undertaken.

The origin of the JD-R model can be traced back to the DCM, JCM and ERI models discussed above. The JD-R model was constructed by taking the limitations of these job stress models into consideration. The JD-R model can be seen as an empirical model that incorporates working conditions by viewing them as part of two distinctive categories, namely job resources and job demands (Hakanen & Roodt, 2010). According to the JD-R model, different levels of job resources and job demands can lead to an employee experiencing strain or feeling motivated. The JD-R model therefore influences occupational wellbeing. (See Figure 2.4 for a depiction of the JD-R model.)



**Figure 2.4** The Job Demands-Resources Model of Work Engagement

Source: Bakker & Demerouti (2014)

There are said to be two main assumptions to be drawn from the JD-R model. The first assumption is that, in any job in any industry, job demands and job resources will be found. These job demands and job resources, although they may vary from job to job, are called job characteristics. Rothmann, Mostert and Strydom (2006) confirm that differences were found between the perceptions of job demands and resources in different companies that were statistically significant. This is dependent on the unique working environment or industry to which the employee is exposed. The second assumption is that two relatively independent processes can be found within the JD-R model that lead to wellbeing, the first being the health impairment process and second the motivational process (Brauchli, Schaufeli, Jenny, Füllermann & Bauer, 2013). These processes are referred to as the dual processes.

Bakker and Demerouti (2014) note a third assumption made from the JD-R model, referring to the interaction of job demands and resources in the prediction of wellbeing. There are two possible ways in which job demands and resources have a combined effect on wellbeing. It is said that this interaction has an indirect effect on performance. In the first interaction, job and personal resources have a buffering effect on the effect that job demands have on burnout and, in the second interaction, job demands have a buffering effect on the impact resources will have on engagement and, indirectly, on performance (Bakker & Demerouti, 2014).

The various variables found in the JD-R model are elaborated on below. The dual processes depicted in the JD-R model are also discussed.

### **2.4.1 Performance**

In an ever-changing working environment, and with the growing technology and closer/smaller world due to social media, upholding the competitive advantage in the market through performance becomes non-negotiable. As mentioned in Chapter 1, this is unfortunately not something that can be attained by following a recipe. It can be argued that a large amount of HR costs in organisations are actually spent on measures and initiatives to ensure that employee performance increases over time (or at least stays constant).

It is often noted that performance is not incorporated into studies. This might be due to the difficulty obtaining access to the data and receiving the right to use it in studies, as well as the quality of the data. Performance data/reviews across most roles in organisations are done with some level of subjectivity, although most companies try to implement measures to limit this as far as possible. Unfortunately, rater bias and the halo effect are typical problems that may influence the data and make it less useful (due to the quality accuracy) for studies.

For the purpose of this study, performance will refer to the perceived quality level to which an employee performs his/her agreed upon and contracted responsibilities. Reference is made specifically to employee performance, and company performance is not referred to directly, although it is argued that employee performance will have an influence on company performance. The possible pitfalls, with reference to the utilisation of the performance data gathered, are acknowledged by the researcher.

## 2.4.2 Occupational wellbeing

When viewing occupational wellbeing, both engagement and burnout should be conceptualised. It is argued that the relationship between job resources, job demands and personal resources leads to either a state of engagement or burnout, or to increased/positive or decreased/negative performance.

Engagement and burnout are found to be moderately negatively related to each other. The correlations obtained ranged from  $-.30$  to  $-.65$  (Schaufeli, Taris & van Rhenen, 2008).

Both employee engagement and burnout are defined in more detail below.

### 2.4.2.1 Employee engagement

The need for research on positive organisational behaviour (POB) has been highlighted (Bakker & Schaufeli, 2008). POB research is defined by Luthans (2002) as the study and/or use of human resource strengths and psychological capacities that are positively orientated, and that can be measured, managed and developed in order to increase performance in today's working context.

Work engagement can be classified as a type of POB construct, as work engagement refers to a positive, work-related, fulfilling state of mind (Bakker & Demerouti, 2008). Engagement is characterised by the following constructs:

- Vigour,
- Dedication and
- Absorption (Schaufeli et al., 2002).

The construct termed "vigour" refers to high levels of energy and resilience while working. "Dedication" is characterised by being strongly involved in the work being done. It also refers to experiencing a sense of meaning, interest/enthusiasm and/or being challenged at work (Bakker & Demerouti, 2008). The term "absorption" refers to an employee being fully and happily captivated at work. For an absorbed employee, time would pass quickly at work, and detaching oneself from work would sometimes be something of a trial (Bakker & Demerouti, 2008).

Engaged employees portray high levels of energy and come across as enthusiastic about their involvement in their jobs (Bakker, Schaufeli, Leiter & Taris, 2008), referring to the vigour and absorption or the identification characteristic of engagement (Leiter & Bakker, 2010). While

being enthusiastic about their work, engaged employees would also be immersed in their work, to the extent that time would be experienced as flying (Bakker & Demerouti, 2008).

Through structured qualitative interviews done with a group of Dutch employees from a variety of occupational settings (all tested on the Utrecht Work Engagement Scale), it was found that engaged employees show high levels of self-efficacy and energy (Schaufeli et al., 2001, as cited in Bakker & Demerouti, 2008). The group of employees indicated that these feelings helped them to influence events outside of their direct lives that can and will affect them. Their positive energy and attitudes towards activities within their environment influenced the way they ultimately created their own recognition or feedback. The positive attitudes of these engaged employees flew over into activities outside of their work (Bakker & Demerouti, 2008).

However, engaged employees are not immortal supermen with endless power and willpower. They also become tired after a tough day at work. The difference comes in the perception of this feeling. Engaged employees perceive this feeling of tiredness as a pleasant state, as they link their feeling of tiredness to the day's positive accomplishments (Bakker & Demerouti, 2008).

Although the three constructs characterising engagement might lead one to think that engaged employees could in fact be workaholics, Bakker and Demerouti (2008) state that engaged employees are not addicted to their work. Engaged employees easily find enjoyment in activities outside of their work. Workaholics work hard due to their unstoppable and intense inner drive to work hard. To engaged employees, work is something they participate in or spend time on because they experience it as fun (Bakker & Demerouti, 2008). Workaholism is categorised as consisting of the following three constructs:

- Work involvement,
- Inner drive and
- Work enjoyment (Burke & MacDermid, 1999).

Croston (2008) mentions that employee engagement refers to a measure of what people are thinking and sensing when they arrive at work. These feelings and thoughts, in turn, determine the amount of discretionary effort they are willing to invest in their tasks at work. Traditional motivation studies view employees as being either "on" or "off"; due to external rewards and internal drives, employees are either motivated to work or not. The implication of following this train of thought leads to viewing employees' motivational levels as uncomplicated (Hackman & Oldham, 1980).

### 2.4.2.2 Burnout

A concrete definition of burnout could not be found in the literature, although a wide range of opinions could be found on the subject. Burnout is often used as a term that explains a state of mental weariness (Schaufeli, Taris & Van Rhenen, 2008) or is defined by a “work-related” state of mind (Maslach et al., 2001).

Burnout can be defined by making reference to its three key dimensions, namely:

- Emotional exhaustion,
- Depersonalisation (cynicism) and
- (Reduced) personal accomplishments (professional efficiency) (Maslach et al., 2001).

If an individual claims to be experiencing burnout, he or she is most probably experiencing a sense of emotional exhaustion. Exhaustion can be regarded as the central element of burnout and is easily seen in an employee’s behaviour (Maslach et al., 2001). The dimension of depersonalisation can also be referred to as cynicism. Due to the exhaustion manifesting in individuals experiencing burnout, they can choose to ignore others in the working environment with whom they might come into contact. This will involve them deliberately putting distance between themselves and their co-workers, for instance to cope with their feelings of exhaustion (Maslach et al., 2001). Reduced personal accomplishment can be seen as a more complicated dimension of burnout. As exhaustion and depersonalisation have the tendency to interfere with effectiveness, the individual’s personal accomplishments become reduced (Maslach et al., 2001).

Exhaustion and cynicism are referred to as the core components of burnout by Green, Walkey and Taylor (1991). The correlations between professional efficacy and cynicism and professional efficacy and exhaustion are relatively low. It was noted that professional efficacy has a different correlation pattern with work-related variables (Lee & Ashforth, 1996). Van Horn, Schaufeli and Enzmann (1999) indicate that, for educators or teachers, the interaction with learners is the most important predictor of burnout.

According to the study done by Schaufeli et al. (2008), burnout can also be seen as a separate construct from workaholism. Maslach (1986) mentions that workaholism can be viewed as the root of burnout. It is said that people working excessively in a frantic manner will ultimately use up their mental resources, resulting in them feeling “burned out” – referring to the feeling expressed when suffering from burnout.

### 2.4.3 Job resources

Job resources refer to those psychological, social, physical or organisational aspects of a job that are either (a) functional for the achievement of work goals; (b) able to reduce job demands and the relevant physiological and psychological costs; and/or (c) able to stimulate personal growth, development and learning (Bakker & Demerouti, 2007).

Job resources can be divided into different levels. On an organisational level, job resources can be classified as career opportunities and as job security. On an interpersonal level, they can be classified as supervisor or co-worker support and team culture. The third level is called the organisation of work level of job resources. This level refers to job resources as role clarity and the opportunity to be able to participate in decision making at work. The last level that job resources can be classified as is called the task level, in which task identity and autonomy can be classified as job resources (Rothmann et al., 2006).

It is also said that job resources can play either an intrinsic or extrinsic motivational role in an organisation. They can play an intrinsic role as they foster employee growth and development, and can play an extrinsic role in that the job resources are instrumental in achieving work goals (Bakker & Demerouti, 2008). Job resources have an intrinsic motivational role in that they assist in the fulfilment of basic human needs. Examples of these needs are autonomy and competence (Deci & Ryan, 1985). In this case, sufficient feedback to an employee would foster learning and then increase job competence, which can be seen as a basic human need. The extrinsic motivational role of job resources can be seen in a situation where the actual work environment fosters the willingness of employees to dedicate their efforts and abilities to their work responsibilities (Meijman & Mulder, 1998). An example of this is where the feedback on work done is of such a nature that it increases the likelihood of attaining work goals successfully. In either of the cases, the effect of the job resources on engagement is positive and a level of engagement is likely to occur (Schaufeli & Bakker, 2004).

Brauchli et al. (2013) note that studies on the JD-R model have shown that variables that are found to be significant job resources for the majority of employees are (a) opportunities for development and learning (advancement and/or growth opportunities) and (b) feedback on performance (organisational support).

Additional examples of job resources are: (social) support from supervisors and/or colleagues; feedback regarding performance; autonomy; and positive learning opportunities and skill variety (Bakker & Demerouti, 2008).

In this study, job resources are made up of the following:

- Organisational support;
- Growth opportunities; and
- Advancement.

#### **2.4.4 Personal resources**

Personal resources refer to those intrinsic resources brought to the working environment by the employee self. According to Hobfoll (1989), personal resources may also refer to a determinant of an individual's ability to adapt to a working environment, and are linked to the job resources provided in the environment. Hobfoll, Johnson, Ennis and Jackson (2003) mention that personal resources are seen to be the positive self-evaluations linked to the individual's resiliency. They link to the individual's perceived ability to control his or her immediate environment.

Discussions on engagement revolve around *what* the employee does and *how* he or she does it, but it is this factor of personal resources that brings the focus back to *who* the person is in the workplace.

With a view on the Five-Factor Model of Personality (FFM) and its relationship with engagement, it was found that it is due to the FFM's characteristic of stability that the relationship with engagement (wellbeing) can be investigated. The five factors of personality have been found to be rather "stable" within individuals during their adult years, although some flexibility is expected. It is argued by Ashton and Lee (2007) that the six-dimensional framework of personality, the HEXACO, can be viewed as an alternative model to the FFM. The FFM refers to personality consisting of five key dimensions, namely openness to experience, conscientiousness, extraversion, agreeableness and neuroticism. The HEXACO divides personality into six dimensions, being honesty-humility, emotionality, extraversion, agreeableness, conscientiousness and openness to experience. The HEXACO will be used in this study to measure personality.

Through an investigation of findings made by researchers in previous studies, the following personality dimensions were investigated individually as personal resources.

- Extraversion;
- Neuroticism (emotionality)
- Agreeableness; and
- Conscientiousness.

#### **2.4.5 Job demands**

Job demands refer to “those physical, psychological, social, or organisational aspects of the job that require sustained physical and/or psychological (cognitive and emotional) effort or skills and are therefore associated with certain psychological cost” (Bakker & Demerouti, 2007, pp. 312). Stated differently, job demands refer to the tasks in the workplace that simply need to be concluded/completed (Schaufeli, Bakker & Van Rhenen, 2009).

This definition of job demands expands the view/definition of job demands as composed in the DCM to include the unique work characteristics of any occupational setting. Job demands should not essentially be seen as negative, but, in the case of demands needing a certain amount of effort from which an employee has not yet recovered, job demands can turn into job stressors (Sonnentag & Zijlstra, 2006, as cited in Schaufeli et al., 2009).

Examples of job demands are work pace and role ambiguity (Clausen & Borg, 2011). In this study, the following job demands are investigated:

- Job overload; and
- Job insecurity.

#### **2.4.6 Job crafting**

Employees have the ability to change the design of the jobs they are employed to do through actively choosing tasks, assigning meaning to these tasks and negotiating different job contents (Parker & Ohly, 2008). This process of shaping or changing jobs can be referred to as “job crafting” (Wrzesniewski & Dutton, 2001).

Job crafting can be defined in terms of the cognitive and physical changes individuals/employees make to their task/jobs. Cognitive changes refer to the perception an individual has regarding his/her job/tasks. Physical changes refer to the changes made to tasks or a role in the form of the task scope or the number of tasks (Bakker & Demerouti, 2014).

The effect of the existence of job crafting is in itself not definitely “good” or “bad”; it all depends on the situation in which the job crafting takes place and to what extent it actually takes place (Wrzesniewski & Dutton, 2001). According to Wrzesniewski and Dutton (2001), three different individual needs lead to the motivation to participate in job crafting. It is said that the need to take control of various aspects of work in the quest to avoid the negative consequences (e.g. alienation from work) is one of the individual needs that affect the motivation of an employee to actively craft a job. Employees will actively participate in job crafting in order to enable the expression of a more positive sense of self and confirmation by peers/co-workers. The third individual need that will lead to an individual crafting a job is the need to fulfil the basic need of connection to others (Wrzesniewski & Dutton, 2001). These three individual needs all underline the motivation within employees to actively participate in the process of job crafting (Wrzesniewski & Dutton, 2001).

According to Tims, Bakker, and Derks (2012), job crafting can take place in the form of four different behaviours, namely:

- Increasing structural job resources;
- Increasing social job resources;
- Increasing challenging job demands; and
- Decreasing hindrance job demands.

## **2.5 The dual processes**

As described above, the JD-R model shows that occupational wellbeing (burnout and engagement) is related or linked to a variety of workplace characteristics. These characteristics can be conceptualised as either job demands or job resources. Under the circumstances of an overload of job demands and limited job resources, employees can experience an energy-draining effect. This effect is fuelled by a stress process (Hu et al., 2011). In the presence of high levels of job demands, but also high or sufficient levels of job resources, positive work outcomes would come from employee performance. These outcomes would originate from a motivational process (Hu et al., 2011).

The theoretical framework of the JD-R model can be seen to integrate two fairly independent research traditions, namely the stress research tradition and the motivational research tradition (Demerouti & Bakker, 2011).

The stress process or health impairment process refers to the widely found situation where poorly planned jobs or lingering (excessive) job demands (for example emotional demands or work overload) have an exhausting effect on an employee's mental, emotional and physical inner resources, and this effect ultimately leads to decreased levels of energy (exhaustion) and health problems (Bakker & Demerouti, 2007). Job demands are the initiators of the stress process (Demerouti & Bakker, 2011).

The motivational process found in the JD-R model assumes that the job resources in the working environment have motivational potential. These resources can influence an employee to portray high levels of engagement, low levels of cynicism and high levels of performance (Bakker & Demerouti, 2007). The existence of job resources can play an intrinsic and an extrinsic motivational role in employee performance and activities. The extrinsic motivational role is instrumental in attaining work goals, and is an intrinsic motivator in that it encourages development, growth and learning in employees (Bakker & Demerouti, 2007). To add to this analogy, job resources play a fulfilling role in addressing basic human needs (Deci & Ryan, 1985). Job resources are the initiators of the motivational process (Demerouti & Bakker, 2011). It is the fact that it has become increasingly more difficult for organisations to maintain success that is driving managers and HR practitioners to understanding what drives motivation on an employee level in order to understand the impact it has on performance.

It was due to the motivational process embedded in the JD-R model that Demerouti, Bakker and Fried (2012) chose to utilise the JD-R model in order to examine the role of work orientation (intrinsic and extrinsic) in job characteristics, influencing employee motivation and/or health. The JD-R model can account for the job characteristics (job resources) and the processes (the motivational process) used in this study.

## **2.6 Relationships between variables in the JD-R model**

As a conclusion to the literature review of the relevant factors depicted in the JD-R model, the relationships between the factors will now be elaborated on. The hypotheses for the study will flow from these reviews.

Under the relevant subsection, work engagement will be discussed and referred to as the antipode of job strains or, in the extreme case, burnout. The link between burnout and engagement, as part of occupational wellbeing, is emphasised by Bakker et al. (2008), who

point out that it is research on burnout that has motivated the most current research on work engagement.

### **2.6.1 The relationship between occupational wellbeing (engagement and burnout) and performance**

Taking the three elements of engagement into consideration, an engaged employee has focused energy that is directed towards achieving goals (Bakker, 2011). This type of energy directed towards work is not found in burned-out employees. Engaged employees are dedicated, absorbed and vigorously involved in their work. It is argued that engaged employees are prone to work harder (than employees experiencing burnout) in their roles, not because they are forced to, but because they are happily engrossed in their work and find a healthy enjoyment in the challenges of attending to their daily tasks and responsibilities.

In this study, performance is defined as the individual's ability to attain and maintain the expected outputs in their responsibilities linked to their role. An individual may be viewed as rendering a service to his/her employer that is on the expected "good and competent" level, but it should also be noted that the service rendered may be above the expected level. In this case, the employee is viewed as showing high levels of performance within their role. The opposite is also true where the service rendered can be perceived to be below what is expected, referring to low levels of performance.

Schaufeli (2011) explains that engaged employees are better performers at work due to being intrinsically motivated to do their jobs/tasks.

In a study conducted by Bakker, Demerouti and Verbeke (2004) it was shown that employees who are engaged received higher in-role and extra-role performance scores from their co-workers. These findings show that engaged employees in fact perform well and are willing to go the extra mile in their work. A study done on a sample of Dutch employees again showed that in-role performance related positively to engagement, whereas it did not show the same with workaholism (Schaufeli, Bakker & Salanova, 2006). Gierveld and Bakker (2005) support the findings of the previously mentioned two studies. They found that engagement is related to high in-role and extra-role performance by secretaries. In addition, it was interesting to note that they mentioned that these engaged employees had more influence on the daily business taking place in the organisation.

To conclude, in a study done on school principals by Bakker, Gierveld and Van Rijswijk (2006), they also found that there were positive associations between engagement and performance and leadership scores given to the principals by the teachers. By referring to the above studies, it can be hypothesised that engagement will influence performance positively.

Due to engagement being the antipode of burnout, it is argued that these two constructs would have opposite influences on performance. It therefore is argued and hypothesised that burnout will influence performance negatively.

In conclusion, for the purpose of this study, engagement will be defined by vigour, dedication and absorption. Burnout will be defined by emotional exhaustion, depersonalisation and reduced personal accomplishment. Performance refers to the quality and quantity of the job and responsibility outputs produced by the employee.

**Proposition 1:** Engagement has a significant positive influence on performance.

**Proposition 2:** Burnout has a significant negative influence on performance.

### **2.6.2 The relationship between job resources and occupational wellbeing (engagement and burnout)**

As per the arguments drawn from the literature models and reviews based on the JD-R model, the relationship between job resources and occupational wellbeing was investigated and tested.

As noted previously, job resources seem to be motivational in nature (linking to the motivational process found in the JD-R model). Bakker (2011) notes that job resources enable employees to deal effectively with job and environmental demands. It is argued that this ability allows employees to remain positive and motivated in their jobs, referring to them being engaged.

As depicted in the JD-R model, job resources are crucial antecedents of work engagement. Without job resources, employees would not be able to channel their attention to their work or experience engagement, because they would be too occupied with dealing with the immediate demands and consequent strain of the job. The idea that variations in job characteristics or job resources may have different effects on occupational wellbeing is not a new one and has been investigated in several studies (Tims, Bakker & Derks, 2013).

A study done on a sample of Dutch employees found a positive relationship between job resources (feedback on performance, social support and coaching from supervisors) and

engagement (Schaufeli & Bakker, 2004). This specific study was replicated with a Finnish sample group. In this study, it was found that the job resources of job control, support from supervisors and a social climate were positively related to engagement (Hakanen, Bakker & Schaufeli, 2006).

Bakker, Demerouti and Schaufeli (2003) noted that several job resources (support from colleagues, feedback from performance and coaching received from a supervisor) lead to engagement. Being exposed to what is termed job resources at work, such as a positive workplace environment and having role autonomy (Crawford, LePine & Rich, 2010), will increase engagement, commitment and performance at work (Nahrgang, Morgeson & Hofmann, 2010). In an evaluation done on a group of employees in a large work force, Hackman, Pearce and Wolfe (1978) evaluated the effect of specifically a job redesign intervention has on occupational wellbeing. It was found that because of the innovation in the fields of technology, affecting the employees' work, jobs were in effect redesigned due to the implementation of these technological functions. The newly implemented technology made some of the jobs more complex where as some of the jobs were made simpler and the challenges linked to the job decreased. The results obtained from the study proved that employees' who's job became enriched, more challenging and more complex in a healthy manner, reported higher scores of internal work motivation and growth satisfaction (engagement). In contract to this, the group whose work became simpler and less challenging (de-riched) obtained lower scores on internal work motivation and growth satisfaction (Hackman, Pearce & Wolfe, 1978).

In 2009, Schaufeli et al. investigated the relationship between job resources and occupational wellbeing. They conducted a two-wave longitudinal study with a group of managers and found that the changes in job resources did in fact contribute to the changes seen and noted in occupational wellbeing. It was specifically noted that an increase in social support and performance feedback (referring to organisational support), opportunities to learn (referring to growth opportunities) and autonomy lead to higher scores for employees on engagement within a year's time. In this study it was noted that, when job resources increased, employee engagement and satisfaction increased (Schaufeli et al., 2009). With reference to the above-mentioned studies, it is hypothesised that job resources will have a positive influence on engagement.

Rothmann et al. (2006) note that, although there are many studies on the predictors (job demands) of occupational wellbeing, little research exists that focuses on the specific job resources influencing occupational wellbeing, specifically in South African organisations.

Brauchli et al. (2013) also confirm that the correlation between job resources and engagement is stronger than the relationship between job demands and engagement.

Previously conducted studies refer to the link between job resources and burnout as the negative indicator of occupational wellbeing. In a South African study done on educators, it was found that a lack of growth opportunities and control are seen as major predictors of the emotional exhaustion factor in burnout (Jackson & Rothmann, 2005). In the study conducted by Schaufeli et al. (2009) it was found that a decrease in job resources brought about an increase in burnout. Bakker et al. (2007) also confirmed these findings and stated that high levels of job resources will protect an individual from burnout. Brauchli et al. (2013) noted that job resources are associated with burnout. They even noted that this specific relationship was stronger than what was usually found in other cross-sectional and longitudinal studies of the JD-R model. With reference to the above-mentioned studies, it is hypothesised that job resources will have a negative influence on burnout.

As per the discussion of the interaction between job demands and resources, it should also be noted that the possibility exists that job demands might play a moderating effect on the relationship found between job resources and engagement. This moderating effect was not assessed within this study. Should it occur to the researcher that the hypotheses formulated with regard to job resources and engagement would be rejected (which does not take this moderating effect into consideration), the possibility of the rejected hypothesis to emphasise the possible moderating effect of job demands on the relationship will be noted.

Job resources boost growth, development and engagement, and ultimately increase job performance (Xanthopoulou, Bakker, Demerouti & Schaufeli, 2007). For the purpose of this study, job resources will incorporate (a) organisational support, (b) growth opportunities and (c) advancement. As a whole, these three job characteristics will be investigated as job resources as depicted in the JD-R model.

**Proposition 3:** Job resources have a significant positive influence on engagement.

**Proposition 4:** Job resources have a significant negative influence on burnout.

### **2.6.3 The relationship between personal resources and occupational wellbeing (engagement and burnout)**

Studies on personality as a predictor of work outcomes have been done for decades (Wefald, Reichard & Serrano, 2011). On the negative side of work outcomes, Salgado (2002) found all factors of the FFM to be predictors of employee turnover. Using the Big Five taxonomy, Meng and Li (2004) managed to link performance to job satisfaction and organisational commitment. With this said, the JD-R model incorporates the elements of engagement and burnout in this relationship between personality and work outcomes (performance). It is argued by Wefald et al. (2011) that many studies (although important within the scope of I/O psychology) miss out on the significant concept of engagement as the link between personality and work outcomes (as performance).

Researchers have documented various findings related to engagement and burnout and a range of different personality characteristics and affects.

In a study done by Rothmann and Storm (2003) on a sample group of South African police officers, it was found that engaged employees are problem-focused, make use of an active coping style and take active steps in attempting to remove stressors. Xanthopoulou et al. (2007) found that engaged employees seem to be self-efficacious and believe that they can gratify their needs through participation in roles within the organisation. Bakker, Gierveld and Van Rijswijk (2006) found that, in a study done on only female school principals, those candidates with the most personal resources in their make-up scored the highest with regard to engagement.

Xanthopoulou et al. (2007) mention that engaged workers can capitalise on a variety of personal resources, which reflect a fundamental component of the person's adaptability.

It is seen that, due to the different types of personalities, certain employees (personalities) will have a tendency to be either engaged or not engaged at work. This will have an influence on their level of commitment and the work outcomes (performance) (Wefald et al., 2011).

Bakker, Demerouti and Sanz-Vergel (2014) mention that a few studies indicate the likelihood of personality (personal resources) playing a significant role in the formulation of burnout. Schaufeli and Enzmann (1998) noted that, at the time, within the more than 100 studies dedicated to burnout literature, one, and in some cases two, constructs related to personality variables were included. Examples were locus of control, achievement motivation and

hardiness. Within the meta-analysis conducted by Alarcon, Eschleman and Bowling (2009) it was shown that personality or personal resources are related to burnout.

Alarcon et al. (2009) found evidence within their meta-analysis for the relationships between the lower-order personality factors and the personality factors described in the FFM and the HEXACO with burnout. Within this meta-analysis it was found that four of the dimensions of personality consistently were proven to have a significant negative relationship with burnout. Emotional stability (emotionality as referred to by the HEXACO), extraversion, agreeableness and conscientiousness all proved to be negatively related to the three dimensions within burnout. Due to the relationship between personal resources and engagement, according to Bakker and Demerouti (2014), the assumption can be made that these personal resources would also have a relationship with engagement. It was found that emotional stability stood out as the most noteworthy predictor of depersonalisation and exhaustion, and extraversion was highlighted as the most important predictor of the dimension personal accomplishment, found within burnout (Alarcon et al., 2009).

In a relatively recent review of the literature done by Mäkikangas, Feldt, Kinnunen and Mauno (2013), it was noted that, of the Big Five personality factors, extraversion, conscientiousness and emotional stability were the factors that consistently were related to engagement. Their review focused on the relationship between engagement and individual factors/variables.

In DeNeve and Cooper's (1998) meta-analytic results it was revealed that there was a negative relationship between neuroticism and engagement. With neuroticism being at the opposite end of the spectrum of emotional stability or emotionality, it can be argued that emotionality will have a positive influence on engagement.

It was found by Wefald et al., (2011) that individuals with high levels of extraversion will report higher levels of absorption and vigour in their work – referring to two dimensions of work engagement. In a study conducted by Langelaan, Bakker, Van Doornen and Schaufeli (2006), the relationship between extraversion and engagement was found to be significant. Diener and Lucas (1999) also noted that extraversion was a strong predictor of engagement. It is hypothesised that, as the personal resources (such as extraversion) grow stronger and bigger, engagement will increase within employees.

It was noted that individuals with higher levels of conscientiousness will report to have higher levels of dedication, again referring to a dimension of engagement (Wefald et al., 2011).

Christian, Garza and Slaughter (2011) show that conscientiousness is positively related to engagement. Kim, Shin and Umbreit (2007) found within their study in the hospitality field that conscientiousness is positively related to professional efficacy. Conscientiousness refers to an individual's dependability. This personality dimension, according to Barrick and Mount (1991), is the most important factor in predicting job performance. Individuals with high levels of conscientiousness therefore tend to possess higher levels of an achievement-striving motivation (Kim, Shin & Swanger, 2009). The three factors of engagement, being vigour, dedication and absorption, are part of this internal drive or striving to achieve goals. It therefore can be expected that conscientiousness will affect engagement through the internal motivational process they have in common (Kim et al., 2009). For the purpose of the study, it is hypothesised that conscientiousness will have a positive influence on engagement.

As per the discussion of the interaction between job demands and resources, it should also be noted that the possibility exists that job demands might have a moderating effect on the relationship found between personal resources and engagement. This moderating effect was not assessed within this study, but should it occur to the researcher that the alternative hypotheses formulated with regard to personal resources and engagement would be rejected (which does not take this moderating effect of job demands into account), the possibility of the rejected hypothesis to emphasise the moderating effect of job demands on the relationship will be noted.

From the abovementioned studies it is clear that the relationship between the four personal resources, namely extraversion, emotionality, conscientiousness and agreeableness, and occupational wellbeing were the most evident. It is for this reason that attention will only be paid to use these four personality traits as personal resources.

For the purpose of this study, personal resources will refer to (a) extraversion, (b) emotionality, (c) conscientiousness and (d) agreeableness. All four personality dimensions will be dealt with individually.

**Proposition 5:** Extraversion has a significant positive influence on engagement.

**Proposition 6:** Extraversion has a significant negative influence on burnout.

**Proposition 7:** Emotionality has a significant positive influence on engagement.

**Proposition 8:** Emotionality has a significant negative influence on burnout.

**Proposition 9:** Conscientiousness has a significant positive influence on engagement.

**Proposition 10:** Conscientiousness has a significant negative influence on burnout.

**Proposition 11:** Agreeableness has a significant positive influence on engagement.

**Proposition 12:** Agreeableness has a significant negative influence on burnout.

#### **2.6.4 The relationship between job demands and occupational wellbeing (engagement and burnout)**

The JD-R model assumes that every job would have various job demands embedded in the elements that employees need to deal with on a daily basis. These job demands are viewed as risk factors and are associated with job stressors (Bakker & Demerouti, 2007). Rothmann et al. (2006) say that every occupation (and every organisation) will have its own set of risk factors affecting occupational wellbeing.

Job demands refer to the aspects of a job that require a level of physiological and/or psychological costs from the employee (Bakker & Demerouti, 2007). Job demands are not necessarily negative factors, and are viewed in line with the health impairment process as one of the dual processes depicted in the JD-R model.

Various researchers refer to the relationship between job demands and burnout, or the feeling of being exhausted, being emotionally overloaded and experiencing impaired health. Research has shown that exposure to job demands, be it role overload, emotional strain or physical constraints, increases burnout in employees and decreases performance (Nahrgang et al., 2010).

Karasek (1979) mentions that evidence shows that job demands (particularly in combination with low job control) are predictors of psychological strain and illness. Doi (2005) showed that job demands (e.g. emotional demands and role ambiguity) may lead to exhaustion and impaired health. Zapf, Vogt, Seifert, Mertini and Isic (1999) say that emotional overload has an effect on the burnout levels of employees in call centres. Work overload and the perceived lack of autonomy again have an influence (as a stressor) on occupational wellbeing for production workers (De Jonge & Kompier, 1997). Jackson and Rothmann (2005) found in a study done in South Africa that job overload as a job demand can be seen as a predictor of the exhaustion element in burnout.

According to LePine, Podsakoff and LePine (2005), job demands that are perceived to be hindering are also perceived to be stressful, as they place unnecessary pressure on personal growth and optimal functioning. Schaufeli et al. (2009) note that the exposure to these job demands may increase an individual's experience of burnout, as the individual needs to invest a considerable amount of resources in order to cope with these (hindering) demands.

It is argued that being exposed to chronic levels of job demands will lead to an employee feeling or being exhausted (in mental and physical resources). This state of exhaustion would lead to the depletion of energy levels and, ultimately, to burnout (Leiter, 1993). In reference to the above findings, it is argued in this study that job demands have a positive relationship with burnout.

Brauchli et al. (2013) also note that job demands are associated with burnout. They also refer to the relationship between job demands and engagement and note that the correlation between job demands and engagement is negative, which is in line with the assumptions made by the JD-R model. In reference to this, it is argued that job demands will have a negative relationship with engagement.

It should be noted that Crawford et al. (2010) found somewhat contrasting evidence to what is reported above. In a meta-analysis conducted by these authors it was reported that what they termed "challenging demands" were positively related to engagement as well as burnout. LePine et al. (2005) note that these challenging demands are those job demands that are responded to actively and through a solution-orientated method. In these cases where an individual is faced with a challenging demand, the individual will be motivated to work harder at attaining goals, as he/she has a good expectation of the reward to follow if success is achieved. It should be noted that the individual will still grow tired as the necessary effort is still being exerted to attain goals when facing these demands.

As per the discussion on the interaction between job demands and resources, it should be noted that the possibility exists that job resources and personal resources might play a moderating effect on the relationship between job demands and burnout. This relationship was not assessed within this study, but should it occur to the researcher that the hypotheses formulated would be rejected (which does not take this moderating effect into consideration), the possibility of the rejected hypothesis to emphasize the possible moderating effect of job resources and/or personal resources on the relationship will be noted.

In conclusion, job demands make a big impact on occupational wellbeing (including burnout and engagement) (Bakker & Demerouti, 2007). As per the research findings stated above, the relationship between job demands and engagement was investigated. It is however noted that the effect of what Crawford et al. (2010) found in their meta-analysis might also be seen in this study, but the strongest assumption is that the hypotheses above will be accepted. It is due to these findings that job demands will not be investigated as a whole, but rather as two specific job demands identified to be prevalent in the e-commerce industry.

As stated previously, the following job demands are investigated for the purpose of the study: (a) job overload and (b) job insecurity.

**Proposition 13:** Job demands (job overload) have a significant negative influence on engagement.

**Proposition 14:** Job demands (job overload) have a significant positive influence on burnout.

**Proposition 15:** Job demands (job insecurity) have a significant negative influence on engagement.

**Proposition 16:** Job demands (job insecurity) have a significant positive influence on burnout.

## 2.7 Proposed theoretical model

Although this study focuses on the South African workforce, viewing international evidence is essential for the richness of future research on the JD-R model. In an effort to build on previous information acquired regarding employee performance and occupational wellbeing, an understanding of previous evidence based on the JD-R model is formulated.

The robustness of the JD-R model was tested by Llorens et al. (2006) on two different occupational sample groups, one of which consisted of 654 Spanish employees and the other of 477 Dutch employees. It was concluded that the structure of the JD-R model was maintained, even though the study took place in two different countries in two different occupational groups. By using structural equation modelling, partial evidence was found for both processes (the impairment process and the employee motivation process) (Llorens et al., 2006).

Hakanen, Schaufeli and Ahola (2008) did a three-year cross-lagged study using the JD-R model. More specifically, the study longitudinally tested the two processes in the JD-R model, namely the motivational and health impairment processes. The sample study consisted of

Finnish dentists (N = 2 555) and continued over three years (Hakanen et al., 2008). The results supported both the motivational and health impairment processes. It was found that job resources did in fact influence potential/future work engagement, leading to commitment to the organisation, while job demands influence burnout, leading to depression in the future (Hakanen et al., 2008).

Bakker et al. (2003) examined the predictive validity of the JD-R model for turnover intention and self-reported absenteeism. A sample of 477 call centre employees in a Dutch telecom company was used. The hypothesis stipulated that job demands would be a central predictor of absenteeism (due to the link to health ailments). The additional hypothesis was that job resources would be the most important predictor of turnover intentions (due to the link to involvement). The results supported both hypotheses (Bakker et al., 2003).

Brauchli et al. (2013) examined the stable and changing components of job characteristics (job resources and job demands) and occupational wellbeing (engagement and burnout) across a time frame. They termed their study a three-wave study of the JD-R model. Brauchli et al. (2013) approached the JD-R model in an alternative manner to that usually taken by researchers, in that they applied a longitudinal stability and change model to the JD-R model. The most commonly used approach for investigating the JD-R model is cross-sectional and common longitudinal research methods and strategies of investigation and analyses. The data for this three-wave study was collected over a time frame that stretched from 2008 to 2011. Data was collected from medium to large Swiss companies in diverse sectors. The sample group was made up of 3 045 employees. The findings show that the positive elements in the model (being engagement and job resources) were more stable than the negative elements (being burnout and job demands) (Brauchli et al., 2013).

Taking the abovementioned evidence on the JD-R model into consideration, it can be concluded that the JD-R model is a heuristic model that includes two sets of working conditions (namely job demands and job resources) as part of its effort to predict occupational wellbeing. This is done regardless of the occupational group (Hakanen & Roodt, 2010). The main assumption of this theoretical framework states that every occupational setting would have its own set of risk factors that would be associated with a variety of job-related stressors (Demerouti & Bakker, 2011).

The JD-R model is furthermore based on two fundamental psychological processes. These processes refer to the fact that job resources have the potential either to increase stress levels

(leading to burnout) or to enhance motivation (leading to engagement) (Buys & Rothmann, 2009).

It is argued that the consolidated utilisation of the JD-R model and theory can lead to effective implementation of interventions focusing on increasing performance through occupational wellbeing and attending to the variables influencing occupational wellbeing. Four different possible JD-R interventions are noted by Bakker and Demerouti (2014), namely:

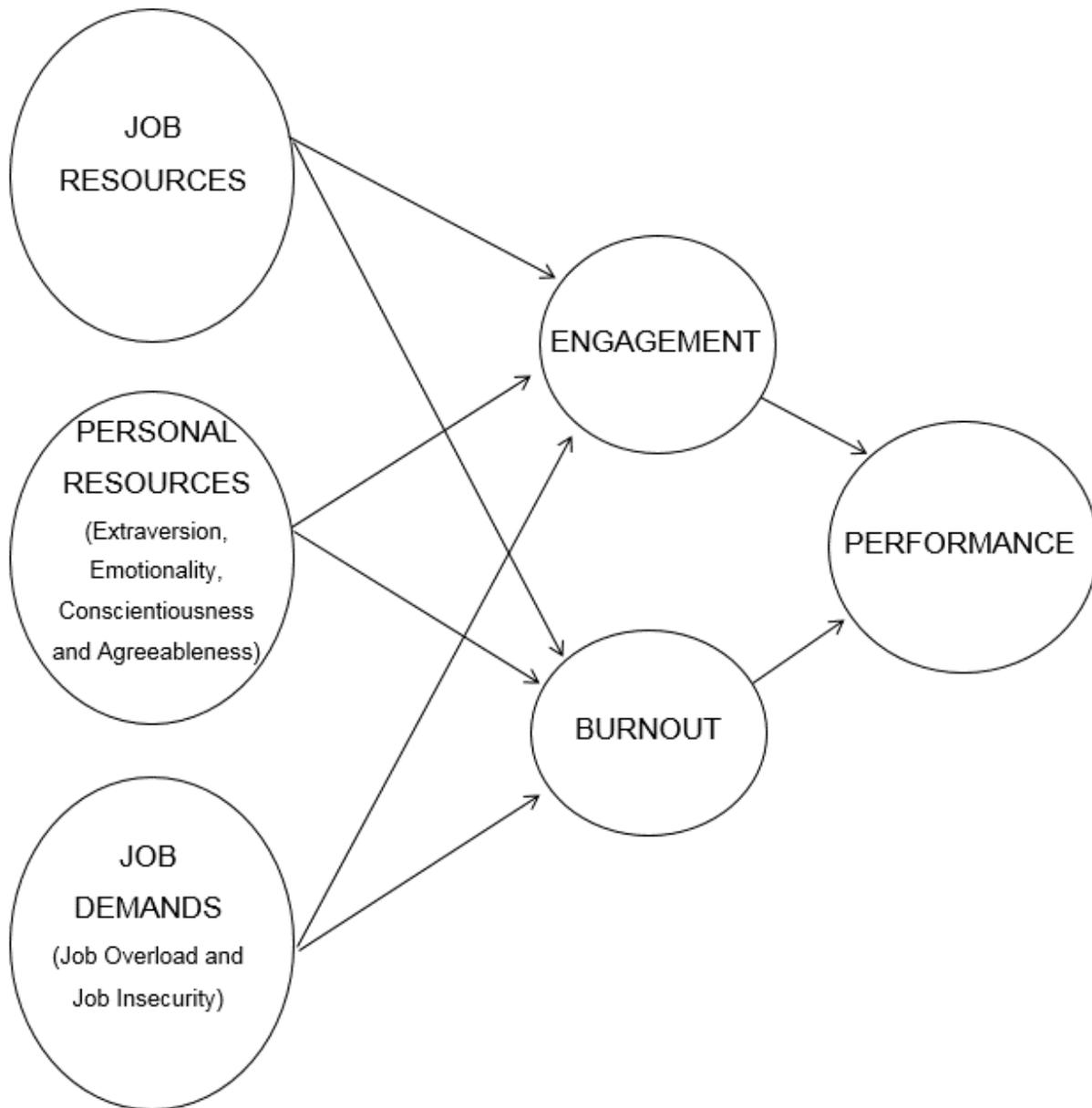
- job redesign;
- job crafting;
- training; and
- strengths-based interventions.

These four interventions can be ordered in line with two dimensions, namely intervention level (being individual versus organisational) and intervention target (being the working environment (job demands and resources) and individual (personal resources)) (Bakker & Demerouti, 2014).

It is acknowledged that job demands and job resources may differ from company to company and industry to industry; however, for the purpose of this study, job demands will incorporate job overload and job insecurity (assessed individually), and job resources will incorporate growth opportunities, organisational support and advancement (assessed as a whole). For the purpose of the theoretical model, these variables will be termed job resources and job demands. Personal resources will only account for extraversion, conscientiousness, emotionality and agreeableness (all assessed individually).

Propositions 1 to 16 are graphically portrayed as causal paths in Figure 2.5.

The model indicates the anticipation that the interaction of the job resources, personal resources and job demands would lead to either work engagement or burnout, and that work engagement would lead to positive (higher) performance and that burnout would lead to negative (lower) performance. The two psychological processes are also included in this model. Focus will specifically be given to the main effects in the model, and not to the moderator and mediator effects.



**Figure 2.5** Theoretical model integrating the relationships between job resources, personal resources, job demands, engagement, burnout and performance.

## 2.8 Conclusion

This chapter has focused on the JD-R model, where it came from, the research done on the relationships in the model, and evidence supporting the model and theory. The literature review elaborated on the variables found in the JD-R model, namely (a) job resources, (b) personal resources (c) job demands, (d) engagement, (e) burnout and (f) performance.

Hypotheses were formulated from the extensive literature argument regarding the relationships between the variables in the model. With all of the hypotheses taken into consideration, the theoretical model was constructed to act as a summary of the full literature review and as the starting point for Chapter 3.

## CHAPTER 3

### Method

#### 3.1 Introduction

The theoretical argument made in the previous chapter leads to the development of substantial research hypotheses that can be viewed in line with the theoretical model seen in Figure 2.5. The purpose of this chapter is to discuss the research design and the various methodologies utilised in evaluating the research hypotheses with reference to the anticipated relationships developed above.

Research methodology serves the epistemic ideal of science (Babbie & Mouton, 2001). It is for this reason that a scientific inquiry should indeed subject its inquiry to the critical inspection of other knowledgeable individuals within the scientific community in line with the research being conducted. If this is done, it can be said that science is rational (Babbie & Mouton, 2001). Science, however, can only serve the epistemic ideal if the methodology chosen to be used in the scientific inquiry can be explained and motivated comprehensively. It is the purpose of Chapter 3 to provide a comprehensive motivation and description of the methodology used in the research.

#### 3.2 Substantive research hypotheses

In order to attempt to answer the research question, hypotheses need to be formulated in line with the rationale and goals of the study. The hypotheses were tested through a method that will be discussed later in this study.

The knowledge that was drawn from the literature review entails that an individual's level of work engagement and/or burnout is influenced by the relationship between his/her personal resources, job resources and job demands. It is said that personal resources and job resources directly affect engagement, with job demands having a moderating effect on this relationship and job demands directly affecting burnout, with personal resources and job resources having a moderating effect on this relationship. The research driving the hypotheses concludes that high levels of work engagement will lead to high levels of performance, and that high levels of burnout lead to low levels of performance.

From the argument made in the literature review it can be derived that the following detailed, substantive research hypotheses should be evaluated. The hypotheses below were subjected to testing by means of a correlational research design and multiple measurements:

Hypothesis 1: Engagement ( $\eta_2$ ) has a significant positive effect on performance ( $\eta_1$ ).

Hypothesis 2: Burnout ( $\eta_2$ ) has a significant negative effect on performance ( $\eta_1$ ).

Hypothesis 3: Job resources (advancement, personal growth and organisational support) ( $\xi_1$ ) have a significant positive effect on engagement ( $\eta_2$ ).

Hypothesis 4: Job resources (advancement, personal growth and organisational support) ( $\xi_1$ ) have a significant negative effect on burnout ( $\eta_3$ ).

Hypothesis 5: Personal resources (extraversion) ( $\xi_2$ ) have a significant positive effect on engagement ( $\eta_2$ ).

Hypothesis 6: Personal resources (extraversion) ( $\xi_2$ ) have a significant negative effect on burnout ( $\eta_3$ ).

Hypothesis 7: Personal resources (emotionality) ( $\xi_3$ ) have a significant positive effect on engagement ( $\eta_2$ ).

Hypothesis 8: Personal resources (emotionality) ( $\xi_3$ ) have a significant negative effect on burnout ( $\eta_3$ ).

Hypothesis 9: Personal resources (conscientiousness) ( $\xi_4$ ) have a significant positive effect on engagement ( $\eta_2$ ).

Hypothesis 10: Personal resources (conscientiousness) ( $\xi_4$ ) have a significant negative effect on burnout ( $\eta_3$ ).

Hypothesis 11: Personal resources (agreeableness) ( $\xi_5$ ) have a significant positive effect on engagement ( $\eta_2$ ).

Hypothesis 12: Personal resources (agreeableness) ( $\xi_5$ ) have a significant negative effect on burnout ( $\eta_3$ ).

Hypothesis 13: Job demands (job overload) ( $\xi_6$ ) have a significant negative effect on engagement ( $\eta_2$ ).

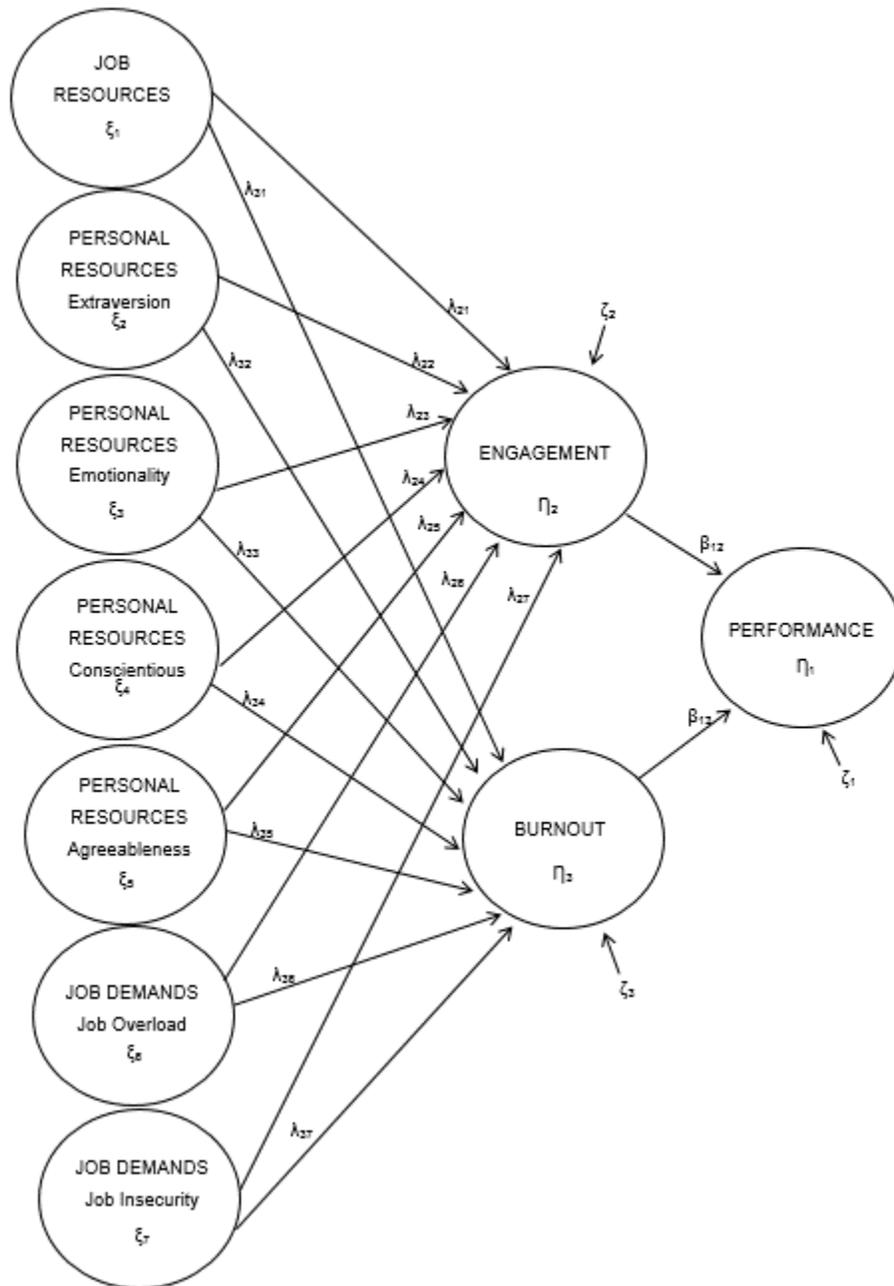
Hypothesis 14: Job demands (job overload) ( $\xi_6$ ) have a significant positive effect on burnout ( $\eta_3$ ).

Hypothesis 15: Job demands (job insecurity) ( $\xi_7$ ) have a significant negative effect on engagement ( $\eta_2$ ).

Hypothesis 16: Job demands (job insecurity) ( $\xi_7$ ) have a significant positive effect on burnout ( $\eta_3$ ).

### **3.3 Structural model**

Following the substantial research hypotheses set out above, and as per the theoretical model depicted in Figure 2.5, a structural model can be depicted. It is the structural model that sets out the assumed relationships argued to be between the various discussed variables. The structural model, as seen in Figure 3.1, defines the exogenous and endogenous latent variables and highlights the various hypothesised relationships.



**Figure 3.1** Representation of the structural model

### 3.4 Statistical hypotheses

Statistical hypotheses were created in line with the relationships depicted in the structural model in Figure 3.1. It would be the ideal scenario for the research if the relationships depicted in Figure 3.1 perfectly explain the covariance between the indicator variables.

Hypothesis 1: Engagement ( $\eta_2$ ) has a significant positive effect on performance ( $\eta_1$ ).

H01:  $\beta_{12} = 0$

H01:  $\beta_{12} > 0$

Hypothesis 2: Burnout ( $\eta_3$ ) has a significant negative effect on performance ( $\eta_1$ ).

H02:  $\beta_{13} = 0$

H02:  $\beta_{13} = 0$

Hypothesis 3: Job resources (advancement, personal growth and organisational support) ( $\xi_1$ ) have a significant positive effect on engagement ( $\eta_2$ ).

H03:  $\gamma_{21} = 0$

H03:  $\gamma_{21} > 0$

Hypothesis 4: Job resources (advancement, personal growth and organisational support) ( $\xi_1$ ) have a significant negative effect on burnout ( $\eta_3$ ).

H04:  $\gamma_{31} = 0$

H04:  $\gamma_{31} > 0$

Hypothesis 5: Personal resources (extraversion) ( $\xi_2$ ) have a significant positive effect on engagement ( $\eta_2$ ).

H05:  $\gamma_{22} = 0$

H05:  $\gamma_{22} > 0$

Hypothesis 6: Personal resources (extraversion) ( $\xi_2$ ) have a significant negative effect on burnout ( $\eta_3$ ).

H06:  $\gamma_{32} = 0$

H06:  $\gamma_{32} > 0$

Hypothesis 7: Personal resources (emotionality) ( $\xi_3$ ) have a significant positive effect on engagement ( $\eta_2$ ).

$$H07: \gamma_{23} = 0$$

$$H07: \gamma_{23} > 0$$

Hypothesis 8: Personal resources (emotionality) ( $\xi_3$ ) have a significant negative effect on burnout ( $\eta_3$ ).

$$H08: \gamma_{33} = 0$$

$$H08: \gamma_{33} > 0$$

Hypothesis 9: Personal resources (conscientiousness) ( $\xi_4$ ) have a significant positive effect on engagement ( $\eta_2$ ).

$$H09: \gamma_{24} = 0$$

$$H09: \gamma_{24} > 0$$

Hypothesis 10: Personal resources (conscientiousness) ( $\xi_4$ ) have a significant negative effect on burnout ( $\eta_3$ ).

$$H010: \gamma_{34} = 0$$

$$H010: \gamma_{34} > 0$$

Hypothesis 11: Personal resources (agreeableness) ( $\xi_5$ ) have a significant positive effect on engagement ( $\eta_2$ ).

$$H011: \gamma_{25} = 0$$

$$H011: \gamma_{25} > 0$$

Hypothesis 12: Personal resources (agreeableness) ( $\xi_5$ ) have a significant negative effect on burnout ( $\eta_3$ ).

H012:  $\gamma_{35} = 0$

H012:  $\gamma_{35} > 0$

Hypothesis 13: Job demands (job overload) ( $\xi_6$ ) have a significant negative effect on engagement ( $\eta_2$ ).

H13:  $\gamma_{26} = 0$

H13:  $\gamma_{26} > 0$

Hypothesis 14: Job demands (job overload) ( $\xi_6$ ) have a significant positive effect on burnout ( $\eta_3$ ).

H014:  $\gamma_{36} = 0$

H014:  $\gamma_{36} > 0$

Hypothesis 15: Job demands (job insecurity) ( $\xi_7$ ) have a significant negative effect on engagement ( $\eta_2$ ).

H015:  $\gamma_{27} = 0$

H015:  $\gamma_{27} > 0$

Hypothesis 16: Job demands (job insecurity) ( $\xi_7$ ) have a significant positive effect on burnout ( $\eta_3$ ).

H016:  $\gamma_{37} = 0$

H016:  $\gamma_{37} > 0$

### **3.5 Method**

#### **3.5.1 Research approach**

In a quest to empirically test the merits of the relations indicated in the structural model of engagement and burnout, a strategy/plan had to be set out showing how this would be done.

The strategy guides one in obtaining empirical evidence that will assist in testing these hypotheses. The strategy set out in the research design is the guide for conducting the research (Babbie & Mouton, 2001).

The decision on which design to use in the research depended on factors such as the research problem, the size of the sample group and the typical evidence required by the study to address the research problem.

This study used an explanatory ex post facto correlational research design to test the substantive research hypotheses. The reason for this was that the variables, as depicted in the structural model, cannot be manipulated or assigned randomly. Observations were made of individuals in an attempt to establish the extent to which they co-vary. An ex post facto correlational design was implemented with the attendant structural equation modelling (SEM) data analysis technique, more specifically partial least squares (PLS) SEM. The SEM convention is related to the use of the Smart PLS program. The partial least squares (PLS) SEM approach was used due to the size of the sample group being small. If the sample group would have been bigger, the co-variance SEM would have been used.

In terms of the logic of the ex post facto correlational design, one would acquire measures of the observed variables and then calculate the observed covariance matrix (Kerlinger & Lee, 2000). Approximations for the freed structural and measurement model parameters were obtained in an iterative manner. The purpose of this was to reproduce the observed covariance matrix as closely as possible (Diamantopoulos & Siguaw, 2000).

If one succeeds and a high degree of fit is found between the observed and estimated covariance matrices, it implies that the psychological processes portrayed in the structural model provide a plausible explanation for the observed covariance matrix. If one fails, in that the fitted model does not accurately reproduce the observed covariance matrix (Diamantopoulos & Siguaw, 2000), the conclusion would inevitably follow that the structural model does not provide an acceptable explanation for the observed covariance matrix. This means that the structural relationships hypothesised by the model do not provide an accurate representation of the psychological process portrayed in the structural model.

### **3.5.2 Research method**

Theron (2010) emphasises that the way research is done will have an impact on the credibility and reliability of the inferences drawn from the study. This emphasises the importance of

managing research methodology procedures meticulously and proves that methodology serves the epistemic ideal of science. It is for this reason that the procedures used in this study are discussed in detail.

### **3.5.3 Research participation**

The sample used consisted of permanently employed individuals, paid on a monthly basis, in a medium-sized South African e-commerce company in the retail industry. The company operates online and delivers products nationally, therefore linking to customers across the whole of South Africa, although the company itself is based in Cape Town.

The employees are divided into a number of departments in the company, namely: 1) Supply Chain (Inbound, Outbound, Warehouse and Supply Chain), 2) Purchasing, 3) Finance, 4) Commercial and Strategy, 5) Information Technology (IT), 6) Customer Service, 7) Human Resources (HR), 8) Office Support Functions, 9) Marketing, 10) Studio, 11) Business Intelligence (BI), 12) Offline Store and 13) Planning. Employees from all of these departments were included in the study and were asked to participate. The employees employed in these departments stretched from lower level employees to top/senior management. The Customer Service and Purchasing departments were the biggest departments asked to participate and included employees employed as Customer Loyalty Advisors, Customer Loyalty Team Leaders, Assistant Buyers, Junior Buyers, Buyers, Senior Buyers and Category Managers.

The sampling method utilised was non-probability sampling, more specifically availability/convenience sampling (Babbie & Mouton, 2001). The method of non-probability sampling was utilised due to the fact that the sampling method was dependant on the availability of participants. Participants in the research study were chosen because of the ease of access to them. Due to the industry being very young, companies are less willing to agree to participating in research activities where they would need to provide performance related data, hence the reason for making use of the non-probability sampling method.

The sample group of 117 participants included a wide variety of employees when referring to the employees' demographics. Table 3.1 provides a summary of the demographic findings of the sample group.

**Table 3.1*****Demographic data of the sample group***

<b>Gender</b>		
<b>Variable</b>	<b>Percentage</b>	<b>Frequency</b>
Females	57%	67
Males	43%	50
Total:	100%	117

<b>Age</b>		
<b>Variable</b>	<b>Percentage</b>	<b>Frequency</b>
21-30	74%	87
31-40	20%	23
41-50	5%	6
51-60	1%	1
Total:	100%	117

<b>Language</b>		
<b>Variable</b>	<b>Percentage</b>	<b>Frequency</b>
English	70%	82
Afrikaans	23%	27
isiXhosa	3%	3
German	2%	2
French	1%	1
isiZulu	1%	1
Total:	100%	117

<b>Education</b>		
<b>Variable</b>	<b>Percentage</b>	<b>Frequency</b>
Gr 10-11	2%	3
Gr 12	25%	29
Post-school certificate or diploma	11%	13
National Diploma/National Higher Diploma	20%	23
Bachelor's degree or equivalent	25%	29
Honours degree or equivalent	13%	15
Master's degree or equivalent	3%	4
Doctoral degree or equivalent	1%	1
Total:	100%	117

**Occupational level**

<b>Variable</b>	<b>Percentage</b>	<b>Frequency</b>
Non-management	63%	74
Junior management	21%	24
Management head of department (HOD)	14%	17
Senior management	2%	2
Total:	100%	117

Of the 117 participants, the majority, being 57%, were women and 43% of the sample group were men. The majority of the participants were between the ages of 21 to 30. This is very representative of a typical e-commerce venture. Twenty percent of the participants were between the ages of 31 and 40. Only 5% and 1% represented the age groups of 41 to 50 and 51 to 60 respectively – 60 years of age being the company's retirement age. The average age of the participants was 28.7.

The sample group realised as anticipated in that the sample group correctly reflected the population group. No problems with the realisation of the sample group were detected.

Through the analysis done on the demographics of the sample group, it was found that the majority of the participants were so-called Generation X and Generation Y. Generational theories state that the era in which the individual is born will affect the way he/she views the world. It is said that an individual's value system (viewed as a factor affecting one's work ethic) is formed in the individual's first decade of living. This can take place through life-changing events in the world, and in family, friends and the community (Graham, 2008). People who form part of the Generation X'ers are generally viewed as people that dislike rules, are not impressed by titles, need options and flexibility, and dislike close supervision. People forming part of Generation Y, otherwise called Millennials, are optimists, value diversity and are very confident, in such a way that they might even be perceived as arrogant (Codrington, 2014). Upon evaluation of the typical characteristics of the two main generations that are found in the sample group, the results can be further explained.

The majority of the participants (70%) indicated that their first language was English. While 23% of the participants indicated that they had Afrikaans as their first language, only 2.6% of the participants indicated Xhosa to be their first language, 1.7% indicated German to be their first language, and the rest noted French, Zulu and "other" as their first language.

It was noted that 24.8% of the participants had a matric certificate, proving completion of matric (Grade 12), and 11.1% of them were in possession of a post-school certificate or diploma. It was indicated that 19.7% of the participants had completed a National Diploma, 24.8% had completed a bachelor's degree or the equivalent, and 12.8% had completed an honours degree or equivalent. The rest of the participants indicated that they either had completed grade 10 or 11, were in possession of a Master's degree or the equivalent, or had a doctoral degree or the equivalent.

The company was divided into 17 departments and participants were asked to indicate in which department they currently were employed. The Customer Service department had the biggest representation in the sample group, with 19 participants indicating that they represented this department. The second largest representing department was the Purchasing Department, with 17 participants participating in the survey. Marketing also had a representation of 16 participants, while 12 participants indicated that they were employed in the studio. Customer Service, Purchasing, Marketing and studio therefore represented the majority of the participants in the sample group. It should be noted that their answers to questions with reference to job demands and resources might be similar in some cases and might have a bigger impact on the significance of relationships between latent variables due to the representation of those departments being so high. Finance and IT were represented by nine participants each, Human Resources was represented by six participants, Business Intelligence, Office Management and the warehouse were represented by four participants each, and Outbound, Planning, Operation and Commercial were represented by three participants each. Inbound and Management were represented by two participants each, and the offline store was represented by only one participant.

The occupational levels represented by the participants were mostly non-managerial, with 63.2% of the participants, and junior management with 20.5% of the participants. The rest of the participants were represented by management (heads of department (HODs)) and senior management.

### **3.5.4 Measuring instruments**

In order to evaluate the substantive hypotheses depicted in Figure 3.1 according to the directives of the ex post facto correlation design, all the variables comprising the model had to be operationalised.

In order to investigate the relationships depicted in Figure 3.1, various measurements had to be utilised. Credible conclusions can be drawn from the evidence derived from the data gathered through the use of applicable measurements.

The Utrecht Work Engagement Scale (UWES) was used to measure work engagement. The Maslach Burnout Inventory – General Survey (MBI-GS) was used to measure burnout. Key performance indicators (KPIs) were used to measure employee performance. A Job Demands Resources Scale (JDRS) was used to assess how employees viewed/perceived the job resources and job demands in their roles. The HEXACO Personality Inventory was used to measure personal resources in employees.

Evidence referring to the psychometric properties per measurement will follow to support the choice of measurement instrument.

#### **3.5.4.1 Key performance indicators (KPIs)**

The KPIs were created/written-up through a consultation process with the employee and his/her direct manager. Each KPI was drafted and approved by being signed off by the employee, a direct manager/superior and a job analyst. Through consultation with the employee and sign-off, an effort was made to empower the employee and gain his/her buy-in.

In the case of an existing role being filled in the organisation, a KPI could be given to the “new starter” employee as empowerment to understand his/her role in the department and organisation. In the case of a new role being crafted in the organisation, the KPI would only be drafted after approximately three months of the role’s existence and once the employee had fully occupied and was functioning within the role. On average, a KPI consists of approximately two to seven key performance areas, where each key performance area consists of a few tasks.

Scoring of performance was done jointly by the employee and his/her direct manager. This was done in order for them to manage the fairness of the process and to open channels for performance management or coaching to take place where necessary. Managers were trained in the proper use of the KPIs by the performance manager in the Human Resource department. In order to potentially increase the effectiveness of the KPI scoring, refresher training sessions were also given to all managers to ensure scoring was done correctly and in a standardised manner.

The KPI measures performance on a five-point scale, with 1 being “meets standards infrequently, needs much improvement” and 5 being “exceeds standards ALL of the time, superior performance”. Time on the job in the organisation is viewed as equal to 100%. This 100% that represents time on the job is divided between the key performance areas with reference to the importance of each task and the amount of time actually dedicated to the task. If, for example, an employee would spend 20% of his/her time on analysing reports and identifying problem areas for the future, and a score of “4 - exceeds standards, highly effective performance” would be allocated to his/her performance on this task, the score of 4 would be multiplied by 20% and the answer (being 0.8) would account for 20% of the employee’s overall performance score out of 5. The total score can therefore be manipulated by adapting the percentages.

#### **3.5.4.2 Utrecht Work Engagement Scale (UWES)**

Work engagement can be assessed using a variety of assessments/measurements (Bakker et al., 2008). The measurement that has been validated most extensively was used in this study.

The UWES comprises three dimensions of engagement, namely vigour, dedication and absorption (Schaufeli & Bakker, 2003). Vigour was assessed by six items, dedication was assessed by five items and absorption was measured by six items.

The UWES originally consisted of 24 items. After psychometric evaluation was done on the items within the UWES, seven items proved to be unsound, leaving the scale with 17 items.

The UWES is a self-report questionnaire and the items are scaled in a seven-point frequency scale, where “0” refers to “never” and “7” refers to “always” (Schaufeli & Bakker, 2003). An example of the items will follow:

“At work, I feel bursting with energy,” was an item that loads onto the vigour dimension of engagement. “I feel happy when I am working intensely” was an item that refers to the absorption dimension of engagement. “I am proud on the work I do” referred to the dedication dimension of engagement.

Individuals scoring high on the vigour scale were usually those with high levels of energy and stamina at work. Individuals scoring high on the dedication scale were those who could identify with their work, as they found their work to be inspiring and challenging. Individuals scoring high

on the absorption scale were usually those who felt that time seemed to fly while they were at work because they were happily captivated in their work/workload (Schaufeli & Bakker, 2003).

The UWES was validated for South Africa (Storm & Rothmann, 2003). Through the use of SEM, a three-factor model of work engagement was confirmed, consisting of vigour, dedication and absorption. The internal consistencies of all three factors were found to be acceptable. All relevant Cronbach's alphas were found to exceed 0.7 (Nunnally & Bernstein, 1984). Scores taken on the UWES across time also proved to be relatively stable, with vigour, dedication and absorption having stability coefficients of 0.30, 0.36 and 0.46 respectively (Bakker, Euwema & Van Dierendonck, 2003). With reference to the equivalence of the three factors for a variety of races in South Africa (and in the South African Police Service), an explanatory factor analysis with target rotations confirmed the equivalence (Storm & Rothmann, 2003).

#### **3.5.4.3 Maslach Burnout Inventory – General Survey (MBI-GS)**

Burnout levels can be assessed by using the MBI-GS (Schaufeli, Leiter, Maslach & Jackson, 1996). This assessment instrument consists of three subscales focused on exhaustion, cynicism (previously referred to as depersonalisation) and professional efficacy (previously referred to as personal accomplishments) (Bakker, Demerouti & Euwema, 2005).

The subscale of exhaustion was measured by five items. Cynicism was measured by the five items in the assessment. The subscale of professional efficacy covers both the social and non-social accomplishments felt at work. This subscale was measured by six items in total.

The participants in the study were asked to indicate to what extent they agreed with each statement made by the items, on a seven-point scale ranging from "0", referring to "never", to "6", referring to "every day".

Examples of the items included in this measurement are "I feel used up at the end of the day", referring to an item that will load onto emotional exhaustion; "I don't really care what happens to some clients", referring to an item that will load onto cynicism; and "I can easily understand how clients feel about things", referring to an item loading onto personal efficacy.

Burnout is indicated by high levels of cynicism and exhaustion, and low levels of professional efficacy (Bakker et al., 2005).

Internal consistencies ranging from 0.73 to 0.91 were found for the three subscales within the MBI-GS. These scores were all found to be sufficient (Leiter & Schaufeli, 1996). In a study done by Storm and Rothmann (2003) on policemen in South Africa, the Cronbach's alphas found for the three subscales were all above the critical score of 0.7, where exhaustion was found to be 0.88, cynicism was 0.78 and professional efficacy was found to be 0.79.

#### **3.5.4.4 Job Demands Resources Scale (JDRS)**

The Job Demands Resources Scale (JDRS) was developed by Jackson and Rothmann (2005). This scale was specifically developed to measure job resources and job demands as described in the JD-R model.

The scale was constructed using a literature study done on job resources and job demands and interviews done with participants in their study.

Rothmann and Joubert (2007) concluded in their study that five factors could be extracted from the scale, namely:

- Overload,
- Job insecurity,
- Growth opportunities,
- Advancement and
- Organisational support.

The factor termed "overload" refers to a combination of emotional and mental load, as well as the quantity of work experienced by employees at work (Rothmann & Joubert, 2007). An example of an item that will load onto the job insecurity dimension within the job demands is "do you need to be more secure that you will keep your current job in the in the next year?".

The term "job insecurity" refers to a feeling of insecurity in the job role (Rothmann & Joubert, 2007). "Do you have too much work to do" refers to a typical example of an item loading onto the overload dimension of job demands. When referring to job demands within this study, notice is taken of these two factors, namely job overload and job insecurity.

The feeling of having sufficient independent opportunities to learn, and having sufficient variety in the work role, relates to the term “growth opportunities” (Rothmann & Joubert, 2007). An example of an item that will load onto the growth opportunities dimension within job resources is “do you know exactly what other people expect of you in your work?”.

The term “advancement” refers to progressing in the work (moving forward) and includes a combination of training, remuneration and career opportunities (Rothmann & Joubert, 2007). “Does your organisation give you opportunities to follow training courses?” is an example of an item that loads onto the factor of advancement found in job resources.

The term “organisational support” refers to the combination of the accessibility of data/information, the relationship with supervisors or management, and participation and social support received from colleagues (Rothmann & Joubert, 2007). “Does your job offer you the possibility of independent thought and action?” is an example of an item loading onto organisational support. When referring to job resources within this study, notice was taken of growth opportunities, advancement and organisational support.

Originally consisting of 48 items in total, the questionnaire was scaled with a four-point Likert scale, where 1 referred to “always” and 4 referred to “never” (Jackson & Rothmann, 2005).

As two of the factors (overload and job insecurity) load onto job demands and three factors (growth opportunities, advancement and organisational support) load onto job resources within the JD-R model, this measurement instrument was utilised to obtain scores for two different factors as seen in the JD-R model. Acceptable internal reliability was found within the scale, with alpha coefficients ranging from .76 to .92 (Rothmann et al., 2006).

Before the scale was utilised in this study, all items were revised in order to ensure that they were applicable for the sample group, as well as for the industry or work environment in which the participants found themselves on a daily basis.

#### **3.5.4.5 HEXACO Personality Inventory**

The HEXACO Personality Inventory model (hereafter referred to as the HEXACO) is a six-dimensional framework of personality, covering the following factors (Ashton & Lee, 2007):

- (H) Honesty-Humility;
- (E) Emotionality;

- (X) eXtraversion;
- (A) Agreeableness;
- (C) Conscientiousness; and
- (O) Openness to experience.

The Honesty-Humility scale refers to sincerity, fairness, greed avoidance and modesty. A person with a high score on this scale will most likely feel little pressure/temptation to break rules or manipulate people to get what he/she wants. An example of an item loading onto this factor is: "I wouldn't use flattery to get a raise or promotion at work, even though it would succeed."

The Emotionality scale refers to fearfulness, anxiety, dependence and sentimentality. A person with a high score on this scale will most likely have a strong need for the support of others and feel anxious in the face of physical dangers and stressors. An example of an item loading onto this factor is: "I sometimes can't help worrying about little things."

The Extraversion scale refers to social self-esteem, social boldness, sociability and liveliness. A person with a high score on this scale will most likely feel positive about himself/herself and enjoy interactions with others, even in groups. An example of an item loading onto this factor is: "On most days, I feel cheerful and optimistic."

The Agreeableness scale refers to forgiveness, gentleness, flexibility and patience. A person with a high score on this scale will most likely find it easier to forgive the wrongs done to him/her and compromise for others. An example of an item loading onto this factor is: "I tend to be lenient in judging others."

The Conscientiousness scale refers to organisation, diligence, perfectionism and prudence. A person with a high score on this scale will most likely organise his/her surroundings, work and life, and tend to work in a disciplined manner. An example of an item loading onto this factor is: "I often push myself very hard when trying to achieve a goal."

The Openness to Experience scale refers to aesthetic appreciation, inquisitiveness, creativity and unconventionality. A person with a high score on this scale will most likely use his/her imagination freely throughout his/her life and find pleasure in art and a wide variety of

knowledge domains. An example of an item loading onto this factor is: "If I had the opportunity, I would like to attend a classical music concert."

Three of the factors in the HEXACO (Extraversion, Conscientiousness and Agreeableness) correspond closely with three of the factors in the FFM. The remaining three factors of the HEXACO stand in a more complex relationship with the remaining two factors of the FFM (Ashton & Lee, 2007). An additional benefit to using the HEXACO in the study is that it predicts a variety of personality phenomena previously not explained by the FFM (Ashton & Lee, 2007).

The HEXACO has been translated into 17 languages, of which Dutch, French, German and English are of importance for the purpose of this study and the sample group (Ashton & Lee, 2007). If the preferred language in which the assessment will be conducted would have been a problem for some participants, the possibility does exist that the assessment could be conducted in any of these mentioned languages.

The HEXACO is a self-report questionnaire and makes use of a five-point Likert scale, where 1 refers to strongly disagree and 5 to strongly agree.

The coefficients of the subscales within the HEXACO were all found to be above the critical score of 0.7, with all ranging between 0.89 and 0.9 (De Vries, 2011).

### **3.6 Research procedure**

An action plan specifying the process to be used in data collection was written up and presented to the company's HR Manager and Managing Director. This was done so as to ensure that they were fully aware of what would be expected and asked from the company and its employees. The presentation of the structured action plan was part of an agreement made with management when they gave consent for the researcher to use the company's employees as a sample group for the purpose of the study. In this presentation, the purpose of the study and the importance of data collection in a clinical and standardised manner were explained, amongst other topics. Agreement from top management was viewed as extremely important because of its impact on employee participation. The success of data collection relied on the willingness of employees to participate in the study and their perception of the extent to which the data would be treated with confidentiality and sensitivity. In order to attend to this perception, every step taken in the data collection process was treated with sensitivity, and confidentiality of the data was assured.

The employees were made aware of the survey and asked to participate in the survey through an email sent out from the researcher to the company distribution list. Consent was given by top management to utilise this distribution list for the purpose of the study. The email served to inform the employees of the purpose of the survey and study, the process to be followed, instructions on how to complete the survey and information about the lucky draw for all who participated. The email contained the contact details of the researcher and research study supervisor; if an individual had questions about the survey they were encouraged to contact the researcher. Confidentiality of the data was reiterated and the lucky draw terms and conditions were set out in the email. The lucky draw referred to cash that could be won for participating in the survey. The names of the winners were drawn anonymously and these individuals were informed of their cash prize. The cash prizes were granted in order to encourage individuals to participate in the survey. Reminder emails to complete the survey were only sent out once to individuals in the attempt not to flood employees with emails with regard to the survey. The instructions stated that participation in the survey was voluntary.

### **3.7 Statistical analyses**

Before the hypotheses can be tested, the data have to be analysed. This was done by using a few techniques, namely the evaluation of missing values, an item analysis, the testing of the measurement models, correlation analysis, partial least squares (PLS)-based structural equation modelling (SEM) (evaluation of outer loadings and analysis of path coefficients), and divergent validity.

In order to limit the number of problems that might have occurred with the data analysis process, the data was evaluated to identify if there were any missing values as part of the data set. A prompt was built into the survey, stopping participants from continuing with the survey if they had not completed all of the questions. This was done to eliminate the occurrence of missing values.

The purpose of the measurements discussed earlier was to measure individuals' standing on each of the constructs within the model. The various items in the measurement acted as stimuli, with the goal to elicit the participants' responses in terms of the behaviour of the underlying construct (as per the model) and to present it in the form of data. It should be taken into consideration that, in some cases, items could be poor in eliciting a response. Through a process called item analysis, poor items could have been identified through item statistics. Item

analysis on the data was used to determine the quality and internal consistency of the items of the individual scales.

SPSS was used to perform this analysis. The decision on whether or not to transform or delete items for the individual scales was dependent on the results obtained from the item analysis and the specific nature of the poor items (if such items were present).

After item analysis has been finalised, the relationships between the various latent variables were evaluated.

Correlation analysis was conducted on all the variables of the structural model.

The PLS-based SEM method had to be utilised due to the sample size obtained during the data capturing phase. This was a factor that was considered before the analysis was conducted. If the sample size would have been larger, the co-variance-based SEM method would have been utilised.

PLS was conducted through the use of the SmartPLS software package. No further multiple regressions were assessed, as the need for evaluating the multiple regression could not be validated and the number of dependent variables was not high.

PLS was utilised to evaluate the statistical significance of the hypothesised relationships in the structural model.

### **3.8 Summary**

The research methodology set out guidelines on how the research was handled. The research design used during the study was the explanatory ex post facto correlational design. This flowed from (amongst other factors) formalising the rationale of the research and the research goals. Measurements used in the research and methods by which participants were sampled were also discussed. It is by systematically setting out the methodology that a framework is provided in which to perform the research.

## CHAPTER 4

### RESEARCH RESULTS

#### 4.1 Introduction

It is the purpose of this Chapter to discuss the results obtained after the research had been done, in accordance with what is set out in Chapter 3. The objective of the research was to investigate what drives performance, in terms of the JD-R model, within a sector that has undergone intense growth recently. Through a theoretical argument presented in the literature review, this research objective was systematically addressed and resulted in the depiction of the structural model seen in Figure 3.1. The structural model accommodates 15 unique, substantial research hypotheses.

This chapter focuses on reporting on the results obtained from the statistical analyses. The goal is to come to a conclusion in the reporting on the fit of the measurement and structural model. The chapter starts off by discussing the analysis done on the missing values and then highlights the findings from the item analyses. This is done in order to establish the psychometric integrity of the indicator variables, representing the latent variables as found in the structural model. In conclusion, the evaluation of the level to which the data fits the statistical data assumptions will be discussed.

#### 4.2 Missing values

The data was assessed for the possibility of missing values. This topic had to be addressed, as the presence of missing values forms part of most research. Neglecting the possible likelihood that the problem of missing values might be evident would be ignorant in this study. As missing data may result in major problems in the data analysis process, the presence of missing data needs to be evaluated. The severity of the problems found with the data analysis are dependent on the patterns of the missing data, the amount of missing data, as well as the reason for the missing data. It is noted by Tabachnick and Fidell (2001) that, if the missing values should be scattered across the data in a non-random manner, the possible problems faced with data analysis are more severe than in the case where the missing values are scattered across the data in a random manner.

The survey had a prompt built into the survey style that assisted in limiting the possibility of missing values. This function was activated in the case that participants skipped or neglected to

answer all of the questions on a page. In this case, the prompt would appear on the screen requesting the participant to review the answers given and complete the outstanding questions, indicated with an asterisk. This limited the number of questions skipped in the survey and acted as a method of controlling the possibility that missing data would be evident.

After an analysis of the missing values in the data, it was found that the dataset did not have missing values. This could be linked to the fact that a measure of control was implemented in the manner in which the survey was constructed, prompting candidates to complete the questions skipped. The possible options available to evaluate the missing data if there should have been any were list-wise deletion, pair-wise deletion, imputation by matching, multiple imputations and full information maximum likelihood (Dunbar-Isaacson, 2006). The use of these methods was not necessary.

### **4.3 Validating the measurement model**

Item analysis is conducted in order to detect items that are not contributing to the reliability and validity of the description of the specific dimension in question. Once an item of this sort is detected, the option of removing it can be analysed in line with the extent of the effect the removal of the item would have on the reliability and validity of the subscale.

Item analysis was conducted on all of the latent variable subscales included in the UWES, MBI, JDRS and HEXACO measurements. Item analyses were conducted in order to investigate:

- The reliability of the indicators of each latent variable
- The homogeneity of each subscale; and
- To screen over items prior to their inclusion in composite item parcels representing the latent variables.

No problematic items were identified.

#### **4.3.1 Item analysis findings: Utrecht Work Engagement Scale (UWES)**

Item analyses were done on every latent variable subscale in the Utrecht Work Engagement Scale (UWES). Table 4.1 represents a summary of the findings. No items were deleted, as the coefficient of the internal consistency (Cronbach's alpha) for all three subscales was found to be satisfactory (being  $> .80$ ). According to Malhotra (2004), reliability scores of  $> .60$  are considered to be satisfactorily high.

**Table 4.1*****Reliability results of the Utrecht Work Engagement Scale latent variable scales***

Variable	Number of items	Mean	Standard deviation	Cronbach's alpha
ENGAGE_VI	6	30.05	6.68	0.88
ENGAGE_DE	5	24.29	7.00	0.92
ENGAGE_AB	6	29.30	7.17	0.89

(ENGAGE\_VI = Vigour; ENGAGE\_DE = Dedication; ENGAGE\_AB = Absorption)

The Vigour sub-scale contained six items. Table 4.2 contains the results of the item analysis for the Vigour subscale.

**Table 4.2*****Item analysis results for the Vigour subscale***

Cronbach's alpha	Cronbach's alpha based on standardised items	N items
0.88	0.88	6

Variable	Scale mean if item deleted	Scale variance if item deleted	Item-total correlation	Scale standard deviation if item deleted	Cronbach's alpha if item deleted
ENGAGE_VI1	25.42	30.54	0.7	5.53	0.84
ENGAGE_VI2	25.34	29.36	0.79	5.42	0.83
ENGAGE_VI3	25.38	28.61	0.69	5.35	0.86
ENGAGE_VI4	24.67	33.69	0.68	5.80	0.86
ENGAGE_VI5	24.92	32.78	0.65	5.73	0.86
ENGAGE_VI6	24.52	34.03	0.57	5.83	0.87

(ENGAGE\_VI = Vigour)

The Vigour scale obtained a Cronbach's alpha of 0.88. An inspection of the item statistics indicated that all the corrected item-total correlations were larger than .57. The visual inspection revealed that none of the items, if deleted, would significantly increase the current Cronbach's alpha and therefore all items found in the Vigour scale were retained.

The Dedication sub-scale consisted of five items. Table 4.3 contains the results of the item analysis for the Dedication subscale.

**Table 4.3**

***Item analysis results for the Dedication subscale***

Cronbach's alpha	Cronbach's alpha based on standardised items	N items
0.92	0.92	5

Variable	Scale mean if item deleted	Scale variance if item deleted	Item-total correlation	Scale standard deviation if item deleted	Cronbach's alpha if item deleted
ENGAGE_DE1	19.50	30.46	0.83	5.52	0.89
ENGAGE_DE2	19.15	31.92	0.81	5.65	0.90
ENGAGE_DE3	19.81	29.84	0.86	5.46	0.89
ENGAGE_DE4	18.67	34.01	0.76	5.83	0.91
ENGAGE_DE5	20.04	32.16	0.71	5.67	0.92

(ENGAGE\_DE = Dedication)

The Dedication subscale obtained a Cronbach's alpha of 0.92. An inspection of the item statistics indicated that all the corrected item total correlations were larger than .71. No items were identified to be problematic items. All items found in the Dedication scale were retained.

The Absorption subscale consisted of six items. Table 4.4 contains the results of the item analysis for the Absorption subscale.

The Absorption subscale obtained a Cronbach's alpha of 0.89. An inspection of the item statistics indicated that all the corrected item total correlations were larger than .59. No items were identified to be problematic items. All items found in the Absorption scale were retained.

**Table 4.4*****Item analysis results for the Absorption subscale***

Cronbach's alpha	Cronbach's alpha based on standardised items	N items
0.89	0.89	6

Variable	Scale mean if item deleted	Scale variance if item deleted	Item-total correlation	Scale standard deviation if item deleted	Cronbach's alpha if item deleted
ENGAGE_AB1	24.16	35.93	0.73	5.99	0.86
ENGAGE_AB2	24.59	37.83	0.62	6.15	0.88
ENGAGE_AB3	23.97	36.04	0.74	6.00	0.86
ENGAGE_AB4	24.10	35.51	0.81	5.96	0.85
ENGAGE_AB5	24.59	35.83	0.74	5.99	0.86
ENGAGE_AB6	25.09	35.80	0.59	5.98	0.89

(ENGAGE\_AB = Absorption)

**4.3.2 Item analysis findings: Maslach Burnout Inventory – General Survey (MBI-GS)**

Item analyses were done on every latent variable subscale in the Maslach Burnout Inventory – General Survey (MBI-GS). Table 4.5 represents a summary of the findings. No items were deleted, as the coefficient of the internal consistency (Cronbach's alpha) for all three subscales was found to be satisfactory (being > .70).

**Table 4.5*****Reliability results of the Maslach Burnout Inventory – General Survey latent variable scales***

Variable	Number of items	Mean	Standard deviation	Cronbach's alpha
MBI_EE	9	30.30	11.18	0.89
MBI_PA	8	26.23	9.60	0.80
MBI_DP	5	11.19	6.14	0.78

(MBI\_EE = Emotional exhaustion; MBI\_PA = Personal accomplishment; MBI\_DP = Depersonalisation)

The Emotional Exhaustion subscale consisted of nine items. Table 4.6 contains the results of the item analysis for the Emotional Exhaustion subscale.

**Table 4.6**

***Item analysis results for the Emotional Exhaustion subscale***

Cronbach's alpha	Cronbach's alpha based on standardised items	N items
0.89	0.89	9

Variable	Scale mean if item deleted	Scale variance if item deleted	Item-total correlation	Scale standard deviation if item deleted	Cronbach's alpha if item deleted
MBI_EE1	26.38	95.74	0.75	9.78	0.87
MBI_EE2	25.97	97.79	0.70	9.89	0.87
MBI_EE3	26.26	96.21	0.78	9.81	0.87
MBI_EE4	27.77	105.00	0.45	10.25	0.89
MBI_EE5	26.74	96.78	0.76	9.84	0.87
MBI_EE6	26.74	95.55	0.72	9.77	0.87
MBI_EE7	26.96	100.69	0.60	10.03	0.88
MBI_EE8	28.31	106.52	0.52	10.32	0.89
MBI_EE9	27.27	99.67	0.55	9.98	0.89

(MBI\_EE = Emotional exhaustion)

The Emotional Exhaustion subscale obtained a Cronbach's alpha of 0.89. An inspection of the item statistics indicated that all the corrected item total correlations were larger than .45. No items were identified to be problematic items. All items found in the Emotional Exhaustion subscale were retained.

The Personal Accomplishment subscale encompassed eight items. Table 4.7 contains the results of the item analysis for the Personal Accomplishment subscale.

The Personal Accomplishment subscale obtained a Cronbach's alpha of 0.80. An inspection of the item statistics indicated that all the corrected item total correlations were larger than .33. No items were identified to be problematic items. All items found in the Personal Accomplishment subscale were retained.

**Table 4.7*****Item analysis results for the Personal Accomplishment subscale***

Cronbach's alpha	Cronbach's alpha based on standardised items	N items
0.80	0.80	8

Variable	Scale mean if item deleted	Scale variance if item deleted	Item-total correlation	Scale standard deviation if item deleted	Cronbach's alpha if item deleted
MBI_PA1 (reversed)	23.09	76.55	0.33	8.75	0.81
MBI_PA2 (reversed)	23.42	73.31	0.45	8.56	0.79
MBI_PA3 (reversed)	22.46	72.49	0.46	8.51	0.79
MBI_PA4 (reversed)	22.72	72.34	0.55	8.51	0.78
MBI_PA5 (reversed)	23.38	66.87	0.71	8.18	0.75
MBI_PA6 (reversed)	22.51	68.37	0.61	8.27	0.76
MBI_PA7 (reversed)	22.92	70.57	0.58	8.40	0.77
MBI_PA8 (reversed)	23.12	75.16	0.44	8.67	0.79

(MBI\_PA = Personal accomplishment)

The Depersonalisation subscale consisted of five items. Table 4.8 contains the results of the item analysis for the Depersonalisation subscale.

The Depersonalisation subscale obtained a Cronbach's alpha of 0.78. An inspection of the item statistics indicated that all the corrected item total correlations were larger than .41. No items were identified to be problematic items. All items found in the Depersonalisation subscale were reserved.

**Table 4.8*****Item analysis results for the Depersonalisation subscale***

Cronbach's alpha	Cronbach's alpha based on standardised items	N items
0.78	0.78	5

Variable	Scale mean if item deleted	Scale variance if item deleted	Item-total correlation	Scale standard deviation if item deleted	Cronbach's alpha if item deleted
MBI_DP1	9.16	25.79	0.57	5.08	0.74
MBI_DP2	8.88	23.61	0.69	4.86	0.69
MBI_DP3	8.84	23.41	0.64	4.84	0.71
MBI_DP4	9.31	26.90	0.50	5.19	0.76
MBI_DP5	8.57	26.47	0.40	5.14	0.79

(MBI\_DP = Depersonalisation)

**4.3.3 Item analysis findings: Job Demands Resources Scale (JDRS)**

Item analyses were done on every latent variable subscale in the Job Demands Resources Scale (JDRS). Table 4.9 represents a summary of the findings. No items were deleted, as the coefficient of the internal consistency (Cronbach's alpha) for all five subscales was found to be satisfactory (being > .70).

**Table 4.9*****Reliability results of the Job Demands Resources Scale latent variable scales***

Variable	Number of items	Mean	Standard deviation	Cronbach's alpha
JDRS_GROW	19	52.89	10.80	0.92
JDRS_OS	11	29.57	6.45	0.87
JDRS_ADVAN	6	11.57	3.99	0.81
JDRS_OL	9	24.67	3.91	0.71
JDRS_JOBINS	3	7.65	2.80	0.88

(JDRS\_GROW = Growth Opportunity; JDRS\_OS = Organisational support; JDRS\_ADVAN = Advancement; JDRS\_OL = Overload; JDRS\_JOBINS = Job Insecurity)

The Growth Opportunities subscale comprised 19 items. Table 4.10 contains the results of the item analysis for the Growth Opportunities subscale.

**Table 4.10**

***Item analysis results for the Growth Opportunities subscale***

Cronbach's alpha	Cronbach's alpha based on standardised items	N items
0.92	0.92	19

Variable	Scale mean if item deleted	Scale variance if item deleted	Item-total correlation	Scale standard deviation if item deleted	Cronbach's alpha if item deleted
JDRS_GROW1 (reversed)	50.72	110.89	0.23	10.53	0.93
JDRS_GROW2	50.43	107.68	0.44	10.38	0.92
JDRS_GROW3	50.03	107.02	0.48	10.34	0.92
JDRS_GROW4	49.83	106.04	0.48	10.30	0.92
JDRS_GROW5	49.58	107.90	0.51	10.39	0.92
JDRS_GROW6	49.85	100.88	0.73	10.04	0.91
JDRS_GROW7	49.68	103.93	0.66	10.19	0.92
JDRS_GROW8	50.20	99.86	0.77	9.94	0.91
JDRS_GROW9	49.95	106.82	0.52	10.34	0.92
JDRS_GROW10	49.63	107.92	0.44	10.39	0.92
JDRS_GROW11	50.13	101.70	0.69	10.08	0.92
JDRS_GROW12	50.17	101.27	0.75	10.06	0.91
JDRS_GROW13	50.33	101.45	0.74	10.07	0.91
JDRS_GROW14	50.46	100.80	0.68	10.04	0.92
JDRS_GROW15	50.19	103.40	0.60	10.17	0.92
JDRS_GROW16	50.49	103.04	0.63	10.15	0.92
JDRS_GROW17	50.09	105.60	0.53	10.28	0.92
JDRS_GROW18	50.03	101.02	0.69	10.05	0.92
JDRS_GROW19	50.22	103.40	0.62	10.17	0.92

(JDRS\_GROW = Growth Opportunities)

The Growth Opportunities subscale obtained a Cronbach's alpha of 0.92. It was noted that the findings did not show any extreme means. The absence of this finding indicates the absence of poor items. Through an inspection of the item statistics, it was noted that all the corrected item-total correlations were larger than 0.44, except for JDRS\_GROW1 (reversed). The corrected item-total correlation for JDRS\_GROW1 (reversed) was 0.23. If the item was to be deleted, the Cronbach's alpha would have been 0.93. In deleting the item, the Cronbach's alpha would therefore not increase significantly. The item therefore was not deleted. There were no items flagged as problematic and all items found in the Growth Opportunities subscale were retained.

The Organisational Support subscale comprised of 11 items. Table 4.11 contains the results of the item analysis for the Organisational Support subscale.

**Table 4.11**

***Item analysis results for the Organisational Support subscale***

Cronbach's alpha	Cronbach's alpha based on standardised items	N items
0.87	0.87	11

Variable	Scale mean if item deleted	Scale variance if item deleted	Item-total correlation	Scale standard deviation if item deleted	Cronbach's alpha if item deleted
JDRS_OS1	27.10	34.26	0.54	5.85	0.86
JDRS_OS2	27.28	32.78	0.70	8.73	0.84
JDRS_OS3	27.08	32.87	0.72	5.73	0.84
JDRS_OS4	26.91	33.54	0.68	5.79	0.85
JDRS_OS5	26.68	33.91	0.71	5.82	0.85
JDRS_OS6	26.84	32.85	0.67	5.73	0.85
JDRS_OS7	26.93	33.46	0.66	5.78	0.85
JDRS_OS8	27.62	35.77	0.39	5.98	0.87
JDRS_OS9	26.44	36.61	0.45	6.05	0.86
JDRS_OS10	26.38	37.79	0.29	6.15	0.87
JDRS_OS11	26.46	36.50	0.41	6.04	0.86

(JDRS\_OS = Organisational Support)

The Organisational Support subscale obtained a Cronbach's alpha of 0.87. An inspection of the item statistics indicated that all the corrected item total correlations were larger than 0.39, except for JDRS\_OS10. The corrected item total correlation for JDRS\_OS10 was 0.29. If the item was to be deleted, the Cronbach's alpha would have been 0.87. In deleting the item, the Cronbach's alpha would therefore not increase significantly and thus the item was not deleted. There were no items flagged as problematic and all items found in the Organisational Support subscale were retained.

The Advancement subscale consisted of six items. Table 4.12 contains the results of the item analysis for the Advancement subscale.

**Table 4.12**

***Item analysis results for the Advancement subscale***

Cronbach's alpha	Cronbach's alpha based on standardised items	N items
0.81	0.81	6

Variable	Scale mean if item deleted	Scale variance if item deleted	Item-total correlation	Scale standard deviation if item deleted	Cronbach's alpha if item deleted
JDRS_ADVAN1	9.55	11.65	0.60	3.41	0.77
JDRS_ADVAN2	9.69	11.48	0.58	3.39	0.78
JDRS_ADVAN3	9.74	11.69	0.49	3.42	0.80
JDRS_ADVAN4	9.62	10.83	0.67	3.29	0.75
JDRS_ADVAN5	9.61	11.60	0.49	3.41	0.80
JDRS_ADVAN6	9.64	11.03	0.60	3.32	0.77

(JDRS\_ADVAN = Advancement)

The Advancement subscale obtained a Cronbach's alpha of 0.81. An inspection of the item statistics indicated that all the corrected item total correlations were larger than 0.49. The visual inspection revealed that none of the items, if deleted, would increase the current Cronbach's alpha significantly and therefore all items found in the Advancement subscale were retained.

The Overload subscale comprised nine items. Table 4.13 contains the results of the item analysis for the Overload subscale.

**Table 4.13**

***Item analysis results for the Overload subscale***

Cronbach's alpha	Cronbach's alpha based on standardised items	N items
0.71	0.71	9

Variable	Scale mean if item deleted	Scale variance if item deleted	Item-total correlation	Scale standard deviation if item deleted	Cronbach's alpha if item deleted
JDRS_OL1	22.27	11.55	0.50	3.40	0.66
JDRS_OL2	21.95	11.48	0.51	3.39	0.66
JDRS_OL3 (reversed)	21.20	13.41	0.19	3.66	0.72
JDRS_OL4	21.57	11.99	0.50	3.46	0.66
JDRS_OL5	21.20	13.71	0.23	3.70	0.71
JDRS_OL6	21.38	12.63	0.36	3.55	0.69
JDRS_OL7	22.67	12.44	0.32	3.53	0.70
JDRS_OL8	22.38	12.13	0.44	3.48	0.67
JDRS_OL9	22.72	12.51	0.41	3.54	0.68

(JDRS\_OL = Overload)

The Overload subscale obtained a Cronbach's alpha of 0.71. It was noted that the findings did not show any extreme means or small standard deviations. The absence of these findings indicates the absence of poor items. Through an inspection of the item statistics, it was noted that all the corrected item total correlations were larger than 0.32, except for the JDRS\_OL3 and JDRS\_OL5. The corrected item total correlation for JDRS\_OL3 was 0.19 and for JDRS\_OL5 it was 0.23. If the items were to be deleted, the Cronbach's alpha would have been 0.72 and 0.71 respectively. In deleting the items, the Cronbach's alpha therefore would not increase significantly. The items were therefore not deleted. It hence can be inferred that the correlations between each item and the total score calculated from the remaining items was satisfactorily

and that the items were reflecting the same underlying factor. No items were flagged as problematic and all items found in the Overload subscale were reserved.

The Job Insecurity subscale consisted of three items. Table 4.14 contains the results of the item analysis for the Job Insecurity subscale.

**Table 4.14**

***Item analysis results for the Job Insecurity subscale***

Cronbach's alpha	Cronbach's alpha based on standardised items	N items
0.88	0.88	3

Variable	Scale mean if item deleted	Scale variance if item deleted	Item-total correlation	Scale standard deviation if item deleted	Cronbach's alpha if item deleted
JDRS_JOBINS1	4.97	3.58	0.79	1.89	0.82
JDRS_JOBINS2	5.09	3.50	0.83	1.87	0.78
JDRS_JOBINS3	5.24	3.91	0.70	1.98	0.90

(JDRS\_JOBINS = Job insecurity)

The Job Insecurity subscale obtained a Cronbach's alpha of 0.88. An inspection of the item statistics indicated that all the corrected item total correlations were larger than 0.70. The visual inspection revealed that none of the items, if deleted, would increase the current Cronbach's alpha significantly and therefore all items found in the Organisational Support subscale were retained.

#### **4.3.4 Item analysis findings: HEXACO**

Item analyses were done on every latent variable subscale in the HEXACO. Table 4.15 represents a summary of the findings. No items were deleted, as the coefficient of the internal consistency (Cronbach alpha's) for all six subscales was found to be satisfactory (being > .60). The Cronbach alpha of the Honesty-Humility subscale was found to be the lowest, at 0.69. The standardised alpha of this subscale was found to be 0.70. It therefore also was viewed to be satisfactory. Note that, although all six subscales are discussed below, the hypotheses within this study will focus on only four of the subscales.

**Table 4.15*****Reliability results of the HEXACO latent variable subscales***

<b>Variable</b>	<b>Number of items</b>	<b>Mean</b>	<b>Standard deviation</b>	<b>Cronbach's alpha</b>
HEXACO_EXTRA	10	34.47	6.34	0.82
HEXACO_EMOTIO	10	31.06	6.25	0.76
HEXACO_CONSC	10	38.23	5.60	0.77
HEXACO_AGREE	10	32.79	5.74	0.75
HEXACO_OPEN	10	36.16	7.46	0.86
HEXACO_HONESTY	10	35.18	5.85	0.69

(HEXACO\_EXTRA = Extraversion; HEXACO\_EMOTIO = Emotionality; HEXACO\_CONSC = Conscientiousness; HEXACO\_AGREE = Agreeableness; HEXACO\_OPEN = Openness to experience; HEXACO\_HONESTY = Honesty-Humility)

The Extraversion subscale consisted of ten items. Table 4.16 contains the results of the item analysis for the Extraversion subscale.

The Extraversion subscale obtained a Cronbach's alpha of 0.82. An inspection of the item statistics indicated that all the corrected item total correlations were larger than 0.40. No items were identified to be problematic items. All items found in the Extraversion subscale were reserved.

**Table 4.16*****Item analysis results for the Extraversion subscale***

<b>Cronbach's alpha</b>	<b>Cronbach's alpha based on standardised items</b>	<b>N items</b>
0.82	0.82	10

<b>Variable</b>	<b>Scale mean if item deleted</b>	<b>Scale variance if item deleted</b>	<b>Item-total correlation</b>	<b>Scale standard deviation if item deleted</b>	<b>Cronbach's alpha if item deleted</b>
HEXACO_EXTRA1	30.78	33.87	0.43	5.82	0.81
HEXACO_EXTRA2(reversed)	30.96	32.77	0.57	5.72	0.80
HEXACO_EXTRA3(reversed)	30.70	31.50	0.52	5.61	0.80
HEXACO_EXTRA4(reversed)	31.01	33.42	0.44	5.78	0.81
HEXACO_EXTRA5	31.49	32.79	0.51	5.73	0.80
HEXACO_EXTRA6	31.43	32.77	0.53	5.72	0.80
HEXACO_EXTRA7	30.98	33.51	0.40	5.79	0.81
HEXACO_EXTRA8	31.10	32.28	0.57	5.68	0.80
HEXACO_EXTRA9	30.75	33.27	0.50	5.77	0.80
HEXACO_EXTRA10(reversed)	31.06	32.62	0.58	5.71	0.80

(HEXACO\_EXTRA = Extraversion)

The Emotionality subscale comprised ten items. Table 4.17 contains the results of the item analysis for the Emotionality subscale.

The Emotionality subscale obtained a Cronbach's alpha of 0.76. Through an inspection of the item statistics, it was noted that all the corrected item total correlations were larger than 0.37, except for HEXACO\_EMOTIO5 (reversed) and HEXACO\_EMOTIO7 (reversed). The corrected item total correlations for HEXACO\_EMOTIO5 (reversed) and HEXACO\_EMOTIO7 (reversed) were 0.30 and 0.29 respectively. If the items were to be deleted, the Cronbach's alpha would have been 0.75. In deleting the items, the Cronbach's alpha would therefore not increase significantly. The items were therefore not deleted. There were no items flagged as problematic and all items found in the Emotionality subscale were retained.

**Table 4.17*****Item analysis results for the Emotionality subscale***

<b>Cronbach's alpha</b>	<b>Cronbach's alpha based on standardised items</b>	<b>N items</b>
0.76	0.75	10

<b>Variable</b>	<b>Scale mean if item deleted</b>	<b>Scale variance if item deleted</b>	<b>Item-total correlation</b>	<b>Scale standard deviation if item deleted</b>	<b>Cronbach's alpha if item deleted</b>
HEXACO_EMOTIO1	28.43	30.73	0.45	5.54	0.73
HEXACO_EMOTIO2	27.94	32.60	0.39	5.71	0.74
HEXACO_EMOTIO3 (reversed)	27.94	30.61	0.55	5.53	0.72
HEXACO_EMOTIO4	27.34	32.22	0.48	5.68	0.73
HEXACO_EMOTIO5 (reversed)	27.57	34.16	0.30	5.84	0.75
HEXACO_EMOTIO6	28.07	32.60	0.37	5.71	0.74
HEXACO_EMOTIO7 (reversed)	28.68	34.08	0.28	5.84	0.75
HEXACO_EMOTIO8	28.06	31.41	0.44	5.60	0.73
HEXACO_EMOTIO9	27.43	32.80	0.42	5.73	0.73
HEXACO_EMOTIO10(reversed)	28.09	31.35	0.49	5.60	0.72

(HEXACO\_EMOTIO = Emotionality)

The Conscientiousness subscale comprised ten items. Table 4.18 contains the results of the item analysis for the Conscientiousness subscale.

The Conscientiousness subscale obtained a Cronbach's alpha of 0.77. Through an inspection of the item statistics, it was noted that all the corrected item total correlations were larger than 0.35, except for HEXACO\_CONSC6. The corrected item total correlation for HEXACO\_CONSC6 was 0.29. If the items were to be deleted, the Cronbach's alpha would have been 0.77. In deleting the item, the Cronbach's alpha would therefore not increase significantly. The item was therefore not deleted. There were no items flagged as problematic and all items found in the Conscientiousness subscale were retained.

**Table 4.18*****Item analysis results for the Conscientiousness subscale***

<b>Cronbach's alpha</b>	<b>Cronbach's alpha based on standardised items</b>	<b>N items</b>
0.77	0.77	10

<b>Variable</b>	<b>Scale mean if item deleted</b>	<b>Scale variance if item deleted</b>	<b>Item-total correlation</b>	<b>Scale standard deviation if item deleted</b>	<b>Cronbach's alpha if item deleted</b>
HEXACO_CONSC1	34.34	25.32	0.44	5.03	0.75
HEXACO_CONSC2(reversed)	34.58	25.11	0.45	5.01	0.75
HEXACO_CONSC3	33.97	26.23	0.43	5.12	0.75
HEXACO_CONSC4(reversed)	33.83	26.47	0.46	5.14	0.75
HEXACO_CONSC5(reversed)	34.14	24.45	0.59	4.94	0.73
HEXACO_CONSC6	34.23	27.73	0.29	5.27	0.77
HEXACO_CONSC7	34.94	25.94	0.35	5.09	0.76
HEXACO_CONSC8(reversed)	34.63	25.28	0.48	5.03	0.74
HEXACO_CONSC9(reversed)	34.43	26.38	0.43	5.14	0.75
HEXACO_CONSC10(reversed)	34.93	25.40	0.44	5.04	0.75

(HEXACO\_CONSC = Conscientiousness)

The Agreeableness subscale comprised ten items. Table 4.19 contains the results of the item analysis for the Agreeableness subscale.

The Agreeableness subscale obtained a Cronbach's alpha of 0.75. Through an inspection of the item statistics, it was noted that all the corrected item total correlations were larger than 0.34, except for HEXACO\_AGREE7. The corrected item total correlation for HEXACO\_AGREE7 was 0.27. If the items were to be deleted, the Cronbach's alpha would have been 0.75. In deleting the item, the Cronbach's alpha would therefore not increase significantly. The item therefore was not deleted. No items were flagged as problematic and all items found in the Agreeableness subscale were retained.

**Table 4.19*****Item analysis results for the Agreeableness subscale***

<b>Cronbach's alpha</b>	<b>Cronbach's alpha based on standardised items</b>	<b>N items</b>
0.75	0.75	10

<b>Variable</b>	<b>Scale mean if item deleted</b>	<b>Scale variance if item deleted</b>	<b>Item-total correlation</b>	<b>Scale standard deviation if item deleted</b>	<b>Cronbach's alpha if item deleted</b>
HEXACO_AGREE1	29.41	27.95	0.34	5.29	0.74
HEXACO_AGREE2	29.52	27.21	0.44	5.22	0.73
HEXACO_AGREE3(reversed)	29.64	26.46	0.48	5.14	0.72
HEXACO_AGREE4	29.62	28.18	0.34	5.31	0.74
HEXACO_AGREE5	29.70	27.32	0.40	5.23	0.73
HEXACO_AGREE6(reversed)	29.97	25.69	0.47	5.07	0.72
HEXACO_AGREE7	29.38	29.24	0.27	5.41	0.75
HEXACO_AGREE8(reversed)	29.47	26.91	0.45	5.19	0.73
HEXACO_AGREE9(reversed)	29.13	24.97	0.59	5.00	0.70
HEXACO_AGREE10	29.28	28.29	0.35	5.32	0.74

(HEXACO\_AGREE = Agreeableness)

The Openness to Experience subscale consisted of ten items. Table 4.20 contains the results of the item analysis for the Openness to Experience subscale.

The Openness to Experience subscale obtained a Cronbach's alpha of 0.86. An inspection of the item statistics indicated that all the corrected item total correlations were larger than 0.47. No items were identified to be problematic items. All items found in the Openness to Experience subscale were reserved.

**Table 4.20*****Item analysis results for the Openness to Experience subscale***

<b>Cronbach's alpha</b>	<b>Cronbach's alpha based on standardised items</b>	<b>N items</b>
0.86	0.86	10

<b>Variable</b>	<b>Scale mean if item deleted</b>	<b>Scale variance if item deleted</b>	<b>Item-total correlation</b>	<b>Scale standard deviation if item deleted</b>	<b>Cronbach's alpha if item deleted</b>
HEXACO_OPEN1(reversed)	32.51	42.78	0.64	6.54	0.84
HEXACO_OPEN2	32.87	42.68	0.66	6.53	0.84
HEXACO_OPEN3	32.69	45.75	0.54	6.76	0.85
HEXACO_OPEN4(reversed)	32.55	45.06	0.51	6.71	0.84
HEXACO_OPEN5	32.20	43.38	0.64	6.59	0.84
HEXACO_OPEN6	32.50	46.27	0.56	6.80	0.85
HEXACO_OPEN7(reversed)	32.51	45.66	0.51	6.76	0.85
HEXACO_OPEN8(reversed)	32.40	48.65	0.47	6.98	0.85
HEXACO_OPEN9	32.53	48.71	0.52	6.98	0.85
HEXACO_OPEN10(reversed)	32.65	45.42	0.56	6.74	0.85

(HEXACO\_OPEN = Openness to experience)

The Honesty-Humility subscale comprised ten items. Table 4.21 contains the results of the item analysis for the Honesty-Humility subscale.

The Honesty-Humility subscale obtained a Cronbach's alpha of 0.69. Through an inspection of the item statistics, it was noted that all the corrected item total correlations were larger than 0.33, except for HEXACO\_HONESTY1, HEXACO\_HONESTY3 and HEXACO\_HONESTY8 (reversed). The corrected item total correlations for HEXACO\_HONESTY1, HEXACO\_HONESTY3 and HEXACO\_HONESTY8 (reversed) were 0.22, 0.24 and 0.28 respectively. If the items were to be deleted, the Cronbach's alphas would have been 0.70, 0.69 and 0.68 respectively. In deleting the items, the Cronbach's alpha would not increase

significantly. The items therefore were not deleted. All items found in the Honesty-Humility subscale were retained.

**Table 4.21**

***Item analysis results for the Honesty-Humility subscale***

Cronbach's alpha	Cronbach's alpha based on standardised items	N items
0.69	0.70	10

Variable	Scale mean if item deleted	Scale variance if item deleted	Item-total correlation	Scale standard deviation if item deleted	Cronbach's alpha if item deleted
HEXACO_HONESTY1	31.45	28.94	0.22	5.38	0.70
HEXACO_HONESTY2(reversed)	31.44	27.69	0.50	5.26	0.64
HEXACO_HONESTY3	31.70	29.15	0.24	5.40	0.70
HEXACO_HONESTY4(reversed)	31.27	27.76	0.40	5.27	0.66
HEXACO_HONESTY5	31.41	27.96	0.33	5.29	0.67
HEXACO_HONESTY6(reversed)	31.06	26.82	0.51	5.18	0.64
HEXACO_HONESTY7	32.50	28.86	0.39	5.37	0.66
HEXACO_HONESTY8(reversed)	32.37	29.48	0.28	5.43	0.68
HEXACO_HONESTY9(reversed)	31.57	29.15	0.34	5.40	0.70
HEXACO_HONESTY10(reversed)	31.87	28.83	0.38	5.37	0.66

(HEXACO\_HONESTY = Honesty-Humility)

#### **4.3.5 Conclusion resulting from the item analysis and the measuring of the measurement models**

The purpose of the foregoing item analysis was to formulate an understanding of the validity of the subscales of the various latent variables found in the structural model, as depicted in Figure 3.1. Conducting item analyses assisted in providing evidence of the psychometric integrity of the various indicator variables that represent each of the latent variables.

The results obtained from the item analyses is proof that the retained items may be combined into item parcels, as sufficient internal consistency was found for the latent variable subscales.

Only one of the subscales' Cronbach's alpha did not exceed 0.70 (it was only slightly below 0.70, being 0.69). In this specific case, the standardised alpha of the subscale was still above .70.

The conclusion was made that all measurements would be utilised, and that all items were retained with all subscales.

#### 4.4 Investigating correlations

A summary of descriptive statistics portraying the means and standard deviations of the descriptive statistics can be seen in Table 4.22.

**Table 4.22**

***Descriptive statistics***

Variable	Descriptive Statistics	
	Mean	Standard Deviation
Perf	108.88	14.78
Eng	83.65	19.70
Burn	67.67	21.42
JRes	94.03	18.98
Extra	34.47	6.34
Emo	31.06	6.25
Consc	38.23	5.60
Agree	32.79	5.74
JOver	24.67	3.91
JInsec	7.65	2.80

(Perf = Performance; Eng = Engagement; Burn = Burnout; JRes = Job Resources; Extra = Extraversion; Emo = Emotionality; Consc = Conscientiousness; Agree = Agreeableness; JOver = Job Overload; JInsec = Job Insecurity)

The correlation coefficients between the latent variables as found in the structural model, depicted in Figure 3.1 were assessed. A summary of the correlations found can be seen in Table 4.23.

**Table 4.23**  
**Correlations**

Variable	Eng	Burn	JRes	Extra	Emo	Consc	Agree	JOver	JInsec
<b>Perf</b>	0.18*	-0.05							
<b>Eng</b>	-		0.68**	0.48**	-0.02	0.37**	0.31**	-0.08	-0.19**
<b>Burn</b>		-	-0.59**	-0.60**	0.12	-0.40**	-0.43**	0.32**	0.24**

\*\*  $p < 0.05$  (Statistically significant at the 95% confidence level)

\* $p = 0.05$

*Note that only inter-correlations relevant to the hypotheses related to this study were included in the correlation table above.*

(Perf = Performance; Eng = Engagement; Burn = Burnout; JRes = Job Resources; Extra = Extraversion; Emo = Emotionality; Consc = Conscientiousness; Agree = Agreeableness; JOver = Job Overload; JInsec = Job Insecurity)

A correlation greater than 0.5 reflected a large correlation. A correlation greater than 0.3 and smaller than 0.5 reflected a medium sized correlation and a correlation smaller than 0.3 reflected a small correlation.

#### **4.5 Partial Least Square (PLS) path analysis**

A prediction-orientated Structural Equation Modelling (SEM) technique called PLS was utilised to investigate model relationships. Due to the sample size being small, a covariance-based SEM was not utilised and instead a PLS-based SEM was utilised.

The R-square of the endogenous variables can be seen in Table 4.24. The R-square value refers to the variance explained by the inner (structural) model. Four percent of the dependent variable Performance was explained by the model; while 64% of the dependent variable Burnout and 61% of the dependant variable Engagement were explained by the model.

**Table 4.24**  
**Overview of PLS**

Construct	AVE	Composite reliability	R square
Performance			0.04
Engagement	0.89	0.96	0.61
Burnout	0.58	0.80	0.64
Job Resources (Agreeableness, Personal Growth and Organisational Support)	0.78	0.91	
Personal Resources (Extraversion)	0.37	0.85	
Personal Resources (Emotionality)	0.18	0.65	
Personal Resources (Conscientiousness)	0.32	0.81	
Personal Resources (Agreeableness)	0.30	0.81	
Job Demands (Job Overload)	0.26	0.62	
Job Demands (Job Insecurity)	0.81	0.93	

On evaluation of the composite reliability, the predictors Job Demands (Job Overload) and Personal Resources (Emotionality) were highlighted as potentially being problematic. The composite reliability for Job Overload was 0.62 and for Emotionality it was 0.65. All the other constructs portrayed composite reliabilities greater than 0.7.

The Average Variance Extracted (AVE) value refers to the outer model and is an indication of how well the latent variables are measured. In other words, the AVE refers to the amount of variance explained by the latent variables found in the outer model (Diamantopoulos & Siguaaw, 2000). It is preferred that the AVE is > 0.50, as this would indicate that latent variable scales do not measure constructs that are unrelated on a theoretical basis (Farrell, 2010, as cited in Theron, 2013). Job Overload was again identified as a latent variable without a sufficient AVE, being 0.27. Emotionality proved to have the lowest AVE, at 0.18, and Extraversion, Conscientiousness and Agreeableness (being the other variables of Personal Resources) also all indicated low AVE scores of 0.37, 0.32 and 0.30 respectively. All of these constructs were measured through the use of the HEXACO. It is noted that the low AVE of all of these constructs might refer to the possible poor measurement of the personal resources within the model. The possibility of the HEXACO being a poor measurement of personal resources was

taken into consideration throughout the rest of the reporting done on these four personal resources constructs. It was noted that the composite reliability scores of these last mentioned variables proved to be sufficient.

Due to the composite reliability scores as well as the AVE being lower than preferred, a question was raised in connection with functionality (effect) of Emotionality and Job Overload within the inner model. It should be noted that some of the path coefficients linked to Job Overload and Emotionality might not be significant in cases where they should have been.

The AVE and composite reliability for the latent variables not mentioned were found to be sufficient.

#### **4.5.1 Reliability analysis**

Through a reliability analysis and by examining the outer loadings, the measurement model was reviewed. Emphasis was placed on the relationship of the various items with the latent variables. For the predictor variables:

- Job Resources (Advancement, Personal Growth and Organisational Support) had three items loading onto it;
- Personal Resources (Extraversion) had ten items loading onto it;
- Personal Resources (Emotionality) had ten items loading onto it;
- Personal Resources (Conscientiousness) had ten items loading onto it;
- Personal Resources (Agreeableness) had ten items loading onto it;
- Job Demands (Job Overload) had nine items loading onto it; and
- Job Demands (Job Insecurity) had three items loading onto it.

For the dependable variables:

- Engagement also had three items loading onto it; and
- Burnout had three items loading onto it.

It is preferred that the outer loading score obtained should be greater than 0.5. A bootstrap was conducted in order to confirm the significance of the relationships.

Table 4.25 shows the findings with reference to the outer loadings on Engagement.

**Table 4.25**  
***Outer loadings on Engagement***

Construct	Item	Outer loading	95% lower		Significant
Engagement	ENGAGE_AB	0.95	0.92	0.97	Yes
Engagement	ENGAGE_DE	0.93	0.89	0.96	Yes
Engagement	ENGAGE_VI	0.96	0.93	0.97	Yes

(ENGAGE\_AB = Absorption; ENGAGE\_DE = Dedication; ENGAGE\_VI = Vigour)

All outer loadings were found to be greater than 0.5, indicating that all the relationships between the latent variable Engagement and the items loading onto it were statistically significant. The calculated confidence intervals also proved these findings to be true.

Table 4.26 shows the findings with reference to the outer loadings on Burnout.

**Table 4.26**  
***Outer loadings on Burnout***

Construct	Item	Outer loading	95% lower		Significant
Burnout	MBI_DP	0.85	0.76	0.91	Yes
Burnout	MBI_EE	0.92	0.89	0.95	Yes
Burnout	MBI_PA	0.58	0.24	0.75	Yes

(MBI\_DP = Depersonalisation; MBI\_EE = Emotional Exhaustion; MBI\_PA = Personal Accomplishment)

All outer loadings were found to be greater than 0.5, indicating that all the relationships between the latent variable Burnout and the items loading onto it were statistically significant. The visual evaluation of the confidence intervals calculated for each item also confirmed that the relationships in the outer loadings were found to be statistically significant.

Table 4.27 shows the findings with reference to the outer loadings on Job Resources.

**Table 4.27**  
***Outer loadings on Job Resources***

Construct	Item	Outer loading	95% lower		Significant
Job Resources	JDRS_ADVAN	0.83	0.82	0.73	Yes
Job Resources	JDRS_GROW	0.89	0.89	0.84	Yes
Job Resources	JDRS_OS	0.93	0.93	0.9	Yes

(JDRS\_ADVAN = Advancement; JDRS\_GROW = Growth Opportunities; JDRS\_OS = Organisational Support)

All outer loadings were found to be greater than 0.5, indicating that all the relationships between the latent variable Job Resources and the items loading onto it were statistically significant. Through the evaluation of the scores obtained through bootstrapping, the confidence intervals also confirmed that the relationships were all statistically significant.

Table 4.28 shows the findings with reference to the outer loadings on Extraversion.

**Table 4.28**  
***Outer loadings on Extraversion***

Construct	Item	Outer loading	95% lower		Significant
Extraversion	HEXACO_EXTRA1	0.52	0.22	0.71	Yes
Extraversion	HEXACO_EXTRA2 (reversed)	0.66	0.52	0.75	Yes
Extraversion	HEXACO_EXTRA3 (reversed)	0.67	0.51	0.80	Yes
Extraversion	HEXACO_EXTRA4 (reversed)	0.53	0.28	0.67	Yes
Extraversion	HEXACO_EXTRA5	0.54	0.23	0.71	Yes
Extraversion	HEXACO_EXTRA6	0.55	0.23	0.72	Yes
Extraversion	HEXACO_EXTRA7	0.47	0.15	0.65	Yes
Extraversion	HEXACO_EXTRA8	0.65	0.44	0.77	Yes
Extraversion	HEXACO_EXTRA9	0.72	0.64	0.81	Yes
Extraversion	HEXACO_EXTRA10(reversed)	0.73	0.60	0.82	Yes

(HEXACO\_EXTRA = Extraversion)

All outer loadings, except for HEXACO\_EXTRA7 (being 0.47), were found to be greater than 0.5, indicating that all the relationships between the latent variable Extraversion and the items loading onto it were statistically significant. The scores indicating the confidence interval also confirmed these findings. With HEXACO\_EXTRA7, the bootstrap still indicated that the relationship was significant.

Table 4.29 shows the findings with reference to the outer loadings on Emotionality.

**Table 4.29**

***Outer loadings on Emotionality***

Construct	Item	Outer loading	95% lower		Significant
Emotionality	HEXACO_EMOTIO1	0.63	-0.39	0.81	No
Emotionality	HEXACO_EMOTIO2	0.34	-0.33	0.76	No
Emotionality	HEXACO_EMOTIO3(reversed)	0.63	-0.29	0.80	No
Emotionality	HEXACO_EMOTIO4	0.41	-0.32	0.77	No
Emotionality	HEXACO_EMOTIO5(reversed)	0.48	-0.36	0.73	No
Emotionality	HEXACO_EMOTIO6	0.38	-0.40	0.76	No
Emotionality	HEXACO_EMOTIO7(reversed)	0.37	-0.41	0.74	No
Emotionality	HEXACO_EMOTIO8	0.14	-0.45	0.75	No
Emotionality	HEXACO_EMOTIO9	0.48	-0.20	0.77	No
Emotionality	HEXACO_EMOTIO10(reversed)	0.06	-0.50	0.77	No

(HEXACO\_EMOTIO = Emotionality)

All outer loadings for the construct Emotionality proved to be below 0.5, except for HEXACO\_EMOTIO1 and HEXACO\_EMOTION3 (reversed), which both were 0.63.

The latent variable Emotionality therefore was flagged as a possible problem variable due to the concern formed around the measurement of the variable through the use of the HEXACO.

Due to the finding in the outer loadings on Emotionality, it is noted that it cannot be confirmed that the construct of Emotionality was measured accurately. Due to the doubt created by the findings on the measurement of Emotionality, it cannot be said with assurance that the findings on the relationships tested through the hypotheses formed around Emotionality should be taken to be an accurate representation of the truth. Further reporting on the two hypotheses that

include emotionality was done, but care should be taken with regard to the conclusions drawn from the findings, as the item is flagged as problematic.

Two measures were taken in order to counter the fact that the measurement of Emotionality might be showing inaccuracies. The possibility that there were missing items in the data set was again reviewed. It was again identified that the questionnaire had measures built into it that ensured that the candidates could not skip or neglect to answer some items. No missing items were found. No items were also flagged to be problematic to the extent that they should be removed from the data set. The results were also pulled from the data set in a manner that excluded the construct of Emotionality from the model. In this case it was found that the findings analysed from these results were not significantly different from the results analysed from the current data set. Excluding the construct of Emotionality therefore would not have such a significant impact on the results and for this reason it was not excluded from the reports.

Table 4.30 shows the findings with reference to the outer loadings on Conscientiousness.

**Table 4.30**

***Outer loadings on Conscientiousness***

Construct	Item	Outer loading	95% lower		Significant
Conscientiousness	HEXACO_CONSC1	0.67	0.52	0.77	Yes
Conscientiousness	HEXACO_CONSC2(reversed)	0.58	0.36	0.71	Yes
Conscientiousness	HEXACO_CONSC3	0.59	0.19	0.78	Yes
Conscientiousness	HEXACO_CONSC4(reversed)	0.71	0.48	0.83	Yes
Conscientiousness	HEXACO_CONSC5(reversed)	0.77	0.58	0.85	Yes
Conscientiousness	HEXACO_CONSC6	0.43	0.11	0.65	Yes
Conscientiousness	HEXACO_CONSC7	0.28	-0.08	0.55	No
Conscientiousness	HEXACO_CONSC8(reversed)	0.44	-0.03	0.65	No
Conscientiousness	HEXACO_CONSC9(reversed)	0.49	0.21	0.67	Yes
Conscientiousness	HEXACO_CONSC10(reversed)	0.50	0.12	0.68	Yes

(HEXACO\_CONSC = Conscientiousness)

All outer loadings, except for HEXACO\_CONSC6, HEXACO\_CONSC7, HEXACO\_CONSC8 (reversed) and HEXACO\_CONSC9 (reversed), were found to be greater than 0.5, indicating that those relationships between the latent variable Conscientiousness and the items loading

onto it were statistically significant. The scores indicating the confidence interval for the relationships where the outer loadings were above 0.5 also confirmed these findings. The outer loadings found for HEXACO\_CONSC6, HEXACO\_CONSC7, HEXACO\_CONSC8 (reversed) and HEXACO\_CONSC9 (reversed) were 0.43, 0.28, 0.44 and 0.49 respectively. The bootstrap still indicated that the relationships between the construct Conscientiousness and the items HEXACO\_CONSC6 and HEXACO\_CONSC9 (reversed) were significant. The bootstrap for the items HEXACO\_CONSC7 and HEXACO\_CONSC8 (reversed) showed that the relationships were not significant.

The latent variable Conscientiousness was therefore flagged as a possible problem variable due to the concern formed around the measurement of the variable.

Table 4.31 shows the findings with reference to the outer loadings on Agreeableness.

**Table 4.31**  
***Outer loadings on Agreeableness***

Construct	Item	Outer loading	95% lower		Significant
Agreeableness	HEXACO_AGREE1	0.61	0.43	0.75	Yes
Agreeableness	HEXACO_AGREE2	0.64	0.40	0.78	Yes
Agreeableness	HEXACO_AGREE3(reversed)	0.57	0.24	0.74	Yes
Agreeableness	HEXACO_AGREE4	0.40	0.08	0.58	Yes
Agreeableness	HEXACO_AGREE5	0.42	0.1	0.62	Yes
Agreeableness	HEXACO_AGREE6(reversed)	0.58	0.32	0.71	Yes
Agreeableness	HEXACO_AGREE7	0.42	0.12	0.62	Yes
Agreeableness	HEXACO_AGREE8(reversed)	0.59	0.29	0.74	Yes
Agreeableness	HEXACO_AGREE9(reversed)	0.70	0.53	0.81	Yes
Agreeableness	HEXACO_AGREE10	0.44	0.11	0.66	Yes

(HEXACO\_AGREE = Agreeableness)

All outer loadings were found to be greater than 0.5, indicating that all the relationships between the latent variable Agreeableness and the items loading onto it were statistically significant. Through the evaluation of the scores obtained through bootstrapping, the confidence intervals also confirmed that the relationships were all statistically significant.

Table 4.32 shows the findings with reference to the outer loadings on Job Overload.

**Table 4.32**

***Outer loadings on Job Overload***

Construct	Item	Outer loading	95% lower		Significant
Job Overload	JDRS_OL1	0.46	0.13	0.74	Yes
Job Overload	JDRS_OL2	0.49	0.2	0.74	Yes
Job Overload	JDRS_OL3(revered)	-0.17	-0.5	0.56	No
Job Overload	JDRS_OL4	0.33	-0.01	0.72	No
Job Overload	JDRS_OL5	-0.05	-0.33	0.57	No
Job Overload	JDRS_OL6	0.15	-0.15	0.73	No
Job Overload	JDRS_OL7	0.78	0.16	0.86	Yes
Job Overload	JDRS_OL8	0.72	0.34	0.83	Yes
Job Overload	JDRS_OL9	0.83	0.26	0.88	Yes

(JDRS\_OL = Job Overload)

Upon examination of the outer loadings of the items on the latent variable Job Overload, the items JDRS\_OL1, JDRS\_OL2, JDRS\_OL3 (reversed), JDRS\_OL4, JDRS\_OL5, and JDRS\_OL6 were flagged as possibly being problematic, as they were all below 0.5. Through the bootstrap it was found that the relationship between Job Overload and the items JDRS\_OL1 and JDRS\_OL2 were in fact statistically significant. The relationship between Job Overload and the items JDRS\_OL3 (reversed), JDRS\_OL4, JDRS\_OL5, and JDRS\_OL6 were however confirmed by the bootstrap to be non-significant. All the remaining outer loadings found between the items and latent variable indicated that the relationships were found to be significant.

The latent variable Job Overload therefore was flagged as a possible problem variable due to the concern formed around the measurement of the variable.

Table 4.33 depicts the finding with reference to the outer loadings on Job Insecurity.

All relationships between the construct Job Insecurity and its items were found to be statistically significant. Through the evaluation of the confidence intervals, it was confirmed that the relationships were found to be statistically significant.

**Table 4.33*****Outer loadings on Job Insecurity***

Construct	Item	Outer loading	95% lower		Significant
Job Insecurity	JDRS_JOBINS1	0.9	0.77	0.95	Yes
Job Insecurity	JDRS_JOBINS2	0.93	0.84	0.97	Yes
Job Insecurity	JDRS_JOBINS3	0.88	0.8	0.94	Yes

(JDRS\_JOBINS = Job Insecurity)

**4.5.2 Path coefficients**

The inner model is referred to when examining the path coefficients. The path coefficients refer to the relationships between the various endogenous and exogenous latent variables. Double checks were performed on the data by means of bootstrapping to ensure that the results were accurate. Of the 16 paths (as elaborated on in Chapter 2), six were found to be statistically significant for the sample group within the retail e-commerce industry. Table 4.34 sets out the findings collaborated through analysing the path coefficients.

Through the method of bootstrapping, it was confirmed that the data portrayed on ten relationships were found to be non-significant. Note that, although the finding on the two relationships taking Emotionality into account both proved to be non-significant, a question is raised with regard to the effective measurement of the construct of Emotionality. The accuracy of the findings therefore is under question.

**Table 4.34*****Path coefficients found for the structural model***

Path	Path coefficient	95% lower	95% upper	Result
Engagement on Performance	0.26	0.02	0.47	Significant
Burnout on Performance	0.10	-0.14	0.30	Not significant
Job Resources on Engagement	0.57	0.38	0.66	Significant
Job Resources on Burnout	-0.24	-0.36	-0.03	Significant
Extraversion on Engagement	0.10	-0.03	0.26	Not Significant
Extraversion on Burnout	-0.32	-0.46	-0.16	Significant
Emotionality on Engagement	-0.10	-0.26	0.28	Not Significant
Emotionality on Burnout	0.10	-0.18	0.24	Not Significant
Conscientiousness on Engagement	0.23	0.08	0.38	Significant
Conscientiousness on Burnout	-0.12	-0.27	0.03	Not Significant
Agreeableness on Engagement	0.11	-0.07	0.29	Not significant
Agreeableness on Burnout	-0.26	-0.41	-0.10	Significant
Job Overload on Engagement	0	-0.19	0.19	Not significant
Job Overload on Burnout	0.13	-0.05	0.3	Not significant
Job Insecurity on Engagement	0.08	-0.08	0.19	Not significant
Job Insecurity on Burnout	0.05	-0.08	0.21	Not Significant

**4.6 Divergent validity**

Through testing divergent validities, an evaluation was undertaken to justify whether the constructs found in the inner model could be classified as entities on their own. It was found that all the constructs in the structural model, except for Extraversion and Conscientiousness, were indeed entities on their own. Care was taken with Extraversion and Conscientiousness throughout the rest of the study as it was possible that Extraversion and Conscientiousness might not refer to the intended constructs.

## 4.7 Summary

Through the method of SEM PLS, it was concluded that not all of the relationships found in the structural model were statistically significant. A breakdown of the statistical significance of the relationships will be discussed per hypothesis.

**Hypothesis 1:** Engagement ( $\eta_2$ ) has a significant positive influence on performance ( $\eta_3$ ).

Hypothesis 1 was accepted. It was found that there was a statistically significant positive relationship between engagement and performance. As engagement increases, performance will increase.

**Hypothesis 2:** Burnout ( $\eta_1$ ) has a significant negative influence on performance ( $\eta_3$ ).

Hypothesis 2 was rejected. It was found that there was no statistically significant relationship between burnout and performance.

**Hypothesis 3:** Job resources (advancement, personal growth and organisational support) ( $\xi_3$ ) have a significant positive influence on engagement ( $\eta_2$ ).

Hypothesis 3 was accepted. It was found that there was a statistically significant positive relationship between job resources (advancement, personal growth and organisational support) and engagement. As job resources (advancement, personal growth and organisational support) increase, engagement will increase.

**Hypothesis 4:** Job resources (advancement, personal growth and organisational support) ( $\xi_3$ ) have a significant negative influence on burnout ( $\eta_1$ ).

Hypothesis 4 was accepted. It was found that there was a statistically significant negative relationship between job resources (advancement, personal growth and organisational support) and burnout. As job resources (advancement, personal growth and organisational support) increase, burnout will decrease.

**Hypothesis 5:** Personal resources (extraversion) ( $\xi_4$ ) have a significant positive influence on engagement ( $\eta_2$ ).

Hypothesis 5 was rejected. It was found that there was no statistically significant relationship between personal resources (extraversion) and engagement.

**Hypothesis 6:** Personal resources (extraversion) ( $\xi_4$ ) have a significant negative influence on burnout ( $\eta_1$ ).

Hypothesis 6 was accepted. It was found that there was a statistically significant positive relationship between personal resources (extraversion) and engagement. As personal resources (extraversion) increase, engagement will increase.

**Hypothesis 7:** Personal resources (emotionality) ( $\xi_5$ ) have a significant positive influence on engagement ( $\eta_2$ ).

Hypothesis 7 was rejected. It was found that there was no statistically significant relationship between personal resources (emotionality) and engagement. The validity of the findings were questioned due to the reporting done on the accuracy of the measurement of the construct. Due to the lack of assurance that emotionality was measured accurately, the finding made that hypothesis 7 should be rejected is questioned.

**Hypothesis 8:** Personal resources (emotionality) ( $\xi_5$ ) have a significant negative influence on burnout ( $\eta_1$ ).

Hypothesis 8 was rejected. It was found that there was no statistically significant relationship between personal resources (emotionality) and burnout. The validity of the findings were questioned due to the reporting done on the accuracy of the measurement of the construct. Due to the lack of assurance that emotionality was measured accurately, the finding made that hypothesis 8 should be rejected is questioned.

The possibility that emotionality as a personal resource could rather act as a moderator in this relationship, as per the literature review, should not be excluded, even though the accuracy of the measurement used with this construct is questioned. Emotionality would then have a negative relationship and impact on burnout as per the literature through its moderating effect on the relationship between job demands and burnout.

**Hypothesis 9:** Personal resources (conscientiousness) ( $\xi_6$ ) have a significant positive influence on engagement ( $\eta_2$ ).

Hypothesis 9 was accepted. It was found that there was a statistically significant positive relationship between personal resources (conscientiousness) and engagement. As personal resources (conscientiousness) increase, engagement will increase.

**Hypothesis 10:** Personal resources (conscientiousness) ( $\xi_6$ ) have a significant negative influence on burnout ( $\eta_1$ ).

Hypothesis 10 was rejected. It was found that there was no statistically significant relationship between personal resources (conscientiousness) and burnout. It might be that conscientiousness should rather be viewed as a moderator, as indicated in the literature review. Conscientiousness would then have a negative relationship and impact on burnout as per the literature through its moderating effect on the relationship between job demands and burnout.

**Hypothesis 11:** Personal resources (agreeableness) ( $\xi_7$ ) have a significant positive influence on engagement ( $\eta_2$ ).

Hypothesis 11 was rejected. It was found that there was no statistically significant relationship between personal resources (agreeableness) and engagement. It might be that agreeableness should rather be viewed as a moderator, as indicated in the literature review. Agreeableness would then have a positive relationship and impact on engagement as per the literature through its moderating effect on the relationship between job resources and engagement.

**Hypothesis 12:** Personal resources (agreeableness) ( $\xi_7$ ) have a significant negative influence on burnout ( $\eta_1$ ).

Hypothesis 12 was accepted. It was found that there was a statistically significant positive relationship between personal resources (agreeableness) and burnout. As personal resources (agreeableness) increase, burnout will increase.

**Hypothesis 13:** Job demands (job overload) ( $\xi_1$ ) have a significant negative influence on engagement ( $\eta_2$ ).

Hypothesis 13 was rejected. It was found that there was no statistically significant relationship between job demands (job overload) and engagement. The possibility for job overload to act as a moderator (as per the literature review) on the relationship between job resources and personal resources with engagement should not be excluded. As the hypothesis was rejected, the argument for job overload to act as a moderator in this sense is motivated.

**Hypothesis 14:** Job demands (job overload) ( $\xi_1$ ) have a significant positive influence on burnout ( $\eta_1$ ).

Hypothesis 14 was rejected. It was found that there was no statistically significant positive relationship between job demands (job overload) and burnout.

**Hypothesis 15:** Job demands (job insecurity) ( $\xi_2$ ) have a significant negative influence on engagement ( $\eta_2$ ).

Hypothesis 15 was rejected. It was found that there was no statistically significant relationship between job demands (job insecurity) and engagement. It might be that job insecurity as a job demand should rather be viewed as a moderator, as indicated in the literature review. Job insecurity would then have a negative impact on engagement due to its moderating effect on the relationship between job resources and personal resources with engagement.

**Hypothesis 16:** Job demands (job insecurity) ( $\xi_2$ ) have a significant positive influence on burnout ( $\eta_1$ ).

Hypothesis 16 was rejected. It was found that there was no statistically significant relationship between job demands (job insecurity) and burnout.

## CHAPTER 5

### IMPLICATIONS, RECOMMENDATIONS AND LIMITATIONS

#### 5.1 Introduction

The objective of the study was to use the JD-R model and principles of the theory to investigate what drives performance. The study focused on the e-commerce retail industry, being the biggest and newest area of growth within the retail sector, as proposed by the Wholesale and Retail SETA in the updated Sector Skills Plan 2013/2014. Occupational wellbeing and its influence on performance are viewed as topics of note in South Africa, due to factors such as the country's low productivity ranking and typical stress and motivation problems noted in the workplace that affect companies' competitive advantage negatively. The research findings, as noted in Chapter 4, shed light on the depth of these topics, problems and factors. I/O psychologists need to be on the lookout for practical interventions for how to address the various problems related to performance and occupational wellbeing. It is the intention of this chapter to assist in suggesting practical interventions for the aforementioned problems, to highlight recommendations for future studies and to qualify the limitations of the study through the evaluation of the JD-R model in the e-commerce retail industry.

#### 5.2 Implications

According to the research findings noted in Chapter 4, it can be said that a positively significant relationship can be found between engagement and performance, and that the relationship argued to be between burnout and performance is non-significant. From these findings, it is evident that I/O psychologists should invest time in formulating and implementing interventions that could strengthen the relationship between engagement and performance, as well as setting up interventions to enhance employees' levels of engagement.

It is due to the significant relationships found within the model that the conclusion can be made that the latent variables, as found within the structural model (depicted in Figure 3.1), indicate significant interventions that I/O psychologists could pursue in order to enhance the prevalence of high levels of engagement within employees employed within the e-commerce industry. There should be investment in these interventions due to the significant relationship found between engagement and performance, so as to increase employee performance, competitive advantage and growth. Developing and implementing interventions and strategies with reference to these latent variables within the JD-R model may enhance the prevalence of

performance among employees employed within the retail e-commerce industry in the South African market. It is noted that studies done on the JD-R model have consistently shown that performance is achieved by employees when they are faced with challenging and resourceful working environments. These types of working environments foster engagement (Bakker & Demerouti, 2014). Previous research studies also suggest that management has the ability and power to influence employees' job demands and job resources (Nielsen, Randall, Yarker & Brenner, 2008), which could indirectly influence wellbeing and performance.

### **5.2.1 Wellbeing and performance**

The path coefficient between engagement and performance was found to be statistically significant (0.26), whereas the path coefficient between burnout and performance was found to be non-significant (0.10). It can be concluded that, in order to increase performance at work as seen in the e-commerce retail industry, I/O psychologists should focus their attention on addressing engagement and ensuring that this is enhanced in people. It is worth noting that the relationship between burnout and performance was found to be non-significant for employees in the e-commerce retail industry. This could be linked to the majority of the sample group being from a younger generation. It could be that, due to the life stage of these young employees, they can be pushed to work longer and harder without feeling burned out at work. It could also be that engagement was exercising a moderating effect on the levels of burnout experienced by employees and that, as long as they are experiencing high levels of engagement, the relationship between burnout and performance would be non-significant.

### **5.2.2 Job resources and wellbeing**

The path coefficients between job resources and wellbeing, being Engagement (0.57) and Burnout (-0.24), both indicated that the hypothesised relationships were satisfactorily significant. The relationship between Job Resources and Engagement would influence Engagement and, in turn, Performance. Due to the negative relationship between job resources and burnout, burnout could be affected due to the negative relationship noted when addressing job resources.

### **5.2.3 Personal resources and wellbeing**

The path coefficients between personal resources (referring to Extraversion, Emotionality, Conscientiousness and Agreeableness) and wellbeing, being Engagement and Burnout, indicate mixed responses. The hypothesised relationships between Extraversion and Burnout (-0.32); Conscientiousness and Engagement (0.23); and Agreeableness and Burnout (-0.26)

were found to be statistically significant. The hypothesised relationships between Extraversion and Engagement (0.10); Emotionality and Engagement (-0.10); Emotionality and Burnout (0.10); Conscientiousness and Burnout (-0.12); and Agreeableness and Engagement (0.11) were found to be statistically non-significant. As part of various selection and recruitment processes it might be more beneficial to take note of the fact that a significant relationship exists between Extraversion and Agreeableness with Burnout; and between Conscientiousness and Engagement. The implication of these findings is that, by employing employees who have proven to have high levels of Conscientiousness, Engagement and Agreeableness, Burnout could be decreased and Engagement could be increased, which could in return increase Performance. This would ultimately be beneficial for companies.

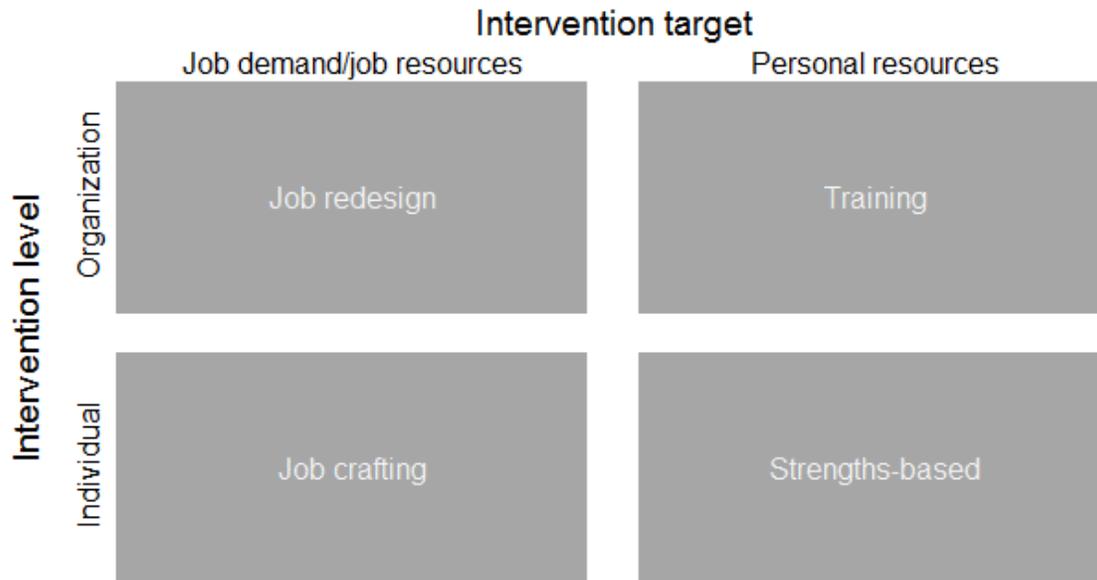
#### **5.2.4 Job demands and wellbeing**

The path coefficients between job demands (referring to Job Overload and Job Insecurities) and wellbeing, being Engagement and Burnout, all showed that the hypothesised relationship between job demands and wellbeing was non-significant. The hypothesised relationship between Job Overload and Engagement (0); Job Overload and Burnout (0.13); Job Insecurity and Engagement (0.08); and Job Insecurity and Burnout (0.05) were found to be statistically non-significant. The implication of these findings is that attending to these factors of job overload and insecurity within the e-commerce industry would be less effective if the purpose was to have an effect on Engagement and Burnout and, ultimately, on Performance.

#### **5.3 JD-R interventions**

With the focus being on investing interventions that could indirectly foster performance, it can be proposed that organisations could decide to train their employees in order for them to cope better with the job demands faced within their working environment and to develop themselves during the normal work day. Interventions could either be organisation-driven or individual-driven. Interventions that are organisation-driven aim at increasing the employee's personal resources and this can take the form of in-house training. Interventions that are individual-driven take on the form of capitalisation on the person's strengths.

Four interventions will be discussed that can be divided into two dimensions, namely intervention level (individual versus organisation) and intervention target (work environment (job resource and job demands) versus the individual (personal resources)). These four interventions are job redesign, job crafting, training and strengths-based interventions (Bakker & Demerouti, 2014). See Figure 5.1 for the depiction of the four interventions as four quadrants.



**Figure 5.1** Interventions on the basis of the JD-R model in terms of intervention target and level.

Source: Bakker and Demerouti (2014)

Job redesign is an intervention that is focused on the organisational level, aiming to change the source (job demands and job resources) of occupational wellbeing. Job design describes “how jobs, tasks, and roles are structured, enacted, and modified, as well as the impact of these structures, enactments, and modifications on individual, group, and organizational outcomes” (Grant & Parker, 2009, p. 319). Although job redesign is normally seen as a top-down process (where the organisation holds the right to create a job, for which they also set the conditions according to which the employee should perform his/her work), job redesign can be done by the organisation as well as by the employees themselves. With job redesign, the goal is to improve occupational wellbeing, being engagement, and ultimately to affect performance positively (Bakker & Demerouti, 2014). An example of job redesign is where an organisation would increase the autonomy of a team or an individual in order to increase engagement and performance. By asking employees to complete a questionnaire related to the JD-R model, organisations could get an understanding of team and individual JD-R profiles and plan job redesigns around these profiles. Performance could be increased through the implementation of the redesign.

Job crafting stands in contrast with job redesign in that it is an intervention that is classified on the individual level. Job crafting is initiated by the employee and, in this, the employees actively change the design of their jobs by choosing tasks and assigning meaning to their job responsibilities (Parker & Ohly, 2008). Through job crafting, employees can proactively change the job resources and job demands faced by them. This type of behaviour can be stimulated by organisations – by showing employees how to craft their roles to be beneficial for both the employee as well as the organisation (Bakker & Demerouti, 2014). Job crafting could be encouraged by organisations through educating employees on job crafting. Employees could be asked to note elements of their job that they would like to change and, over a period of six weeks (as an example), they could be asked how they intend to change these elements. Through constant coaching, the behaviour of job crafting could be encouraged in order to increase wellbeing and performance.

Within the field of Human Resources, training and development are seen as cornerstones. Training can be seen as an organisational-level intervention and, by providing employees with training, employees gain new skills, technical knowledge and additional problem-solving skills. Through training, the knowledge base of employees can be improved so as to enhance personal resources such as optimism and resilience. Training can also be utilised in order to focus directly on personal resources so as to facilitate the same improvement. Peterson, Luthans, Avolio, Walumbwa and Zhang (2011) have shown that psychological capital (the positive change in personal resources) is linked to a positive change in performance as rated by a superior. It is said that these interventions do not only increase the personal resources as reported by the employee him/herself, but also as observed by external raters (Demerouti, Van Eeuwijk, Snelder and Wild, 2011). Personal resources are thus amendable and can be increased to enhance work engagement and ultimately performance.

Strength-based interventions are individual-level interventions that aim to increase personal resources. According to Bakker and Demerouti (2014), engagement is dependent on the match between individual strengths within employees and the degree to which these employees can tap from their strengths during their daily work activities. These individual strengths could be defined as positive traits, as reflected in feelings, behaviours and thoughts (Park, Peterson & Seligman, 2004). Examples of these positive traits are bravery, curiosity and kindness. Employees who use their strengths within their daily work are expected to be self-efficacious (Bakker & Demerouti, 2014). Peterson and Seligman (2004) argue that, through working with your strengths, a feeling of being engaged and fulfilled would be experienced. This, in turn,

would encourage a feeling of being true to yourself and acting in an authentic manner. There could be various ways of implementing strength-based interventions in the workplace. One of the ways would be to provide employees with feedback on their most important strength that they are using at work and then, as a follow-up, to provide them insight into how they could utilise their strength more at work. This could be done through online portals and the writing of daily journals on the progress experienced at work (Bakker & Demerouti, 2014). By providing employees with feedback of this nature, employees would be able to reconsider how they make use of their strengths at work.

As described above, interventions that are driven by the organisation and/or the individual can be found that focus on the job resources, personal resources and job demands in order to affect occupational wellbeing positively and, ultimately, to increase performance levels to the benefit of the company and its employees.

#### **5.4 Comparison between findings in study and other key studies**

By evaluating a model in a variety of organisational settings, I/O psychologists are offered a broader understanding of the relationships found within the model and/or theory. With regard to the JD-R model, the following comparisons could be made when viewing the findings collected in this study and findings noted by other key studies in the industry.

Schaufeli (2011) and Bakker et al. (2006) noted that they found that engaged employees will more likely perform on a high level. With burnout being viewed as the antipode of engagement, the opposite was hypothesised about the relationship between burnout and performance. The relationship between engagement and performance was found to be significant, whereas the relationship between burnout and performance was not found to be significant.

The findings of this study correspond with what was found in key literature within the field of psychology. Within a Dutch and a Finnish sample group, it was found that a positive relationship exists between job resources and engagement (Hakanen et al., 2006; Schaufeli & Bakker, 2004). The positive relationship between job resources and engagement, as well as the negative relationship between job resources and burnout, was accepted and corresponds with what is noted in previous studies done in this field.

Interestingly, only a few findings made in this study correspond with what is noted in the research. Alarcon et al. (2009) mention that there is a negative relationship between extraversion, emotionality, conscientiousness and agreeableness, and burnout. Bakker and

Demerouti (2014) noted that there is a positive relationship between personal resources and engagement. Within this study, it was found that the hypothesised positive relationship between conscientiousness was accepted, as well as the hypothesised negative relationship between extraversion and agreeableness and burnout. The other hypothesised relationship, between personal resources and wellbeing (including engagement and burnout), was rejected.

Although the research notes that being exposed to job demands would increase the feeling of being burned out (Schaufeli et al., 2009), the finding of this study do not correspond with this. Brauchli et al. (2013) also noted that job demands will have a negative relationship with engagement. This was again not supported by the findings of this study. The hypothesised negative relationship between job overload as well as job insecurity and engagement, and the hypothesised positive relationship between job overload as well as job insecurity and burnout, were rejected.

The fact that the findings of this study differ from what is found in key research conducted previously shows that the e-commerce industry is a different industry to what South Africans are probably used to and this might be part of the reason why the findings prove to be different from those previously found. It should be noted for future studies that industries and the demographics of a sample group could be the causes of discrepancies between findings accumulated in the current study and previous key research in the field. These difference should also be noted when implementing interventions focused on targeting performance.

### **5.5 Limitations of the study**

This research study had various limitations that should be noted. It would be ignorant not to note these limitations, as it might be that some of the limitations affect the results found in the research slightly, although it is argued that this does not weaken the results, as discussed in Chapter 4.

The sample group available was very small and limited in terms of diversity. This was due to the industry of e-commerce retail being fairly new in South Africa, as e-commerce has only recently started to be noticed and growing in South Africa. It would have been preferable for the study to be conducted on a larger sample group. Due to the small sample group, the PLS SEM method of analysis had to be used. The size of the sample group limited the nature of the analysis that could be done. In the event that missing values were evident to a large extent, the sample group would have been made even smaller, leading to more limitations of the study.

The data for the study was collected mostly through self-reporting measurements. Self-reporting measurements are often utilised for the collection of data, but Babbie and Mouton (2001) mention that this type of measurement is often criticised. The problem of common method variance is said to be one of the factors criticised about this way of collecting data. It is said that, due to the problem of common method variance, the inferences made by the researcher might in some cases be artificially inflated. The existence of response biases has also been reported in self-report data. With these problems, the important thing is to acknowledge their possible existence and then to take this into consideration when interpreting the data (Donaldson & Gran-Vallone, 2002).

Self-report data is also frequently influenced by social desirability. It is possible that the participants may have given responses to the questions within the self-report web-based questionnaire that would create a more favourable impression of themselves (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). Again, when the data gathered through self-reporting measurement was analysed for the purpose of the study, it was borne in mind that there were certain limitations to the study and data due to the possibility of respondents responding in a socially desirable manner.

With reference to the data collection for performance with the use of the KPIs, the possibility of rater bias may pose a limitation on the study. In the process of scoring the KPIs or performance of the participants, the managers and employees (being the participants) had to discuss the perceived level of performance and allocate a score to reflect the standard of performance. In some cases it might have been that managers had a slight preference for some employees over others. In these cases, it could be that rater bias played an effect in the quality and validity of the data collected. Rater bias refers to the situation where a rater scores a participant higher than what it should be due to his/her personal preferences and feelings about the employee being reviewed. In the full sample group, the chance exists that rater bias could be evident and therefore the effect of rater bias was taken into consideration and seen as a possible limitation of the study.

As per Chapter 3, the majority of the sample group were 29 years of age and younger. The demographics with reference to the age group were not so wide. The narrow scope of the demographics of the sample group may be seen as a limitation, as the sample group will not be so "rich" in variance. With most of the sample group being from one age group, the generalisability of the results could be affected negatively.

Job overload and job insecurity had already been flagged as problem variables in the item analysis stage. The problem was only very slight, however, to such an extent that the two variables were included in the study. It would be ignorant if the existence of the concern regarding these two variables in the beginning of the analysis was not noted as a possible limitation to the study. It should be noted that the existence of the problem areas in the variables might have unwanted effects on the results obtained through the study.

With reference specifically to an element such as Burnout the spill-over effect of other stress factors within the participant's life at home at the time when he/she was exposed to the assessment might be viewed as a limitation in the study. The researcher does not have control over these factors. Examples of these factors are family relationships and unstable homes.

These limitations should also be viewed as factors that would assist I/O psychologists in identifying additional recommendations for future research endeavours so as to ensure that further fruitful research studies are conducted in the field of industrial psychology and the e-commerce industry in South Africa.

## **5.6 Recommendations for the future**

Although not all of the correlation coefficients found and evaluated for statistical significance were accepted in this research study, it can still be concluded that those hypotheses or relationship that were found to be significant will hold truth when evaluated in future studies. It therefore is the plea of the researcher that more studies are conducted on the relationship between these mentioned constructs, in different industries and countries with different (preferably larger) sample groups with a wider variety of demographics and through the use of different measurements.

The preference would be to replicate the results found in this study and to add to the knowledge base found in SA on the JD-R model and how performance can be seen as a factor dependant of many other factors in the workplace. The following are recommendations for future studies done on a similar topic.

Conducting a study with a larger sample group is recommended due to the importance of the sample size in the quality of the results found. It would also be beneficial if the demographics of the sample group could be wider. It is a recommendation to bear the potential demographics of the sample group in mind when considering the company/area in which the sample chosen. In this study, the majority of the participants were English speaking and the majority of the

participants were 29 years of age or younger. It would have been better to have a sample group that reflected the demographic relationships found in the South African context.

Research done on the basis of the JD-R model is rarely found in the fairly new industries emerging in South Africa. It is the researcher's opinion that this is mostly due to the volatile nature of emerging industries and the perceived difficulty to get the companies in emerging industries to give consent for research to be done on their employees. However, it is recommended that more studies should be done on emerging industries due to the unique factors working together within such circumstances, all of which affect employees. In this way the knowledge base will become broader and the role and importance of I/O psychologists in these emerging industries will be supported. I/O psychologists will benefit from studies done on the emerging industries in South Africa, in all knowledge domains, and would be able to assist companies through the implementation of interventions that are grounded in a more solid knowledge base.

With reference to the data analysis done on the HEXACO model, it is the researcher's opinion that more studies should be done on the HEXACO measurement itself within the South African population.

It is also recommended that future studies take the possible moderating effect of job demands on the relationship between job resources or personal resources and wellbeing into consideration. It was noted in Chapter 4, as part of the discussion of the research results, that this impact of job demands on personal resources and job resources should also be considered. This relationship was not measured in this study. It is the plea of the researcher that these relationships are assessed to bring depth to the research findings.

The study could be seen as a "snapshot" taken of the JD-R model within the retail e-commerce industry. This could have prevented the researcher from drawing causal conclusions from the data obtained (Taris & Kompier, 2006). In order to enhance the consistency and accuracy of the reported research findings as seen in Chapter 4, it might be reasonable to conduct a longitudinal study in the future.

From the discussion above, it is evident that continued research in the domain of I/O psychology is stressed and, through it, the enrichment of the current knowledge base dependent on it.

## 5.7 Conclusion

The overall purpose of the study was to evaluate the relationships between engagement and burnout, and performance, through the various relationships also found between job resources, personal resources and job demands. These relationships were evaluated in line with what the research stated regarding the JD-R model and how these construct correlate with each other as part of this model to contribute positively to the theoretical framework of wellbeing and performance.

The results obtained in the study provide evidence of to what level performance is influenced by engagement and burnout, and how job resources, personal resources and job demands will have an impact on wellbeing, namely engagement and burnout. It was proven that being engaged will have a positive relationship with performance. The hypothesised significant relationship between burnout and performance was not proven.

The findings as discussed in Chapter 4 will provide I/O psychologists with much-needed insight into the effective management of the various stress, performance and motivation work-related problems present in the South African market and in the retail e-commerce industry. Through interventions focusing on increasing performance through wellbeing, I/O psychologists can ensure that performance is addressed in order to have a positive impact on the company bottom line.

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