

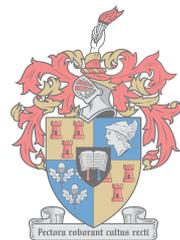
**AN EXPLANATORY STUDY ON THE DETERMINANTS OF
ORGANISATIONAL COMMITMENT AND THE INFLUENCE THEREOF
ON INTENTION TO QUIT AMONG ARTISANS AND ENGINEERS**

Samuel Siwela

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

Supervisor: Mr F. van der Bank

1 March 2018



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DECLARATION

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ABSTRACT

Artisans and engineers are considered the backbone of infrastructure development and economic growth in South Africa. Given the critical skill shortage in this area, the attraction and retention of artisans and engineers are therefore of paramount importance for organisations, and the economy in general. As such it has been argued that more research should be conducted on factors contributing to the retention of this key talent.

Previous studies have highlighted the construct of *organisational commitment* as highly relevant for understanding and promoting personnel retention. The study was therefore driven by the need to identify the determinants of the various forms of *organisational commitment* and to investigate the effect thereof on *intention to quit*.

The total sample size for the study comprised of 238 participants that were recruited from a large manufacturing company using non-probability sampling. Item and factor analysis were performed on the respective sub-scales, after which confirmatory factor analysis was used to fit the measurement model. The initial results indicated a somewhat problematic model that was ascribed to the operationalisation of the construct, *continuance commitment*. Naturally, this was disappointing due to the centrality of the variable in the study. After much deliberation, it was decided to remove this latent variable, and focus mainly on *affective commitment*. The results of the modified measurement model indicated close fit in the parameter and good factor loadings in generally.

The comprehensive structural model showed reasonable fit, but the hypothesis of close fit had to be rejected. Four of the eight path-specific hypotheses were corroborated by the results. The structural model was subsequently modified by adding two paths that were suggested by the modification indices which also made theoretical sense. The modified structural model showed good fit and the null hypothesis of close fit could not be rejected. Also, eight out of the ten paths in the structural model were now supported.

The results of the study confirm the central role of *affective commitment* in managing the *intention to quit* amongst artisans and engineers. It was found that for this to take effect, companies would need to focus on *job fit*, *meaningful work*, *organisational support* and *satisfaction with pay*. As expected, *satisfaction with pay* was influenced by *perceived organisational justice*, and interestingly also by *organisational support*. Finally, a strong negative relationship was found between *perceived organisational justice* and *intention to quit*. These findings provide valuable insights to organisations and human resources practitioners on how they can use *affective commitment* to increase the retention of artisans and engineers.

OPSOMMING

Ambagsmanne en ingenieurs word beskou as die ruggraat van infrastruktuurontwikkeling en ekonomiese groei in Suid-Afrika. Die lok en behoud van ambagsmanne en ingenieurs is dus van uiterse belang vir organisasies, en die ekonomie in die algemeen gegewe die kritieke vaardigheidstekort in hierdie gebied. Dit word gevolglik aangevoer dat meer navorsing gedoen moet word oor faktore wat tot die behoud van hierdie sleuteltalent bydra.

Die konstruk van *organisatoriese-verbinten* is deur vorige studies uitgesonder as hoogs relevant vir die verstaan en bevordering van personeelbehoud. Die studie is dus gedryf deur die behoefte om die determinante van die verskeie vorme van *organisatoriese-verbinten* te identifiseer en die effek daarvan op die *voorneme om te bedank* te ondersoek.

Die totale steekproefgrootte vir die studie het uit 238 deelnemers bestaan wat deur middel van nie-waarskynlikheidsteekproefneming by 'n groot vervaardigingsmaatskappy gewerf is. Item- en faktoranalise is uitgevoer op die onderskeie subskale, waarna bevestigende faktorontleding gebruik was om die metingsmodel te pas. Die aanvanklike resultate het op 'n ietwat problematiese model gedui wat aan die operasionalisering van die konstruk, *voortsettingsverbinten* toegeskryf was. Dit was uiteraard teleurstellend as gevolg van die sentraliteit van die veranderlike in die studie. Na baie beraadslaging is besluit om hierdie latente veranderlike te verwyder en uitsluitlik op *affektiewe verbinten* te fokus. Die resultate van die gewysigde metingsmodel het gedui op benaderde passing in die parameter, en goeie faktorladings in die algemeen.

Die omvattende strukturele model het redelike passing getoon, maar die nulhipotese van benaderde passing moes verwerp word. Vier van die agt bane in die model is deur die resultate bevestig. Die strukturele model is vervolgens gewysig deur twee bane by te voeg wat deur die modifikasie-indekse voorgestel is en wat ook teoreties sin gemaak het. Die gewysigde strukturele model het goeie passing getoon en die

hipotese van benaderde passing kon nie verwerp word nie. Verder was daar nou ondersteuning vir agt uit die tien bane in die strukturele model.

Die resultate van die studie bevestig die sentrale role van *affektiewe verbintenisse* ten einde die *voorneme om te bedank* onder ambagsmanne en ingenieurs te bestuur. Daar is bevind dat dat vir dit om in werking te tree, organisasies op *werkspassing*, *betekenisvolle werk* en *organisatoriese ondersteuning en tevredenheid met betaling* sal moet fokus. Soos verwag, is *tevredenheid met betaling* beïnvloed deur *waargenome organisatoriese regverdigheid*, en interessant genoeg ook deur *organisatoriese ondersteuning*. Ten slotte is daar ook 'n sterk negatiewe verwantskap tussen *waargenome organisatoriese regverdigheid* en *voorneme om te bedank* gevind. Hierdie bevindings bied waardevolle insigte aan organisasies en menslike hulpbronpraktisyns oor hoe hulle *affektiewe verbintenisse* kan gebruik om ambagsmanne en ingenieurs te behou.

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CHAPTER 1: INTRODUCTION

1.1 Background of the study

The world has become increasingly complex and turbulent, and a new world order has emerged in which every organisation is striving to become globally competitive. More and more, top-level managers are realising that human resources (i.e. the people side of the business) is critical to the long-term survival of the business. This is substantiated by Srinivasan (2011) who believes that in the emerging and future world of business, the key success factor will not be capital or technology but the employees that possess the right skills set to turn the company strategy into reality. The same is echoed by Kaliprasad (2006), who states that highly skilled and talented employees have become the only sustainable competitive advantage in the global market. Srinivasan (2011) subsequently argues that harnessing and retaining key talent is the most important factor that will determine the success and effectiveness of an organisation.

The need to retain a talented and skilled workforce is especially important in the African continent. Africa, an emerging economy, is experiencing unprecedented growth, signaling the need for more skilled labour; however the skills and talent available is slowly falling short of demand. Shar and Burke (2003) noted that South Africa is experiencing skills shortage that has resulted from a supply and demand equation where the demand of qualified and experienced candidates to take up employment opportunities in the job market exceeds the supply of the available and willing potential candidates. Similarly, a report from Ernest and Young (2008) indicated a huge shortage of skills in the engineering sector as it showed that demand had outstripped the supply.

Figures published by the Solidarity Research Institute (2008) showed that apprenticeship training declined dramatically during post-1994, with about 13 000 apprenticeship programme running in 1982 to about 3 400 in 2006. This significant drop has had a negative impact on the supply of qualified artisans to the labour market and this has contributed to the skills shortage that is being experienced. To exacerbate the problem even more, South Africa has been suffering from the so called *brain drain*.

According to the Chamber of Mines (2007) there has been a high turnover of artisans and engineers to international markets like Canada and New Zealand. This has resulted in contemporary organisations grappling with the challenge of retaining their key talent.

The critical shortage of especially artisans and engineers in South Africa has posed severe challenges to employers that rely on these skills sets as key drivers of success. According to Du Toit and Roodt (2008), artisans have been considered as the backbone of infrastructure development and are also a pillar of economic growth in the private and public sectors. Van Rooyen, Du Toit, Botha and Rothmann (2010) echoed the same sentiments by noting that there is a critical shortage of artisans and this has a negative impact on infrastructure development and growth. The skills shortage of artisans and engineers can thus be regarded as a major obstacle to economic growth and job creation in South Africa.

Even though higher institutions of learning are channeling graduates to the labour market, the numbers are not enough to meet the high demand for qualified and experienced engineers and artisans. This, according to Adams (2006), creates a scenario where entry level graduates are expected to enter the world of work and “hit the road running”, often without sufficient training or mentoring from experienced employees.

The current shortfall of supply of highly qualified and experienced artisans and engineers has put organisations in a “catch 22” situation. Due to the critical shortage of skills, it is in the best interest of the organisations to invest in the training and development of raw talent through interventions such as learnerships and apprenticeships as well as develop talent from within through graduate programs and internships. However, by developing and upskilling your talent it also enhances their employability in the market and hence the organisation may stand the risk of losing the same talent to competitors. As a result, employers are constantly faced with a dual need of developing their talent on one hand and ensuring that they retain that same talent on the other hand.

Retention of key talent has therefore become a top priority, especially in the case of engineers and artisans. This inevitably leads to the question, what can be done to improve the retention of engineers and artisans, and as such, safeguard this critical skills in specific organisations, but also in South Africa at large. One construct that has been repeatedly linked to the employee's desire to stay with an organisation is organisational commitment, especially when emotional attachment is present (Delobbe & Vandenberghe, 2000; Griffith, Horn and Gaertner, 2000; Meyer, Allen and Gellatly, 1990; Spector, 2008). Given the critical need to retain artisans and engineers, it is therefore critical to empirically understand the role of organisational commitment in the retention of artisans and engineers (Dockel, Basson & Coetzee, 2006).

The Three-Component Model of organisational commitment as postulated by Allen and Meyer (1990) comprises of three forms of commitment: affective, continuance and normative. Meyer and Allen (1991, p. 11) defined affective commitment as "the employee's emotional attachment to, identification with and involvement in the organisation". Thus members of an organisation that are driven by a strong affective commitment are more easily retained because they have an inherent desire to stay and want to continue working for the organisation (Meyer & Allen, 1991). Continuance commitment, on other hand, is defined as "the awareness of costs associated with leaving the organisation" (Meyer & Allen, 1997, p. 11). Continuance commitment can be viewed as a calculative exchange relationship characterised by the employee's desire to stay with the organisation because discontinuation of membership will be accompanied by economic loss on the side of the employee, and continuing with membership presents economic and non-economic benefits. Finally, normative commitment is defined as "the employee's feelings of obligation to remain with the organisation" (Allen & Meyer, 1990, p. 6). Of these three forms, affective commitment has been found to be the strongest predictor of intention to quit (Meyer, Allen and Gellatly, 1990).

The underlying tenet of the definitions reviewed is that organisational commitment is a psychological state that represents employees' desire to continue membership in the organisation, and thus has a great impact on employee retention. It is therefore plausible to assert that organisations can effectively retain artisans and engineers in their organisations once they are able to understand the antecedents of organisational

commitment and align their retention efforts to what drives the commitment of this talent pool. However, as explained in the foregoing definitions, different forms of organisational commitment exist – which are neither identical in terms of their antecedents nor in their outcomes. In others words, different factors influence the different forms of organisational commitment, and likewise, the different forms of organisational commitment follow different channels through which they affect retention.

Differentiation between the different forms of commitment (e.g. affective and continuance commitment) helps to better understand the motive or drive behind employees' intention to stay with organisations. If employees have a high intention to stay because they “want to” (affective commitment), they are likely to be employees that have a high attachment to the organisation and have a high alignment with the organisation's goals and values and will be willing to go an extra mile for the success of the organisation. Furthermore, a meta-analytic study by Meyer et al. (2002) has confirmed that employees that have high affective commitment exhibit innovative behaviors and are bound to engage in organisational citizenship behaviors that can be critical in driving organisational success and building competitive advantage.

On the other hand, employees that stay in the organisation because they “need to” (continuance commitment) are only staying because of the benefits that they risk losing by discontinuing membership of the organisation or because of the unavailability of more attractive alternatives. Therefore, employees that are driven by continuance commitment will stay with their employer for the sake of the rewards and benefits that they risk losing if they leave. This, for obvious reasons, has important implications for organisations' compensation and remuneration strategy, especially when scarce skills are involved, as in the case of artisans and engineer. As noted by Van Rooyen et al. (2010), organisations are constantly going through extra ordinary lengths by offering innovative compensation packages to retain artisans as there is a practice of organisations poaching this scarce skill. This has also been substantiated by Du Toit and Roodt (2008) who stated that there is still aggressive poaching and headhunting of highly qualified, skilled and experienced engineering professionals by overseas companies. Thus one can argue that continuance commitment will bind the employee to the organisation there is a low perceived likelihood of attaining more attractive

employment opportunities or when alternative employment opportunities fail to exceed the reward and benefits that they currently receive in the current organisation. In this regard, organisations can retain employees that are driven by continuance commitment only if no other employer can offer or provide a better return on investment for the employee. As a result, organisations are engaging in extra ordinary efforts to retain critical talent through offering competitive salaries, sign-on bonuses and retention grants which are costly, but not necessarily successful retention measures (Van Rooyen et al., 2010). It is for this reason insufficient to be relying on continuance commitment to bind employees to the organisation because organisations are engaged in a war for talent of scarce skills and are willing to buy such talent at a premium.

It also noteworthy that there have been compelling research findings that have shown that organisational commitment is of great value to the organisation as it has been found to predict various desirable behaviors over and above intention to stay, including high attendance, extra role effort and resiliency in pursuit of organisational goals (Cohen, 2003; Meyer, Allen & Gellatly, 2003; Miller & Lee, 2001). Organisations can therefore benefit from an in-depth understanding of organisational commitment as employees that have high levels of organisational commitment have been shown to be highly engaged, have low rates of absenteeism, will not withhold effort and will go an extra mile to ensure that they deliver on their performance objectives. The net result is a productive worker that will be able to individually contribute to the success of the organisation. Moreover, highly committed employees can serve as a strong competitive advantage that can assist an organisation to outclass its competitors and gain a strong market share.

1.2 Research Initiating Questions

The argument that has been expounded is that organisational commitment is critical for the retention of organisational talent, as well as for the level of effort to be expected from those that choose to stay in the organisation. But why do employees vary in their level of organisational commitment and how can organisations use this to their advantage? Focusing predominantly on affective and continuance commitment, this study aimed to explicate the antecedents that determine the level of commitment

experienced by employees, and how these influence intention to quit amongst artisans and engineers. Understanding the above mentioned psychological mechanism would give in-depth insight in how to influence artisan and engineering attitudes and behaviours that are critical to long-term organisational success.

1.3 Research Objectives

The study had the following objectives;

- To develop an explanatory model that explicates the psychological mechanism that determine the level of organisational commitment (confined to affective and continuance commitment) of artisans and engineers and their intention to quit
- To empirically evaluate the proposed model and assess the fit of the model
- To derive managerial suggestions from the research findings that can guide organisations to develop initiatives that will drive the desired levels of commitment, and as such, support the retention of artisans and engineers

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

According to Cohen (2003) the construct of organisational commitment as a research topic is very important. This construct has been deemed highly relevant in the contemporary world of work as it gives us understanding of employee work-related attitudes and behaviours. Furthermore there is research evidence that suggests that driving organisational commitment can become an effective retention strategy for an organisation. Empirical research seem to suggest that high levels of commitment are associated with low levels of turnover. This is substantiated by a meta-analysis study by Griffith, Horn and Gaertner (2000) that found that organisational commitment was negatively associated with turnover. Furthermore research findings by Delobbe and Vandenberghe (2000) and Spector (2008) seem to validate the view that highly committed employees have a strong desire to stay with the organisation and are less likely to leave when compared to employees with low commitment. Also Neal and Northcraft (1991) confirmed the negative relationship between organisational commitment and intention to quit. These compelling findings are very important especially to the South African organisations that are faced with a huge challenge of retaining the highly skilled engineering talent that is highly sought after in the job market. It is under this background that one can assume that when organisations are able to influence the commitment of their workforce, they would be in a better position to retain their critical talent that is the backbone of the organisation's success.

While the construct of organisational commitment has been proved to be very critical to the success of an organisation, Iles, Foster and Tinline (1996, p 16) note that this construct "has been criticised for adopting a too simplistic model of commitment. On the one hand there is need to differentiate among various facets or targets of commitment ... in addition, it also makes sense to speak of organisational commitments commitment itself is a more complex construct than it appears". It is for this reason that industrial psychology as a discipline needs to pursue research that will provide practitioners with knowledge that will assist them to come up with pragmatic interventions informed by scientific inquiry and drive the desired type of commitment in order to leverage on the benefits of a highly committed workforce. The

increased knowledge of organisational commitment is critical in empowering HR practitioners to develop strategies and interventions that will drive the desired form of organisational commitment and lead to retention of organisational talent.

Therefore empirical research needs to be clear on the impact and benefit of each form of commitment over and above the impact and benefit that has been established by the composite construct. This is critical as the argument presented in Chapter 1 seem to suggest that affective commitment is the most beneficial form of commitment that organisations need to influence. This is because there seem to be strong evidence that links affective commitment to desirable work outcomes such as attendance, citizenship behaviours and performance that can enable the organisation to outclass its competitors. Questions have been raised about the benefits of continuance commitment (Iles, 2000). Moreover, some research findings (Meyer et al. 2002; O'Driscoll and Randall, 1999) suggest that continuance commitment might be unrelated or negatively related to the desirable work outcomes such as attendance, extra role effort, job involvement and citizenship behaviours.

2.2 Defining the organisational commitment construct

Commitment can be defined differently depending on which lens or perspective one is using to define it. The most predominant perspective that has dominated the literature include the attitudinal and the behavioural approach. The behavioural approach views commitment as a behavioural act. Meyer and Allen (1991) refer to this as the persistence of certain behaviour. Looking at commitment from this perspective, it is not necessary *good or bad*, but depends on the specific behaviours the person is bound to, and the extent to which these behaviours are congruent with the goals and values of organisation. Research in this area attempts to identify and modify conditions that would make certain behaviours more binding, and in a sense to *lock the person in*. (Mowday et al., 1979; Salancik, 1977).

The attitudinal approach, on the other hand, takes a psychological view of commitment, describing it as a *mind-set* or psychological state concerning the extent to which individuals experience a sense of psychological attachment to the organisation. Meyer and Allen (1991, p.62) refers to this as “feelings and/or beliefs

concerning the employee's relationship with an organisation". It is further argued that the level of psychological attachment is a function of the extent to which the individual perceive their own values and goals to be congruent with that of the organisation. According to O'Reilly (1986) the level of congruence, and thus the level of psychological attachment is strongest when the individual identifies with and internalises the perspectives of the company.

The perspective taken in this study (i.e. Meyer's three-component-model of commitment: affective, continuance and normative commitment) falls within the attitudinal approach, in the sense that it views commitment as a *psychological state*. However, strictly speaking, it expands the concept of commitment beyond that of an *attitude*, i.e. the way individual feels and thinks about their relationship with an organisation – thoughts and feelings which can generally be classified as *favourable* or *unfavourable*. Except for affective commitment (reflecting a desire to maintain membership), the other two components of Meyer's model, continuance commitment (reflecting a *need* to maintain membership) and normative commitment (reflecting an *obligation* to maintain membership) do not technically fall within the traditional definition of an *attitude*, i.e. a favourable/unfavourable evaluation of the organisation. Therefore, preference will be given to the term, psychological state rather than attitude. The following section further explained Meyer's three-component-model of commitment.

2.3 The Three-Component Model of Organisational Commitment

The Three-Component Model was developed by Meyer and Allen (1997) and denotes three forms of commitment namely affective, normative and continuance commitment. The model has garnered empirical support (Allen and Meyer, 1996; Meyer, Stanley, Herscovitch and Topolnytsky, 2002) and has been applied widely in organisational research. The model has been very influential in predicting various job and organisational outcomes such as attendance and absenteeism, retention, citizenship behaviours and job performance (Meyer et al., 2002). The research findings seem to suggest that affective commitment strongly predicts the job and organisational outcomes, followed by normative commitment and continuance commitment seem to be negatively related or unrelated to desirable work outcomes (Meyer et al., 2002).

This study regarded organisational commitment to encompass only affective and continuance commitment and not inclusive of normative commitment. The exclusion of normative commitment was informed by research findings that seem to point towards a conceptual overlap between the two forms of commitment. This was substantiated by a meta-analytic study by Meyer et al. (2006) that showed that there is a significant overlap between affective commitment and normative commitment as evidenced by the substantial corrected correlation of $r=.63$. In this regard Jaros (2007, p. 12) noted that "... normative commitment offers little additional explanatory power when modelled as a predictor of outcomes in conjunction with affective commitment". Therefore this study excluded normative commitment and only focused on affective and continuance components of organisational commitment.

2.3.1 Affective Commitment

Affective commitment refers to the degree to which an individual employee is emotionally attached to the organisation. Affectively committed employees have a high degree of emotional attachment, strongly identify with the organisation and have a high degree of involvement with the organisation. Research findings seem to suggest that affectively committed employees "show higher performance, productivity and lower levels of absenteeism and tardiness" (Cohen, 2003 p. 18). Furthermore affective commitment has been found to have a positive relationship with desirable work outcomes such as attendance, role performance, organisational citizenship behaviour compared to continuance commitment (Somers, 1993; Wasti, 2005). In their meta-analysis study, Meyer et al. (2002) found that affective commitment had the strongest negative relationship with turnover ($r= -.17$) and withdrawal connections ($r= -.56$). Meyer et al. (2002) further found that affective commitment correlated negatively with absenteeism ($r= -.15$). With regards to job performance Meyer et al. (2002) found that affective commitment had the strongest correlation with performance ($r= .16$) compared to normative commitment ($r=.06$) and continuance commitment ($r=-.07$). Somers (1993) further noted that employees that have high levels of affective commitment are more likely to engage in citizenship behaviours than employees that are driven by continuance commitment. This was substantiated by the finding in the meta-analysis study by Meyer et al. (2002) when they found that affective commitment correlated positively with organisational citizenship behaviour ($r=. 32$) compared to

normative commitment ($r=.24$) and continuance commitment (near zero and unrelated). Based on the empirical support above, there is a strong business case for organisations to drive affective commitment as it has been found to correlate strongly with desirable work outcomes.

Moreover, Suliman and Illes (2000) also substantiated that there is merit in driving affective commitment arguing that employees that are influenced by affective commitment are more likely to stay longer with the organisation regardless of availability of alternative employment. This implies that affective commitment can play a critical role in the retention of artisans and engineers that are deemed to be scarce talent in the South African market. Research by Dockel, Basson and Coetzee (2006) showed that affective commitment has more retention power compared to continuance commitment. Therefore based on this line of thinking it becomes very beneficial for Human Resource practitioners to understand what antecedents are related to what type or kind of commitment so that they may be able to design interventions that will influence the desired commitment. For example it may make sense that HR practitioners focus on antecedents that influence affective and normative commitment as opposed to continuance commitment. This will be aligned with research findings that have pointed out that affective commitment has the strongest impact on intention to leave and performance while continuance commitment has the least impact (Meyer et al, 2002).

2.3.2 Continuance Commitment

Continuance commitment is entrenched in the set bet theory develop by Becker (1960) where an employee by virtue of organisational membership is able to acquire investments such as career advancement, seniority, rewards and recognition, power and status that are likely to be lost if the employee discontinues membership. Thus employees that are driven by continuance commitment are calculative and will perpetuate organisational membership when the cost associated with leaving is very high. Tetrick (1995, p. 590) notes that continuance commitment implies an “exchange framework whereby performance and loyalty are offered in return for material benefits and rewards”. Therefore when an employee is offered highly satisfactory material benefits and rewards in an organisation, they are likely to find it difficult to leave as the

investments that they have acquired as members of the organisation would bind them to stay.

According to Best (1994) continuance commitment is likely to be stronger when attractive opportunities are few in the market and the investments that the employee risks losing by terminating membership are quite high. This presents a critical point of departure in understanding the role of continuance commitment in the retention of artisans and engineers in the South African context. There is a critical shortage of engineering talent (i.e. artisans and engineers) in the labour market and this has fuelled a war for talent among local and international organisations that has resulted in the high rates of employee turnover especially among generation X that have been found to have a high propensity to changing jobs frequently (Nienaber & Masigiri, 2013; Meteswa & Ortlepp, 2010; Van Rooyen et al. 2010). Van Rooyen et al. (2010) further notes that the challenge of skills shortage for artisans and engineers by stating that these skills have become so scarce that organisations have to go through extraordinary lengths to attract and retain them. The question therefore is, when artisans and engineers are given counter offers by other organisations will they stay with their current employer? Suliman and Illes (2000) are of the view that an employee driven by continuance commitment is likely to terminate organisational membership at any time when s(he) feels that the cost-profit relationship of staying has reached disequilibrium compared to the counter offer. Therefore despite the high salaries and the innovative attraction and retention strategies that organisations are pursuing to attract and retain artisans and engineers (Van Rooyen et al., 2010), it is likely that employees may realise that there are tangible benefits for discontinuing membership and joining another organisation. Thus given the potential increased mobility of artisans and engineers due to availability of attractive alternatives in the market, it is therefore expected that those employees that stay longer with the organisation may have accumulated rewards and investments that represent significant cost of leaving.

On the other hand, questions have been asked about the benefits of continuance commitment (Suliman, 2000). There is some research evidence that has linked continuance commitment to counterproductive behaviours such as withholding effort, abandonment behaviours, absenteeism and tardiness (Lumley, Coetzee, Tlandinyane and Ferreira, 2011). These are the counterproductive behaviours that may threaten

the wellbeing and success of the organisation. Meyer et al. (2002) have also noted that since continuance commitment is unrelated or negatively related to desirable work outcomes, it would be beneficial to aim at driving more of affective commitment and normative commitment and managing continuance commitment to a minimum. In the same line of thought Ilies, Foster and Tinline (1996) have recommended that human resource practitioners target policies, procedures and practices that will enhance affective commitment, instead of relying too much on continuance commitment.

2.3.3 Normative Commitment

Meyer and Allen (1997, p. 11) defined normative commitment as “a feeling of obligation to continue employment”. Employees that are driven by normative commitment have a sense of strong moral duty, obligation and loyalty (Wiener and Vardi, 1980) towards their organisation and this compels them to stay. Some researchers have pointed out that a collectivistic culture is likely to lead to normative commitment because it is likely to generate an employment relationship that will foster loyalty, belonging and fear of violating these expectations may subtly prevent the individual from leaving the organisation

The major contention of this study is that although organisational commitment has been found to be beneficial to the organisation, it is the nature of organisational commitment that counts as each form of commitment influences different attitudes and behaviours that yield different organisational outcomes. So far it has been argued that affective commitment is strongly related to desirable work outcomes compared to continuance commitment. Although continuance commitment has been found to “lock” people into the organisation, it may not necessarily produce desirable work attitudes and behaviours.

2.4 Social Exchange Theory

The social exchange theory has become an established theoretical framework that has been seen as providing very plausible insight into understanding exchange relationships and behaviours within an organisational context. The social exchange theory hinges around the reciprocity principle where the employer provides economic

and socioemotional resources on one hand and the employee provides his skills, knowledge, expertise and effort towards the benefit of the organisation on the other hand. This exchange relationship develops through the obligation that is created by the need to reciprocate what each party would have brought to the exchange relationship. This is captured by Shore, Tetrick, Lynch and Barksdale (2006, p. 844) when they stated that “employees consider both the actions of the organisation and their own responses to those interactions when forming their perceptions of social exchange with the employer”. Thus the exchange of tangible and intangible economic and socioemotional resources is critical for sustaining the relationship. Cropezano and Mitchell (2005) noted that the core tenet of exchange relationships is underpinned by trusting, loyal and mutual commitments and can only be sustained by both parties meeting the rules of exchange. Research evidence seem to be pointing out that when employers meet the economic and socioemotional needs of the workforce, it is likely to trigger low levels of turnover and high levels of citizenship behaviour and commitment to the organisation which enhances overall organisational performance (Hom, Tsui, Wu & Zhang, 2009; Shong, Tsui, & Lauw, 2009).

Tsui, Pearce, Porter and Tripoli (1997) have categorised social exchange relationships into four categories namely mutual investments, over-investments, under investments and quasi-spot contracts exchange relationships.

2.4.1 The mutual investments employee-organisational relationship

The mutual investment employee-organisational relationship is characterised by the employer offering a very competitive employee value proposition that act as broad organisation inducements and in return employees are obliged to reciprocate by offering high performance contributions that will lead to organisational success (Hom et al., 2009). According to Shore, Coyle-Shapiro, Chen and Tetrick (2000) there is empirical evidence that seem to be pointing out that a strong social exchange relationship like mutual investments is likely to drive strong employee contributions that are characterised by high levels of organisational commitment, intention to stay, citizenship behaviour and performance. However the employer that is offering high mutual investments should ensure that they create a high performance culture that will facilitate the high employee performance and contribution.

Therefore based on the norm of reciprocity we expect employees that are on the receiving end of mutual investments relationship to show expanded contributions to their employer. Thus it is expected that the mutual investment employee-organisational relationship should bring forth a highly committed employee that is willing to go an extra mile to achieve organisational goals. Eisenberger, Armeli, Rexwinkel, Lynch and Rhoades (2001) substantiated this by noting that employees that are in a mutual investment social exchange relationship have a strong felt obligation that will induce strong emotional bond (affective commitment) towards the organisation. This emotional bond has been found to be associated with positive work outcomes such as attendance, extra role behaviour and productivity.

2.4.2 Over-investment employee-organisational relationship

The over investment employee organisational relationship is characterised by the organisation providing high and broad inducements (Hom et al., 2009) but there is no binding expectation that the employee makes a significant contribution to the organisation. This type of investment is the most favourable for employees as they get more economic and socioemotional resources compared to their contributions to the organisations. Hom et al. (2009) noted that such exchange relationships are more typical of public and government institutions where employees receive tangible rewards and benefits from their employer but their contributions in the form of performance may not be strictly monitored. It is plausible to expect employees that are enjoying the over investment relationship to continue their employment as leaving the organisations will result in the loss of benefits and rewards that they are getting in the employment relationship. In this regard we expect such employees to stay with the organisation for long as quitting would be linked to costs that they may be incurred by terminating organisational membership.

2.4.3 Under-investment employee-organisational relationship

The under investment employee-organisational relationship arises when the organisation provides narrow inducements but would expect significant employee contributions. According to Hom et al. (2009) such an exchange relationship is likely

to occur under conditions of intense economic pressure where the organisations are forced to cut cost to sustain operations. In such cases, employee responsibilities can get increased significantly without any increase in salary or roles can be combined without any increase on the employee's salary. This employee-organisational relationship may be likely to trigger feelings of injustice and compensatory behaviour such as reducing effort, theft and sabotage.

2.4.4 Quasi-spot contract employee-organisation relationship

Quasi-spot contract employee-organisation relationship is likely to exist between the organisation and temporary or outsourced employees where the employer provides minimal investments for specific and narrow employee contributions, As Hom et al. indicate (2009) these employees would carry out predetermined tasks but have no obligation to contribute to the wider success of the organisation.

2.5 Psychological Contract

Cullinane and Dundon (2006) noted that a psychological contract defines expectations about the social exchange interaction. Levinson, Price, Munden and Solley (1992, p. 21) defined the construct of psychological contract as “a series of mutual expectations of which the parties of the relationship may not themselves be dimly aware but which none the less govern their relationship to each other”. Coyle-Shapiro and Kessler (2000) further noted that most definitions of psychological contract reinforce the dimension of mutual expectations between the parties involved in the exchange relationship. It is therefore plausible that a psychological contract that hinges in the mutual investment employee-organisational relationship framework as described by Tsui et al. (1997) is likely to positively influence the attitudes and behaviours of artisans and engineers in South African organisations. It seems highly likely that artisans and engineers involved in a mutual investment employee-organisation relationship are likely to exhibit strong commitment towards the organisation.

It is therefore proposed that an exchange relationship between the employer and the employee that exudes the mutual investment relationship is likely to drive the affective commitment of engineers and artisans. This assumption is based on the norm of

reciprocity which dictates that an employer that pursues a mutual investment approach is likely to create a strong sense obligation from the employee side that the employee will have to reciprocate through high performance and behaviours that promote the welfare of the organisation. Conversely researchers have also reported that perceived violations of the psychological contract is significantly associated with diminishing levels of affective commitment and an increase in turnover intentions (Coyle-Shapiro & Kessler, 2007). This was further substantiated by a meta-analytic study by Zhao, Wayne, Glibkowski and Bravo (2007) that showed that the breach of the psychological contract was associated with lower levels of affective commitment. It is therefore highly plausible to deduce that artisans and engineers that perceive their organisation as fulfilling the expectations of the psychological contract are likely to have a strong emotional attachment to the organisation. These are the employees that are committed to the organisational cause and are likely to stay longer with the organisation.

2.6 Commitment and Intention to Quit

The argument that has been proffered in the discussion is that organisational commitment plays a critical role in binding the employee to the organisation. Researchers have pointed out that organisational commitment is an antecedent of intention to quit (Horn & Griffeth, 1995). This implies that lower levels of turnover will be an outcome of high levels of commitment. However as previously elucidated, affective commitment and continuance commitment seem to follow different channels in which they lower intention to quit. Affective commitment triggers the intention to stay because the employee has a strong emotional bond and attachment to their organisation while continuance commitment influence intention to stay through the high level of awareness of significant loss of investment and benefits that the employee has acquired through organisational membership. Research has empirically demonstrated that organisational commitment either in the form of affective commitment or continuance commitment is predictive of intention to leave. This was substantiated by findings in the studies by Griffith and Hepturn (2005) and Hogan and Jiang (2008) that demonstrated that organisational commitment predicted the employee's intention to leave the organisation. Griffith et al. (2000) also supported the view that organisational commitment plays a key role in predicting the employee's

intention to quit. Griffith et al. (2000) found that organisational commitment actually predicted intention to quit better than job satisfaction.

Thus there are numerous studies that seem to confirm that organisational commitment is predictive of intention to stay with an organisation (Griffith & Hepturn, 2005; Hogan & Jiang, 2008; Horn & Griffeth, 1995; Meyer et al., 2003; Meyer et al., 2006). Hence organisational commitment can be described as a nexus that binds the employees to the organisation leading to reduced turnover. It is therefore critical that we understand the antecedents of organisational commitment. This will empower organisations to design retention strategies and practices that are informed by empirical research. In this regard understanding the variables which influences organisational commitment of artisans and engineers will help inform South African organisations on what areas to focus on to increase the organisational commitment of artisans and engineers thereby increase the possibility of them staying longer with the organisation.

Based on the discussion above the following hypothesis were formulated:

- Hypothesis 1: *Affective commitment is hypothesised to have a negative influence on intention to quit.*
- Hypothesis 2: *Continuance commitment is hypothesised to have a negative influence on intention to quit.*

2.7 Antecedents of Organisational Commitment

There has been extensive research into the antecedents of organisational commitment. Most literature studies seem to classify the antecedents of organisational commitment into personal characteristics and organisational characteristics. The personal characteristics entail demographic variables such as age, gender and race and personal dispositions that include attitudes and personality. Various research studies seem to indicate that age may have an influence on organisational commitment. A meta-analysis study by Mathieu and Zajac (1990) showed a positive correlation between organisational commitment and age. Beintein, Vandenberghe, Vandenberg and Stinglhamber (2005) further found evidence that affective commitment and normative commitment seemed to increase with age. This was also supported by Meyer and Allen (1984) when they noted that older workers become

more attitudinally committed to an organisation. Ferreira and Coetzee (2010) also echoed the same sentiments when they found that older employees seem to have higher levels of affective and normative commitment compared to their younger counterparts. Other studies have also shown that tenure is related to organisational commitment (Mathieu & Zajac, 1990; Meyer & Allen, 1984; Meyer et al., 2002). Although age and tenure seem to be related to organisational commitment, there were not included as variables of interest in this study as they do not have practical value for altering organisational commitment.

With regard to race and gender, a study by Coetzee, Schreuder and Tladinyane (2007) found no significant differences between organisational commitment with regards to race (black and white) and gender (females and males). The same findings were also reported by Metcalfe and Dick (2002) who did not find any significant differences between the organisational commitment of males and females. Bargram (2003) also found in his study that personal characteristics (gender, marital status, age and kinship responsibility) were not significant predictors of commitment. Furthermore, Meyer et al. (2006) argued that demographic variables, regardless of form, have a trivial influence on organisational commitment. Based on the discussion above, it seemed to have less merit to include demographic variables as antecedents of organisational commitment in the current study. Therefore demographic variables were not included as variable of interest in this study.

Beyond the demographic variables that influence organisational commitment, Allen and Meyer (1991) singled out subjective work experiences (i.e. perceptions of organisational factors) that include organisational rewards, justice and supervisor support as strong predictors of organisational commitment. This was further substantiated by a meta-analysis study by Meyer et al. (2006) that found that the antecedents categorised as subjective work experiences were strongly related to organisational commitment, in particular affective commitment. In a study by Coetzee, Mitonga-Monga and Swart (2014), variables such as job satisfaction, training and development and rewards and recognition were found to significantly and positively influence affective commitment. In another study, Lumley et al. (2011) also confirmed pay satisfaction was an important antecedent of affective commitment. Also, Meyer et al. (2006) found in their meta-analytic study that perceived organisational support and

organisational justice was significantly and positively related to organisational commitment. Furthermore in their conceptual model of workplace commitment, Rocco and Wollard (2008) identified interesting work, clarity of purpose, equity and fairness, feedback and recognition, empowerment and autonomy as the important antecedents of organisational commitment. The study by Ferriera and Coetzee (2013) also showed that job embeddedness which can be defined as personal, environmental and organisational forces that play a role of binding the employee to his job (Yao, Lee, Mitchell, Burton and Sablynski, 2004), was related to organisational commitment. The same findings were also confirmed by Mitchell, Holtom, Lee, Sablynski, Erez (2001) found that job embeddedness was positively related to organisational commitment ($r=.44$ for grocery employees and $r=.54$ for hospital employees).

Based on the review above, the antecedents of the organisational commitment categorised as subjective work experiences seem to have the strongest impact on organisational commitment (Meyer, 1991; Meyer et al., 2006). It therefore seemed plausible to assume that employers that offer antecedents that are categorised as desirable work experiences in the social exchange relationship are likely to have a positive influence the organisational commitment of their workforce. The following section discussed specific antecedents that seemed to be salient in positively influencing the organisational commitment of employees.

2.7.1 Satisfaction with Pay

As noted by Nzukuma and Bussin (2011) pay remains the most powerful motivator of employment conditions. In this regard, a competitive salary may play a critical role as an organisational inducement that will bind the artisan and the engineer to the organisation. This is substantiated by the study by Kinner and Sutherland (2000) which indicated that competitive remuneration packages and performance incentives were the most important factors contributing to organisational commitment. Furthermore Coetzee, Mitong-Monga and Swart (2014) showed in their study that market related remuneration, benefits and non-monetary incentives played a huge role in enhancing the employees' affective commitment. Lumley, Coetzee, Tladinyane and Ferreira (2011) also corroborated these findings when they reported that satisfaction with pay was an important antecedent of affective commitment.

The results above seemed to indicate that satisfaction with aspects of compensation was strongly related to affective commitment. In this regard, it seemed plausible that artisans and engineers that are satisfied with their pay are likely to show high levels of affective commitment. Maceli and Lane (1991, p. 24) defined the construct of satisfaction with pay as “the amount of overall positive or negative affect (or feelings) that individuals have toward pay”. Satisfaction with pay has been conceptualised to consist of four dimensions that include satisfaction with pay level, benefits, pay structure and pay rises. Artisans and engineers that have a high degree of satisfaction with their pay are likely to develop an emotional attachment or bond to the organisation (Coetzee, Mitong-Monga and Swart, 2014; Lumley, Coetzee, Tladinyane and Ferreira, 2011). Therefore in this study it was proposed that satisfaction with pay would be an important antecedent of affective commitment and would directly and positively influence affective commitment.

On the other hand, satisfaction with pay should translate to significant cost of leaving the organisation. The reasoning is that a high degree of satisfaction with pay is more likely to bind the individual to the organisation especially if there are few alternative job opportunities. Furthermore Van Rooyen et al. (2010) noted that organisations have become more innovative in offering attractive and very competitive remuneration packages such as sign-on bonus, retention grants and talent premiums in the hope that this will be enough to bind the artisans to their employer. In their study Van Rooyen et al. (2010) remuneration was the most important factor in the retention of artisans. The same findings were supported by Vandenberghe and Tremblay (2008) who noted that satisfaction with pay is more likely to bind the individual to the organisation. In their study Vandenberghe and Tremblay (2008) found that satisfaction with pay was found to be significantly and positively related to continuance commitment. It therefore seems plausible that the higher the satisfaction with pay, the greater the potential loss that an artisan or engineer may incur by discontinuing organisational membership. In this regard one would expect satisfaction with pay to positively influence continuance commitment (Vandenberghe and Tremblay, 2008).

2.7.2 Pay Satisfaction and Organisational Justice

One of the key factors that influence satisfaction with pay is the perceived fairness of that particular pay. Heneman and Judge (2000) further noted that fairness whether considered in terms of distributive or procedural justice is central to pay satisfaction. There are numerous studies that seem to indicate that organisational justice is a key antecedents of satisfaction with pay (Arnold & Spell, 2006; Fong & Shaffer, 2003; Tremblay Sire and Blakin, 2000). In particular, research seem to confirm that distributive justice followed by procedural justice have a positive relationship with satisfaction with pay. Martin and Bennett (1996) reported a significant positive relationship between distributive justice and benefit satisfaction. This was further substantiated by studies by Davis and Ward (1995) as well as Temblay, Sire and Balkin (2000) that found that distributive justice had a positive relationship with satisfaction with pay. These studies seemed to demonstrate that when employees perceive high levels of distributive justice, there would show higher levels of satisfaction with pay dimensions. Therefore employees that perceive fairness in their salaries in terms of their inputs (qualifications, performance and experience) that they bring to the production process and the outcomes that they receive in comparison to the referent group are likely to be highly satisfied with their pay. This is very important when one considers the merit systems for artisans. The study by Van Rooyen et al. (2010) found that artisans viewed the merit system as lacking fairness and not a just system. In the study by Van Rooyen et al. (2010) artisans were disgruntled that the merit system did not fairly reward exceptional performers because despite their performance, the pay increase is negotiated by unions. Therefore high performing artisans that contribute more to business success may feel a strong sense of injustice that their salaries are the same as everyone even though they contribute the most to the success of the organisation. Thus an organisation that does not have a supplementary compensation system that will incentivise performance over and above the negotiated wage is likely to create a perception of an unfair system that can trigger feelings of dissatisfaction with pay.

Based on the discussion above, the following hypothesis were formulated:

- Hypothesis 3: *Satisfaction with pay is hypothesised to have a positive influence on affective commitment*
- Hypothesis 4: *Satisfaction with pay is hypothesised to have a positive influence on continuance commitment*
- Hypothesis 5: *Perceived organisational justice is hypothesised to have a positive influence on satisfaction with pay*

2.7.3 Perceived Organisational Justice

Perceived organisational justice has been epitomised by three core dimensions that is procedural, distributive and interactional justice. Distributive justice has been defined as the individual's perception of fairness emanating from how decision on outcomes and resource allocation are made (Adams, 1965; Colquitt, 2001). The equity theory by Adams (1965) initially captured the essence of distributive justice. According to Adams (1965) equity is accomplished when an individual perceive a relative parity between their inputs (qualifications, experience, performance, tenure) and the outcomes they receive. Thus distributive justice refers to perceptions of fairness that arises when an individual evaluates their inputs and their outcomes and they are satisfied with the outcomes when they compare them with a referral group.

Procedural justice has been defined as “fairness issues concerning methods, mechanisms and processes used to determine outcomes” (Folger and Cropanzano, 1998, p. 26). Procedural justice is strongly influenced by the perception of how fair the process and procedures have been applied to arrive at decisions and outcomes. The application of processes and procedures such as selection, promotion, remuneration practices, disciplinary procedures, affirmative action and retrenchments play a significant role in influencing procedural justice. In this regard organisational representatives such as leaders, managers and human resource practitioners should ensure that policies and procedures are applied fairly and consistently all the time. Leventhal (1980) recommended a following criteria that enhances the perceived fairness of application of processes and procedures:

- Accuracy: The procedures must be accurate and information presented by both parties must be honest and correct.
- Consistency: The same procedure must be used with all people and it must be the same procedure every time.
- Ethical: Procedures must conform to the prevailing morals and ethics.
- Correctable: There must be a mechanism to correct or change bad decisions.
- Bias suppression: The person making the decision (third party) does not have a vested interest in the outcome or make decisions based on personal Beliefs.
- Representation: An opportunity for both parties to state their case must be provided, thus providing the “voice” or process control.

On the other hand interactional justice refers to the perceived fairness of how individuals are treated during the decision making process or determination of outcomes. Interactional justice has been further divided into interpersonal justice and informational justice. Interactional justice refers to the dignity and respect that individuals are exposed to when organisational agents such as line managers and human resource practitioners are applying organisational processes and procedures. Informational justice refers to the truthfulness of the explanation or justification that is provided during the application of organisational processes and procedures.

Organisational justice has been identified as an antecedent of organisation commitment. Latham and Pinder (2005) indicated that there is an association between organisational justice and organisational commitment. In particular they argued that when employees perceive that they are treated fairly, they are highly likely to develop a strong affect towards the organisation. Several studies have shown that when employees perceive a high level of justice in the work environment they are most likely to exhibit higher levels of commitment to the organisation (Lowe and Vodunovich, 1995; Meyer et al., 2002). Furthermore Lambert, Hogan and Barton (2003) found that procedural justice and distributive justice had a positive impact on the commitment of employees. This was further substantiated by a meta-analysis study by Colquitt, Conlon, Wesson, Porter and Yee (2001) that found that procedural justice and

distributive justice were positively and significantly related with organisational commitment. Another meta-analysis study by Cohen-Charash and Spector (2001) also reported the same findings when they found that distributive, procedural and interactional justice were positively and significantly related to organisational commitment. Thus it was credible to conclude that perceptions of fairness or justice in the exchange relationship between the employee and the employer may be linked to affective and continuance commitment. In this regard the following hypothesis were formulated:

- Hypothesis 6: *Perceived organisational justice is hypothesised to have a positive influence on affective commitment*
- Hypothesis 7: *Perceived organisational justice is hypothesised to have a positive influence on continuance commitment*

2.7.4 Satisfaction with Career Advancement Opportunities

When one uses the lens of social exchange theory, it is more plausible to expect that employees that have a favourable perception of the extent and degree of career growth and development opportunities with their current employer are likely to stay longer. In the 21st century career development and advancement does not only denote advancing up the career ladder. It also means affording employees diverse opportunities such as stretch assignments, lateral moves and multiple project works that help build and broaden the employee's skills set and competency levels. Researchers have noted that organisations that provide career development and mobility opportunities as part of the wider and broad organisational inducements are more likely to positively influence the commitment of its employees (Ferreira and Coetzee, 2013; Weng, McElroy, Morrow and Liu, 2010). Organisations that develop their employees and promote from within are likely to enhance the loyalty of their employees and build a reputation as an employer of choice. It is thus highly likely that affective commitment of artisans and engineers would be enhanced if the employer is viewed as providing career development opportunities as part of the mutual investment social exchange relationship. More importantly artisans and engineers are likely to be affectively committed to the organisation when they view promotion

decisions based on merit (Robbins, 1993). This was supported by the study by Sturges, Conway, Guest and Lifeoghe (2005) that found that employees that received support in managing their careers had increased affective commitment. Furthermore research by Chang (1999) and Weng et al (2010) also reported that employees that viewed the organisation as meeting their career and development needs had significantly higher levels of emotional and psychological attachment with their organisation. Therefore it is likely that organisations that provide career development opportunities for artisans and engineers as part of the social exchange relationship are likely to influence the affective commitment of their workforce. In this regard it was credible, to assume employees that are satisfied with career growth and development opportunities are likely to show an emotional bond (affective commitment) with their organisation.

On the other hand one can argue that employees that perceive their organisation as adequately supporting their career and development needs are likely to have a lot to lose should they terminate organisational membership. Organisational membership offers benefits that translates into professional development, skills advancement and promotions in the long run which become significant costs that prevent one from leaving. Furthermore continuance commitment is likely to arise when an individual has been afforded career advancement opportunities based on seniority and on the job experience without the requisite formal qualifications. This therefore makes it difficult for the employee to move to other organisations that may need the experience that the employee has acquired as well as formal qualifications. Even though the alternative opportunities are available such employees are not able to move to such opportunities as they may not have the requisite formal qualifications. In this regard the employee will stay with the organisation because they may realise that the cost of leaving to another organisation may be high as they may not get the position that they currently enjoy in their current organisation. It is therefore credible to expect employees that have been afforded career advancement opportunities on the basis of seniority and experience to show a high degree of continuance commitment. Furthermore employees that perceive opportunities for career advancement in their organisations are likely to perceive high opportunity costs for leaving and hence may stay longer with their employer.

On the basis of the discussion above, it was reasonable to formulate the following hypothesis:

- Hypothesis 8: *Satisfaction with career advancement opportunities is hypothesised to have a positive influence on affective commitment*
- Hypothesis 9: *Satisfaction with career advancement opportunities is hypothesised to have a positive influence on continuance commitment*

2.7.5 Job Embeddedness

Organisations that provide a work environment that enhance job embeddedness are likely to provide an inducement that would bind the employees to the organisation. Yao, Lee, Mitchell, Burton and Sablynksi (2004, p. 159) defined job embeddedness as “.... the combined forces that keep a person from leaving his or her job”. The forces alluded to by Yao et al. (2004) include fit, links and sacrifice. Ferreira and Coetzee (2014) articulated the three forces in the Table 1 below;

Table 1.1

Dimensions of embeddedness

Fit	The extent to which a person perceives that the job, organisation and environment mesh with or compliment (fit) other areas and aspects of his or her life
Links	The extent of an individual’s ties with other people and activities at work in relation to/compared with family, non-work and off-the-job interests
Sacrifice	The ease with which a person feels that links can be broken, or the person’s perception of what they would have to give up if they were to leave the current position

Adapted from Ferreira and Coetzee, (2014, p. 03)

2.7.5.1 Fit

The fit dimension refers to an employee's perceived compatibility with the organisation as well as with his/her job. Thus artisans and engineers that have a higher fit are likely to have a strong match with regard to their skills and the nature of the job that they are doing. They are likely to have a career path that is aligned to their career needs and the needs of the organisation. Employees that have a strong positive alignment with the organisation are likely to be very emotionally attached to the organisation and be willing to invest energy and effort in pursuit of organisation goals. They are less likely to leave the organisation. Consequently research seems to confirm that strong fit is positively related to organisational commitment and negatively related to intention to quit (Chatman, 1991; O'Rielly, Chatman and Caldwell, 1991; Villanova, Bernardin, Johnson and Dahmus, 1994).

2.7.5.2 Links

The link dimension refers to the formal and informal connections that an individual establishes with other colleagues in the work environment. Links act as a very beneficial resource as the employee is able to use the informal and formal networks to effectively deliver on the work and non-work deliverables. The links represent the social capital that is characterised by relationships that are valuable and meaningful to the employee and hence may make it difficult for the individual to terminate group or organisational membership. It is thus reasonable to propose that the higher that social investments in the form of links and connections that an employee has with colleagues and the organisation, the more the employee will have an emotional attachment with the organisation and the more the employee will not contemplate leaving the organisation. On the other hand Holtom and Lee (2007) noted that strong formal and informal links established within the organisation may also become non-monetary costs that may bind the individual to the organisation. Therefore it is reasonable to assume that strong links will show a positive relationship with affective and continuance commitment. Furthermore Takawira, Coetzee and Schreuder (2014) found that links were positively related with the intention to stay in the organisation. This was also corroborated by Mitchell et al. (2001) who also found that the more the number of links between the person and the job or organisation the more he/she feels

bound to the job and organisation. Therefore it is more plausible to expect links will be positively related to affective and continuance commitment.

2.7.5.3 Sacrifice

The sacrifice dimension captures the perceived monetary and non-monetary benefits that an individual employee risk losing by terminating organisational membership. Individuals with strong links can be considered to have a high sacrifice element that is characterised by the risk of losing the beneficial connections with entities of the job or the organisation should they consider leaving. In this regard it is expected that there should be a strong relationship between the sacrifice dimension and continuance commitment since there is a huge conceptual overlap. Employees that are driven by continuance commitment stay with the organisation because they fear losing the investments and benefits that they have acquired by being members of the organisation and risk losing if they decide to discontinue their membership. There is a strong argument that the sacrifice dimension of job embeddedness has a huge conceptual overlap with continuance commitment and hence there seemed to be lack of merit to study the relationship between the two constructs. In a study by Ferreira and Coetzee (2013) the sacrifice dimension contributed the most in explaining variance in continuance commitment. We can there argue that there is a strong conceptual overlap between the sacrifice dimension and continuance commitment and it would make sense to exclude the sacrifice dimension in the construct of job embeddedness. Therefore for the purposes of this study, the sacrifice dimension was excluded as part of the job embeddedness construct.

Thus in the context of the current study, job embeddedness was confined to the job fit and job links dimensions. Job fit was viewed as the extent that the employee perceives a high degree or fit and compatibility with his job and organisation while job links was viewed as the formal and informal connections that an individual establishes with other colleagues in the work environment. Hence based on the discussion above, the following research hypothesis was formulated:

- Hypothesis 10: *Job Embeddedness is hypothesised to have a positive influence on affective commitment*

- Hypothesis 11: *Job Embeddedness is hypothesised to have a positive influence on continuance commitment*

2.7.6 Perceived Organisational Support

According to Rhoades, Eisenberger and Armeli (2001) the organisational support theory postulate that when an organisation is viewed as meeting economic and socioemotional needs of its workforce, employees would form a belief that the organisation cares about them and has their interest at heart (Eisenberger, Cummings, Armeli, & Lynch, 1997; Eisenberger, Huntington, Hutchison, & Sowa, 1986; Shore & Shore, 1995). Such employee beliefs influence the employee to reciprocate by ensuring that they behave in ways that benefit the organisation and would go an extra mile to achieve organisational objectives. Therefore organisations that are viewed as valuing the contributions of their employees and are perceived to be appreciating, recognising and rewarding employee efforts are most likely to be viewed as very supportive. It was proposed that when employees view the organisation as supportive, they develop positive behaviours and attitudes towards the organisation that leads to emotional attachment to their employer. This emotional attachment becomes the bond that binds the employee to the organisation and will impel the employee to behave in ways that benefit the organisation.

Therefore if organisational support has a link with organisational commitment, then organisations have the opportunity to influence organisational commitment of their workforce by demonstrating that they provide support to their employees. This can be done by ensuring that the organisation provides adequate information to enable employees to plan their schedules, caring about employees' opinions and being able to support them when they face challenges in doing their jobs. Furthermore organisations can influence the perception that it is supportive to its employees' through ensuring that they treat their employees fairly as well as recognise and value their contributions. When employees perceive that they are receiving greater support from the organisation, they are likely to develop an emotional bond with the organisation. This is substantiated by Saks (2006) in his study that reported a positive relationship between organisational support and affective commitment. Furthermore studies by Shore and Tetrick (1991) and Shore and Wayne (1993) found that

perceived organisational support had a strong correlation with affective commitment but was not correlated with continuance commitment. Another study by O'Driscoll and Randall (1999) found that perceived organisational support was strongly associated with affective commitment and negatively associated with continuance commitment. Some researchers have suggested that continuance commitment can be influenced by perceptions of being poorly treated rather than perceptions of caring (Shore and Tetrick, 1991; Shore & Wayne, 1993). Therefore it is plausible to propose that perceived organisational support may be strongly related to affective commitment and not so much to continuance commitment.

Moreover organisations can influence the perception that they provide adequate support by ensuring that their agents such as management and human resources practitioners act in a supportive way towards the organisational workforce. Employees tend to associate the action of agents of the organisation such as management with the organisation itself. According to Levinson (1965) cited in Eisenberger et al. (2001) management is viewed as the agent of the organisation and employees do not differentiate between the individual behaviour of management and the organisational intent. Therefore organisational management play a critical role in influencing the perception that employees develop regarding the support that they get from the organisation. Thus management through their practices such as providing performance feedback, participative decision making, delegation, resource provisioning are likely to create a strong perception that the organisation is providing great support to its workforce. In this regard employees that have a strong perception that the organisation is providing strong support to its workforce are likely to develop an emotional bond with the organisation and are likely to stay longer. It is therefore likely that organisational support will be strongly related to affective commitment.

- Hypothesis 12: *Perceived organisational support is hypothesised to have a positive influence on affective commitment.*

2.7.7 Meaningful Work

Hackman and Oldham (1975, p. 162) defined meaningful work as “the degree to which the employee experiences the job as one which is generally meaningful, valuable and worthwhile”. On the other hand Steger, Dirk and Duffy (2012) conceptualized the construct of meaningful work to encompass three facets that is psychological meaningfulness, meaning making through work and the greater good motivations. Kahn (1990, p. 704) further defined psychological meaningfulness as a “feeling that one is receiving a return on investments of one’s self in a currency of physical, cognitive, or emotional energy”. According to Kahn (1990) employees experience meaningfulness when they feel that the work they are doing is worthwhile, valuable and when they feel they are making a difference. This is substantiated by May, Gilson and Harter (2004, p. 14) who noted that psychological meaningfulness is “the value of a work goal or purpose, judged in relation to an individual’s own ideals or standards”. For the purposes of this study meaningful work will be viewed on the basis of psychological meaningfulness.

The provision of exciting and challenging work is a leading factor for engaging and retaining talent regardless of the industry, economic conditions or business challenges (Kaye & Jordan-Evans, 2002). Lack of challenging work was found to be the most important variable of factors affecting the retention cognitions of employees (Sutherland & Jordan, 2004). Furthermore Thomas and Velthouse (1990) also noted that lack of meaningful work can significantly trigger disengagement and feelings of apathy. It is therefore envisaged that work that is perceived to be meaningful by the employee is likely to elicit personal growth, increase motivation and induce affective commitment. This is supported by research findings that have indicated that psychological meaningfulness has a significant influence on an employee’s positive work behaviour (Cartwright & Holmes, 2006; Chalofsky and Krishna, 2009; May, 2003). Also Willemse and Deacon (2015) also found that meaningful work correlated significantly with positive work attitude of an employee. Dockel et al. (2006) further noted that knowledge workers like artisans and engineers that view their tasks and job content as challenging and having opportunities for learning and exchanging of information are likely to have a strong sense of emotional attachment with the organisation. Therefore organisations that engage in job enrichment exercises and job

design that provide skills variety to the employees are likely to influence the affective commitment of their employees (Dockel et al. 2006).

Based on the discussion above, the following hypothesis was formulated:

Hypothesis 13: *Meaningful Work is hypothesised to have a positive influence on affective commitment*

2.8 Proposed Conceptual Model

According to the foregoing arguments, the most salient factors hypothesised to influence affective and continuance commitment include satisfaction with pay, perceived organisational support, perceived organisational justice, satisfaction with career development opportunities, meaningful work and job embeddedness. Moreover, it was argued that both affective and continuance have a negative influence on intention to quit. Combined these hypothesised relationships between the variables culminate into a structural model, depicted by Figure 2.1. The structural model represents the overarching research hypothesis concerning the intricacies of the mechanism explaining variance in organisational commitment, and the concomitant influence on intention to quit.

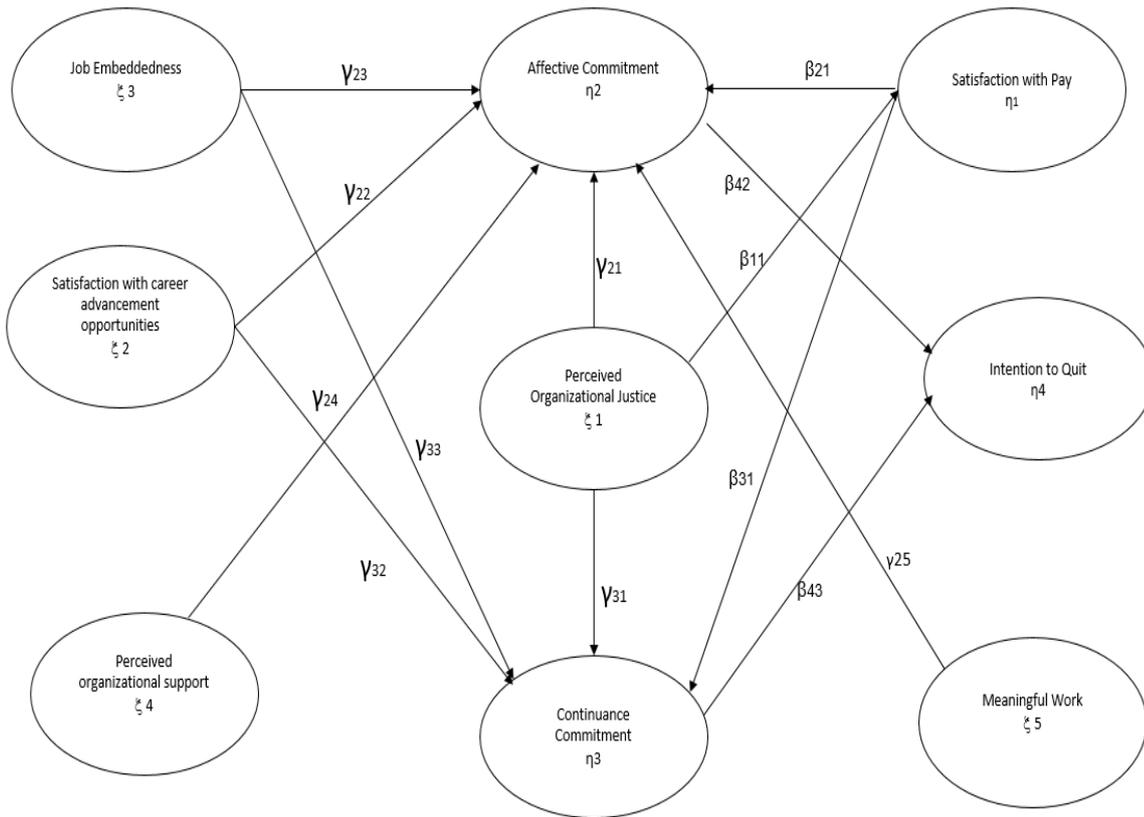


Figure 2.1: Proposed conceptual model

2.9 Summary

Chapter 2 highlighted the importance of organisational commitment as a proxy for intention to quit among artisans and engineers. The chapter also further elaborated on the historical development and current conceptualisations of organisational commitment as a construct in organisational psychology. Various antecedents of affective and continuance commitment were then investigated with the purpose of developing an explanatory model that could serve to explain variance amongst artisans and engineers in terms of the level of organisational commitment experienced by them. Chapter 3 subsequently discussed and articulated the research methodology that was employed to test the plausibility of the theoretical model developed in Chapter 2.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

Chapter 1 put forth an argument that organisational commitment is a potentially useful construct for understanding the retention of organisational talent. Given the critical need to retain artisans and engineers, this study therefore endeavored to better understand the role of organisational commitment as a retention tool in the sample of artisans and engineers from a manufacturing organisation.

In Chapter 2 the review of the literature expounded a theoretical argument that culminated in the development of a structural model that explicated the antecedents that determine the level and nature of commitment in the form of affective and continuance commitment experienced by employees. Understanding the antecedents that influence the level and nature of commitment will have numerous benefits to organisations as they will be able to use the relevant antecedents to drive the desired commitment.

Chapter 3 presents the research design and methodology used to empirically evaluate the proposed structural model. The purpose of empirically evaluating the structural model was to ascertain whether the theoretical relationships specified at the conceptualisation stage are substantiated by data (Diamantopoulos and Sigauw, 2000).

3.2 Substantive Research Hypotheses

The overarching substantive research hypothesis claims that the structural model depicted in *Figure 2.1* represents a valid account of the psychological mechanism that determines the level of affective and continuance commitment of artisans and engineers, and the impact thereof on their intention to quit. The overarching substantive research hypothesis can be dissected into the following 13 substantive path specific research hypotheses.

Hypothesis 1: *Affective commitment is hypothesised to have a negative influence on intention to quit*

Hypothesis 2: *Continuance commitment is hypothesised to have a negative influence on intention to quit*

Hypothesis 3: *Satisfaction with pay is hypothesised to have a positive influence on affective commitment*

Hypothesis 4: *Satisfaction with pay is hypothesised to have a positive influence on continuance commitment*

Hypothesis 5: *Perceived organisational justice is hypothesised to have a positive influence on satisfaction with pay*

Hypothesis 6: *Perceived organisational justice is hypothesised to have a positive influence on affective commitment*

Hypothesis 7: *Perceived organisational justice is hypothesised to have a positive influence on continuance commitment*

Hypothesis 8: *Satisfaction with career advancement opportunities is hypothesised to have a positive influence on affective commitment*

Hypothesis 9: *Satisfaction with career advancement opportunities is hypothesised to have a positive influence on continuance commitment*

Hypothesis 10: *Job Embeddedness is hypothesised to have a positive influence on affective commitment*

Hypothesis 11: *Job Embeddedness is hypothesised to have a positive influence on continuance commitment*

Hypothesis 12: *Perceived organisational support is hypothesised to have a positive influence on affective commitment*

Hypothesis 13: *Meaningful work is hypothesised to have a positive influence on affective commitment*

3.3 Research Design

The research design is the plan and structure of the investigation which is employed to seek answers to the research question and the testing of the hypothesis. The research design outlined the blue print that was required to regulate the way in which the validity of the hypothesised relationships among the latent variables were evaluated. The research design attempts to ensure empirical evidence that can be interpreted unambiguously for or against the proposed research hypothesis. This is achieved by substantially controlling variance in the measures of the dependent variable (Kerlinger and Lee, 2000). The research design is critical in ensuring the credibility of research findings. In this regard the research design aims to maximise systemic variances while minimising error variance and controlling extraneous variance.

The research design for this study had a quantitative orientation. According to De Vos (2005) a quantitative design is used to guide an inquiry into social or human problem based on testing a theory composed of variables that are measured with numbers and analysed with statistical procedures in order to determine whether the predictive generalisation of the theory are plausible. This study utilised the *ex post facto* correlational design. A correlational design lends itself well to evaluating the relationship(s) between two or more variables as they naturally exist. Gravetter and Forzano (2003) have noted that correlational studies seem to exhibit high external validity stemming from the fact that the researcher does not directly manipulate, control, influence or interfere with the independent variables under investigation. This is also corroborated by Kerlinger and Lee (2000) that noted that *the ex post facto* research design is a systematic empirical inquiry where the researcher does not have control of the independent variables as their manifestations have taken place or cannot be influenced by the researcher.

While this study utilised the *ex post facto* research design, it had some shortcomings. The *ex post facto* method did not allow for the manipulation of independent variables. Compared to experimental designs that allow for the manipulation of independent variables so that the researcher can observe their impact on the dependent variables, the *ex post facto* designs lack this control and this presents a possibility for erroneous

interpretations. Therefore due to these limitations, the research findings derived from *ex post facto* designs should be interpreted with caution.

3.4 Statistical Hypothesis

As stated earlier, the overarching substantive research hypothesis claims that the structural model depicted on Figure 2.1 presents a valid account of the psychological mechanism that determine the level of affective and continuance commitment amongst artisans and engineers, and the influence thereof on their intention to stay or leave the organisation.

If the overarching substantive hypothesis is presumed to represent a perfect account of the manner in which the variables are structurally related, then the overarching substantive hypothesis translates to the exact fit null hypothesis represented as:

$$H_0 \text{ exact fit: RMSEA} = 0$$

$$H_a \text{ exact fit: RMSEA} > 0$$

On the other hand, if the model depicted in Figure 2.1 that forms the basis of the substantive hypothesis is presumed to represent an approximate account of the psychological mechanism under investigation, then the overarching substantive hypothesis translates to a close fit null hypothesis that is represented as follows:

$$H_0 \text{ close fit: RMSEA} \leq 0.05$$

$$H_a \text{ close fit: RMSEA} > 0.05$$

The overarching hypothesis was further be dissected into 13 path-specific statistical hypotheses, as outlined in Table 2.1:

Table 2.1: Path specific statistical hypothesis

Hypothesis 1 $H_{01}: \beta_{42}=0$ $H_{a1}: \beta_{42}<0$	Hypothesis 2 $H_{02}: \beta_{43}=0$ $H_{a2}: \beta_{43}<0$	Hypothesis 3 $H_{03}: \beta_{21}=0$ $H_{a3}: \beta_{21}>0$
Hypothesis 4 $H_{04}: \beta_{31}=0$ $H_{a4}: \beta_{31}>0$	Hypothesis 5 $H_{05}: \gamma_{11}=0$ $H_{a5}: \gamma_{11}>0$	Hypothesis 6 $H_{06}: \gamma_{21}=0$ $H_{a6}: \gamma_{21}>0$
Hypothesis 7 $H_{07}: \gamma_{31}=0$ $H_{a7}: \gamma_{31}>0$	Hypothesis 8 $H_{08}: \gamma_{22}=0$ $H_{a8}: \gamma_{22}>0$	Hypothesis 9 $H_{09}: \gamma_{32}=0$ $H_{a9}: \gamma_{32}>0$

Hypothesis 10 H ₀ 10: $\gamma_{23}=0$ H _a 10: $\gamma_{23}>0$	Hypothesis 11 H ₀ 11: $\gamma_{33}=0$ H _a 11: $\gamma_{33}>0$	Hypothesis 12 H ₀ 12: $\gamma_{24}=0$ H _a 12: $\gamma_{24}>0$
Hypothesis 13 H ₀ 13: $\gamma_{25}=0$ H _a 13: $\gamma_{25}>0$		

3.5 Measuring Instruments

The following section describes the measuring instruments that were used to operationalise the latent variables in the structural model. The credibility of a research study is increased when one is able to demonstrate that the measures used as indicators are valid and reliable. This is substantiated by Diamantopoulos and Siguaw, (2000) who noted that if confidence of the measures is not established by demonstrating their validity and reliability, the assessment of substantive relationships in the structural model becomes problematic. Reliability refers to the consistency of a measure while validity demonstrates the extent to which an indicator actually measures what it is supposed to measure (Diamantopoulos and Siguaw, 2000). The measures that were used in this study were drawn from literature and have in previous research studies demonstrated sound psychometric properties that indicated that they are valid and reliable measures of the latent variable of interest in this study.

3.5.1 Organisational Commitment

Organisational commitment in this study was measured using the affective and continuance commitment subscales of the Organisational Commitment Scale (OCS) developed by Meyer and Allen (1991). The OCS consists of three subscales namely the affective commitment subscale, continuance commitment subscale and the normative commitment subscale. Organisational commitment for the purposes of this study was confined to affective and continuance commitment. The affective commitment subscale comprised of 8 items (*"I do not feel 'emotionally attached' to this organisation"*) while the continuance commitment subscale comprised of 7 items (*"Right now, staying with my job at this organisation is a matter of necessity as much as desire"*). Meyer and Allen (1997) observed the internal consistencies of the OCS dimensions varying between .85 for affective commitment and .79 for continuance commitment. Meyer, Allen and Smith (1993) reported the Cronbach Alpha of .82 for

affective commitment and .7 for continuance commitment. Van Dyk, Coetzee and Tebele (2013) also reported high internal consistency reliabilities for affective commitment (.90) and continuance commitment (.84). Furthermore O'Driscoll and Randall (1999) in their study also reported acceptable Cronbach Alphas for affective commitment (.78) and continuance commitment (.79). Thus the affective and continuance commitment subscales have demonstrated sound reliability. In this study affective and continuance commitment were treated as two separate latent variables. Two item parcels per subscale were created by taking the mean of the uneven numbered and the mean of even numbered items of each subscale to operationalise the affective and continuance commitment latent variables (i.e. 4 indicators in total, 2 for each latent variable).

3.5.2 Satisfaction with Pay

Pay Satisfaction was measured using the 18 item version of the Pay Satisfaction Questionnaire (PSQ) developed by Heneman and Schwab (1985). The PSQ consist of four subscales that measure the respondents level of satisfaction with four facets of pay that is pay level (four items), benefits (four items), pay raise (four items) and pay structure and administration (6 items). Examples of items include "*I am satisfied with my overall level of pay*", "*I am satisfied with the raises I have typically received in the past*", "*I am satisfied with how the company administers pay*". Ucho, Sunday, Ngbea and Banje (2015) found a reliability coefficient of .83 for the PSQ. Judge (1993) also found a Cronbach Alpha of .89 for the overall PSQ scale. Currall, Towler, Judge and Kohn (2005) also found acceptable Cronbach Alphas for the subscales of the PSQ. They found a Cronbach Alpha of .98 for pay level, .99 for benefits, .82 for pay structure and administration and .89 for pay raises. Furthermore Panaccio, Vandenberghe and Ben-Ayed (2014) found acceptable Cronbach Alphas for pay level (.96), pay raise (.90), benefits (.95) and pay structure and administration (.95). Therefore there is empirical evidence that demonstrates the internal consistency reliability of the Pay Satisfaction Questionnaire (PSQ). The subscale means representing the four dimensions of satisfaction with pay (namely pay level, benefits, pay raise and pay structure and administration) were used as indicators to operationalise the satisfaction with pay variable.

3.5.3 Perceived Organisational Justice

Perceived organisational justice was measured using the scale developed and validated by Colquitt (2001). The scale consists of three subscales namely a distributive justice subscale, a procedural justice subscale and an interactional justice subscale. For the purposes of this study, perceived organisational justice was confined to procedural and procedural justice. The distributive justice subscale consists of 4 items (*“Are the outcomes you receive appropriate for the work you have completed?”*) and procedural justice consisted of 7 items (*“Have you been able to appeal the outcomes arrived at by those procedures?”*). Colquitt and Rodell (2011) in their longitudinal study with two periods obtained acceptable Cronbach Alphas for the subscales in each period. They obtained Cronbach Alphas for procedural justice subscale (.86 for time 1 and .90 for time 2), distributive justice subscale (.97 for time 1 and .90 for time 2) and Interactional justice (interpersonal justice .93 for time 1 and .94 for time 2). Another study by Ambrose and Schminke (2009) used the three subscales developed by Colquitt (2001) and obtained acceptable Cronbach Alphas for the procedural justice (.89), distributive justice (.95) and interactional justice (.95) subscales. Therefore there is empirical support for the internal consistency of the perceived organisational justice scale developed by Colquitt (2001) that were used in the current study. The subscale means representing the two dimensions perceived organisational justice namely distributive justice and procedural justice were used as indicators to operationalise the perceived organisational justice latent variable.

3.5.4 Job Embeddedness

Job embeddedness was measured by the Job Embeddedness Scale (JES) of Mitchell et al. (2001). The JES comprises of two dimensions namely the organisational dimension and community dimension. The current study was confined to the organisational dimension that has been found to be a better predictor of employee performance compared to the community dimension (Allen, 2006; Halbesleben and Wheeler, 2008). The organisational dimension comprises of the three subscales that is the fit subscale, links subscale and sacrifice subscale. The job fit subscale has 9 items (*“I fit with the company’s culture”*) while the job links subscale consisted of 7 items (*“how many coworkers do you interact with regularly”*). The reliability and validity of the JES in the South Africa context has been confirmed by Van Dyk (2012).

Furthermore Ferreira and Coetzee (2013) reported high and acceptable Cronbach Alphas for fit subscale (.84), links subscale (.77) and sacrifice subscale (.87). Takawira et al. (2014) in their study also obtained acceptable internal consistency reliabilities for the fit subscale (.81), link subscale (.79) and sacrifice (.88). Thus the JES has demonstrated internal consistency in the South Africa context. As mentioned in Chapter 2 this study excluded the sacrifice subscale due to the conceptual overlap with continuance commitment. Moreover, prior to the fitting of the structural model the researcher also decided to exclude the Links subscale due to concerns about the unidimensionality of the subscale. Hence, only the job fit subscale was used in this study. Two item parcels were created by taking the mean of the uneven numbered and the mean of even numbered items of job fit subscale to operationalise job fit latent variable (i.e. 2 indicators).

3.5.5 Intention to Quit

Roodt (2004) initially designed a 14 item Turnover Intention Scale to measure the employees' intention to stay or leave their organisation. Jacobs (2005) and Du Plooy and Roodt (2013) reported acceptable Cronbach coefficients of .91 and .80 respectively. Martin and Roodt (2008) adapted the TIS to a 13 item version and found an acceptable Cronbach Alpha of .90. Bothma and Roodt (2013) adapted the 15 item scale to a 6 item TIS version and found Cronbach Alpha of .80. In their study Bothma and Roodt (2013) found that the factor loadings of the six items on a single factor ranged from .73 to .81. These finding demonstrated that the 6 item TIS version has sound psychometric properties. This study utilised the 6 item version ("*What is the probability that you will leave your job, if you get another suitable offer?*") of the TIS developed by Roodt (2004) to assess the artisans and engineers intention to stay or leave their organisations. In the SEM analyses the ¹researcher used 2 items of the scale that captured the actual intention to quit and each item was used as an indicator of the latent variable (i.e. 2 indicators).

¹ The intention to quit scale initially consisted of 14 items. However before item analysis via exploratory factor analysis was conducted, the actual wording of the scale items was scrutinised and it was noted that with the exception of 2 items, the rest of the scale items seemed to represent more of the push and pull factors of intention to quit rather than measuring the actual intention to quit construct. Push factors were captured by those items that seemed to represent the causes that push the individual to consider leaving while pull factors were captured by those items that seemed to prevent the individual from leaving. The researcher decided to use only 2 items from the intention to quit scale that directly represented intention to quit construct. The shortened version of the intention to quit that consisted of 2 items was not subjected to EFA due to the remaining number of items on the scale.

3.5.6 Perceived Organisational Support

Perceived organisational support was measured by the Perceived Organisational Support Scale (POS) developed by Eisenberger et al. (1986). They originally developed a 36 item measure of perceived organisational support (POS) and later refined it into a 17 item version through combining items that had high factor loadings from the original item pool. Rhoades, Eisenberger and Armeli (2001) further refined the POS 17 item scale to an 8 item POS measure by selecting the highest factor loading items. Rhoades and Eisenberger (2002, p. 699) justified the use of the 8 item version by noting that “because the original scale is unidimensional and has high internal reliability, the use of shorter versions does not appear problematic”. This study used the shortened version that constituted of 8 items (*“My organisation really cares about my well-being”*). Rhoades et al. (2001) as well as Saks (2006) have obtained Cronbach Alphas for the shorter version of the POS measure that are above .70 as stipulated by Nunnally and Bernstein (1994) thereby confirming the reliability of the scale. O’Driscoll and Randall (1999) found a Cronbach Alpha of .94 for the original scale. Two item parcels were created by taking the mean of the uneven numbered and the mean of even numbered items of perceived organisational support scale to operationalise the perceived organisational support latent variable (i.e. 2 indicators).

3.5.7 Satisfaction with career advancement opportunities

Satisfaction with career development opportunities was measured using the Organisational Career Growth scale that comprises of 15 items that was developed by Weng (2010). The Organisational Career Growth scale comprises of 4 dimensions namely career goals progress, professional ability development and promotion speed and remuneration growth. The career goals progress, professional ability development and promotion speed subscales comprise of 4 items each while remuneration growth subscale has 3 items. Weng and McElroy (2012) obtained reliable coefficient alphas for the career goal progress (.85), professional ability development (.86), promotion speed (.86), and remuneration growth (.78). Furthermore Weng, McElroy, Morrow and Liu (2010) also obtained coefficient alphas of .86 for career goal progress, .86 for professional ability development, .80 for promotion speed and .78 for remuneration growth. Thus the organisational career growth scale has demonstrated internal consistency. The subscale means representing the four dimensions of satisfaction with

career advancement opportunities namely career goals progress, professional ability development, promotion speed and remuneration growth were used as indicators to operationalise the satisfaction with career advancement opportunities latent variable.

3.5.8 Meaningful Work

Meaningful Work was measured using Psychological Meaningfulness Scale (PMS). This scale is a 6 item subscale of the Psychological Conditions Questionnaire developed by May et al. (2004). The scale assesses the extent to which the employee derives meaning in his/her work related activities. The participants were asked to rate how strongly they agreed with each item (e.g., *“The work I do on this job is worthwhile; My job activities are personally meaningful to me”*) using a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*). May et al. (2004) in their study found a Cronbach Alpha of .90 on the psychological meaningfulness subscale. While Olivier and Rothmann (2007) reported a Cronbach Alpha of .92 and Woods and Sofat (2013) also reported a Cronbach Alpha of .92. It is therefore apparent that the psychological meaningfulness scale has demonstrated internal consistency and was used in this study. Two item parcels were created by taking the mean of the uneven numbered and the mean of even numbered items of psychological meaningfulness subscale to operationalise the meaningful work latent variable (i.e. 2 indicators)

3.5.9 Summary of indicators

Table 3.1

Summary of indicators

Latent variables	Measure	Indicators for SEM
Affective Commitment	Affective Commitment Subscale	1 Subscale, split into 2 parcels
Continuance Commitment	Continuance Commitment Subscale	1 Subscale, split into 2 parcels
Intention to Quit	Turnover Intention Scale	1 Scale, 2 items of the scale used and each item was used as an indicator
Satisfaction with Pay	4 Subscales i.e Pay Level, Benefits, Pay Rise and Pay Structure and Administration	4 Subscales, each representing an indicator

Satisfaction with Career Development Opportunities	Organisational Growth Career Scale	4 Subscale, each representing and indicator
Perceived Organisation Support	Perceived Organisational Support Scale	1 Scale, split into 2 parcels
Perceived Organisation Justice	Procedural and Distributive scales	2 Subscales, each representing an indicator
Meaningful Work	Psychological Meaningfulness Scale	1 Scale, split into 2 parcels
Job Embeddedness	Job Fit subscale	1 Subscale, split into 2 parcels

3.6 Sampling and Research Participants

Research findings hinge on the participants that give information in a research study. For practical reasons, it may not be feasible to collect research data from the entire research population. In this regard a representative sample must be selected to represent the entire population. The selected sample can only be considered representative if it mirrors the characteristics or phenomenon of interest as it manifest in the research population. Kerlinger and Lee (2000) noted that sampling refers to taking a portion of the population to represent the target population. Thus the sample can loosely be defined as a subset of the entire research population. In essence probability sampling in the form of random sampling technique is likely to yield a representative sample as each participant in the entire research population has an equal chance of being selected into the sample pool. However, probability sampling requires that one has an established sampling frame and knows the entire research population. For the current study however a non-probability sample, specifically convenience sampling technique, was used to draw a sample of artisans and engineers from a manufacturing organisation that had a large headcount of artisans and engineers. Convenience sampling is a sampling procedure that is anchored at utilising the research participants that are available and willing to participate in the research. The fact that non-probability sampling was used may imply that the sample may not mirror the research target population from which it was drawn and hence it may not be truly representative of the research population. This therefore limited the generalisability of the study.

The research sample was drawn in a large manufacturing and engineering company that has its head offices in Johannesburg and has branches in Johannesburg Durban,

Cape Town and Kathu. The target sample consisted of artisans and engineers that are based in the aforementioned branches. For the purposes of this study, an artisan was defined as an employee in the participating organisation that had successfully completed a trade test and obtained a formal trade test qualification as prescribed by Sector Education and Training Authority (SETA). An engineer on the other hand was defined as an employee in the participating organisation that had attained an engineering qualification recognised by the engineering council of South Africa (ECSA). A total of 238 artisans and engineers participated in the study.

The sample demographic characteristics that included age range, gender, race, employee type and highest qualification are shown in Table 3.2 below;

Table 3.2

Sample Characteristics

		Frequency	Percent
Gender	Female	20	8.4
	Male	218	91.6
	Total	238	100.0

		Frequency	Percent
Age Range	18-24	23	9.7
	25-34	109	45.8
	35-44	74	31.1
	45-54	25	10.5
	55+	7	2.9
	Total	238	100.0

		Frequency	Percent
Race	Black	159	66.8
	Coloured	22	9.2
	Indian/Asian	13	5.5
	White	44	18.5
	Total	238	100.0

		Frequency	Percent
Employee Type	Artisan/Technician	154	64.7
	Engineer	84	35.3
	Total	238	100.0

		Frequency	Percent
Highest Qualification	Degree	69	29.0
	Diploma	48	20.2
	Masters	2	.8
	Trade test certificate	119	50.0
	Total	238	100.0

		Frequency	Percent
Years of Service	2-5yrs	72	30.3
	5-10 yrs	69	29.0
	less than 2 yrs	51	21.4
	More than 10 yrs	46	19.3
	Total	238	100.0

Table 3.2 indicated that the majority of the respondents were male that constituted 91.6% of the sample while female participants constituted 8.4%. This is understandable as the engineering sector is largely dominated by male artisans and engineers. In terms of age range, respondents aged 25-34 years constituted 45.8% of the sample followed by respondents aged 35-44 with 31.1 % while the 45-54 age group constituted 10.5%. The remaining age groups (18-24 and 55+) had less than 10% representation respectively. Table 3.2 further indicated that the majority of respondents were from the black racial category constituting 66.8% of the sample followed by white racial category with 18.5% and coloured and Indian/Asians constituting 9.2% and 5.5% of the sample respectively.

In terms of employee type, the research sample was predominantly dominated by artisans/technicians that constituted 64.7% of the sample while engineers constituted 35.3%. Furthermore of the 238 respondents that participated in this study, 50% had obtained a trade test certificate, while 29% had obtained a degree while 20.2% had obtained a diploma qualification with only 0.8% that had obtained a master's degree qualification. Based on tenure, employees with 2-5 years of service constituted 30.3%, of the sample employees with 5-10 years of service constituted 29.0%, while employees with less than 2 years of service constituted 21.4% and lastly more than 10 years of service constituted 19.3% of the sample. Although the description of the sample seemed to paint a picture of a diverse sample group, the major drawback of

the sample was the fact that it was drawn from one organisation and therefore there could be some specific organisational extraneous variables that can influence the dynamics observed in the study.

By its nature, structural equation modelling (SEM) lends itself as a large sample technique (Ullman, 2006). Large sample are required when using SEM statistical analysis because the parameter estimates and chi-square test of fit are very sensitive to sample size. This was also substantiated by Hu and Bentler (1998) when they stated that the adequacy of the test statistics are influenced by the sample size and are likely to perform poorly in small samples. MacCallum, Browne and Sugawara (1996) noted that the sample size is critical in ensuring that the research design is able to achieve sufficient statistical power to test the research hypothesis. If the sample size is not large enough then the parameter estimates will be unstable and the analysis will lack statistical power. Statistical power refers to the probability of rejecting the null hypothesis that the model fits the data given that the null hypothesis is false (Diamantopoulos & Sigauw, 2000).

Structural equation modelling studies have been found to lend themselves very well to large samples. As noted by Bryman and Bell (2003) validation of a study is increased when the relative size of the sample increases. In order to determine the satisfactory sample size for this study, the Preacher and Coffman (2006) software was employed and the results indicated that a minimum sample of 88 (alpha .05; degrees of freedom 186; Null RMSEA .05; ALT RMSEA .08) was required to achieve a statistical power of .80 for the close fit hypothesis. Based on this criteria, the current sample size of 238 seemed sufficient and satisfactory.

Another criterion that was considered for determining sample size was the ratio of the number of cases (N) to number of parameters that require statistical estimates. According to Jackson (cited in Kline, 2011) the ideal sample size to parameters ratio is 20:1 and the minimum ratio is 10:1. The number of parameters to be estimated in this study was 67 and the sample size required when applying the sample size to parameters criteria implied that the sample size should range between 670 as the minimum and 1340 as the maximum. Although the sample size for this study was 238 and fell short of the sample size recommended, it still achieved the statistical power of 0.80 and met the general "rule" of at least 200 or above cases.

3.7 Statistical Power

Statistical power in the context of SEM refers to the probability that a false/poor model will be rejected (i.e. the probability that the chi-square estimate will be significant when in fact the model fits mediocre in the parameter). A low power therefore “favours” the researchers (Kline, 2011). However, as explained by Diamantopoulos and Siguaw (2000), obtaining support for a model under conditions of low power reduces confidence in the plausibility of the model as it will not be certain whether the test statistic reflects the “correctness” of the model or the lack of sensitivity to specification errors. It is therefore agreed that researchers should aim for a statistical power of .80.

3.8 Data Collection Procedure

The researcher scheduled multiple briefing sessions in the workshop areas across all branches where artisans and engineers are based in South Africa. The purpose of these briefing sessions was to explain the purpose of the study and to recruit the participants that were willing to participate. The researcher had to spend time explaining the issues of confidentiality and anonymity as these seemed to be concerns that the respondents had. Furthermore the researcher had to explain the need for demographic details of the respondents. This was done to address the concerns of the respondents and to assure them that the demographic details were not going to be used to identify them. The researcher booked a boardroom for each session so that the employees that were willing to participate can go to the boardroom and complete the questionnaire. There was a collection box that was placed in the boardroom so that once the participant had completed the questionnaire, they can drop their completed questionnaire in the box. This was done to guarantee the anonymity of the responses of the participants.

3.9 Statistical Analysis

The data gathering process using the research questionnaire yielded data that had to be analysed to obtain answers to the research initiating question. In the analysis of the data, SPSS Version 24 was used to conduct item analysis and exploratory factor analysis while LISREL version 8.80 was utilised to perform confirmatory factor analysis to evaluate the fit of the measurement model and to perform structural equation modelling to evaluate the fit of the structural model.

3.9.1 Missing Values

Missing values in a data set presented a challenge that needed to be resolved before any analysis of the data could be done. Several options have been proffered as viable methods to treating missing values namely list-wise deletion, pair-wise deletion, multiple imputation, imputation by matching and full information maximum likelihood imputation (Du Toit & Du Toit, 2001). The list-wise deletion and the pair-wise methods have been classified as case methods (Kline, 2011). The list-wise deletion method entails removing any case that had a missing value or values such that the data set should comprise of only complete data cases. The fact that any case with missing values is deleted when applying this method implies that it will have a detrimental effect on sample size if the sample has many cases with missing values. The pairwise deletion method on the other hand, unlike the list-wise deletion method, only deletes a case for analysis on variables with missing values on the variables involved in the analysis but that case can still be used in other analysis where the required data is complete. This technique has been found to present challenges when one needs to calculate covariance terms since the sample size may differ substantially which may result in biased estimates. The other technique to consider was the multiple imputation (MI) available on LISREL. This technique involves conducting several imputations for each missing value. Each imputation creates a complete data set which could be analysed separately in order to obtain multiple estimates of the parameter of the model (Raghunatha and Schafer cited in Dunbar-Isaacson, 2006). This method however assumes that the observed variables are continuous and follow a multivariate normal distribution (Du Toit & Du Toit, 2001). The last method that was considered for treating the missing values was imputation by matching. This method involves substituting real values for missing values. These substitute values are derived from the one or more other cases that have a similar response pattern over a set of matching variables. The cases devoid of missing values are typically used as matching variables. The advantages of multiple imputation and imputation by matching is that no cases with missing values are deleted and the data set derived from these procedures can be used for item analysis, dimensionality analysis and creation of item parcels (Du Toit & Du Toit, 2001). Thus the researcher had to evaluate the data, assess the magnitude of missing values and chose the most suitable method that will effectively resolve the

challenge of missing values in this study. The motivation of the chosen method was discussed in Chapter 4.

3.9.2 Item Analysis

Item analysis via the SPSS reliability procedure was conducted on scale items that served as manifest indicators of the latent variables that include satisfaction with pay, perceived organisational support, perceived organisational justice, satisfaction with career advancement opportunities, job embeddedness, affective and continuance commitment, meaningful work as well as artisan and engineers' intention to quit. Item analysis is a process that assesses whether the scale items "hang together" if they are meant to be measure the same underlying latent construct (Pallant, 2011). This procedure of item analysis helps to determine the internal consistency of a scale which increases when the scale items "hang together" and are measuring the same underlying construct which would be indicated by a higher Cronbach Alpha (Pallant, 2011). Furthermore, Theron (2007) noted that item analysis helps to identify and eliminate items not contributing to the internal consistent description of the various dimensions of the construct in question. Thus item analysis helped identify poor items or items that did not satisfactory represent the underlying latent variable and these items were considered for elimination.

3.9.3 Dimensionality

Exploratory factor analysis (EFA) was used for evaluating dimensionality of the measuring scales. According to Kahn (2006) EFA explores how many factors exist among a set of variables and the degree to which the variables are related to the factors. Exploratory factor analysis was performed (using SPSS version 24) on each scales/subscale of the questionnaire to assess the uni-dimensionality of scales. Uni-dimensionality would be established when all scale/subscale items "hang together" indicating that there are measuring the same underlying construct that explains a considerable proportion observed variance in each item that constitute the scale/subscale. Thus the objective of confirming the uni-dimensionality of each subscale was to establish if the scale items are measuring the same underlying latent

variable and in the process identify and remove items that do not adequately reflect the latent variable they are meant to reflect (indicated by insufficient factor loadings).

Principle factor analysis (PAF) was used as the extraction technique. Factor extraction involved determining the least number of factors that could best represent the interrelationships among a set of variables (Pallant, 2011). PAF was used as the extraction technique because it analyses common variance shared between items comprising a scale/subscale. This made PAF more preferable than principal component factor analysis (PCA) that analysis all (common and unique) variance. Also oblique rotation was applied over orthogonal rotation because it allowed the factors to be correlated (Tabachnick & Fidell, 2001; Pallant, 2011). The determination of how many factors to extract was informed by the eigenvalue greater-than-unity rule (Kaiser, 1960) and the scree test.

With regards to the identification of items that had insufficient factor loadings, a criterion of $\lambda_{ij} > .50$ was applied to indicate acceptable factor loadings. Hair, Anderson and Tatham, (2006) have recommended an even higher criterion $\lambda_{ij} > .71$ which was only applied in this study when examining the factor loadings of the item parcels when fitting the measurement model.

3.9.4 Structural Equation Modelling

Structural equation modelling (SEM) lends itself well for testing models with multiple dependent and independent variables. This is substantiated by Ullman (2006) who notes that when the phenomena of interest are complex and multidimensional, SEM is the only analysis that allows complex and simultaneous tests of all the relationships. Hoyle (1995) also noted that SEM is a comprehensive statistical approach to testing hypothesis about relations among observed and latent variables. The process of structural equation modelling comprised of two main steps that is validation of the measurement model and the fitting of the structural model. According to Diamantopoulos and Siguaw (2000) the measurement model describes how each latent variable is operationalised by corresponding manifest indicators while the structural model describes the relationship between the latent variables themselves. The purpose of evaluating the structural model is to ascertain whether the structural

model derived from the theorising is substantiated by the data (Diamantopoulos & Siguaw, 2000).

3.9.4.1 Interpretation of measurement model fit and parameter estimates

The measurement model focuses on the way in which the latent variables are operationalised, that is how they are represented by the manifest or observable variables (Diamantopoulos and Siguaw, 2000). Thus the objective of confirmatory factor analysis was to determine the level of success with which the latent variables comprising the measurement model were operationalised in terms of item parcels. Successful operationalisation was attained if there was evidence that the model can successfully reproduce the observed covariance matrix and if the model parameter estimates indicate that the majority of the variance in the indicator variables can be explained in terms of the latent variables they were designed to reflect (Burger, 2012). Successful operationalisation of the measurement model was a precondition that needed to be met before considering the fitting of the structural model. In evaluating the fit of the measurement model, the null hypothesis of exact fit was first tested. The hypothesis was represented as follows;

Measurement model H_0 exact fit: $RMSEA = 0$

Measurement model H_a exact fit: $RMSEA > 0$

The exact null hypothesis assumes that the measurement model provides a perfect account of the manner in which the latent variables manifest themselves in the indicator variables. The desirable outcome is not to reject the hypothesis of exact fit as this will be indicative of evidence that the measurement model provides a perfect account of the manner in which the latent variables manifest themselves in the indicator variables. However it is highly likely that the hypothesis of exact fit will be rejected as it is implausible to expect the model to fit perfectly in the population as the model is only an approximation of reality (Diamantopoulos & Siguaw, 2000)

The fact that we would have failed to prove that the measurement model fits perfectly in the population signals that we need to test the hypothesis of close fit. The hypothesis was represented as follows;

Measurement model $H_{0 \text{ close fit}}$: $RMSEA \leq .05$

Measurement model $H_{a \text{ close fit}}$: $RMSEA > .05$

The close fit hypothesis assumes that the measurement model provides an approximate account of the manner in which the latent variables manifest themselves in the indicator variables. Again the desirable outcome is not to reject the hypothesis of close fit as this will be indicative that the measurement model provides a close approximation of the manner in which the latent variables manifest themselves in the indicator variables. Testing and obtaining the hypothesis of close fit is the initial basket of evidence that builds confidence towards the successful operationalisation of the measurement model. Once close fit has been obtained, the fit indices were used to test the close fit hypothesis. Hence the measurement model fit was interpreted by examining the full spectrum of goodness of fit indices provided by LISREL (Diamantopoulos and Siguaw, 2000). The fit indices that were used to assess measurement model fit included the chi-square test that was corroborated with root mean square error of approximation (RMSEA), goodness-of-fit (GFI) and adjusted goodness-of-fit index (AGFI), normed fit index (NFI), non-normed fit index (NNFI), comparative fit index (CFI), expected cross-validation index (ECVI) and the standardised root mean square residual (SRMR).

Furthermore the magnitude and distribution of the standardised residuals were also examined as they have been deemed to be very useful diagnostic data that assist in examining the quality of measurement model fit. Large positive and negative standardised residuals that were denoted by values greater than +2.58 or -2.58 provided insight on model fit as large positive standardised residuals indicated that the measurement model underestimated the covariance between manifest variables involved. This would imply that the model may need modification through adding paths that is through freeing of some parameters (Diamantopoulos and Siguaw, 2000). On the other hand large negative standardised residuals denoted by values greater than -2.58 would be indicating that the model overestimates the covariance between the manifest variables involved which would imply that the model may need a reduction of

paths through the fixing of parameters of the variables concerned (Diamantopoulos and Siguaw, 2000). Also the model modification indices were inspected to comment on the fit of the model. Also the modification indices were inspected to help in understanding how the current model can be modified to enhance fit. In particular large modification indices denoted by values greater than 6.6349 (at significance level of .01) would be indicative of parameters that when set free would improve the fit of the model significantly ($p < .01$) (Diamantopoulos and Siguaw, 2000) provided doing so makes substantive sense.

3.9.4.2 Interpretation of structural model fit and parameter estimates

The structural model specified the substantive relationships among latent variables of interest in this study. Therefore the main objective of evaluating the structural model is to establish whether the theoretical relationships developed during the conceptualising stage are corroborated by the data. (Diamantopoulos and Siguaw, 2000). Before the evaluation of the structural model, a comprehensive LISREL model (comprising of the measurement and structural model) was fitted. The evaluation of the comprehensive LISREL model fit was conducted through inspecting a full spectrum of the fit indices that included the chi-square, RMSEA, GFI, AGFI, NFI, NNFI, CFI and ECVI. Furthermore the magnitude and distribution of the standardised residuals was also examined as they have been deemed to provide useful insight in the quality of model fit. Specifically large positive residuals (exceeding 2.58) indicate that the model underestimates the covariance of the latent variables and could be providing a modification guide of adding paths through freeing some parameters (Diamantopoulos and Siguaw, 2000). On the other hand negative large residuals would be indicating that the model overestimates the covariance of the latent variables and could be providing a modification guide of trimming paths through fixing the parameters of the variables concerned ((Diamantopoulos and Siguaw, 2000).

Also the model modification indices were inspected to understand how the current structural model can be modified to enhance fit. In particular large modification indices denoted by values greater than 6.6349 (at significance level of .01) in the Γ and B matrices would be indicative of parameters that when set free would improve the fit of the model significantly ($p < .01$) (Diamantopoulos and Siguaw, 2000) provided doing so makes substantive sense. Modifications index values paint a picture of the quality

of the fit of the model with large numbers of large and significant Γ and B modification index values eroding the confidence of the model fit and implying that there are numerous potential opportunities to enhance the fit of the model. However caution has been given to researchers to only make modifications to the model when it has theoretical merit and make substantive sense to do so.

If the comprehensive LISREL model obtained close fit (i.e. H_0 close fit fails to be rejected) or if the fit indices of the model exhibited reasonable fit, then H_{01} - H_{013} were tested and the magnitude of the completely standardised path coefficients were interpreted for all significant path coefficients. The structural model was considered successful when;

- the comprehensive model fitted the data well,
- the measurement model fitted the data well,
- the path coefficients for the hypothesised structural relations were statistically significant, and
- the model would be found to explain a substantial proportion of the variance in each of the endogenous latent variables

3.10 Summary

In summation, this chapter discussed the methodology that was used to test the measurement and structural model. The discussion outlined the substantive research hypothesis and statistical hypothesis, research design, measuring instruments, sampling and research participants, data collection procedures and statistical procedures to be used.

CHAPTER 4: RESEARCH RESULTS

4.1 Introduction

Chapter 4 presents the research results obtained from the data analysis. The chapter starts by explaining the procedure that was used for dealing with missing values. Next, the reliability and validity of the various subscales are inspected by means of item analysis and exploratory factor analysis. This is followed by discussing the extent to which the data satisfied the normality assumptions, before subsequently evaluating the fit and parameter estimates of the measurement model. Finally, the structural model's fit along with the path-specific hypotheses are considered.

4.2 Missing Values

The obtained multivariate data set contained missing values and this problem had to be dealt with before any analysis could proceed. Dealing with missing values needs careful consideration. Evaluation of the methods used to treat missing values need to be understood so that the chosen method does not significantly reduce the sample size as SEM lends itself well to large samples that are above 200 (Diamantopoulos & Siguaw, 2000.)

In deciding which method to apply in dealing with the missing values, the researcher had to take into account whether the data satisfied the assumption of normality as well as evaluate the number of missing values. In the Excel data set, there were 239 cases and the review of the data set indicated that there was one case that had a large number of missing responses (75 missing responses) and that was flagged and deleted. The data set then remained with 238 cases of which 233 were complete cases without any missing values and 5 cases with each one missing value. The distribution of the missing values is depicted in Table 4 below;

Table 4***Distribution of missing values across measurement scales***

Instruments	Number of missing values
Affective commitment subscale (4 items)	1
Perceived organisational support scale (6 items)	1
Organisational career growth scale	1
Procedural justice subscale	1
Psychological meaningfulness scale	1

Given the overview of the possible methods of dealing with the missing values discussed in Chapter 3 and the small number of missing values as indicated in Table 4, the researcher had to decide on what method to use to deal with missing values in this study. Taking into account that there were 5 cases with missing values, using the list-wise deletion method would have resulted in a sample of 233 complete data cases. Though this would have reduced the sample, the reduction would not have been significant. Therefore list-wise method was considered as one possible option. Another viable technique to deal with the missing values was the imputation by matching. This technique meant that none of the cases would be deleted and the sample would still be 238 cases. Thus the researcher had to make a choice of whether to deal with the missing values via list-wise deletion or imputation by matching. The latter option was adopted. Imputation by matching procedure was chosen and as discussed previously it entails substituting missing values with real values. Using this technique meant that the replacement values assigned to the case had to be derived from one or more other cases that had a similar response pattern over a set of matching variables (Jöreskog & Sörbom, 1996a). Also imputation by matching was considered as the most viable procedure since the multivariate normality assumption was not satisfied in this data. Furthermore this procedure has been deemed to exert less stringent assumptions compared to other procedures and seemed to be the most conservative and safe procedure for treating missing values (Theron, 2013). Imputation by matching succeeded in dealing with the missing values for the 5 cases that had missing values and the imputed sample still constituted 238 cases.

4.3 Item Analysis

Item analysis via SPSS version 24 was conducted on scale/subscale items that served as manifest indicators of the latent variables in this study that comprised of satisfaction with pay, perceived organisational support, and perceived organisational justice, satisfaction with career advancement opportunities, job embeddedness, affective and continuance commitment and intention to quit. The item analysis procedure was utilised to determine the internal consistency of each scale/subscale. Internal consistency is denoted by the Cronbach Alpha (α) and has been described as the degree to which items that comprise a scale/subscale are able to 'hang together' – indicating whether the items are measuring the same underlying construct (Pallant, 2011). In this case the purpose was twofold: To evaluate whether the scales demonstrated reliability and validity before proceeding with further analysis, and then if necessarily, to make improvements to the scales by using the item statistics to identify and eliminate poor items (Anastasi & Urbin, 1997).

4.3.1 Results of item analysis

The interpretation of the item analysis results and decisions based thereon regarding which items to retain and which items to consider for removal or deletion were guided by the following classical measurement theory statistics;

- Item means and item standard deviations: Extreme means and standard deviations are indicative of potentially problematic items.
- Corrected item-total correlation: The magnitude of the correlations between each item and the total score gives some indication of the extent to which each item measures the same latent construct as the other items. Items with low item-total correlations (less than .3) are considered suspect with regard to measuring the same underlying construct(s) (Pallant, 2011).
- Squared multiple correlations: A good item will be identified by a reasonable squared multiple correlation which will be indicating that the item shares a reasonable proportion of variance with other items that reflect the same underlying construct (Theron, 2013).
- Change in scale/subscale variance if the item would be deleted: Items that would result in a significant increase in the scale/subscale variance, or only a

small decrease in the scale/subscale variance, if deleted would signal that they are bad items and should be considered for removal or deletion.

With regard to the acceptable Cronbach Alpha, researchers have pointed out that a Cronbach Alpha that is above .70 seems to be the preferred cut-off point (Devellis, 2003; Kerlinger & Lee, 2000; Nunnally, 1967). This study adopted the criteria proposed by Nunnally (1967) that views a Cronbach Alpha of .90 and above as excellent; .80-.89 as good; .70-.79 as adequate; and below .70 as having limited applicability.

4.3.2 Reliability analysis: Affective commitment subscale

The Affective Commitment subscale consisted of 6 items and the results of item analysis are indicated in Table 4.1.

Table 4.1

The reliability analysis of the affective commitment subscale

Reliability Statistics			
Cronbach's Alpha	Cronbach's Alpha Based on		N of Items
.802	Standardized Items	.811	6
Item Statistics			
	Mean	Std. Deviation	N
Affcomm1	3.59	1.063	238
Affcomm3	3.74	1.010	238
Affcomm5	3.87	.948	238
Affcomm6	3.85	.881	238
Affcomm2	3.49	1.014	238
Affcomm4R	3.34	1.138	238

Inter-Item Correlation Matrix						
	Affcomm1	Affcomm3	Affcomm5	Affcomm6	Affcomm2	Affcomm4R
Affcomm1	1.000	.631	.600	.607	.367	.223
Affcomm3	.631	1.000	.603	.602	.438	.161
Affcomm5	.600	.603	1.000	.599	.365	.275
Affcomm6	.607	.602	.599	1.000	.308	.285
Affcomm2	.367	.438	.365	.308	1.000	.201
Affcomm4R	.223	.161	.275	.285	.201	1.000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Affcomm1	18.29	12.391	.672	.516	.744
Affcomm3	18.13	12.682	.674	.542	.745
Affcomm5	18.00	12.992	.682	.500	.745
Affcomm6	18.02	13.447	.670	.502	.751
Affcomm2	18.39	14.120	.447	.225	.797
Affcomm4R	18.54	14.714	.291	.117	.838

The Affective Commitment subscale obtained a Cronbach Alpha of .802 which is good (Nunnally, 1967). This indicates that approximately 80% of the variance in the items is systematic or true variance while 20% of the variance can be attributed to random error. The inspection of the item statistics showed absence of extreme mean(s) and standard deviation(s) with means ranging from 3.34 to 3.87 (on a 5 point scale) and standard deviations ranging from .881 to 1.138. The presence of extreme mean(s) and standard deviations(s) would have been indicative of potentially problematic items.

Inspection of the inter-item correlation matrix indicates low to moderate correlations that range from .161 to .631. The affective commitment scale items were designed to reflect on a single underlying latent variable (affective commitment) and the majority of the items moderately correlate with other scale items which indicates that they have the same source of variance. However items Affcom4R and to a lesser extent Affcom2 seem to be notable exceptions as the responses to these items seem to indicate that they may have a different source of variance than that underpinning the remaining items.

Inspection of the item-total statistics indicated that the corrected item-total correlations were above .30 with the exception of items Affcomm 2 and Affcomm4R which seemed to present themselves to be outliers in the item-total distribution. The squared multiple correlations further showed items Affcomm2 and Affcomm4R each shared less than 30% of the variance with the others items, with the rest of the squared multiple correlations all above .50.

Inspection of whether deleting any of the scale items will increase the Cronbach Alpha seemed to flag item Affcom4R leading to a slight increase of Cronbach Alpha from

.802 to .838. Given that the same item had the squared multiple correlation of .117, it was flagged as a problematic item and was subsequently considered for deletion.

Affcomm4R was deleted and the item analysis was re-run. The Cronbach Alpha obtained increased to .839. The inter-item correlation matrix now indicated that all items correlated above .30. Item-total statistics showed that all the corrected item total correlations fell above .30 while the squared multiple correlations fell above .40 with the exception of item Affcomm2 that had a value of .214. Furthermore, inspection of the whether deleting any of the scale items will increase the Cronbach Alpha seemed to flag item Affcom2 as leading to another slight increase of Cronbach Alpha from .838 to .859. Given that the same item had a squared multiple correlation of .214, and would result in an increase in Cronbach Alpha when deleted, it was flagged as a problematic item and was subsequently considered for deletion.

Table 4.2

Item-Total Statistics for the reduced Affective commitment subscale

	Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
	Affcomm1	14.95	9.094	.701	.516
Affcomm3	14.80	9.217	.730	.537	.779
Affcomm5	14.67	9.750	.687	.492	.793
Affcomm6	14.68	10.183	.668	.490	.800
Affcomm2	15.05	10.749	.442	.214	.859

Affcomm2 was deleted and the item analysis was again re-run. The Cronbach Alpha obtained was .863. In inspecting the item-Total statistics in Table 4.2, none of the remaining items indicated an increase in Cronbach Alpha if they were deleted. Given that the Cronbach Alpha had increased to .863 and that none of the remaining items will lead to an increase in Cronbach Alpha if deleted, the 4 items were retained.

4.3.3 Reliability analysis: Continuance commitment subscale

The continuance commitment subscale consisted of 6 items and the results of item analysis are indicated in Table 4.3.

Table 4.3

The reliability analysis of the Continuance commitment subscale

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.658	.659	6

Item Statistics			
	Mean	Std. Deviation	N
Concomm7	3.50	1.168	238
Concomm8	3.14	1.152	238
Concomm9	3.61	1.081	238
Concomm10	2.97	1.158	238
Concomm11	3.03	1.075	238
Concomm12	3.28	1.132	238

Inter-Item Correlation Matrix						
	Concomm7	Concomm8	Concomm9	Concomm10	Concomm11	Concomm12
Concomm7	1.000	.406	.234	.137	.057	.160
Concomm8	.406	1.000	.353	.208	.147	.258
Concomm9	.234	.353	1.000	.295	.219	.128
Concomm10	.137	.208	.295	1.000	.407	.305
Concomm11	.057	.147	.219	.407	1.000	.334
Concomm12	.160	.258	.128	.305	.334	1.000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Concomm7	16.02	12.932	.312	.180	.644
Concomm8	16.38	12.026	.446	.266	.594
Concomm9	15.92	12.719	.393	.194	.614
Concomm10	16.55	12.097	.432	.242	.599
Concomm11	16.50	12.918	.368	.226	.623
Concomm12	16.24	12.615	.376	.185	.620

The continuance commitment subscale obtained a Cronbach Alpha of .658 that was below the .70 guideline for an adequate Cronbach Alpha (Nunnally, 1967). This indicates that approximately 66% of the variance in the items is systematic or true variance while 34% of the variance can be attributed to random error. While this was a concern, previous research studies have reported Cronbach Alpha that were below the cut off of .70 with Smuts (2011) reporting a Cronbach Alpha below .70 and Bezuidenhout (2013) reporting a Cronbach Alpha of .636.

The inspection of the item statistics showed absence of extreme mean(s) and standard deviation(s) with means ranging from 2.97 to 3.61 (on a 5 point scale) and standard deviations ranging from 1.075 to 1.168. The item statistics showed the absence of extreme means and standard deviations. The inter-item correlation matrix indicated low to moderate correlations that range from .057 to .407 which seemed to be a concern. The inter-item correlations that are less than .30 seemed to raise a concern.

Inspection of the item total statistics indicated that the corrected item-total correlations were above .30 with item Concomm7 with the lowest correlation of .312. The squared multiple correlations all fell all below .30. This suggested that each item of the scale shared less than 30% of its variance with a weighted linear composite of the other scale items. The low squared multiple correlations of the items suggest that the items do not share a common source of variance and this presents a concern.

However, inspection of whether deleting any items in the scale will increase the Cronbach Alpha indicated that none of the items would result in an increase in Cronbach Alpha when they were deleted. While the Cronbach Alpha was lower than the set criteria of .70, inter-item correlation matrix and squared multiple correlations that were very concerning, it was however decided to provisionally retain the items pending exploratory factor analysis/dimensionality analysis.

4.3.4 Reliability analysis: Satisfaction with Pay

Satisfaction with pay was measured using the pay satisfaction questionnaire that comprised four subscales namely Pay Level subscale, Benefits subscale, Pay Structure and Administration subscale and Pay Raise subscale. Item analysis was conducted separately on each subscale and the results are discussed in Table 4.4 to Table 4.7.

4.3.4.1 Reliability analysis: Pay Level subscale

The pay level subscale consisted of 4 items and the results of item analysis are indicated below.

Table 4.4

The reliability analysis of Pay level subscale

Reliability Statistics					
Cronbach's Alpha	Cronbach's Alpha Based on		N of Items		
.967	Standardized Items		4		
Item Statistics					
	Mean	Std. Deviation	N		
Paylevel1	2.67	1.202	238		
Paylevel2	2.63	1.197	238		
Paylevel3	2.61	1.118	238		
Paylevel4	2.60	1.131	238		
Inter-Item Correlation Matrix					
	Paylevel1	Paylevel2	Paylevel3	Paylevel4	
Paylevel1	1.000	.929	.841	.843	
Paylevel2	.929	1.000	.865	.898	
Paylevel3	.841	.865	1.000	.900	
Paylevel4	.843	.898	.900	1.000	
Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Paylevel1	7.84	10.990	.907	.869	.959
Paylevel2	7.88	10.805	.943	.909	.948
Paylevel3	7.89	11.554	.902	.834	.960
Paylevel4	7.91	11.380	.917	.867	.956

The Pay Level subscale obtained a Cronbach Alpha of .967 which is excellent (Nunnally, 1967). This indicates that approximately 97% of the variance in the items of the scale is systematic or true score variance while 3% of the variance can be attributed to random error. Inspection of the item statistics showed the absence of

extreme means and standard deviations with means ranging from 2.87 to 2.95 (on a 5 point scale) and standard deviations ranging from 1.118 to 1.202. The inter-item correlation matrix indicates that each item consistently correlate with other other remaining items which is indicative that items are measuring the same underlying factor.

Inspection of the item total statistics indicates that the corrected item-total correlations are above .30 and all squared multiple correlations are all above .30. Also there were no outliers to the lower end of the distributions of the item-total correlations and squared correlations. The squared multiple correlations above .30 indicates that each item shared a reasonable proportion of variance with the other scale items and this further supported the view that items of the pay level subscale measure the same underlying factor.

Inspection of whether deleting any of the items in the scale will increase the Cronbach Alpha indicated that none of the items if deleted would increase the Cronbach Alpha. The evidence presented seem to indicate that the Pay Level subscale has no items that could be flagged as problematic hence all items were retained.

4.3.4.2 Reliability analysis: Benefits subscale

The Benefits subscale consisted of 4 items and the results of item analysis are indicated in Table 4.5.

Table 4.5

The reliability analysis of the Benefits subscale

Reliability Statistics			
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items		N of Items
.943	.944		4

Item Statistics			
	Mean	Std. Deviation	N
Benefits5	2.87	1.274	238
Benefits6	2.94	1.248	238
Benefits7	2.95	1.220	238
Benefits8	2.87	1.170	238

Inter-Item Correlation Matrix				
	Benefits5	Benefits6	Benefits7	Benefits8
Benefits5	1.000	.823	.751	.787
Benefits6	.823	1.000	.846	.810
Benefits7	.751	.846	1.000	.830
Benefits8	.787	.810	.830	1.000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Benefits5	8.77	11.723	.836	.719	.935
Benefits6	8.70	11.528	.892	.802	.917
Benefits7	8.68	11.879	.866	.777	.925
Benefits8	8.76	12.198	.867	.757	.926

The Benefits subscale obtained a Cronbach Alpha of .943 which is above the cut off of .70. This indicates that approximately 94% of the variance in the items of the scale is systematic or true score variance while 6% of the variance can be attributed to random error. Inspection of the item statistics shows the absence of extreme means and standard deviations with means ranging from 2.87 to 2.95 (on a 5 point scale and standard deviations ranging from 1.170 to 1.274. The inter-item correlation matrix indicated moderately high correlations that are above .50 indicating that the Benefits subscale items measured the same underlying factor.

Inspection of the item total statistics indicated that the corrected item-total correlations were above .30 and all squared multiple correlations were all above .30. The squared multiple correlations above .30 indicates that each item shares a reasonable proportion of variance with the other scale items and this further supports the view that items of the Benefits subscale measure the same underlying factor.

Inspection of whether deleting any of the items in the scale will increase the Cronbach Alpha indicated that none of the items if deleted would increase the Cronbach Alpha. The evidence presented seems to indicate that the Benefits subscale has no items that could be flagged as problematic hence all items were retained.

4.3.4.3 Reliability analysis: Pay structure and administration subscale

The Pay structure and administration subscale consisted of 6 items and the results of item analysis are indicated below.

Table 4.6

The reliability analysis of the Pay structure and administration subscale

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.890	.889	6

Item Statistics			
	Mean	Std. Deviation	N
Str/Admin13	2.92	1.146	238
Str/Admin14	2.88	1.132	238
Str/Admin15	2.82	.992	238
Str/Admin16	3.14	1.101	238
Str/Admin17	2.73	1.033	238
Str/Admin18	3.32	1.151	238

Inter-Item Correlation Matrix						
	Str/Admin13	Str/Admin14	Str/Admin15	Str/Admin16	Str/Admin17	Str/Admin18
Str/Admin13	1.000	.663	.473	.621	.552	.627
Str/Admin14	.663	1.000	.458	.587	.550	.591
Str/Admin15	.473	.458	1.000	.580	.582	.495
Str/Admin16	.621	.587	.580	1.000	.557	.693
Str/Admin17	.552	.550	.582	.557	1.000	.560
Str/Admin18	.627	.591	.495	.693	.560	1.000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Str/Admin13	14.89	19.124	.731	.559	.866
Str/Admin14	14.94	19.452	.704	.524	.871
Str/Admin15	15.00	21.084	.625	.438	.883
Str/Admin16	14.67	19.234	.758	.597	.862
Str/Admin17	15.08	20.314	.686	.488	.874
Str/Admin18	14.49	19.027	.738	.571	.865

The structure and administration subscale obtained a Cronbach Alpha of .890 which is good (Nunnally, 1967). The Cronbach Alpha denotes that approximately 89% of the variance in the items of the scale is systematic or true score variance while 11% of the variance can be attributed to random error. Inspection of the item statistics shows relatively low means ranging from 2.73 to 3.32 (on a 5 point scale) and standard deviations ranging from .992 to 1.146. This indicates that there was an absence of extreme means and standard deviations. The inter-item correlation matrix indicates satisfactory correlations that are above .30 which is indicative that the items on the subscale are measuring the same underlying factor.

Inspection of the item-total statistics indicates that the corrected item total correlations were all above .30 and the squared multiple correlation were also above .30. The squared multiple correlations above .30 indicated that each item shared a reasonable proportion of variance with the other scale items and this further supported the view that items of the structure and administration subscale measure the same underlying factor. More importantly, none of the items showed themselves to be outliers in the distribution of the item-total and squared multiple correlations.

Furthermore inspection of whether Cronbach Alpha would increase if any of the scale items was deleted indicated that none of the items if deleted would lead to an increase in Cronbach Alpha. The evidence presented indicated that the structure and administration subscale seemed not to have any items that could have been flagged as problematic hence all the scale items were retained.

4.3.4.4 Reliability analysis: Pay raise subscale

The Pay raise subscale consisted of 4 items and the results of item analysis are indicated in Table 4.7.

Table 4.7

The reliability analysis of the Pay Raise Subscale

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.854	.853	4

Item Statistics			
	Mean	Std. Deviation	N
Raise9	2.60	1.123	238
Raise10	2.64	1.080	238
Raise11	2.80	1.107	238
Raise12	2.76	1.104	238

Inter-Item Correlation Matrix				
	Raise9	Raise10	Raise11	Raise12
Raise9	1.000	.584	.671	.598
Raise10	.584	1.000	.483	.499
Raise11	.671	.483	1.000	.717
Raise12	.598	.499	.717	1.000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Raise9	8.21	7.708	.733	.548	.797
Raise10	8.16	8.610	.594	.377	.854
Raise11	8.01	7.738	.743	.607	.793
Raise12	8.04	7.897	.713	.554	.806

The pay raise subscale obtained a Cronbach Alpha of .854 which is good (Nunnally, 1967). This indicates that approximately 85% of the variance in the items of the scale is systematic or true score variance while 15% of the variance can be attributed to random error. Inspection of the item statistics shows the absence of extreme means and standard deviations with means ranging from 2.60 to 2.80 (on a 5 point scale) and standard deviations ranging from 1.080 to 1.123. The inter-item correlation matrix indicates moderately high correlations that are above .40 which supports the view that the pay raise subscale items measured the same underlying factor.

Inspection of the item total statistics indicates that the corrected item-total correlations were above .30 and all squared multiple correlations are all above .30 and there is an absence of outliers. The squared multiple correlations above .30 indicate that each item shared a reasonable proportion of variance with the other scale items and this further supported the view that items of the raise subscale measure the same underlying factor.

Inspection of whether deleting any of the items in the scale will increase the Cronbach Alpha indicated that none of the items if deleted would increase the Cronbach Alpha. The evidence presented seemed to indicate that the raise subscale had no items that could have been flagged as problematic hence all items were retained.

4.3.5 Reliability analysis: Perceived organisational support scale

The perceived organisational support scale consisted of 8 items and the results of item analysis are indicated in Table 4.8.

Table 4.8

The reliability analysis of the Perceived organisational support scale

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.844	.848	8

Item Statistics			
	Mean	Std. Deviation	N
Orgsupp1	3.77	1.036	238
Orgsupp2	3.46	1.066	238
Orgsupp3R	3.21	1.246	238
Orgsupp4	3.26	1.090	238
Orgsupp5	3.21	1.120	238
Orgsupp6	3.41	1.022	238
Orgsupp7	3.32	1.030	238
Orgsupp8R	2.98	1.083	238

Inter-Item Correlation Matrix								
	Orgsupp1	Orgsupp2	Orgsupp3R	Orgsupp4	Orgsupp5	Orgsupp6	Orgsupp7	Orgsupp8R
Orgsupp1	1.000	.689	.293	.606	.518	.521	.452	.173
Orgsupp2	.689	1.000	.234	.698	.559	.485	.395	.208
Orgsupp3R	.293	.234	1.000	.267	.134	.272	.220	.453
Orgsupp4	.606	.698	.267	1.000	.650	.625	.537	.254
Orgsupp5	.518	.559	.134	.650	1.000	.687	.549	.159
Orgsupp6	.521	.485	.272	.625	.687	1.000	.522	.239
Orgsupp7	.452	.395	.220	.537	.549	.522	1.000	.118
Orgsupp8R	.173	.208	.453	.254	.159	.239	.118	1.000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Orgsupp1	22.85	27.867	.668	.548	.815
Orgsupp2	23.16	27.612	.670	.611	.814
Orgsupp3R	23.40	29.735	.365	.280	.856
Orgsupp4	23.36	26.561	.757	.642	.802
Orgsupp5	23.41	27.264	.660	.597	.815
Orgsupp6	23.21	27.759	.691	.562	.812
Orgsupp7	23.30	28.955	.562	.394	.827
Orgsupp8R	23.63	31.203	.320	.236	.856

The perceived organisational support scale obtained a Cronbach Alpha of .844 which is good (Nunnally, 1967). This denotes that approximately 84% of the variance in the items of the scale is systematic or true score variance while 16% of the variance can be attributed to random error. The item statistics are indicative of lack of extreme means and standard deviations with means ranging from 2.98 to 3.77 (on a 5 point scale) while the standard deviations ranged from 1.030 to 1.244. Therefore none of the items could be described as being insensitive to differences in respondents' standing on the underlying latent variable.

The inter-item correlation matrix shows that Orgsupp3R and Orgsupp8R had lower correlations that were less than .30 which could have indicated that item orgsupp3R and Orgsupp8R may not have the same source of variance than that underpinning the remainder of the scale items hence the lower correlations with other scale items.

Inspection of the item-total statistics indicates that the corrected item-total correlations and squared multiple correlations were above .30 with the exception of item Orgsupp3R and Orgsupp8R that had squared multiple correlations less than .30. The squared multiple correlations for item Orgsupp3R and Orgsupp8R seemed to suggest that these items may have a different source of variance than that underpinning other scale items and hence the low squared multiple correlations of the items seemed to present a concern.

An inspection of the Item Total Statistics indicates that deleting item Orgsupp3R and Orgsupp8R would increase the Cronbach Alpha from .844 to .856 for both items. The reason for these items to seem to perform poorly might stem from the fact that they are negatively worded and such items have been known to pose challenges and

sometimes confuse participants. Given this evidence, items Orgsupp3R and Orgsupp8R were flagged as problematic items and were subsequently deleted. Item analysis of the perceived organisational support scale was repeated without items Orgsupp3R and Orgsupp8R and the results are indicated in Table 4.9 below;

Table 4.9

The reliability analysis of the reduced Perceived organisational support scale

Reliability Statistics					
Cronbach's Alpha Based on					
Cronbach's Alpha	Standardized Items			N of Items	
.887	.887			6	

Item-Total Statistics					
	Scale Mean	Scale	Corrected	Squared	Cronbach's Alpha
	if Item	Variance if	Item-Total	Multiple	
	Deleted	Item Deleted	Correlation	Correlation	
Orgsupp1	16.65	18.684	.688	.538	.870
Orgsupp2	16.96	18.383	.700	.610	.868
Orgsupp4	17.16	17.555	.786	.637	.853
Orgsupp5	17.21	17.694	.739	.585	.861
Orgsupp6	17.01	18.650	.705	.549	.867
Orgsupp7	17.11	19.453	.595	.387	.884

The organisational support scale yielded a Cronbach Alpha of .887. The inter-item correlation matrix indicates satisfactory correlations that are above .30. The item-total statistics indicates that corrected item-total correlations were above .30 and the squared multiple correlations were also above .30. Inspection of the item-total statistics indicates that none of the remaining items would have resulted in an increase of Cronbach Alpha level if there were deleted. Therefore the remaining 6 items were retained.

4.3.6 Reliability analysis: Meaningful work scale

The Meaningful work scale consisted of 6 items and the results of item analysis are indicated in Table 4.10.

Table 4.10***The reliability analysis of the Meaningful work scale***

Reliability Statistics						
Cronbach's Alpha Based on						
Cronbach's Alpha	Standardized Items				N of Items	
.923	.925				6	

Item Statistics			
	Mean	Std. Deviation	N
Mwork1	4.38	.724	238
Mwork2	4.28	.769	238
Mwork3	4.16	.853	238
Mwork4	4.20	.747	238
Mwork5	4.26	.716	238
Mwork6	4.37	.717	238

Inter-Item Correlation Matrix						
	Mwork1	Mwork2	Mwork3	Mwork4	Mwork5	Mwork6
Mwork1	1.000	.806	.554	.645	.665	.610
Mwork2	.806	1.000	.617	.679	.742	.643
Mwork3	.554	.617	1.000	.656	.677	.644
Mwork4	.645	.679	.656	1.000	.779	.694
Mwork5	.665	.742	.677	.779	1.000	.668
Mwork6	.610	.643	.644	.694	.668	1.000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Mwork1	21.28	10.733	.759	.672	.912
Mwork2	21.38	10.253	.815	.736	.904
Mwork3	21.50	10.184	.725	.546	.919
Mwork4	21.46	10.410	.807	.680	.905
Mwork5	21.40	10.495	.831	.713	.903
Mwork6	21.29	10.787	.756	.580	.912

The meaningful work scale obtained a Cronbach Alpha of .923 which is excellent (Nunnally, 1967). This indicates that approximately 92% of the variance in the items of the scale is systematic or true score variance while 8% of the variance can be attributed to random error. Inspection of the item statistics shows the absence of

extreme means and standard deviations with means ranging from 4.20 to 4.38 (on a 5 point scale) and standard deviations ranging from .716 to .853. The inter-item correlation matrix indicates moderately high correlations that are above .50 which is indicative that the items of the meaningful work scale have the same source of variance hence the moderately high correlations. This supports the view that the meaningful work scale items measured the same underlying factor.

Inspection of the item total statistics indicates that the corrected item-total correlations are above .50 and all squared multiple correlations are all above .50. The squared multiple correlations above .50 indicated that each item shared a reasonable proportion of variance with the other scale items and this further supports the view that items of the raise subscale measure the same underlying factor.

Inspection of whether deleting any of the items in the scale will increase the Cronbach Alpha indicated that none of the items if deleted would increase the Cronbach Alpha. The evidence presented seems to indicate that the meaningful work scale has no items that could be flagged as problematic hence all items are retained.

4.3.7 Reliability analysis: Perceived organisational justice

Perceived organisational justice was measured using two subscales namely the distributive justice subscale and the procedural justice subscale. Item analysis was conducted separately on each subscale and the results are discussed in Table 4.11 and Table 4.12.

4.3.7.1 Reliability analysis: Distributive justice subscale

The distributive justice subscale consisted of 4 items and the results of item analysis are indicated below;

Table 4.11

Reliability analysis: Distributive justice subscale

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.873	.873	4

Item Statistics			
	Mean	Std. Deviation	N
DistriJust1	3.29	1.094	238
DistriJust2	3.32	1.002	238
DistriJust3	3.34	1.005	238
DistriJust4	3.37	.949	238

Inter-Item Correlation Matrix				
	DistriJust1	DistriJust2	DistriJust3	DistriJust4
DistriJust1	1.000	.794	.634	.533
DistriJust2	.794	1.000	.598	.592
DistriJust3	.634	.598	1.000	.637
DistriJust4	.533	.592	.637	1.000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
DistriJust1	10.03	6.463	.763	.671	.823
DistriJust2	10.00	6.823	.778	.672	.817
DistriJust3	9.99	7.076	.713	.529	.843
DistriJust4	9.96	7.551	.661	.476	.862

The distributive justice subscale obtained a Cronbach Alpha of .873 which is good (Nunnally, 1967). The item statistics shows that there are no extreme means and standard deviations with means ranging from .329 to 3.337 (on a 5 point scale) and standard deviations ranging from .949 to 1.094. The inter-item correlation matrix indicates satisfactory correlations that are above .50 which is indicative that the items are measuring the same underlying factor.

Inspection of the inter-item statistics indicates that the corrected item-total correlations are all above .30 and the squared multiple correlations are all above .30. The squared multiple correlations above .30 indicates that each item shared a reasonable proportion of variance with the other scale items and this further supported the view that items of the distributive justice subscale measure the same underlying factor.

Inspection of whether deleting any of the scale items will increase Cronbach Alpha seemed to indicate that none of the scale items if deleted would have led to an increase in the Cronbach Alpha. As such the evidence presented seems to indicate

that the distributive justice subscale had no items that can be flagged as problematic and therefore all the scale items were retained.

4.3.7.2 Reliability analysis: Procedural justice subscale

The procedural justice subscale consisted of 7 items and the results of item analysis are indicated in Table 4.12.

Table 4.12

The reliability analysis of the Procedural justice subscale

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.901	.901	7

Item Statistics			
	Mean	Std. Deviation	N
ProceJust5	3.22	.969	238
ProceJust6	3.12	.982	238
ProceJust7	3.24	.859	238
ProceJust8	3.22	.849	238
ProceJust9	3.27	.897	238
ProceJust10	3.05	.922	238
ProceJust11	3.47	.962	238

Inter-Item Correlation Matrix							
ProceJus	t5	ProceJust6	ProceJust7	ProceJust8	ProceJust9	ProceJust10	ProceJust11
ProceJust5	1.000	.686	.587	.480	.573	.583	.473
ProceJust6	.686	1.000	.602	.521	.639	.622	.437
ProceJust7	.587	.602	1.000	.514	.635	.545	.575
ProceJust8	.480	.521	.514	1.000	.593	.482	.577
ProceJust9	.573	.639	.635	.593	1.000	.611	.547
ProceJust10	.583	.622	.545	.482	.611	1.000	.601
ProceJust11	.473	.437	.575	.577	.547	.601	1.000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
ProceJust5	19.36	19.126	.707	.546	.886

ProceJust6	19.46	18.823	.736	.612	.883
ProceJust7	19.34	19.788	.724	.541	.884
ProceJust8	19.36	20.333	.654	.466	.892
ProceJust9	19.31	19.295	.756	.585	.881
ProceJust10	19.53	19.347	.723	.554	.884
ProceJust11	19.11	19.524	.660	.520	.892

The procedural justice subscale obtained a Cronbach Alpha of .901 which is excellent (Nunnally, 1967). This denotes that approximately 90% of the variance in the items of the scale is systematic or true score variance while 10% of the variance can be attributed to random error. Inspection of the item statistics shows that there were no extreme means and standard deviations with means ranging from 3.05 to 3.47 (on a 5 point scale) and standard deviations ranging from .849 to .969.

The inter-item correlation matrix indicates satisfactory correlations that are all above .30 which is indicative that the items of the procedural justice subscale are measuring the same underlying factor. Inspection of the item total statistics indicates that corrected item-total correlations were above .50 and the squared multiple correlations were above .30. The squared multiple correlations above .30 indicated that each item of the procedural justice subscale shared a reasonable proportion of variance with the other scale items and this further supported the view that items of the procedural justice subscale measure the same underlying factor.

Inspection of whether deleting any item of the subscale will increase the Cronbach Alpha indicated that none of the items would lead to an increase in Cronbach Alpha if any of the scale items was deleted. As such the procedural justice subscale had no items that could be flagged as problematic and therefore all the items were retained.

4.3.8 Reliability analysis: Job fit subscale

Job embeddedness was measured using the job fit subscale which consisted of 9 items. Item analysis was conducted on the job fit subscale and the results are shown in Table 4.13.

Table 4.13***The reliability analysis of the Job fit subscale***

Reliability Statistics		
Cronbach's Alpha Based on		
Cronbach's Alpha	Standardized Items	N of Items
.849	.850	9

Item Statistics			
	Mean	Std. Deviation	N
JobFit1	4.21	.637	238
JobFit2	3.49	.917	238
JobFit3	3.83	1.042	238
JobFit4	4.15	.821	238
JobFit5	4.04	.834	238
JobFit6	3.73	.873	238
JobFit7	3.93	.829	238
JobFit8	3.79	1.124	238
JobFit9	3.69	1.134	238

Inter-Item Correlation Matrix									
	JobFit1	JobFit2	JobFit3	JobFit4	JobFit5	JobFit6	JobFit7	JobFit8	JobFit9
JobFit1	1.000	.411	.360	.319	.303	.301	.267	.205	.296
JobFit2	.411	1.000	.396	.324	.251	.245	.243	.207	.223
JobFit3	.360	.396	1.000	.473	.377	.502	.260	.488	.538
JobFit4	.319	.324	.473	1.000	.664	.414	.498	.468	.429
JobFit5	.303	.251	.377	.664	1.000	.397	.547	.423	.352
JobFit6	.301	.245	.502	.414	.397	1.000	.342	.479	.440
JobFit7	.267	.243	.260	.498	.547	.342	1.000	.442	.351
JobFit8	.205	.207	.488	.468	.423	.479	.442	1.000	.707
JobFit9	.296	.223	.538	.429	.352	.440	.351	.707	1.000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
JobFit1	30.66	28.050	.437	.265	.846
JobFit2	31.38	26.802	.396	.258	.850
JobFit3	31.04	23.842	.637	.470	.826
JobFit4	30.72	25.256	.663	.535	.825
JobFit5	30.83	25.651	.599	.516	.831
JobFit6	31.14	25.521	.580	.361	.832
JobFit7	30.94	26.203	.532	.386	.837
JobFit8	31.08	23.053	.657	.582	.824
JobFit9	31.18	23.159	.638	.561	.826

The job fit subscale obtained a Cronbach Alpha of .849 that is good (Nunnally, 1967). This indicates that approximately 85% of the variance in the items is systematic or true variance while 15% of the variance can be attributed to random error.

The inspection of the item statistics shows absence of extreme mean(s) and standard deviation(s) with means ranging from 3.69 to 4.21 (on a 5 point scale) and standard deviations ranging from .637 to 1.134. The item statistics shows the absence of extreme means and standard deviations. The inter-item correlation matrix indicates moderate correlations with a few correlations that were below .30.

Inspection of the item total statistics indicated that the corrected item-total correlations were above .30 with item jobfit2 with the lowest correlation of .396. The squared multiple correlations were above .30 with the exception of items jobfit1 and jobfit2 which had squared multiple correlations of .265 and .258 respectively. This suggested that these two items of the scale shared variance that was less than 30% with the other scale items. The low squared multiple correlations of the items seemed to present a concern.

However inspection of whether deleting any items in the scale will increase the Cronbach Alpha indicated that only item jobfit2 showed a very marginal increase in alpha when deleted from .849 to .850. Although items jobfit1 and jobfit2 seemed to present some concerns there was no compelling evidence to warrant their deletion at the moment and hence it was decided to provisionally retain the items pending dimensionality analysis.

4.3.9 Reliability analysis: Satisfaction with career advancement opportunities

Satisfaction with career advancement opportunities was measured using the organisational career growth scale which comprised of four subscales namely career goal progress (4 items), professional ability development (4 items), promotion speed (4 items) and remuneration growth (3 items). Item analysis was conducted separately for each subscale and the results are discussed in table 4.14 – table 4.17.

4.3.9.1 Reliability analysis: Satisfaction with Career goal progress subscale

Item analysis of the career goal progress subscale was conducted and the results are indicated below.

Table 4.14

The reliability analysis of the Career goal progress subscale

Reliability Statistics				
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items		N of Items	
.869	.869		4	

Item Statistics			
	Mean	Std. Deviation	N
Careergoal1	3.74	1.070	238
Careergoal5	3.68	1.035	238
Careergoal7	3.66	1.062	238
Careergoal15	3.73	1.009	238

Inter-Item Correlation Matrix				
	Careergoal1	Careergoal5	Careergoal7	Careergoal15
Careergoal1	1.000	.696	.599	.615
Careergoal5	.696	1.000	.649	.623
Careergoal7	.599	.649	1.000	.566
Careergoal15	.615	.623	.566	1.000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Careergoal1	11.07	7.160	.738	.556	.826
Careergoal5	11.13	7.194	.769	.596	.814
Careergoal7	11.15	7.403	.692	.486	.845
Careergoal15	11.08	7.672	.688	.475	.846

The career goal progress subscale obtained a Cronbach Alpha of .869 which is good (Nunnally, 1967). This Cronbach Alpha denotes that approximately 87% of the variance in the items of the scale is systematic or true score variance while 13% of the variance can be attributed to random error. Inspection of the item statistics shows that

there were no extreme means and standard deviations with means ranging from 3.66 to 3.74 (on a 5 point scale) and standard deviations ranging from 1.035 to 1.070.

Inspection of the inter-item correlation matrix indicates satisfactory correlations that are all above .30 which was indicative that the items of the career goal progress subscale was measuring the same underlying factor. The item-total statistics indicates corrected item-total correlations that are above .50 and the squared multiple correlations that are above .30. The squared multiple correlations above .30 indicates that each item of the Career Goal Progress subscale shared a reasonable proportion of variance with the other scale items and this further supported the view that items of the career goal progress subscale measure the same underlying factor.

Inspection of whether deleting any of the scale items would increase the Cronbach Alpha indicated that none of the scale items if deleted would increase the Cronbach Alpha. As such the evidence presented indicates that the career goal progress subscale had no items that could be flagged as problematic and therefore all items were retained

4.3.9.2 Reliability analysis: Professional ability and development subscale

Professional ability and development subscale consisted of 4 items and the results of item analysis are highlighted below.

Table 4.15

The reliability analysis of the Professional ability and development subscale

Reliability Statistics			
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items		N of Items
.874	.874		4

Item Statistics			
	Mean	Std. Deviation	N
ProfDev2	3.97	1.018	238
ProfDev9	3.79	1.033	238
ProfDev11	3.79	1.046	238
ProfDev14	3.74	1.027	238

Inter-Item Correlation Matrix				
	ProfDev2	ProfDev9	ProfDev11	ProfDev14
ProfDev2	1.000	.581	.644	.603
ProfDev9	.581	1.000	.623	.677
ProfDev11	.644	.623	1.000	.675
ProfDev14	.603	.677	.675	1.000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
ProfDev2	11.32	7.452	.693	.487	.853
ProfDev9	11.50	7.272	.719	.528	.843
ProfDev11	11.51	7.078	.749	.565	.831
ProfDev14	11.56	7.142	.756	.580	.828

The professional ability and development subscale obtained a Cronbach Alpha of .874 which is good (Nunnally, 1967). This Cronbach Alpha denotes that approximately 87% of the variance in the items of the scale is systematic or true score variance while 13% of the variance can be attributed to random error. Inspection of the item statistics shows that there were no extreme means and standard deviations with means ranging from 3.74 to 3.97 (on a 5 point scale) and standard deviations ranging from 1.018 to 1.046. The inter-item correlation matrix indicates satisfactory correlations that are above .50 which is indicative that each item had the same source of variance that is underpinning the rest of the scale items which supports the view that the items reflect on a single underlying latent variable (professional ability and development latent variable).

Inspection of the item-total statistics shows that the corrected item-total correlations are all above .50 and the squared multiple correlations are all above .40. The squared multiple correlations above .40 denotes that each item of the subscale shares a reasonable proportion of variance with other scale items since they measure the same underlying factor.

Furthermore inspection of whether deleting any of the items in the subscale will increase Cronbach Alpha indicates that none of the scale items if deleted would lead to an increase in Cronbach Alpha. As such the evidence presented indicates that the

Professional Ability Development subscale had no items that could be flagged as potentially problematic and therefore all items were retained.

4.3.9.3 Reliability analysis: Promotion speed subscale

The Promotion speed subscale consisted of 4 items and the results of item analysis are highlighted below.

Table 4.16

The reliability analysis of the Promotion speed subscale

Reliability Statistics			
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items		N of Items
.818	.824		4

Item Statistics			
	Mean	Std. Deviation	N
Promspeed12	2.43	.960	238
Promspeed3	3.11	1.201	238
Promspeed6	2.33	.910	238
Promspeed10	3.39	1.007	238

Inter-Item Correlation Matrix				
	Promspeed12	Promspeed3	Promspeed6	Promspeed10
Promspeed12	1.000	.605	.677	.494
Promspeed3	.605	1.000	.518	.508
Promspeed6	.677	.518	1.000	.432
Promspeed10	.494	.508	.432	1.000

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Promspeed12	8.83	6.439	.725	.562	.734
Promspeed3	8.15	5.696	.655	.436	.772
Promspeed6	8.93	6.957	.647	.482	.772
Promspeed10	7.87	6.904	.562	.320	.806

The promotion speed subscale obtained a Cronbach Alpha of .818 which met the criteria of .80 set for this study. This Cronbach Alpha denotes that approximately 82%

of the variance in the items of the scale is systematic or true score variance while 18% of the variance can be attributed to random error. Inspection of the item statistics showed an absence of extreme means and standard deviations with means ranging from 2.43 to 3.39 (on a 5 point scale) and standard deviations ranging from .910 to 1.201. The presence of extreme means and standard deviations would have been indicative of potentially problematic items.

The inter-item correlation matrix indicates satisfactory correlations that were above .40 which was indicative that the scale items have the same source of variance and reflected a single underlying latent variable (promotion speed). Furthermore inspection of the item-total statistics indicated the corrected item-total correlations that were above .50 and all squared multiple correlations that were above .30. The squared multiple correlations that were above .30 denoted that each item scale shared a very reasonable proportion of variance with the other scale items since they measure the same underlying factor.

The inspection of whether deleting any of the items in the Promotional Speed subscale would increase Cronbach Alpha indicated that none of the items of the subscale if deleted would have resulted in the increase of Cronbach Alpha. As such the evidence presented seemed to indicate that the Promotional Speed subscale had no items that could be flagged as problematic and therefore all items were retained.

4.3.9.4 Reliability analysis: Remuneration growth subscale

The Remuneration growth subscale consisted of 3 items and the results of item analysis are highlighted below.

Table 4.17

The reliability analysis of the Remuneration growth subscale

Reliability Statistics			
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items		N of Items
.799	.804		3

Item Statistics			
	Mean	Std. Deviation	N
Remgrowth4	2.55	1.004	238
Remgrowth8	2.94	1.120	238

Remgrowth13	2.34	.913	238
-------------	------	------	-----

Inter-Item Correlation Matrix

	Remgrowth4	Remgrowth8	Remgrowth13
Remgrowth4	1.000	.577	.590
Remgrowth8	.577	1.000	.564
Remgrowth13	.590	.564	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Remgrowth4	5.29	3.243	.658	.435	.712
Remgrowth8	4.89	2.925	.640	.410	.740
Remgrowth13	5.49	3.559	.649	.423	.729

The remuneration growth subscale obtained a Cronbach Alpha of .799 which is good (Nunnally, 1967). This Cronbach Alpha denotes that approximately 80% of the variance in the items of the scale is systematic or true score variance while 20% of the variance can be attributed to random error. Inspection of the item statistics shows an absence of extreme means and standard deviations with means ranging from 2.34 to 2.94 (on a 5 point scale) and standard deviations ranging from .913 to 1.120. The presence of extreme means and standard deviations would have been indicative of potentially problematic items.

The inspection of the inter-item correlation matrix indicates satisfactory correlations that are above .50 which are indicative that the scale items have the same source of variance and are reflecting on a single latent variable (remuneration growth). The inter-item correlation supported the view that the items of the Remuneration Growth subscale is measuring the same underlying factor.

Inspection of the item total statistics indicates that the corrected item total correlations were above .50 and all squared multiple correlations were all above .40. The squared multiple correlations that were above .40 seem to indicate that each item of the subscale shared a very reasonable proportion of variance with the other scale items since they measured the same underlying factor.

The inspection of whether deleting any of the items in the Remuneration growth subscale would increase Cronbach Alpha indicated that none of the items of the

subscale if deleted would have resulted in the increase of Cronbach Alpha. As such the evidence presented seem to indicate that the Remuneration Growth subscale had no items that could be flagged as problematic and therefore all items were retained.

4.3.10 Reliability analysis: Intention to Quit

The intention to quit scale initially consisted of 14 items. However before item analysis via exploratory factor analysis was conducted, the actual wording of the scale items was scrutinised and it was noted that with the exception of 2 items, the rest of the scale items seemed to represent more of the push and pull factors of intention to quit rather than measuring the actual intention to quit construct. Push factors were captured by those items that seemed to represent the causes that push the individual to consider leaving while pull factors were captured by those items that seemed to prevent the individual from leaving. Examples of items that represented the push factors included “To what extent is your current job not addressing your important personal needs?”, “How often are opportunities to achieve your most important goals at work jeopardised”, “How often are your most important personal values at work compromised?”, while those items that represented pull factors included “How often do only family responsibilities preventing you from quitting?”, “How often do only vested personal interest (pension fund, unemployment fund, etc.) prevent you from quitting?”, “How often do the troubles associated with relocating, prevent you from quitting?”. This impelled the researcher to use only 2 items from the intention to quit scale that directly represented intention to quit. Thus the reduced intention to quit scale consisted of 2 items and the results of item analysis are highlighted in Table 4.18.

Table 4.18

The reliability analysis of the reduced Intention to Quit Scale

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.724	.732	2

Item Statistics			
	Mean	Std. Deviation	N
I.Quit1	2.71	1.301	238
I.Quit7	3.71	1.561	238

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
I.Quit1	3.71	2.436	.577	.333	.
I.Quit7	2.71	1.692	.577	.333	.

The reduced Intention to quit scale obtained a Cronbach Alpha of .72 which is adequate (Nunnally, 1967). This means that approximately 72% of the variance in the items is systematic/true score variance while 28% of the variance can be attributed to random error. Inspection of the item statistics shows that there was the absence of extreme means and standard deviations with means ranging from 2.71 to 3.71 (on a 5 point scale) and standard deviations ranging from 1.301 to 1.561

Inspection of the inter-item correlation matrix indicated satisfactory inter-item correlations that are above .40 which was indicative that each item of the subscale correlated with the total score of the remaining items since there were measuring the same underlying factor. The item-total statistics showed that the corrected item total correlations were above .50 and the squared multiple correlations were above .30. The squared multiple correlations that were above .30 were indicative that each scale item shared a very reasonable proportion of variance with other scale items which validated the notion that the Intention to quit items measured the same underlying factor

The inspection of whether deleting any of the items in the intention to quit scale would increase Cronbach Alpha indicated that none of the items of the subscale if deleted would result in the increase of Cronbach Alpha. As such the evidence presented seem to indicate that the reduced Intention to quit scale had no additional items that could be flagged as problematic and therefore the two remaining items were retained.

4.3.11 Summary of item analysis

After subjecting each scale/subscale to item analysis, a summary of the item analysis results is provided in Table 4.19 below.

Table 4.19

Summary of item analysis results

Scale/Subscale	Cronbach Alpha	Number of scale items	Number of items deleted	Number of items retained
Organisational Commitment				
Affective Commitment	0.859	6	2	4
Continuance commitment	0.658	6	0	6
Satisfaction With Pay				
Pay level	0.967	4	0	4
Benefits	0.943	4	0	4
Rise	0.854	4	0	4
Pay structure & Administration	0.89	6	0	6
Satisfaction With Career advancement opportunities				
Career goal progress	0.869	4	0	4
Professional ability development	0.874	4	0	4
Promotion speed	0.818	4	0	4
Remuneration growth	0.799	3	0	3
Perceived organisational Justice				
Distributive justice	0.873	4	0	4
Procedural justice	0.901	7	0	7
Perceived Organisational Support				
Meaningful Work	0.923	6	0	6
Job fit	0.849	9	0	9
Intention to quit	0.724	2	0	2

4.4 Dimensionality Analysis

4.4.1 Introduction

Exploratory factor analyses was used for evaluating the dimensionality of the measuring scales and subscales that were developed to measure uni-dimensional constructs or dimensions of constructs as well as identify items that did not load satisfactory on the factor they intended to reflect. Items were considered to have a satisfactory loading if $\lambda_i > .50$. Other authorities (Field, 2005; Tabachnick & Fidell, 2009) have offered a guide of .3 as acceptable and satisfactory level of factor loadings

that denote that approximately 10% of the item's variance is explained by the factor. In the process of confirming the uni-dimensionality of the scale/subscales unrestricted principal factor analysis with direct oblimin rotation was performed. Principal axis factoring (PAF) presented itself as the most desirable because it analyses common variance shared between items that comprise a scale/subscale compared to principal component analysis that analysis all the variance (Tabachnick & Fidell, 2011). The determination of how many factors to extract was informed by the eigenvalue greater-than-unit rule and the scree test.

Prior to conducting exploratory factors analysis there was a need to establish if the data obtained in this study were suitable for factor analyses. According to Tabachnick and Fidell (2007) the data should met three sets of criteria for it to be deemed factor analysable namely;

- i) The inter-item correlation matrix that should contain numerous correlations above .30 and should be statistically significant ($p < .05$)
- ii) The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy should approaches unity (at least $> .60$)
- iii) The Bartlett's test of sphericity should be statistically significant ($p < .05$) resulting in the rejection of the hypothesis that the inter-item correlation matrix is an identity matrix in the parameter.

4.4.2. Uni-dimensionality of the Affective Commitment Subscale

Inspection of the correlation matrix indicated that all inter-item correlations exceeded .30 and that all were statistically significant ($p < .50$) and this was indicative that the data was factor analysable. The affective commitment subscale also obtained a Kaiser-Meyer-Oklin measure of sampling adequacy of .830 which approached unity and thus indicated that the correlation matrix was factor analysable. Furthermore the Bartlett's test of sphericity which was testing the null hypothesis that the correlation matrix was an identity matrix was found to be significant $X^2(6, N=238) = 414.942$ ($p < .000$) which led to the rejection of the null hypothesis that the correlation matrix is an identity matrix in the parameter. This further indicated that the data was factor analysable. Thus based on the criteria proposed by Tabachnick and Fidell (2007) the

evidence above indicated that the inter-item correlation matrix of the affective commitment subscale was factor analysable

The application of the eigenvalues greater-than-one criterion (Kaiser, 1960) indicates that only 1 factor had an eigenvalue greater than 1. Furthermore the scree test criterion also indicates one factor above the elbow or breakpoint. The single factor confirmed by scree test criterion and eigenvalues greater-than-one criterion accounted for approximately 61% of variance. The factor matrix of the affective commitment subscale indicated in Table 4.20 shows that the retained scale items had high and satisfactory factor loadings that were greater than .50. Inspection of the reproduced correlations with regard to the percentage of non-redundant residual correlations with absolute values greater than .05 indicated that 0% of the residual correlations had values greater than .05. This indicates that the extracted one-factor structure provided a highly satisfactory explanation of the observed inter-item correlation matrix (Theron, 2013). The uni-dimensionality assumption had therefore been supported for the reduced Affective Commitment subscale.

Table 4.20

Factor structure for the reduced Affective commitment subscale

Factor Matrix ^a	
	Factor
	1
Affcomm1	.790
Affcomm3	.789
Affcomm5	.767
Affcomm6	.770

4.4.3 Uni-dimensionality of the Continuance commitment subscale

Item analysis had indicated that the continuance scale had obtained a Cronbach Alpha that is less than .70 and the items of the scale did not bolster confidence as they seemed to show some concerning qualities (especially the squared multiple correlations <.30). However none of the items if deleted would have increased Cronbach Alpha hence it was decided to provisionally retain the items pending exploratory factor analysis. Thus the continuance commitment subscale was subjected to exploratory factor analysis and the results are as follows;

The application of the eigenvalues greater than one criterion (Kaiser, 1960) and the scree test criterion seemed to suggest that 2 factors should be extracted which is not collaborating the uni-dimensionality assumption made in this study. There are 2 eigenvalues greater than 1 and 2 factors above the elbow or breakpoint. The obliquely rotated two factor solution is presented in Table 4.21 below;

Table 4.21

Factor structure for the Continuance commitment subscale

Factor Matrix		
	Factor	
	1	2
Concomm7	.414	-.342
Concomm8	.635	-.436
Concomm9	.480	-.092
Concomm10	.562	.278
Concomm11	.534	.448
Concomm12	.463	.146

Inspection of Table 4.21 with the view of examining the items that loaded on each of the factors did not suggest any meaningful identity of the factors. The factor matrix of the structure of the continuance subscale showed that items Concomm7, Concomm8 and Concomm11 seemed to present themselves as complex items that cross loaded on both factors. Based on the above it appeared that the 2 factor solution may not be optimal hence it was decided to force a one factor solution.

Table 4.22

Factor matrix when forcing the extraction of a single factor

Factor Matrix	
	Factor
	1
Concomm7	.392
Concomm9	.502
Concomm10	.564
Concomm12	.479
Concomm8	.547
Concomm11	.481

Inspection of Table 4.22 portraying the forced one-factor solution indicates that the factor loadings for items Concomm7, Concomm11 and Concomm12 fell below .50

while items Concomm9, Concomm9 and Concomm10 had satisfactory factor loadings ($>.50$). Furthermore the communalities were inspected and they indicated that Concomm 7 had the lowest communality ($<.20$) which could have been indicative that the item does not fit well with other items of the scale (Pallant, 2011). Pallant (2011) suggested the removal of items with low communalities in order to increase the total variance explained. Given this evidence above it was decided to delete item Concomm 7 and re-run the exploratory factor analysis

Table 4.23

Factor structure for the Continuance commitment subscale

Factor Matrix	
	Factor
	1
Concomm9	.458
Concomm10	.631
Concomm12	.495
Concomm8	.430
Concomm11	.565

After deleting item Concomm 7, exploratory factor analysis was re-run forcing a 1 factor extraction and the results are indicated above in Table 4.23. Inspection of Table 4.23 indicate that some of the factor loadings marginally fell short of the .5 cut-off. The factor loadings ranged from .430 to .631. It was decided to accept the factor loadings with items that marginally missed the .50 cut-off and the variance explained by the forced one factor solution was 27%. Furthermore inspection of the reproduced correlations with regard to the percentage of non-redundant residuals with absolute values greater than .05 indicated that 6 (60%) of non-redundant residuals with absolute values greater than .05. This indicated that the extracted single factor provided a very tenuous explanation of the observed covariance matrix. 60% of the non-redundant correlations is very concerning and suggests that a second factor may be at play. Furthermore the percentages of large non-redundant residual correlations fall above the criterion of 50% recommended by Field (2006).

4.4.4 Satisfaction with Pay scale

As discussed previously satisfaction with pay was a multidimensional scale that consisted of four subscales namely pay level subscale, benefits subscale, pay raise

subscale and pay structure and administration subscale. Exploratory factor analysis was conducted on each subscale and the results are discussed below.

4.4.4.1 Uni-dimensionality of Pay level subscale

Inspection of the correlation matrix indicated that the data was factor analysable as all the correlations were above .30 and significant ($p < .05$). The subscale also obtained a Kaiser-Meyer-Olkin measure of sampling adequacy of .817 which approached unity thus indicated that the correlation matrix was factor analysable. Furthermore the Bartlett's test of sphericity was significant $\chi^2 (6, N=238) = 1274.105$ ($p < .000$) which led to the rejection of the null hypothesis of the correlation identity matrix. This further provided evidence that the correlation matrix of the pay level subscale was factor analysable

The application of the eigenvalues greater-than-one criterion (Kaiser, 1960) indicated that only 1 factor had an eigenvalue greater than 1. Furthermore the scree test criterion also indicated one factor above the elbow or breakpoint. The extracted single factor accounted for approximately 88% of variance. The factor matrix of the pay level subscale indicated in Table 4.24, showed that the scale items had high and satisfactory factor loadings that were greater than .50. Inspection of the reproduced correlations with regard to the percentage of non-redundant residual correlations with absolute values greater than .05 indicated that 0% of the residual correlations were greater than .05. This indicated that the extracted one factor structure provided a highly satisfactory explanation of the observed inter-item correlation matrix (Theron, 2013). The uni-dimensionality assumption had therefore been supported for the pay level subscale.

Table 4.24

Factor structure for the Pay level subscale

Factor Matrix ^a	
	Factor
	1
Paylevel1	.925
Paylevel2	.967
Paylevel3	.921
Paylevel4	.939

4.4.4.2 Uni-dimensionality of Benefits subscale

Item analysis had indicated that the Benefits subscale did not have any problematic items. The scale was then subjected to dimensionality analysis and the results were as follows.

The assessment of whether the data was factor analysable yielded positive results. Firstly the correlation matrix indicated that all the correlations were above .30 and significant ($p < .05$) which suggested that the data could be subjected to factor analysis. Furthermore the subscale obtained a Kaiser-Meyer-Olkin measure of sampling adequacy of .842 which approached unity thus indicated that the correlation matrix was factor analysable. Also the Bartlett's test of sphericity was significant $X^2(6, N=238) = 901.651$ ($p < .000$) which led to the rejection of the null hypothesis of the correlation identity matrix. This further provided evidence that the correlation matrix of the pay level subscale was factor analysable

The application of the eigenvalues greater-than-one criterion (Kaiser, 1960) indicated that only one factor had an eigenvalue greater than 1. Furthermore the scree test criterion also indicated one factor above the elbow or breakpoint. The extracted single factor accounted for approximately 81% of variance. The factor matrix of the benefits subscale indicated in Table 4.25 showed that the scale items had high and satisfactory factor loadings that were greater than .50. Inspection of the reproduced correlations with regard to the percentage of non-redundant residual correlations with absolute values greater than .05 indicated that 0% of the residual correlations were greater than .05. This indicated that the extracted one-factor structure provided a highly tenable explanation of the observed correlation matrix (Theron, 2013). Convincing support was therefore obtained for the assumption that all the items of the Benefits subscale measure a single underlying factor. This, however, still constitutes insufficient evidence to conclude that the single underlying factor is in fact the latent Satisfaction with Pay dimension of interest.

Table 4.25***Factor structure for the Benefits subscale***

Factor Matrix ^a	
	Factor
	1
Benefits5	.865
Benefits6	.929
Benefits7	.902
Benefits8	.900

4.4.4.3 Uni-dimensionality of Raise subscale

Item analysis had indicated that the Raise subscale did not have any problematic items. The subscale was then subjected to dimensionality analysis and the results.

The assessment of whether the data was factor analysable yielded positive results. Firstly the correlation matrix indicated that all the correlations were above .30 and significant ($p < .05$) which suggested that the data could be subjected to factor analysis. Furthermore the subscale obtained a Kaiser-Meyer-Olkin measure of sampling adequacy of .780 which approached unity thus indicated that the correlation matrix was factor analysable. Also the Bartlett's test of sphericity was significant $X^2(6, N=238) = 433.698$ ($p < .000$) which led to the rejection of the null hypothesis of the correlation identity matrix. This further provided evidence that the correlation matrix of the pay level subscale was factor analysable

The application of the eigenvalues greater than-one-criterion (Kaiser, 1960) indicated that only one factor had an eigenvalue greater than 1. Furthermore the scree test criterion also indicated one factor above the elbow or breakpoint. The extracted single factor accounted for approximately 60% of variance. The factor matrix of the benefits subscale indicated in Table 4.26 showed that the scale items had high and satisfactory factor loadings that were greater than .50. Inspection of the reproduced correlations with regard to the percentage of large non-redundant residual correlations with absolute values greater than .05 indicated that 3 (50%) non-redundant residual correlations with absolute values greater than .05. This indicated that the extracted one-factor structure provided a tenuous explanation of the observed correlation. 50% of the non-redundant correlations is somewhat concerning and could suggest that a

second factor may be at play. However the percentage of large non-redundant residual correlations fall within the criterion of 50% recommended by Field (2006).

Table 4.26

Factor structure for the Raise subscale

Factor Matrix	
	Factor
	1
Raise9	.809
Raise10	.641
Raise11	.838
Raise12	.794

4.4.4.4 Uni-dimensionality of Pay structure and administration subscale

Item analysis had indicated that the structure and administration subscale did not have any problematic items. The scale was then subjected to dimensionality analysis and the results were as follows.

The assessment of whether the data was factor analysable yielded positive results. Firstly the correlation matrix indicated that all the correlations were above .30 and significant ($p < .05$) which suggested that the data was could be subjected to factor analysis. Furthermore the subscale obtained a Kaiser-Meyer-Okin measure of sampling adequacy of .885 which approached unity thus indicated that the correlation matrix was factor analysable. Also the Bartlett's test of sphericity was significant $X^2 (6, N=238) = 727.305$ ($p < .000$) which led to the rejection of the null hypothesis of the correlation identity matrix. This further provided evidence that the correlation matrix of the pay level subscale was factor analysable

The application of the eigenvalues greater-than-one criterion (Kaiser, 1960) indicated that only one factor had an eigenvalue greater than 1. Furthermore the scree test criterion also indicated one factor above the elbow or breakpoint. The extracted single factor accounted for approximately 58% of variance. The factor matrix of the structure and benefits subscale indicated in Table 4.27 showed that the scale items had high and satisfactory factor loadings that were greater than .50. Inspection of the reproduced correlations with regard to the percentage of non-redundant residual correlations with absolute values greater than .05 indicated that 0% of the residual

correlations had values greater than .05. This indicated that the extracted one factor structure provided a highly tenable explanation of the observed inter-item correlation matrix (Theron, 2013).

Table 4.27

Factor structure for the Pay structure and administration subscale

Factor Matrix	
	Factor
	1
Str/Admin13	.782
Str/Admin14	.753
Str/Admin15	.667
Str/Admin16	.814
Str/Admin17	.731
Str/Admin18	.793

4.4.5 Uni-dimensionality of Perceived organisational support scale

Item analysis indicated that item Orgsupp3R and Orgsupp8R were poor items that were subsequently deleted. Therefore the dimensionality analysis was conducted with the exclusion of the two poor items. Inspection of the correlation matrix of the reduced organisational support scale indicated that it was factor analysable as all the correlations were above .30 and all were statistically significant ($p < .05$). The scale also obtained a Kaiser-Meyer-Okin measure of sampling adequacy of .858 which approached unity thus indicated that the correlation matrix was factor analysable. Furthermore the Bartlett's test of sphericity was significant $X^2 (15, N=238) = 759.820$ ($p < .000$) which led to the rejection of the null hypothesis of the correlation identity matrix. This further provided evidence that the correlation matrix of the organisational support scale was factor analysable

The application of the eigenvalues greater-than-one criterion (Kaiser, 1960) indicated that only one factor can be extracted which had an eigenvalue greater than 1. Furthermore the scree test criterion also indicated the extraction of one factor since one factor seemed to be above the elbow or breakpoint. The extracted single factor accounted for approximately 57% of variance. The factor matrix of the organisational support scale indicated in Table 4.28 showed that all the scale items had high and satisfactory factor loadings on a single factor that were greater than .50. Inspection of

the reproduced correlations with regard to the percentage of non-redundant residual correlations with absolute values greater than .05 indicated that 40% of the residual correlations were greater than .05. This indicated that the extracted one factor structure provided a tenuous explanation of the observed correlation. 40% of the non-redundant correlations is somewhat concerning and could suggest that a second factor may be at play. However the non-redundant residual correlations did not exceed the 50% range recommended by Field (2006) and therefore could be viewed to be in an acceptable range.

Table 4.28

Factor structure for the Perceived organisational support scale

Factor Matrix	
	Factor
	1
Orgsupp1	.736
Orgsupp2	.755
Orgsupp4	.849
Orgsupp5	.793
Orgsupp6	.753
Orgsupp7	.632

4.4.6 Uni-dimensionality of Meaningful work

Meaningful work was measured using the psychological meaningfulness scale. Item analysis had indicated that the psychological meaningfulness scale did not have any poor items and hence all the 6 scale items were included in the dimensionality analysis. Inspection of the correlation matrix of the psychological meaningfulness scale indicated that it was factor analysable as all the correlations were above .30 and all were significant ($p < .05$). The scale also obtained a Kaiser-Meyer-Olkin measure of sampling adequacy of .891 which approached unity thus indicated that the correlation matrix was factor analysable. Furthermore the Bartlett's test of sphericity was significant $\chi^2 (15, N=238) = 1051,931$ ($p < .000$) which led to the rejection of the null hypothesis of the correlation identity matrix. This further provided evidence that the correlation matrix of the psychological meaningfulness scale was factor analysable

The application of the eigenvalues greater-than-one criterion (Kaiser, 1960) indicated that only one factor can be extracted which had an eigenvalue greater than 1. Furthermore the scree test criterion also indicated the extraction of one factor since one factor seemed to be above the elbow or breakpoint. The extracted single factor accounted for approximately 67% of variance. The factor matrix of the psychological meaningfulness scale indicated in Table 4.29 showed that all the scale items had high and satisfactory factor loadings on a single factor that were greater than .50. Inspection of the reproduced correlations with regard to the percentage of non-redundant residual correlations with absolute values greater than .05 indicated that only 6% of the residual correlations had values greater than .05 suggesting that the one factor solution provides a tenable explanation of the observed correlation.

Table 4.29

Factor structure for the Meaningful work scale

Factor Matrix	
	Factor
	1
Mwork1	.797
Mwork2	.859
Mwork3	.756
Mwork4	.847
Mwork5	.873
Mwork6	.787

4.4.7 Perceived organisational justice scale

Perceived organisational justice was measured using two subscales namely the distributive justice and procedural justice subscales (Colquitt, 2001). Dimensionality analysis was conducted on each subscale separately and the results are shown below.

4.4.7.1 Uni-dimensionality of Distributive justice subscale

Item analysis had indicated that the distributive justice subscale did not have any poor items and hence all 4 subscale items were included in the dimensionality analysis. Inspection of the correlation matrix of the distributive justice subscale indicated that it was factor analysable as all the correlations were above .30 and all were statistically significant ($p < .05$). The scale also obtained a Kaiser-Meyer-Okin measure of sampling adequacy of .759 which approached unity thus indicated that the correlation

matrix was factor analysable. Furthermore the Bartlett's test of sphericity was significant $\chi^2(6, N=238) = 516.195$ ($p < .000$) which led to the rejection of the null hypothesis of the correlation identity matrix. This further provided evidence that the correlation matrix of the psychological meaningfulness scale was factor analysable

The application of the eigenvalues greater-than-one criterion (Kaiser, 1960) indicated that only one factor can be extracted which had an eigenvalue greater than 1. Furthermore the scree test criterion also indicated the extraction of one factor since one factor seemed to be above the elbow or breakpoint. The extracted single factor accounted for approximately 64% of variance. The factor matrix of the distributive justice subscale indicated in Table 4.30 showed that all the scale items had high and satisfactory factor loadings on a single factor that were greater than .50. Inspection of the reproduced correlations indicated 4 (66%) of non-redundant residual correlation with absolute values greater than .05. This indicated that the extracted one factor structure provided a tenuous explanation of the observed correlation. 66% of the non-redundant correlations is somewhat concerning and could suggest that a second factor may be at play. Furthermore it is slightly above the criteria of 50% recommended by Field (2006).

Table 4.30

Factor structure for the Distributive justice subscale

Factor Matrix	
	Factor
	1
DistriJust1	.845
DistriJust2	.857
DistriJust3	.768
DistriJust4	.710

4.4.7.2 Uni-dimensionality of Procedural justice subscale

Item analysis had indicated that the procedural justice subscale did not have any poor items and hence all the 7 subscale items were included in the dimensionality analysis. Inspection of the correlation matrix of the distributive justice subscale indicated that it was factor analysable as all the correlations were above .30 and all were statistically significant ($p < .05$). The scale also obtained a Kaiser-Meyer-Okin measure of

sampling adequacy of .892 which approached unity thus indicated that the correlation matrix was factor analysable. Furthermore the Bartlett's test of sphericity was significant $X^2(21, N=238) = 898.828$ ($p < .000$) which led to the rejection of the null hypothesis of the correlation identity matrix. This further provided evidence that the correlation matrix of the psychological meaningfulness scale was factor analysable

The application of the eigenvalues greater-than-one criterion (Kaiser, 1960) indicated that only one factor can be extracted which had an eigenvalue greater than 1. Furthermore the scree test criterion also indicated the extraction of one factor since one factor seemed to be above the elbow or breakpoint. The extracted single factor accounted for approximately 57% of variance. The factor matrix of the procedural justice subscale indicated in Table 4.31 showed that the scale items had high and satisfactory factor loadings on a single factor that were greater than .50. Inspection of the reproduced correlations with regard to the percentage of non-redundant residual correlations with absolute values greater than .05 indicated that 23% of the residual correlations had values greater than .05 suggesting that the one-factor solution provides a tenable explanation of the observed correlation.

Table 4.31

Factor structure for the Procedural justice subscale

Factor Matrix	
	Factor
	1
ProceJust5	.751
ProceJust6	.785
ProceJust7	.768
ProceJust8	.691
ProceJust9	.806
ProceJust10	.765
ProceJust11	.700

4.4.8 Uni-dimensionality of Job fit subscale

Item analysis had indicated that the two items Jobfit1 and Jobfit2 seemed to present minor concerns due to low squared multiple correlations that were less than 30 as well as the marginal increase of Cronbach Alpha if the item Jobfit2 was deleted. However there was no compelling evidence to delete the items hence they were included in the

dimensionality analysis of the scale. The scale was then subjected to dimensionality analysis and the results were as follows;

The assessment of whether the data was factor analysable yielded positive results. Firstly the correlation matrix indicated that the majority of correlations were above .30 and significant ($p < .05$) which suggested that the data was could be subjected to factor analysis. Furthermore the subscale obtained a Kaiser-Meyer-Okin measure of sampling adequacy of .844 which approached unity thus indicated that the correlation matrix was factor analysable. Also the Bartlett's test of sphericity was significant $X^2(36, N=238) = 807.905$ ($p < .000$) which led to the rejection of the null hypothesis of the correlation identity matrix. This further provided evidence that the correlation matrix of the job fit subscale was factor analysable

The application of the eigenvalues greater-than-one criterion (Kaiser, 1960) and the scree test criterion seemed to suggest that 2 factors should be extracted which was not in line with the uni-dimensionality assumption made in this study. There were 2 eigenvalues greater than 1 and 2 factors above the elbow or breakpoint. The factor matrix of the structure and job fit subscale indicated in Table 10 all the items loaded strongly on factor 1 but only items Jobfit4, Jobfit5, Jobfit8 and Jobfit9 loaded strongly on factor one and also showed moderate loadings on factor 2. Examination of Table 4.32 depicting the 2 factor structure did not suggest a meaningful identity for the two factor to be established. Furthermore factor 1 accounted for approximately 41% of the variance while the 2 factor solution accounted for approximately 48% of variance that is explained by the scale. The second factor added approximately 7% of variance over and above the variance accounted for by factor 1. This seemed to indicate that a 2 factor solution may not be optimal hence a decision was taken to force a 1 factor solution.

Table 4.32

Factor structure for the Job Fit subscale

	Factor Matrix	
	Factor	
	1	2
JobFit1	.455	.083
JobFit2	.424	.089
JobFit3	.675	-.155
JobFit4	.745	.280

JobFit5	.700	.390
JobFit6	.620	-.084
JobFit7	.592	.221
JobFit8	.727	-.294
JobFit9	.727	-.437

Table 4.33**Factor matrix when forcing the extraction of a single factor**

Factor Matrix	
	Factor
	1
JobFit1	.462
JobFit2	.431
JobFit3	.681
JobFit4	.736
JobFit5	.674
JobFit6	.629
JobFit7	.591
JobFit8	.714
JobFit9	.688

Inspection of Table 4.33 depicting the forced one-factor solution indicated that all the factor loadings were satisfactory ($>.50$) with the exception of items Jobfit1 and Jobfit2 that had borderline loadings of .462 and .431 respectively. Furthermore the communalities table also indicated that Jobfit1 and Jobfit2 had lower communalities ($<.30$) which could have been indicative that the items do not fit well with other items of the scale (Pallant, 2011). Given this evidence and the fact that these items were also flagged during item analysis, it was decided to delete item Jobfit1 and Jobfit2.

Table 4.34**Factor matrix when forcing the extraction of a single factor**

Factor Matrix	
	Factor
	1
JobFit3	.649
JobFit4	.731
JobFit5	.676
JobFit6	.626
JobFit7	.591
JobFit8	.756
JobFit9	.704

After deleting the aforementioned items, exploratory factor analysis was re-run forcing a 1 factor extraction and the results are indicated above on Table 4.34. The results shown in the Table indicate that all the remaining items loaded satisfactory on one factor with factor loadings ranging from .591 to .756. The forced single factor accounted for approximately 46% of variance. However inspection of the reproduced correlations with regard to the percentage of non-redundant residual correlations with absolute values greater than .05 indicated that 13 (61%) of the non-redundant residual correlations had absolute values greater than .05. This indicated that the extracted single-factor factor structure provided a very tenuous explanation of the observed covariance matrix. 61% of the non-redundant correlations is very concerning and could suggest that a second factor may be at play. Furthermore the percentages of non-redundant correlations fall above the criterion of 50% recommended by Field (2006) even though all the retained items had satisfactory factor loadings that are above .50.

4.4.9 Satisfaction with Career advancement opportunities scale

Satisfaction with career advancement opportunities was measured using the Organisational Career Growth scale which comprised of 4 subscales namely career goal progress (four items), professional ability development (four items), promotion speed (four items) and remuneration growth (three items). Dimensionality analysis was conducted on each subscale and the results are shown below;

4.4.9.1 Uni-dimensionality of Career goal progress subscale

Inspection of the correlation matrix indicated that the data was factor analysable as all the correlations were above .30 and significant ($p < .05$). The subscale also obtained a Kaiser-Meyer-Olkin measure of sampling adequacy of .828 which approached unity thus indicated that the correlation matrix was factor analysable. Furthermore the Bartlett's test of sphericity was significant $\chi^2 (6, N=238) = 452.756$ ($p < .000$) which led to the rejection of the null hypothesis of the correlation identity matrix. This further provided evidence that the correlation matrix of the career goal progress subscale was factor analysable

The application of the eigenvalues greater-than-one criterion (Kaiser, 1960) indicated that only 1 factor had an eigenvalue greater than 1. Furthermore the scree test criterion also indicated one factor above the elbow or breakpoint. The factor matrix of the career

goal progress subscale indicated in Table 4.35 showed that the scale items had high and satisfactory factor loadings that were greater than .50. The extracted single factor accounted for approximately 63% of variance. Inspection of the reproduced correlations with regard to the percentage of non-redundant residual correlations with absolute values greater than .05 indicated that 0% of the residual correlations had values greater than .05. This indicated that the extracted one-factor structure provided a highly satisfactory explanation of the observed correlation matrix (Theron, 2013).

Table 4.35

Factor structure for the Career goal progress subscale

Factor Matrix	
	Factor
	1
Careergoal1	.812
Careergoal5	.851
Careergoal7	.753
Careergoal15	.747

4.4.9.2 Uni-dimensionality of Professional ability and development subscale

Inspection of the correlation matrix of the professional ability development subscale indicated that it was factor analysable as all the correlations were above .30 and all were significant ($p < .05$). The subscale also obtained a Kaiser-Meyer-Olkin measure of sampling adequacy of .827 which approached unity thus indicated that the correlation matrix was factor analysable. Furthermore the Bartlett's test of sphericity was significant $X^2(6, N=238) = 467.070$ ($p < .000$) which led to the rejection of the null hypothesis of the correlation identity matrix. This further provided evidence that the correlation matrix of the professional ability development subscale was factor analysable

The application of the eigenvalues greater-than-one criterion (Kaiser, 1960) indicated that only 1 factor had an eigenvalue greater than 1. Furthermore the scree test criterion also indicated one factor above the elbow or breakpoint. The extracted single factor accounted for approximately 64% of variance. The factor matrix of the professional ability development subscale indicated in Table 4.36 showed that the scale items had high and satisfactory factor loadings that were greater than .50. Inspection of the

reproduced correlations with regard to the percentage of non-redundant residual correlations with absolute values greater than .05 indicated that 0% of the residual correlations were greater than .05. This indicated that the extracted one factor structure provided a highly satisfactory explanation of the observed correlation (Theron, 2013).

Table 4.36

Factor structure for the Professional ability and development subscale

Factor Matrix	
	Factor
	1
ProfDev2	.751
ProfDev9	.784
ProfDev11	.821
ProfDev14	.830

4.4.9.3 Uni-dimensionality of Promotion speed subscale

Inspection of the correlation matrix of the promotion speed subscale indicated that it was factor analysable as all the correlations were above .30 and all were significant ($p < .05$). The subscale also obtained a Kaiser-Meyer-Okin measure of sampling adequacy of .778 which approached unity thus indicated that the correlation matrix was factor analysable. Furthermore the Bartlett's test of sphericity was significant $X^2(6, N=238) = 349.702$ ($p < .000$) which led to the rejection of the null hypothesis of the correlation identity matrix. This further provided evidence that the correlation matrix of the professional ability development subscale was factor analysable

The application of the eigenvalues greater-than-one criterion (Kaiser, 1960) indicated that only one factor can be extracted which had an eigenvalue greater than 1. Furthermore the scree test criterion also indicated the extraction of one factor since one factor seemed to be above the elbow or breakpoint. The extracted single factor accounted for approximately 55% of variance. The factor matrix of the promotion speed subscale indicated in Table 4.37 showed that all the scale items had high and satisfactory factor loadings that were greater than .50. Inspection of the reproduced correlations with regard to the percentage of non-redundant residual correlations with absolute values greater than .05 indicated that 16% of the residual correlations were

greater than .05. This indicated that the extracted one-factor structure provided a highly tenable explanation of the observed correlation matrix (Theron, 2013).

Table 4.37

Factor structure for the Promotion speed subscale

Factor Matrix	
	Factor
	1
Promspeed3	.732
Promspeed6	.746
Promspeed10	.613
Promspeed12	.851

4.4.9.4 Uni-dimensionality of Remuneration and growth subscale

Inspection of the correlation matrix of the remuneration growth subscale indicated that it was factor analysable as all the correlations were above .30 and all were statistically significant ($p < .05$). The subscale also obtained a Kaiser-Meyer-Okin measure of sampling adequacy of .713 which approached unity thus indicated that the correlation matrix was factor analysable. Furthermore the Bartlett's test of sphericity was significant $\chi^2 (6, N=238) = 224.440$ ($p < .000$) leading to the rejection of the null hypothesis of the correlation identity matrix. This further provided evidence that the correlation matrix of the professional ability development subscale was factor analysable

The application of the eigenvalues greater than one criterion (Kaiser, 1960) indicated that only one factor can be extracted which had an eigenvalue greater than 1. Furthermore the scree test criterion also indicated the extraction of one factor since one factor seemed to be above the elbow or breakpoint. The extracted single factor accounted for approximately 58% of variance. The factor matrix of the Remuneration Growth subscale indicated in Table 4.38 showed that the scale items had high and satisfactory factor loadings that were greater than .50. Inspection of the reproduced correlations with regard to the percentage of non-redundant residual correlations with absolute values greater than .05 indicated that 0% of the residuals correlations had values greater than .05. This indicated that the extracted one-factor structure provided

a highly satisfactory explanation of the observed inter-item correlation matrix (Theron, 2013).

Table 4.38

Factor structure for the Remuneration growth subscale

Factor Matrix	
	Factor
	1
Remgrowth4	.775
Remgrowth8	.743
Remgrowth13	.760

4.4.9.5 Uni- dimensionality of reduced intention to quit scale

As previously discussed, the intention to quit scale initially consisted of 14 items. However before item analysis via exploratory factor analysis was conducted, the actual wording of the scale items was scrutinised and it was noted that with the exception of 2 items, the rest of the scale items seemed to represent more of the push and pull factors of intention to quit rather than measuring the actual intention to quit construct. Push factors were captured by those items that seemed to represent the causes that push the individual to consider leaving while pull factors were captured by those items that seemed to prevent the individual from leaving. The researcher decided to use only 2 items from the intention to quit scale that directly represented intention to quit. The shortened version of the intention to quit that consisted of 2 items was not subjected to EFA due to the remaining number of items on the scale.

4.5 Summary

During item analysis four items were flagged as problematic and were subsequently deleted and these items included the two items of the Affective Commitment scale (item Affcomm2 and item Affcomm4R) as well as two items of perceived organisational support scale (item OrgsuppR3 and Orgsupp4R). The instruments employed in this study are standard instruments that have been used and validated in previous research studies and have known factor structure that has been empirically determined. Dimensionality analysis was used to corroborate the uni-dimensionality of the scales and subscales as well as identify poor items that could be deleted to improve the reliability of the scales/subscales. Through dimensionality analysis item

Concomm7, JobFit1 and JobFit2 were identified as poor items and were subsequently deleted. Moreover the uni-dimensionality of the scales/subscales was corroborated and this signalled that item parcels could be created and the researcher can proceed with fitting the comprehensive measurement model.

4.6 Variable Type

There was a need to decide whether the measurement model will be fitted using individual items or item parcels. Using individual items to serve as indicators of the latent variables would have been ideal as solutions in confirmatory analysis tend to improve when the number of indicator variables per factor increased. However using the individual items would have resulted in a complex LISREL model that would result in the estimation of parameters that would exceed the observations in the data set. Or else a very large sample would have been required to ensure credible parameter estimates. In this regard item parceling seemed to be a viable alternative instead of using individual items. Item parceling can be described as a process of combining unidimensional scale items into small groups that become composite indicator variables for each latent variable. Thus using item parcels as opposed to individual items had the advantage that less parameters had to be estimated in the measurement model hence the estimates would be more stable. Also item parceling has been deemed to have an advantage of creating more reliable indicator variables (Nunnally, 1978). Furthermore there seem to be consensus that item parcels provide better fitting solutions as measured by the Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI) and Chi—Square test when the uni-dimensionality of the scale has been established (Bandalos, 2009). The procedure of creating item parcels for unidimensional scale entailed using splitting the items into even and odd numbered into two item parcels. For the multidimensional scales, the subscales scores that were confirmed to be uni-dimensional were used as indicators. For the reduced intention to quit scale which had two individual items, each item was used as an indicator. For the purposes of this study, it was assumed that the item parcels were continuous variables that were measured on an interval scale (Jöreskog & Sörbom, 1996a). The use of maximum likelihood was therefore permissible if the data satisfied the multivariate normality assumption but if this assumption was not satisfied, then robust maximum likelihood would be considered.

4.7 Test for Multivariate Normality

Maximum likelihood estimation is the default procedure used to estimate model parameters in the process of fitting a measurement model to continuous data. However this method of estimation hinges on the assumption that the data follows a normal distribution and if this assumption is not satisfied, it can lead to misleading model parameter estimates. It has been observed that departure from multivariate normal distribution significantly affects the chi-square test as it is sensitive to deviation from normality. The use of ML estimation under severe deviation from normality has been found to result in Type 1 error were the model is rejected even when it is properly specified. Furthermore the inappropriate analysis of continuous non-normal variables in structural equation models can result in incorrect standard errors and chi-square estimates. As such there was a need to test the null hypothesis of whether the item parcels used to operationalise the latent variables satisfied the assumption that the data followed a normal distribution. Hence the univariate and multivariate normality of the item parcels was evaluated via PRELIS (Jöreskog & Sörbom, 1996). The results of the PRELIS are shown on Table 4.39 and Table 4.40

Table 4.39

Test of Univariate normality for the measurement model before normalisation

Variable	Skewness		Kurtosis		Skewness and Kurtosis	
	Z-Score	P-Value	Z-Score	P-Value	Chi-Square	P-Value
CGOAL	-5.735	0.000	2.615	0.009	39.726	0.000
PDEV	-6.257	0.000	3.113	0.002	48.835	0.000
PSPEED	-1.486	0.137	-0.639	0.523	2.616	0.270
RGROW	-0.351	0.726	-1.595	0.111	2.668	0.263
AFF_1	-4.250	0.000	1.164	0.244	19.421	0.000
AFF_2	-2.669	0.008	1.676	0.094	9.931	0.007
CCOM_1	0.060	0.952	-0.638	0.523	0.411	0.814
CCOM_2	-1.583	0.113	-0.982	0.326	3.471	0.176
ITQ_1	3.286	0.001	-0.195	0.845	10.837	0.004
ITQ_2	0.443	0.658	-8.844	0.000	78.409	0.000
JFIT_1	-5.104	0.000	2.589	0.010	32.749	0.000
JFIT_2	-4.874	0.000	2.376	0.018	29.402	0.000
DJ	-1.602	0.109	-0.944	0.345	3.459	0.177
PJ	-1.092	0.275	1.034	0.301	2.262	0.323
MWRK_1	-5.421	0.000	2.947	0.003	38.068	0.000
MWRK_2	-5.305	0.000	2.763	0.006	35.782	0.000
ORGS_1	-3.809	0.000	0.840	0.401	15.211	0.000
ORGS_2	-3.584	0.000	1.154	0.248	14.178	0.001
BEN	0.234	0.815	-5.472	0.000	29.994	0.000

PLEVEL	1.981	0.048	-4.544	0.000	24.571	0.000
RAISE	0.220	0.826	-1.100	0.271	1.258	0.533
STRADM	-1.886	0.059	0.044	0.965	3.558	0.169

CGOAL = Career Goal Progress; PDEV = Professional Ability and Development; PSPEED = Promotion Speed; AFF_1 and AFF_2 = Affective Commitment; CCOM_1 and CCOM_2 = Continuance commitment; ITQ_1 and ITQ_2 = Intention to Quit; JFIT_1 and JFIT_2 = Job Fit; DJ = Distributive Justice; PJ = Procedural Justice; MWRK_1 and MWRK_2 = Meaningful Work; ORGS_1 and ORGS_2 = Perceived Organisational Support; BEN = Pay Benefits; PLEVEL = Pay Level; RAISE = Pay Level; STRADM = Pay Structure and Administration.

Table 4.40

Test of Multivariate normality for the measurement model before normalisation

Skewness			Kurtosis			Skewness and Kurtosis	
Value	Z-Score	P-Value	Value	Z-Score	P-Value	Chi-Square	P-Value
91.273	20.425	0.000	604.523	11.370	0.000	546.469	0.000

Table 4.39 and Table 4.40 show the results of the test for univariate normality and multivariate normality of the data. Table 4.40 indicates that 14 out of 22 indicator variables failed the test of univariate normality ($p < .05$). Furthermore Table 4.40 show that the data failed the test for multivariate normality. The null hypothesis that stated that the data followed a multivariate normal distribution had to be rejected ($X^2 = 546.469$, $p < .05$). Since the quality of the solution obtained in the structural equation modelling is contingent upon satisfying the assumption of multivariate normality, it was decided to normalise the indicator variables through PRELIS. Subsequently PRELIS was used to normalise the data and Table 4.41 and Table 4.42 show the results of the test for univariate normality and multivariate normality of the data after the normalisation procedure

Table 4.41

Test of univariate normality for the measurement model after normalisation

Variable	Skewness		Kurtosis		Skewness and Kurtosis	
	Z-Score	P-Value	Z-Score	P-Value	Chi-Square	P-Value
CGOAL	-0.439	0.661	-0.767	0.443	0.780	0.677
PDEV	-0.363	0.716	-0.657	0.511	0.563	0.755
PSPEED	0.167	0.867	-0.380	0.704	0.173	0.917
AFF_1	-0.804	0.421	-1.025	0.305	1.698	0.428
AFF_2	-0.799	0.424	-1.237	0.216	2.169	0.338
CCOM_1	-0.287	0.774	-2.222	0.026	5.020	0.081

CCOM_2	-0.578	0.563	-1.803	0.071	3.584	0.167
ITQ_1	1.218	0.223	-2.059	0.040	5.720	0.057
ITQ_2	-0.719	0.472	-3.297	0.001	11.389	0.003
JFIT_1	-0.356	0.722	-0.431	0.667	0.312	0.855
JFIT_2	-0.689	0.491	-0.843	0.399	1.185	0.553
DJ	-0.420	0.674	-0.583	0.560	0.517	0.772
PJ	-0.116	0.907	-0.084	0.933	0.021	0.990
MWRK_1	-2.112	0.035	-2.440	0.015	10.417	0.005
MWRK_2	-2.172	0.030	-2.480	0.013	10.872	0.004
ORGS_1	-0.242	0.809	-0.630	0.528	0.456	0.796
ORGS_2	-0.116	0.908	-0.459	0.646	0.224	0.894
BEN	0.106	0.916	-1.799	0.072	3.249	0.197
PLEVEL	0.549	0.583	-1.816	0.069	3.598	0.165
RAISE	0.384	0.701	-0.872	0.383	0.909	0.635
STRADM	0.141	0.888	-0.557	0.577	0.330	0.848

CGOAL = Career Goal Progress; PDEV = Professional Ability and Development; PSPEED = Promotion Speed; AFF_1 and AFF_2 = Affective Commitment; CCOM_1 and CCOM_2 = Continuance commitment; ITQ_1 and ITQ_2 = Intention to Quit; JFIT_1 and JFIT_2 = Job Fit; DJ = Distributive Justice; PJ = Procedural Justice; MWRK_1 and MWRK_2 = Meaningful Work; ORGS_1 and ORGS_2 = Perceived Organisational Support; BEN = Pay Benefits; PLEVEL = Pay Level; RAISE = Pay Level; STRADM = Pay Structure and Administration.

Table 4.42

Test of multivariate normality for the measurement model after normalisation

Skewness			Kurtosis			Skewness and Kurtosis	
Value	Z-Score	P-Value	Value	Z-Score	P-Value	Chi-Square	P-Value
63.563	11.167	0.000	527.187	8.303	0.000	193.643	0.000

Table 4.41 show the results of the test of univariate normality after employing PRELIS to normalise the data. The normalisation procedure significantly improved the univariate normality with p values of some indicators increasing quite substantially but as can be seen in Table 4.41, 3 out of 22 indicators still failed the test for univariate normality ($p < 0.05$). Furthermore Table 4.42 shows that even after normalisation the null hypothesis that stated that the data followed a multivariate normal distribution still had to be rejected ($\chi^2 = 193.643$, $p < .05$). Therefore since the normalisation procedure did not yield the desired result of multivariate normality the use of alternative estimation methods suitable for data that does not follow a multivariate normal distribution had to be considered. Researchers have suggested use of Weighted Least Squares (WLS), Diagonally Weighted Least Squares (DWLS) and Robust Maximum Likelihood as viable estimation methods to fit structural equation models to non-normal

data (Du Toit & Du Toit, 2001; Joreskog & Sorbom, 1998; Mels, 2003). Given these options, the Robust Maximum Likelihood estimation technique was adopted as the most appropriate estimation method to use in this study. Mels (2003) recommended the use of robust maximum likelihood estimation technique for fitting of measurement models of continuous data which did not satisfy the multivariate normality assumption as it enabled calculations of more appropriate fit indices in LISREL. Although the attempt at normalising the multivariate indicator variable distribution failed to achieve multivariate normality it nonetheless reduced the deviation of the sample distribution from the theoretical multivariate normal distribution. Hence the normalised data was utilised for further analysis.

4.8 Assessing overall measurement model fit

The measurement model focuses on the way in which the latent variables are operationalised - that is it describes how they are represented by the manifest or observable variables (Diamontopoulos and Siguaaw, 2000) and therefore evidence of successful measurement model specification should indicate that manifest indicators are reflective of latent variables they were meant to represent. Thus the objective of confirmatory factor analysis was to determine the level of success with which the latent variable comprising the measurement model were operationalised in terms of the items parcels. Successful operationalisation was only attained if there was evidence that the model can successfully reproduce the observed covariance matrix and that a large percentage of the variance of the indicator variables can be explained in terms of the latent variables they were designed to reflect (Theron, 2013). Traditionally the normal theory χ^2 statistic has been a popular fit statistics but is affected by shortcomings since it is severely affected by non-normality and sample size. Diamontopoulos and Siguaaw (2000), with reference to a plethora of fit indices that assess model fit in different ways recommended the use of multiple fit indices to reach a judgement concerning the overall fit of a model. Researchers seem to recommend using the Satorra-Bentler X^2 test that is corroborated with RMSEA, ECVI, SRMR, GFI, NNFI, CFI, R^2 as sufficient indices that can empower one to make an informed decision about model fit (Boomsma, 2000; Diamontopoulos & Siguaaw, 2000; Kline, 2005).

Lisrel 8.80 was used to perform a confirmatory analysis on the measurement model to determine the fit of the model. Robust maximum likelihood estimation method was used on the normalised data to produce the estimates. An admissible final solution of parameter estimates was obtained after 23 iterations and the goodness of fit statistics are indicated on Table 4.43. The visual representation of the overall fitted measurement model is depicted in Figure 4.1

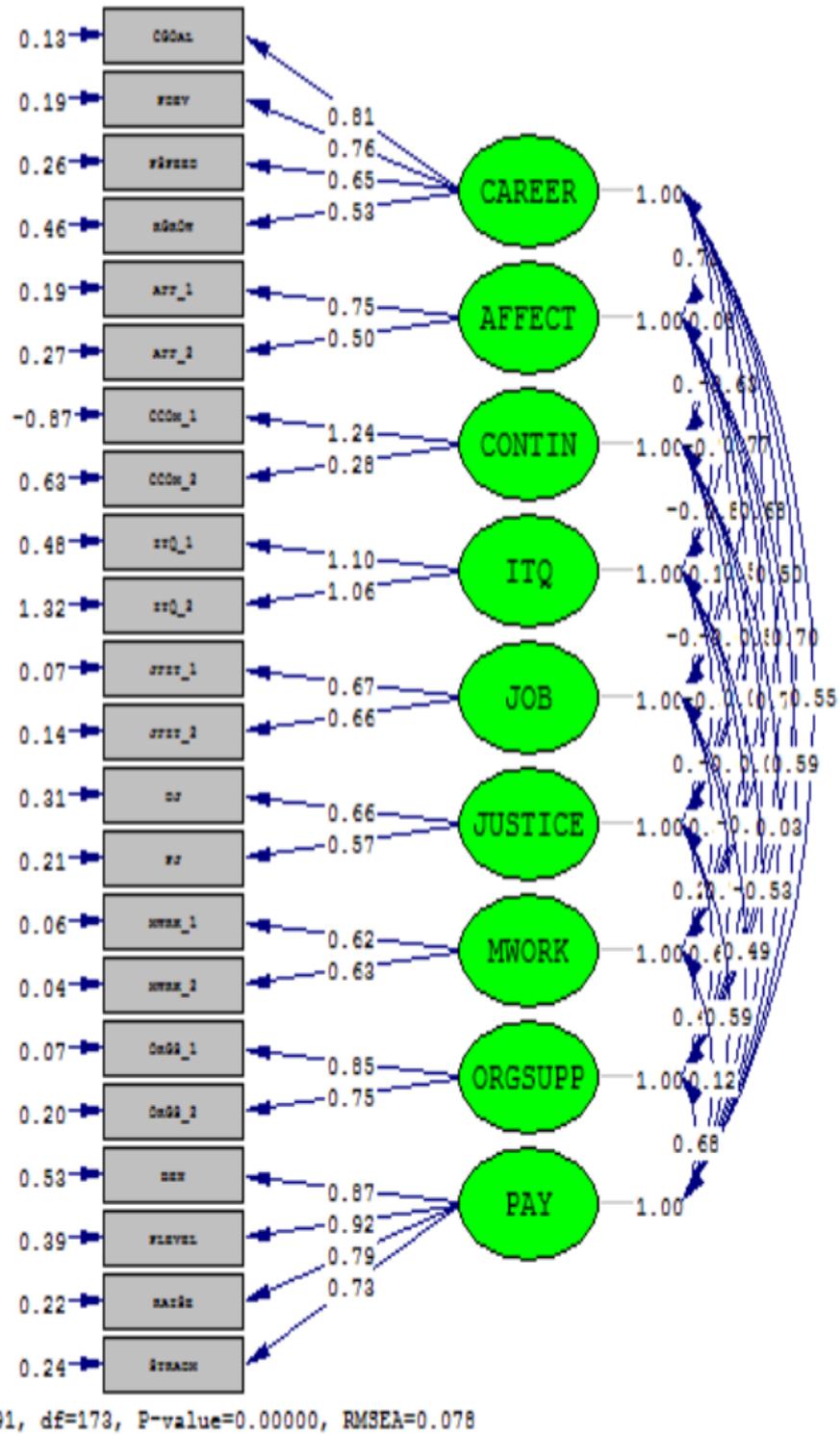


Figure 4.1: Representation of the fitted overall measurement model (Standardised solution)

Table 4.43***Goodness-of-fit statistics for the overall measurement model***

Degrees of Freedom = 173
 Minimum Fit Function Chi-Square = 433.175 (P = 0.0)
 Normal Theory Weighted Least Squares Chi-Square = 467.688 (P = 0.0)
Satorra-Bentler Scaled Chi-Square = 421.912 (P = 0.0)
 Chi-Square Corrected for Non-Normality = 1119.887 (P = 0.0)
 Estimated Non-centrality Parameter (NCP) = 248.912
 90 Percent Confidence Interval for NCP = (192.470 ; 313.050)
 Minimum Fit Function Value = 1.828
 Population Discrepancy Function Value (F0) = 1.050
 90 Percent Confidence Interval for F0 = (0.812 ; 1.321)
Root Mean Square Error of Approximation (RMSEA) = 0.0779
 90 Percent Confidence Interval for RMSEA = (0.0685 ; 0.0874)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.000
 Expected Cross-Validation Index (ECVI) = 2.455
 90 Percent Confidence Interval for ECVI = (2.217 ; 2.726)
 ECVI for Saturated Model = 2.135
 ECVI for Independence Model = 40.412
 Chi-Square for Independence Model with 231 Degrees of Freedom = 9533.730
 Independence AIC = 9577.730
 Model AIC = 581.912
 Saturated AIC = 506.000
 Independence CAIC = 9676.120
 Model CAIC = 939.694
 Saturated CAIC = 1637.484
Normed Fit Index (NFI) = 0.956
Non-Normed Fit Index (NNFI) = 0.964
 Parsimony Normed Fit Index (PNFI) = 0.716
Comparative Fit Index (CFI) = 0.973
 Incremental Fit Index (IFI) = 0.973
 Relative Fit Index (RFI) = 0.941
Critical N (CN) = 124.125
Root Mean Square Residual (RMR) = 0.0555
Standardized RMR = 0.0669
Goodness of Fit Index (GFI) = 0.848
Adjusted Goodness of Fit Index (AGFI) = 0.778
 Parsimony Goodness of Fit Index (PGFI) = 0.580

Testing exact fit null hypothesis:

Measurement model H_0 exact fit: RMSEA = 0

Measurement model H_a exact fit: RMSEA > 0

The exact null hypothesis that stated that the measurement model provides a perfect account of the manner in which the latent variables manifest themselves in the indicator variables was tested via the Satorra-Bentler scaled chi-square statistic. Table

4.43 indicates that the Satorra-Bentler scaled chi-square statistic yielded a value of 421.912 ($p = .000$). The hypothesis of exact fit was consequently rejected ($p < .05$) which was an expected outcome as it implies that the position that the measurement model shows exact fit in the parameter is not a tenable position. Diamantopoulos and Siguaw (2000) indicated that it is implausible to expect the model to fit perfectly in the population as it is an approximation of reality.

Testing close fit null hypothesis:

Measurement model $H_{0 \text{ close fit}}$: $RMSEA \leq .05$

Measurement model $H_{a \text{ close fit}}$: $RMSEA > .05$

Furthermore Table 4.43 shows that the close fit null hypothesis ($RMSEA \leq .05$) should be rejected ($p < .05$; $p = .000$). This implies that the claim that the model fits close in the parameter is strongly challenged and is not a permissible position to hold. The rejection of the null hypothesis of close fit casts a shadow of doubt on whether the measurement model fitted well and the fit may not be adequate to allow the confident interpretation of the parameter estimates.

The Root Mean Square Error of Approximation (RMSEA) has been regarded as “one of the most informative fit indices” (Diamantopoulos and Siguaw, 2000, p. 85). The RMSEA has been reported to show how well the model with unknown but optimally chosen values, fit the population covariance matrix if it were available (Brown and Cudeck, 1993). The RMSEA is sensitive to the number of estimated parameters in the model and chooses the less numbers of parameters hence it has been described as a fit statistics that favors parsimony and will choose the model with lesser number of parameters. Researchers have stipulated cut off values of less than .05 to be indicative of good fit, between .05 and under .08 as indicative of reasonable fit and values between .08 and .10 to be indicative of mediocre fit while values greater than .10 as indicative of poor fit. Table 4.43 indicates that the value obtained of .0779 demonstrates reasonable fit despite the fact that close fit is not obtained in the parameter. However the upper boundary of the 90 percent confidence interval for RMSEA (.0685: .0874) falls slightly above the critical cut-off value for reasonable fit of .08.

Absolute fit indices are calculated without the consideration of a baseline model. The absolute fit indices seek to determine how well the model fits the sample data without any comparison to a baseline model. The absolute fit indices that are used to assess measurement model fit include the goodness of fit index (GFI), adjusted goodness of fit index (AGFI), root mean square residual (RMR) and standardised root mean square residual (SRMR).

GFI calculates the proportion of variance that is accounted for by the estimated population covariance (Tabachnick and Fidell, 2007) and shows how close the model comes to replicate the observed covariance matrix (Diamontopoulos and Siguaw, 2000). Diamontopoulos and Siguaw (2000) noted that the GFI has been recommended as the most reliable measure of absolute fit in most circumstances. The GFI and AGFI should be between zero indicative of poor fit and 1 indicative of perfect fit. Values above .90 have been proffered as the cut off for a good fit. Inspection of the GFI and the AGFI in Table 4.43 seem to paint a picture of a reasonable fit with GFI of .848 that marginally misses the .90 cut off. The AGFI of 0.778 also missed the cut off of .90.

Comparative fit indices show how much better the model fits compared to a baseline/independent model. Diamantopolous and Siguaw (2000) indicated that the literature recommends that the non-normed fit index (NNFI) and the comparative fit index (CFI) ought to be relied upon for fit assessment

The Normed Fit Index (NFI) assess the model by comparing the X^2 value of the model to the X^2 value of the null/independence model. **The Non-Normed Fit Index (NNFI)** adjusts the NFI for the number of degrees of freedom in the model. The independence model specifies that all measured variables are uncorrelated. Values of the statistic range from 0 and 1 and the cut off value recommended has been values greater than .90 that indicate good fit.

The Comparative fit index (CFI) also compares the sample covariance matrix with the null/independent model and the independent model assumes that all latent variables are uncorrelated. Values of CFI statistic range from 0 and 1.0 with values closer to 1.0 indicating good fit. A cut-off criterion of CFI that is .90 or above has largely been recommended as indicative of good fit.

Table 4.43 show that the current study yielded the incremental fit indices that express a well-fitting model. The NFI (.956), NNFI (.964), CFI (.973) are indicative of a good fitting model and are all above the recommended cut off of .90. The CFI value obtained of .973 indicates that the study measurement model fit is better compared to the independence model.

Root Mean Square residual (RMR) and Standardized Root mean Square Residual (SRMR) are the square roots of the difference between the residuals of the sample of the covariance matrix and the hypothesized covariance model. The range of the RMR is calculated based upon the scales of each indicator and presents challenges if the questionnaire contains items with varying levels. For example if one scale has items ranging from 1-5 while others range from 1-7 the RMR becomes difficult to interpret (Kline, 2005). The SRMR on the other hand are standardised residuals that are stable and are not impacted by the unit of measurement of the of the model variables (Diamontopoulos & Siguaw, 2000). For this reason the SRMR is the preferred and most meaningful to interpret. Values of the SRMR range from 0 to 1 with good fitting models obtaining values less than .05 (Diamontopoulos & Siguaw, 2000) while values as high as .08 have been deemed acceptable (Hu and Bentler, 1999).

Inspecting Table 4.43, RMR and the SRMR values obtained in this study were 0.0555 and 0.0669 respectively which marginally fell outside the 0.05 cut and further erodes confidence regarding a good and well-fitting model. Even though the RMR and SRMR marginally missed the cut off criteria, they seem to paint a picture of a reasonable fit and can be deemed acceptable (Hu and Bentler, 1999).

4.8.1 The unstandardised lambda-X matrix for the overall measurement model

The other important consideration that needed to be examined to reach a verdict on the success of the operationalisatoion of the latent variables comprising the intention to quit structural model was the magnitude and the statistical significance of the slope of the regression of the observed variables on their respective latent variables. This examination assisted in painting a picture of the validity of the measures. According to Diamantopoulos and Siguaw, (2000) the slope of regression of X_i on ξ_j in the fitted model has to be substantial and significant in order for a measure to provide a valid reflection of a specific latent variable. The regression coefficients of the manifest variables on the latent variables are significant ($p < .05$) if the absolute values of z

values exceeds -1.96 and 1.96 (non-directional) and -1.64 and 1.64 (directional). Since the hypotheses were formulated directional, the z values (< -1.64 and < 1.64) are indicative of significant factor loadings and provides validity evidence in favour of the indicators used in the study (Diamontopoulos & Sigauw, 2000). The unstandardized lambda-X matrix for the measurement model is indicated in Table 4.44 below.

Table 4.44***Unstandardised factor loading matrix***

	CAREER	AFFECT	CONTIN	ITQ	JOB	JUSTICE
CGOAL	0.809 (0.043) 18.923	--	--	--	--	--
PDEV	0.763 (0.046) 16.677	--	--	--	--	--
PSPEED	0.650 (0.045) 14.594	--	--	--	--	--
RGROW	0.529 (0.056) 9.412	--	--	--	--	--
AFF_1	--	0.751 (0.047) 15.953	--	--	--	--
AFF_2	--	0.497 (0.049) 10.127	--	--	--	--
CCOM_1	--	--	1.239 (0.739) 1.676	--	--	--
CCOM_2	--	--	0.275 (0.176) 1.569	--	--	--
ITQ_1	--	--	--	1.099 (0.074) 14.801	--	--
ITQ_2	--	--	--	1.059 (0.090) 11.789	--	--
JFIT_1	--	--	--	--	0.666 (0.036) 18.570	--
JFIT_2	--	--	--	--	0.657 (0.037) 17.751	--

DJ	- -	- -	- -	- -	- -	0.659 (0.057) 11.553
PJ	- -	- -	- -	- -	- -	0.567 (0.051) 11.069
MWRK_1	- -	- -	- -	- -	- -	- -
MWRK_2	- -	- -	- -	- -	- -	- -
ORGS_1	- -	- -	- -	- -	- -	- -
ORGS_2	- -	- -	- -	- -	- -	- -
BEN	- -	- -	- -	- -	- -	- -
PLEVEL	- -	- -	- -	- -	- -	- -
RAISE	- -	- -	- -	- -	- -	- -
STRADM	- -	- -	- -	- -	- -	- -

	MWORK	ORGSUPP	PAY
	-----	-----	-----
CGOAL	- -	- -	- -
PDEV	- -	- -	- -
PSPEED	- -	- -	- -
RGROW	- -	- -	- -
AFF_1	- -	- -	- -
AFF_2	- -	- -	- -
CCOM_1	- -	- -	- -
CCOM_2	- -	- -	- -
ITQ_1	- -	- -	- -
ITQ_2	- -	- -	- -
JFIT_1	- -	- -	- -
JFIT_2	- -	- -	- -
DJ	- -	- -	- -
PJ	- -	- -	- -
MWRK_1	0.617 (0.031) 19.835	- -	- -
MWRK_2	0.628 (0.030) 20.860	- -	- -
ORGS_1	- -	0.851 (0.043) 19.930	- -
ORGS_2	- -	0.755 (0.048) 15.774	- -
BEN	- -	- -	0.869 (0.059) 14.837
PLEVEL	- -	- -	0.918 (0.056) 16.403

RAISE	- -	- -	0.794 (0.047) 16.921
STRADM	- -	- -	0.730 (0.049) 14.981

CGOAL = Career Goal Progress; PDEV = Professional Ability and Development; PSPEED = Promotion Speed; AFF_1 and AFF_2 = Affective Commitment; CCOM_1 and CCOM_2 = Continuance commitment; ITQ_1 and ITQ_2 = Intention to Quit; JFIT_1 and JFIT_2 = Job Fit; DJ = Distributive Justice; PJ = Procedural Justice; MWRK_1 and MWRK_2 = Meaningful Work; ORGS_1 and ORGS_2 = Perceived Organisational Support; BEN = Pay Benefits; PLEVEL = Pay Level; RAISE = Pay Level; STRADM = Pay Structure and Administration.

Table 4.44 indicates that all but 1 indicator loading are statistically significant (at $p < .05$) as indicated by z values that fell outside the critical values of -1.64 and 1.64. The significant factor loadings indicated by absolute values of z-values that exceeded 1.64 demonstrated to some degree that the various indicator variables provided a valid reflection of the latent variable they intended to reflect. As noted in Table 4.43, the only insignificant factor loading is the 1 item parcels CCOM_2 (z value = 1.596) which seems to cast the shadow of doubt on the validity of the aforementioned item parcel indicator (Diamontopoulos & Sigauw, 2000). The insignificant factor loading of the item parcel of continuance commitment, CCOM_2 seem to paint a picture that there are challenges with the operationalisation of the continuance commitment latent variable.

In summary, the multiple fit indices discussed so far have painted a picture of a reasonable fit but also somewhat problematic measurement model. The major disappointment is that the hypothesis of close fit is not obtained ($p < .05$). This implied that the claim that the model fits closer in the parameter is strongly challenged and is not a permissible claim to hold thereby casting doubt on the adequacy of the measurement model fit. Despite the rejection of the hypothesis close fit the RSMEA value of 0.779 demonstrates reasonable fit while GFI (.848) and AGFI (.778) although marginally missing the .90 cut off point paints a satisfactory levels of model fit. Furthermore comparative fit indices NFI (.956), NNFI (.964) and CFI (.973) also paint a picture of a well-fitting model. Also the RMR (.0555) and SRMR (.0669) though missing the criteria of good fit (.05 or less) the values are still deemed acceptable (Hu and Bentler, 1999) and seem to paint a picture of a reasonable model fit. Despite this evidence supporting a somewhat reasonable fitting model, it is still disappointing that the hypothesis of close fit is not obtained ($p=0.000$). Furthermore the loading of the

item parcel CCOM_2 on the Continuance Commitment latent variable that it was tasked to measure the continuance commitment latent variable was not significant and this seems to challenge the ability of the indicator to reflect the construct it was tasked to reflect.

Given this picture, the researcher had to investigate how the hypothesised model can be modified to enhance fit. The first point of evaluation was the modification indices. The modification indices calculated for Δ are shown in Table 4.44 below.

4.8.2 Modification Indices

Table 4.45

Measurement model modification indices for Δ

	CAREER	AFFECT	CONTIN	ITQ	JOB	JUSTICE
CGOAL	- -	0.032	0.717	0.713	0.596	3.503
PDEV	- -	1.167	3.075	1.433	0.013	8.739
PSPEED	- -	0.249	3.174	0.973	0.404	13.982
RGROW	- -	4.563	5.834	8.055	0.037	36.564
AFF_1	0.197	- -	0.212	0.218	0.697	2.127
AFF_2	1.714	- -	0.140	- -	- -	8.166
CCOM_1	- -	- -	- -	- -	- -	- -
CCOM_2	1.115	0.342	- -	0.281	0.285	0.088
ITQ_1	0.795	0.057	0.551	- -	1.317	0.115
ITQ_2	0.634	0.032	0.477	- -	0.744	0.138
JFIT_1	0.020	0.114	0.038	3.063	- -	0.040
JFIT_2	0.016	0.082	0.038	2.123	- -	0.037
DJ	- -	3.006	0.162	1.235	1.997	- -
PJ	- -	2.745	0.169	1.921	2.908	- -
MWRK_1	2.222	3.656	5.250	0.661	0.009	4.674
MWRK_2	2.857	4.046	5.241	0.704	0.012	5.191
ORGS_1	0.163	1.250	0.864	0.033	2.998	0.021
ORGS_2	0.248	1.745	0.523	0.047	4.625	0.036
BEN	5.616	0.656	0.046	4.223	0.835	9.370
PLEVEL	4.458	3.142	0.062	0.578	5.211	1.127
RAISE	1.104	0.036	0.453	0.006	0.000	3.031
STRADM	9.977	5.876	0.089	7.956	10.406	3.554
	MWORK	ORGSUPP	PAY			
CGOAL	10.706	2.576	21.261			
PDEV	1.765	4.526	11.311			
PSPEED	12.967	5.428	33.005			
RGROW	13.739	26.808	78.001			
AFF_1	1.229	0.269	1.349			

AFF_2	1.595	3.646	3.176
CCOM_1	- -	- -	- -
CCOM_2	0.528	0.778	2.967
ITQ_1	4.222	2.917	1.319
ITQ_2	2.610	1.065	0.868
JFIT_1	0.632	1.583	0.005
JFIT_2	0.506	1.793	0.005
DJ	2.287	5.439	2.737
PJ	2.067	- -	- -
MWRK_1	- -	0.510	2.251
MWRK_2	- -	0.549	2.236
ORGS_1	0.850	- -	0.105
ORGS_2	0.842	- -	0.154
BEN	0.352	0.297	- -
PLEVEL	2.907	5.713	- -
RAISE	0.075	0.414	- -
STRADM	2.226	5.031	- -

CGOAL = Career Goal Progress; PDEV = Professional Ability and Development; PSPEED = Promotion Speed; AFF_1 and AFF_2 = Affective Commitment; CCOM_1 and CCOM_2 = Continuance commitment; ITQ_1 and ITQ_2 = Intention to Quit; JFIT_1 and JFIT_2 = Job Fit; DJ = Distributive Justice; PJ = Procedural Justice; MWRK_1 and MWRK_2 = Meaningful Work; ORGS_1 and ORGS_2 = Perceived Organisational Support; BEN = Pay Benefits; PLEVEL = Pay Level; RAISE = Pay Level; STRADM = Pay Structure and Administration.

The modification indices shown in Table 4.45 indicates that a total of 18 values with modification values (MI) greater than 6.64. Three dimension scores of the satisfaction with career growth opportunities namely PDEV (professional development ability), PSPEED (promotional speed) and RGROW (remuneration and growth) seemed to load on JUSTICE (perceived organisational justice). Also item parcel AFF_2 (affective commitment) also loaded on JUSTICE (perceived organisational justice). BEN (benefits) a dimension of satisfaction with pay also loaded on JUSTICE (perceived organisational justice). STRADM (pay structure and administration) a dimension of satisfaction with pay also seemed to load on to AFFECT (affective commitment), ITQ (intention to quit) and JOB (job embeddedness). Furthermore the four dimensions of satisfaction with career advancement opportunities namely CGOAL (career goals progress), PDEV (professional ability development), PSPEED (promotion speed) and RGROW (remuneration growth) seemed to load on to PAY (satisfaction with pay). In particular the RGROW dimension seems to load strongly on satisfaction with pay as evidenced by the MI value of 78.001. Also three of the career advancement opportunities dimensions namely CGOAL (career goals progress), PSPEED (promotion speed) and RGROW (remuneration growth) seemed to load on to MWORK (meaningful work) while the dimension RGROW also loaded on ORGSUPP (perceived

organisational support). The modification indices in Table 4.45 indicate that 18 of the 176 parameters if set free would improve the fit of the measurement model. This constituted about 10% of the parameters that could be set free which seemed to paint a somewhat slightly worrying picture of the fit of the measurement model. However although the modification indices seem to indicate that the items parcels created can be used as indicators of latent variables that they were not intended to load on, this suggestion presents a challenge as the latent variable that the item parcels were tasked to reflect were informed by theory and the items were created to load on theoretically aligned latent variables. Furthermore caution has been provided over allowing modification indices to drive the process of improving fit. As noted by Kelloway (1998) modification indices should be considered if there is a convincing theoretical argument supporting the freeing of the parameter. In keeping with this recommendation, when one scrutinises why RGROW indicator loaded on satisfaction with pay seems, it appears that this makes substantive and theoretical sense. Clearly if one experiences growth in their remuneration there are more likely to experience high levels of satisfaction with their pay. Therefore it seems to make theoretical sense that the RGROW indicator loaded on satisfaction with pay. However instead of specifying a cross load it was decided to remove the RGROW indicator due to the overlap between this particular dimension of satisfaction with career advancement opportunities (remuneration growth) and satisfaction with pay.

4.8.3. Squared multiple correlations (R^2)

The squared multiple correlations are indicated on Table 4.46 below

Table 4.46

Squared multiple correlations for item parcels

CGOAL	PDEV	PSPEED	RGROW	AFF_1	AFF_2
0.836	0.754	0.620	0.380	0.749	0.474
CCOM_1	CCOM_2	ITQ_1	ITQ_2	JFIT_1	JFIT_2
2.311	0.107	0.714	0.460	0.865	0.761
DJ	PJ	MWRK_1	MWRK_2	ORGS_1	ORGS_2
0.584	0.604	0.864	0.910	0.909	0.741
BEN	PLEVEL	RAISE	STRADM		

0.586 0.686 0.746 0.690

CGOAL = Career Goal Progress; PDEV = Professional Ability and Development; PSPEED = Promotion Speed; AFF_1 and AFF_2 = Affective Commitment; CCOM_1 and CCOM_2 = Continuance commitment; ITQ_1 and ITQ_2 = Intention to Quit; JFIT_1 and JFIT_2 = Job Fit; DJ = Distributive Justice; PJ = Procedural Justice; MWRK_1 and MWRK_2 = Meaningful Work; ORGS_1 and ORGS_2 = Perceived Organisational Support; BEN = Pay Benefits; PLEVEL = Pay Level; RAISE = Pay Level; STRADM = Pay Structure and Administration

The squared multiple correlations (R^2) denotes the proportion of variance in the manifest variables that can be explained by the variance in the latent variable that they were designed to reflect. As such Diamantopolous and Siguaw (2000) have indicated that squared multiple correlations of the manifest variable are indicative of the degree to which the indicators are devoid of error. Therefore reviewing squared multiple correlation values would give the researcher diagnostic information pertaining to which manifest variables do a good job of reflecting the latent variables they were task to reflect. R^2 values range from 0.00 to 1.00 with values closer to 1 indicating that the particular indicator significantly reflects high variance in the latent variable it was tasked to reflect. Inspection of Table 4.46 reveals that most indicator variables had R^2 values $>.50$ expressing satisfactory indicator validity. The exceptions were item parcels CCOM_2 (0.107), RGROW (0.380) and ITQ_2 (0.402) which obtained R^2 values that were less than .5; while an inadmissible value was obtained for item parcel CCOM_1 (2.311). This suggests that a substantial amount of the variance in these aforementioned indicators is attributed to random error and non-relevant systematic sources of variance which compromises their reliability and validity. In particular the R^2 values for the continuance commitment scale are particularly worrying. The value for CCOM_1 is inadmissible and indicated an improper estimate that indicates the problematic nature of the continuance commitment indicators and prohibits the interpretation of the model parameter estimates. Furthermore CCOM_2 shows a very low R^2 value which implies that the indicator does not do a good job of explaining variance on the underlying continuance commitment latent variable it was tasked to reflect. Thus the inadmissible value of the R^2 value for item parcel CCOM_1 and the low very R^2 value for CCOM_2 seem to raise a red flag and further shows the challenges related to measuring continuance commitment in this study.

4.8.4 Theta-delta matrix

Furthermore the completely standardised theta-delta matrix was inspected. The completely standardised theta-delta values are indicated in Table 4.47.

Table 4.47

Completely standardised theta-delta matrix

CGOAL	PDEV	PSPEED	RGROW	AFF_1	AFF_2
-----	-----	-----	-----	-----	-----
0.164	0.246	0.380	0.620	0.251	0.526
CCOM_1	CCOM_2	ITQ_1	ITQ_2	JFIT_1	JFIT_2
-----	-----	-----	-----	-----	-----
-1.311	0.893	0.286	0.540	0.135	0.239
DJ	PJ	MWRK_1	MWRK_2	ORGS_1	ORGS_2
-----	-----	-----	-----	-----	-----
0.416	0.396	0.136	0.090	0.091	0.259
BEN	PLEVEL	RAISE	STRADM		
-----	-----	-----	-----		
0.414	0.314	0.254	0.310		

CGOAL = Career Goal Progress; PDEV = Professional Ability and Development; PSPEED = Promotion Speed; AFF_1 and AFF_2 = Affective Commitment; CCOM_1 and CCOM_2 = Continuance commitment; ITQ_1 and ITQ_2 = Intention to Quit; JFIT_1 and JFIT_2 = Job Fit; DJ = Distributive Justice; PJ = Procedural Justice; MWRK_1 and MWRK_2 = Meaningful Work; ORGS_1 and ORGS_2 = Perceived Organisational Support; BEN = Pay Benefits; PLEVEL = Pay Level; RAISE = Pay Level; STRADM = Pay Structure and Administration

The theta-delta matrix indicates the proportion of the variance in the observed variables not explained by the latent variable(s) linked to it but rather by random error and nonrelevant systemic variables. Table 4.47 shows the theta-delta matrix which indicates that item parcel RGROW (.620), CCOM_1 (-1.311), CCOM_2 (.893) and AFF_2 (.526) had the highest percentage of variance in the indicator variables that cannot be explained in terms of the latent variables. Again the continuance commitment indicators come to the fore with extremely high theta-delta values. In fact the inadmissible theta-delta value for item parcel CCOM_1 was indicative of an improper estimate thereby showing the problematic nature of the continuance commitment indicators. Also the large theta-delta value of CCOM_2 (0.893) seem to be very concerning as it implies that a very substantial proportion of the variance in the observed variable is not explained by the continuance commitment latent variable but is attributed to random error and nonrelevant systemic variables. Thus Table 4.47

seem to paint a picture of the challenges of the successful operationalisation of the continuance commitment latent variable as evidenced by the inadmissibly high and negative theta-delta value for CCOM_1 (-1.311) and CCOM_2 (.893). Also the large theta delta value for RGROW (.620) seem to be a concern. Given that the RGROW indicator seemed to also load strongly to satisfaction with pay as evidenced by the largest MI value of 78.001, this seems to corroborate the decision to remove this indicator variable.

There seem to be compelling basket of evidence discussed so far that indicates that the continuance commitment latent variable has not been successfully operationalised by the manifest indicators. As discussed previously, item parcel CCOM_2 had an insignificant factor loading which means that the position that the CCOM_2 indicator reflects the construct it was tasked to reflect was not empirically supported. Furthermore the R^2 values for the continuance commitment indicators (CCOM_1=2.311 and CCOM_2=.107) seem to raise a flag on the measurement problems related to measuring continuance commitment in this study. Also the high theta-delta values also seemed to corroborate the challenge of successful operationalisation of the continuance commitment latent variable in this study. Given this basket of evidence that pointed to the challenges of successful operationalisation of the continuance commitment latent variable, it was decided to also exclude this latent variable. The exclusion of the continuance commitment latent variable implied that some of the initial hypothesis were no longer testable as articulated in the next section. Also, as explained earlier, it was decided to exclude the RGROW indicator which represented *remuneration growth*, a dimension of *career advancement*. The modified measurement model was fitted and the results are discussed in the next section.

4.9 Fitting the modified measurement model

Confirmatory factor analysis was performed on the modified measurement model that excluded the continuance commitment latent variable and the remuneration and growth (RGROW) latent variable. The motivation for the exclusion of the two latent variables was comprehensively elaborated in the discussion above. Furthermore, the RGROW indicator which represented *remuneration growth*, a dimension of *career*

advancement, was removed due to the obvious overlap with *pay satisfaction*. Other modifications included the exclusion of the Affective commitment items 2 and 4R from the parcels as these items were flagged as problematic during the reliability analysis but accidentally included in the initial CFA. The results of the fitted measurement model are indicated on Table 4.48 below;

Table 4.48

Goodness-of-fit statistics for the overall modified measurement model

Goodness of Fit Statistics
 Degrees of Freedom = 124
 Minimum Fit Function Chi-Square = 234.311 (P = 0.00)
 Normal Theory Weighted Least Squares Chi-Square = 226.314 (P = 0.000)
Satorra-Bentler Scaled Chi-Square = 206.710 (P = 0.000)
 Chi-Square Corrected for Non-Normality = 480.507 (P = 0.0)
 Estimated Non-centrality Parameter (NCP) = 82.710
 90 Percent Confidence Interval for NCP = (47.031 ; 126.282)
 Minimum Fit Function Value = 0.989
 Population Discrepancy Function Value (F0) = 0.349
 90 Percent Confidence Interval for F0 = (0.198 ; 0.533)
Root Mean Square Error of Approximation (RMSEA) = 0.0531
 90 Percent Confidence Interval for RMSEA = (0.0400 ; 0.0656)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.335
Expected Cross-Validation Index (ECVI) = 1.429
 90 Percent Confidence Interval for ECVI = (1.279 ; 1.613)
ECVI for Saturated Model = 1.603
ECVI for Independence Model = 36.806
 Chi-Square for Independence Model with 171 Degrees of Freedom = 8685.065
 Independence AIC = 8723.065
 Model AIC = 338.710
 Saturated AIC = 380.000
 Independence CAIC = 8808.038
 Model CAIC = 633.880
 Saturated CAIC = 1229.731
Normed Fit Index (NFI) = 0.976
Non-Normed Fit Index (NNFI) = 0.987
 Parsimony Normed Fit Index (PNFI) = 0.708
 Comparative Fit Index (CFI) = 0.990
Incremental Fit Index (IFI) = 0.990
 Relative Fit Index (RFI) = 0.967
Critical N (CN) = 188.512
Root Mean Square Residual (RMR) = 0.0438
Standardized RMR = 0.0520
Goodness of Fit Index (GFI) = 0.909
Adjusted Goodness of Fit Index (AGFI) = 0.860
 Parsimony Goodness of Fit Index (PGFI) = 0.593

As indicated in Table 4.48, the Satorra-Bentler Scaled chi-square statistic yielded a value of 206.710 ($p=0.000$). The hypothesis of exact fit was consequently rejected ($p < .05$) which was an expected outcome as it implies that the position that the measurement model shows exact fit in the parameter is not a tenable position. Diamantopoulos and Siguaw (2000) indicated that it is implausible to expect the model to fit perfectly in the population as it is an approximation of reality.

Furthermore Table 4.48 showed that the close fit null hypothesis ($RMSEA \leq .05$) should not be rejected ($p > .05$; $p = .335$) and it was therefore concluded the position that the modified measurement model shows close fit in the parameter was a tenable position. Furthermore Table 4.48 indicated that the RMSEA value obtained of .0531 demonstrated that the model achieved good close fit in the sample.

The goodness-of-fit index (GFI) and the adjusted goodness-of-fit index (AGFI) reflect how closely the model comes to perfectly reproducing the sample covariance matrix (Diamantopoulos & Siguaw, 2000). Inspection of the GFI and the AGFI in Table 4.48 seem to paint a picture of a well-fitting modified measurement model with GFI of .909 that is above the cut-off of .90 indicative of a good model fit. The AGFI of .860 marginally missed the .90 cut-off but is satisfactory and exhibits a well-fitting model. Thus the GFI and AGFI obtained by the modified measurement model seem to be supportive of a good model fit.

Comparative fit indices show how much better the model fits compared to a baseline/independent model. As recommended by Diamantopolous and Siguaw (2000) NNFI and the comparative fit index (CFI) were inspected to assess the fit of the measurement model. As previously discussed, the comparative fit indices that have values approaching unity (1.00) express a good fit of the model. Table 4.48 showed that the current study yielded the incremental fit indices that express a well-fitting model. The NFI (.976), NNFI (.987), CFI (.990) were indicative of a good fitting model and were all above the recommended cut off of .90. The CFI value obtained of .990 indicates that the study modified measurement model fit is better compared to the independence model. Thus the incremental fit indices all showed values that exceeded the recommended cut of 0.90 which painted a very positive picture of a measurement model fit.

Expected Cross Validation Index (ECVI) has been recommended as useful indicators of model fit. The ECVI looks at overall error thereby indicating the difference between the population covariance matrix and the model fitted into the sample. Thus the ECVI assess whether the model is likely to cross validate across samples of the sample size from the same population (Diamantopoulos & Siguaw, 2000). According to Diamantopoulos and Siguaw (2000) the ECVI is a useful indicator of a model fit when it is compared with the independence model and the saturation model with a smaller

ECVI indicating that model has a high likelihood of being replicated in a cross-validation sample that the saturated or independence models. Inspection of Table 4.48 showed that the comparison of the obtained ECVI value of 1.429 was smaller than the ECVI values obtained for saturated model (1.603) and independence model (36.806) which served as evidence of a good fitting model and also indicated that the fitted modified model seemed to have a better chance of being replicated in a cross validation sample compared to other models.

The critical N (CN) statistic was also inspected and reported. Diamantopoulos and Siguaw (2000) noted that the CN statistic indicates the size that a sample must reach in order to accept the fit of a given model on a statistical basis. Recommendations proffered as a cut off to indicate that a model has an adequate representation of the data is CN values > 200 . Inspection of Table 4.48 indicated that the CN value obtained is 188.512 fell below the value recommended as the cut off thereby indicating that the model exhibits adequate representation of the data. However Diamantopoulos and Siguaw (2000) indicated that this recommended cut-off has been challenged in the literature hence the CN measure must be used with caution.

The Root Mean Square Residual (RMR) and Standardized Root Mean Square Residual (SRMR) were also inspected. As discussed previously, the RMR and SRMR are the square roots of the difference between the residuals of the sample of the covariance matrix and the hypothesized covariance model. The MRM and SRMR values range from 0 to 1 with a good model fit being denoted by values that are less than .05. Inspection of Table 4.48 shows that the MRM and SMRM values obtained were .0438 and .0520 respectively which seem to build a good level of confidence regarding a good fitting modified measurement model.

4.9.1 The unstandardised lambda-X matrix for the overall modified measurement model

The examination of the statistical significance of the slope of the regression of the observed variables on their respective latent variables was evaluated through the unstandardised lambda-X matrix in Table 4.49.

Table 4.49

Unstandardised Lambda-X matrix

	CAREER	AFCOM	QUIT	JOBFIT	JUSTICE	MWRK
	-----	-----	-----	-----	-----	-----
CGOAL	0.838 (0.042) 20.198	--	--	--	--	--
PDEV	0.771 (0.045) 17.006	--	--	--	--	--
PSPEED	0.612 (0.047) 13.034	--	--	--	--	--
AFF_1	--	0.780 (0.044) 17.539	--	--	--	--
AFF_2	--	0.733 (0.046) 15.913	--	--	--	--
ITQ_1	--	--	1.100 (0.075) 14.766	--	--	--
ITQ_2	--	--	1.057 (0.089) 11.832	--	--	--
JFIT_1	--	--	--	0.665 (0.036) 18.491	--	--
JFIT_2	--	--	--	0.658 (0.037) 17.773	--	--
DJ	--	--	--	--	0.655 (0.058) 11.291	--
PJ	--	--	--	--	0.570 (0.051) 11.247	--
MWRK_1	--	--	--	--	--	0.616 (0.032) 19.555
MWRK_2	--	--	--	--	--	0.628 (0.030) 21.083
ORGS_1	--	--	--	--	--	--
ORGS_2	--	--	--	--	--	--
BEN	--	--	--	--	--	--
PLEVEL	--	--	--	--	--	--
RAISE	--	--	--	--	--	--
STRADM	--	--	--	--	--	--
	ORGSUP	PAYS				
	-----	-----				
CGOAL	--	--				
PDEV	--	--				
PSPEED	--	--				
AFF_1	--	--				
AFF_2	--	--				
ITQ_1	--	--				
ITQ_2	--	--				
JFIT_1	--	--				
JFIT_2	--	--				
DJ	--	--				
PJ	--	--				
MWRK_1	--	--				

MWRK_2	- -	- -
ORGS_1	0.851 (0.043)	- -
	19.982	
ORGS_2	0.755 (0.048)	- -
	15.857	
BEN	- -	0.871 (0.059)
		14.868
PLEVEL	- -	0.918 (0.056)
		16.438
RAISE	- -	0.794 (0.047)
		16.918
STRADM	- -	0.729 (0.049)
		14.932

CGOAL = Career Goal Progress; PDEV = Professional Ability and Development; PSPEED = Promotion Speed; AFF_1 and AFF_2 = Affective Commitment; ITQ_1 and ITQ_2 = Intention to Quit; JFIT_1 and JFIT_2 = Job Fit; DJ = Distributive Justice; PJ = Procedural Justice; MWRK_1 and MWRK_2 = Meaningful Work; ORGS_1 and ORGS_2 = Perceived Organisational Support; BEN = Pay Benefits; PLEVEL = Pay Level; RAISE = Pay Level; STRADM = Pay Structure and Administration.

Inspection of the unstandardized Lambda-X matrix in Table 4.49 indicate that all the indicator variables have significant factor loadings as evidenced by z-values greater than plus or minus 1.64. Caution has been given on heavily relying on the unstandardized lambda-X estimates as ‘the problem arises because indicators of the same construct may be measured on very different scales. If this is the case, then direct comparisons of the magnitude of the loadings are clearly inappropriate’ (Diamantopolous & Sigauw, 2000, p. 89). In this regard the completely standardised factor loadings were inspected.

4.9.2 Completely standardised factor loading matrix

Table 4.50 below shows the completely standardised factor loading matrix

Table 4.50

Completely standardised lambda-X matrix for the item parcels

	CAREER	AFCOM	QUIT	JOBFIT	JUSTICE	MWRK
CGOAL	0.947	- -	- -	- -	- -	- -
PDEV	0.877	- -	- -	- -	- -	- -
PSPEED	0.742	- -	- -	- -	- -	- -
AFF_1	- -	0.889	- -	- -	- -	- -
AFF_2	- -	0.841	- -	- -	- -	- -
ITQ_1	- -	- -	0.846	- -	- -	- -
ITQ_2	- -	- -	0.677	- -	- -	- -
JFIT_1	- -	- -	- -	0.929	- -	- -

JFIT_2	- -	- -	- -	0.874	- -	- -
DJ	- -	- -	- -	- -	0.760	- -
PJ	- -	- -	- -	- -	0.781	- -
MWRK_1	- -	- -	- -	- -	- -	0.928
MWRK_2	- -	- -	- -	- -	- -	0.955
ORGS_1	- -	- -	- -	- -	- -	- -
ORGS_2	- -	- -	- -	- -	- -	- -
BEN	- -	- -	- -	- -	- -	- -
PLEVEL	- -	- -	- -	- -	- -	- -
RAISE	- -	- -	- -	- -	- -	- -
STRADM	- -	- -	- -	- -	- -	- -

	ORGSUP	PAYS
	-----	-----
CGOAL	- -	- -
PDEV	- -	- -
PSPEED	- -	- -
AFF_1	- -	- -
AFF_2	- -	- -
ITQ_1	- -	- -
ITQ_2	- -	- -
JFIT_1	- -	- -
JFIT_2	- -	- -
DJ	- -	- -
PJ	- -	- -
MWRK_1	- -	- -
MWRK_2	- -	- -
ORGS_1	0.954	- -
ORGS_2	0.861	- -
BEN	- -	0.767
PLEVEL	- -	0.828
RAISE	- -	0.863
STRADM	- -	0.830

CGOAL = Career Goal Progress; PDEV = Professional Ability and Development; PSPEED = Promotion Speed; AFF_1 and AFF_2 = Affective Commitment; ITQ_1 and ITQ_2 = Intention to Quit; JFIT_1 and JFIT_2 = Job Fit; DJ = Distributive Justice; PJ = Procedural Justice; MWRK_1 and MWRK_2 = Meaningful Work; ORGS_1 and ORGS_2 = Perceived Organisational Support; BEN = Pay Benefits; PLEVEL = Pay Level; RAISE = Pay Level; STRADM = Pay Structure and Administration.

The completely standardised factor loading matrix highlighted in Table 4.50 was inspected. The standardised factor loading matrix reflects the slope of the regression of the standardised item parcels on the standardised latent variables. According to Diamantopoulos and Siguaw (2000) the completely standardised factor loadings indicate the average change expressed in standard deviation units in the indicator variable associated with 1 standard deviation change in the latent variable. Inspection of the standardised factor loadings indicates that they are high and the majority of the factor loadings exceed the stringent cut off of .71 stipulated by Hair, Anderson and Tatham (2006). The only exception is item parcel ITQ_2 (.677) that marginally missed the ideal criterion of .71 stipulated by Hair et al. (2006).

4.9.3 Standardised Residuals

Standardised residuals have been regarded as a useful source of data that provides diagnostic information for lack of fit in the model (Kelloway, 1993) and therefore should be inspected. Joreskog and Sorbom (1993) have noted that a standardised residual is a residual that is divided by its standard error. Standardised residuals can be interpreted as standard normal deviates (z scores) and as such can be expected to be dispersed more or less symmetrical around zero which is indicative of a well-fitting model. Large residuals may indicate that the model either underestimated or overestimated the variances and/or covariances in question. Diamantopoulos and Siguaw (2000) deemed large residuals as those that are above +2.58 or -2.58. The large positive standardised residuals (>2.58) indicate that the model underestimates the covariances among the observed variables and Diamantopoulos and Siguaw (2000) recommended the need of adding explanatory paths in the model. While large negative standardized residuals (<-2.58) indicate that the model overestimate the covariances among observed variables which may call for reduction of paths. Table 4.50 below showed that 5 large negative residuals and 8 large positive residuals were observed and they constitute 6.8% of the total standardised residuals. This percentage is not excessive to be a great concern that the model either overestimates or underestimates the covariance among the observed variables in the observed covariance matrix.

Table 4.51

Summary statistics for the modified measurement model standardised residuals

Smallest Standardized Residual = -7.333
 Median Standardized Residual = 0.000
 Largest Standardized Residual = 5.768

Largest Negative Standardized Residuals

Residual for	AFF_2 and	CGOAL	-7.333
Residual for	ITQ_2 and	AFF_2	-3.805
Residual for	MWRK_2 and	PSPEED	-3.312
Residual for	BEN and	DJ	-4.154
Residual for	PLEVEL and	ORGS_1	-3.256

Largest Positive Standardized Residuals

Residual for	DJ and	PSPEED	2.665
Residual for	ORGS_1 and	PSPEED	2.991
Residual for	ORGS_1 and	JFIT_1	3.901
Residual for	BEN and	ITQ_1	3.517
Residual for	PLEVEL and	PSPEED	3.396
Residual for	PLEVEL and	BEN	5.768

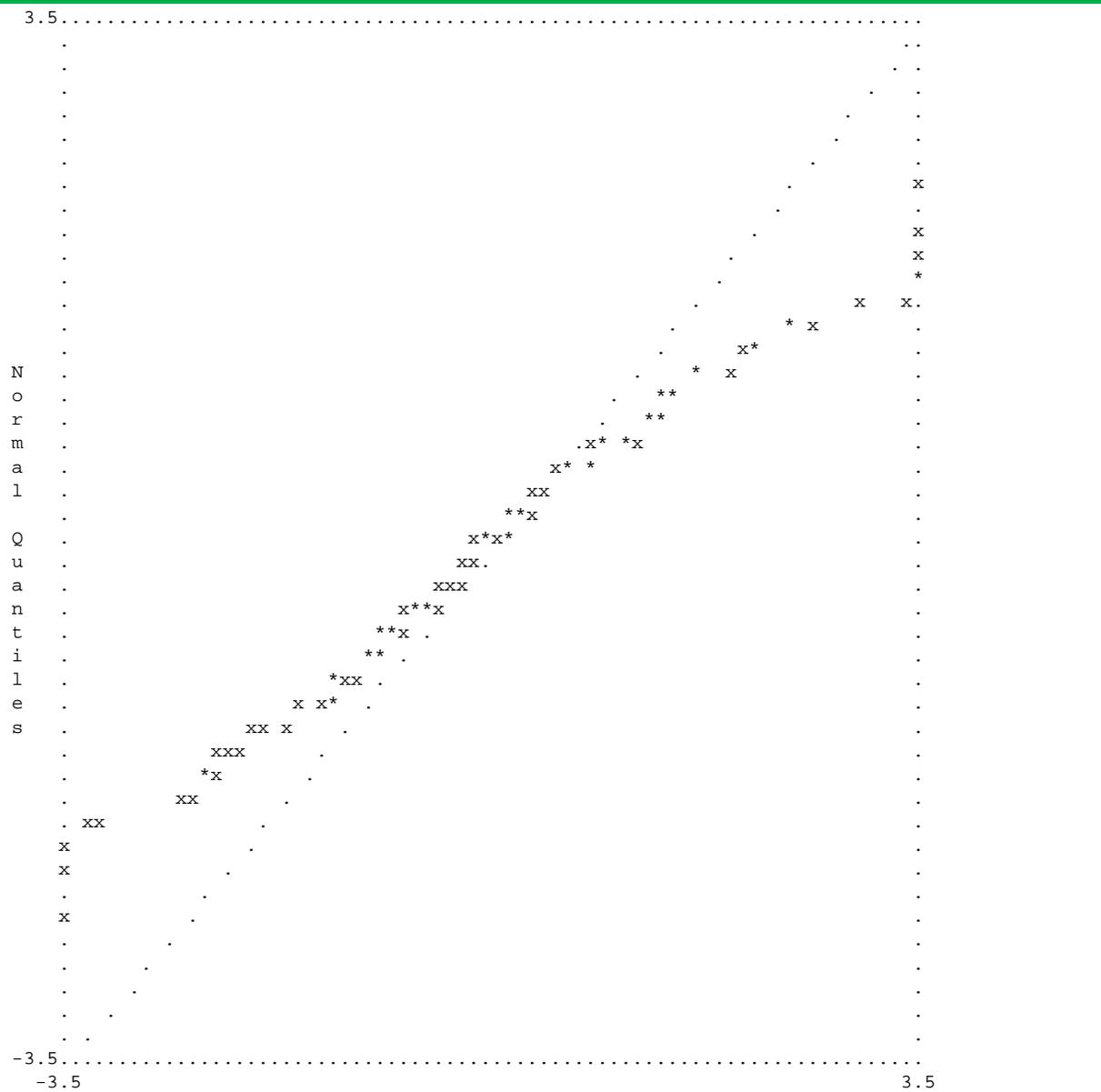


Figure 4.3: Q-Plot of standardised residuals of the modified measurement model

Inspection of the Q-plot on Figure 4.3 seem to indicate a reasonable to good fitting model as the standardised residuals seem to fall in the 45 degree reference line and only deviate on the upper and low regions of the X-axis. These findings are in line with the results discussed in Table 4.51 were there were 5 large negative residuals and 8 large positive residuals.

4.9.5 Squared Multiple Correlations (R^2)

The squared multiple correlations are indicated on Table 4.52 below

Table 4.52

Squared multiple correlations for item parcels

CGOAL	PDEV	PSPEED	AFF_1	AFF_2	ITQ_1
-----	-----	-----	-----	-----	-----
0.897	0.769	0.550	0.791	0.707	0.715
ITQ_2	JFIT_1	JFIT_2	DJ	PJ	MWRK_1
-----	-----	-----	-----	-----	-----
0.459	0.862	0.764	0.577	0.611	0.862
MWRK_2	ORGS_1	ORGS_2	BEN	PLEVEL	RAISE
-----	-----	-----	-----	-----	-----
0.912	0.909	0.741	0.588	0.686	0.746
STRADM					

0.688					

CGOAL = Career Goal Progress; PDEV = Professional Ability and Development; PSPEED = Promotion Speed; AFF_1 and AFF_2 = Affective Commitment; ITQ_1 and ITQ_2 = Intention to Quit; JFIT_1 and JFIT_2 = Job Fit; DJ = Distributive Justice; PJ = Procedural Justice; MWRK_1 and MWRK_2 = Meaningful Work; ORGS_1 and ORGS_2 = Perceived Organisational Support; BEN = Pay Benefits; PLEVEL = Pay Level; RAISE = Pay Level; STRADM = Pay Structure and Administration.

The squared multiple correlations (R^2) denotes the proportion of variance in the manifest variables that can be explained by the variance in the latent variable that they were designed to reflect. As such Diamantopoulos and Siguaw (2000) have indicated that squared multiple correlations of the manifest variable are indicative of the degree to which the indicators are devoid of error. Therefore reviewing squared multiple correlation values would give the researcher diagnostic information pertaining to which manifest variables do a good job of reflecting the latent variable they were task to reflect. R^2 values range from 0.00 to 1.00 with values closer to 1 indicating that the particular indicator successfully reflects variance in the latent variable it was tasked to reflect. Inspection of Table 4.52 reveals that most indicator variables had R^2 values $>.50$ expressing satisfactory indicator validity. The exception is item parcel ITQ_2 (0.462) which obtained R^2 values that is marginally less than .50. The R^2 values seem to build confidence that the manifest variables do a good job of reflecting the latent variable they were task to reflect. This seem to be paint a picture of the successful operationalisation of the latent variables comprising the reduced structural model.

4.9.6 Theta-delta matrix

Furthermore the completely standardized theta-delta matrix was inspected. The completely standardized theta-delta matrix is shown in Table 4.53 below.

Table 4.53

The completely standardised theta-delta matrix

CGOAL	PDEV	PSPEED	AFF_1	AFF_2	ITQ_1
-----	-----	-----	-----	-----	-----
0.103	0.231	0.450	0.209	0.293	0.285
ITQ_2	JFIT_1	JFIT_2	DJ	PJ	MWRK_1
-----	-----	-----	-----	-----	-----
0.541	0.138	0.236	0.423	0.389	0.138
MWRK_2	ORGS_1	ORGS_2	BEN	PLEVEL	RAISE
-----	-----	-----	-----	-----	-----
0.088	0.091	0.259	0.412	0.314	0.254
STRADM					

0.312					

CGOAL = Career Goal Progress; PDEV = Professional Ability and Development; PSPEED = Promotion Speed; AFF_1 and AFF_2 = Affective Commitment; ITQ_1 and ITQ_2 = Intention to Quit; JFIT_1 and JFIT_2 = Job Fit; DJ = Distributive Justice; PJ = Procedural Justice; MWRK_1 and MWRK_2 = Meaningful Work; ORGS_1 and ORGS_2 = Perceived Organisational Support; BEN = Pay Benefits; PLEVEL = Pay Level; RAISE = Pay Level; STRADM = Pay Structure and Administration.

The theta-delta matrix indicates the proportion of the variance in the observed variable not explained by the latent variable assigned to it but rather by random error and nonrelevant systematic variables. Thus the theta-delta values indicate the proportion of the item parcel variance that can be attributed to systematic non-relevant variance and random error variance. Table 4.53 indicates that the indicator variables seem to be exhibiting low to moderate theta delta values thereby building confidence that the manifest indicators are doing a good job of reflecting the latent variable they were tasked to reflect. This bolsters confidence of the successful operationalisation of the measurement model.

4.9.7 Modification Indices

The modification indices are shown in Table 4.54 below;

Table 4.54

Modification Indices for lambda-X

	CAREER	AFCOM	QUIT	JOBFIT	JUSTICE	MWRK
CGOAL	- -	0.338	1.224	0.406	1.621	2.628
PDEV	- -	0.452	0.262	0.000	2.843	0.156
PSPEED	- -	3.523	6.133	0.830	25.527	9.506
AFF_1	2.117	- -	1.634	0.704	2.637	0.087
AFF_2	1.938	- -	1.073	0.402	2.559	0.072
ITQ_1	1.543	0.108	- -	1.135	0.183	4.207
ITQ_2	1.239	0.057	- -	0.757	0.219	2.565
JFIT_1	0.003	0.280	3.085	- -	0.013	0.700
JFIT_2	0.002	0.223	2.106	- -	0.012	0.563
DJ	- -	0.887	2.555	1.708	- -	2.123
PJ	- -	0.989	5.029	2.067	- -	1.950
MWRK_1	3.287	4.019	0.449	0.000	4.056	- -
MWRK_2	4.266	4.241	0.476	0.000	4.477	- -
ORGS_1	0.126	0.362	0.074	2.492	0.010	0.851
ORGS_2	0.170	0.405	0.106	4.016	0.017	0.860
BEN	4.614	0.727	4.419	0.868	9.047	0.355
PLEVEL	4.405	3.540	0.639	5.282	1.090	2.922
RAISE	0.631	0.413	0.000	0.000	2.790	0.073
STRADM	10.340	4.247	8.055	10.545	3.731	2.232

Modification Indices for LAMBDA-X

	ORGSUP	PAYS
CGOAL	2.083	9.930
PDEV	0.952	1.292
PSPEED	15.219	49.478
AFF_1	0.067	0.044
AFF_2	0.044	0.037
ITQ_1	2.097	1.280
ITQ_2	1.096	0.917
JFIT_1	1.807	0.001
JFIT_2	2.064	0.001
DJ	7.949	2.234
PJ	- -	- -
MWRK_1	0.520	2.282
MWRK_2	0.550	2.252
ORGS_1	- -	0.099
ORGS_2	- -	0.146
BEN	0.316	- -
PLEVEL	5.715	- -
RAISE	0.417	- -
STRADM	5.186	- -

CGOAL = Career Goal Progress; PDEV = Professional Ability and Development; PSPEED = Promotion Speed; AFF_1 and AFF_2 = Affective Commitment; ITQ_1 and ITQ_2 = Intention to Quit; JFIT_1 and JFIT_2 = Job Fit; DJ = Distributive Justice; PJ = Procedural Justice; MWRK_1 and MWRK_2 = Meaningful Work; ORGS_1 and ORGS_2 = Perceived Organisational Support; BEN = Pay Benefits; PLEVEL = Pay Level; RAISE = Pay Level; STRADM = Pay Structure and Administration.

Modification indices indicate the extent to which the normal theory X^2 fit statistic will decrease if a currently fixed parameter in the model is set free. Large modification indices values (> 6.64) are indicative of the parameters that is set free would improve

the fit of the model significantly ($p < .01$) (Diamantopoulos & Siguaaw, 2000). Table 4.54 indicates that the dimensions of satisfaction with pay namely STRADM (pay structure and administration) seemed to load on the satisfaction with career advancement opportunities, intention to quit and job fit latent variables. Furthermore the dimension of satisfaction with career advancement opportunities, CGOAL (career goal progress) loaded on pay satisfaction. The other dimension of satisfaction with career advancement opportunities, PSPEED (promotion speed) loaded on ORGSUPP (perceived organisational support), PAYS (satisfaction with pay), JUSTICE (perceived organisational justice) and MWRK (meaningful work). Furthermore one dimension of perceived organisational justice, DJ (distributive justice) loaded on organisational support. Considering that 10 paths out of possible 133 constituting less than 8% would improve model fit seems to build confidence on the current model fit. Furthermore the critical question was whether these proposed 10 paths made substantive sense. Caution has been provided over allowing modification indices to drive the process of improving model fit. Kelloway (1998) noted that modification indices should only be considered if there is a convincing theoretical argument thus aligning with the theoretical testing purpose of SEM. Due to the fact that an acceptable fit was already achieved and the fact that the improvements were not so significant to justify the modification of the current measurement model the proposed modifications were not explored.

4.9.8 Summary

The evidence presented above indicates that the modified measurement model revealed good to reasonable fit which signals the successful operationalisation of the latent variables. The collective evidence discussed above seem to corroborate the reliability and validity of the operationalisations of the latent variables in the modified measurement model. Therefore based on the results presented in this section, it was concluded that sufficient merit existed to warrant the conclusion that the modified measurement model was successfully operationalised. It was thus possible to derive an unambiguous verdict in the fit of the structural model.

4.10 Assessing overall comprehensive LISREL model fit

The structural model specifies the substantive relationships among latent variables of interest that were postulated through the review of theory. According to Jöreskog and Sörbom (1996, p. 1) the structural model consists of a set of linear structural equations which “specifies the causal relationships among latent variables, describes the causal effects and assigns the explained and unexplained variance”. Therefore the main objective of evaluating the structural model is to establish whether the theoretical relationships developed during the conceptualizing stage are corroborated by the data (Diamantopoulos & Sigua, 2000). Thus the evaluation of the structural model entails establishing the validity of the nomological relationships developed through theorising.

As previously discussed, the initial measurement model was modified through the exclusion of the continuance commitment latent variable that seemed to present measurement problems emanating from a lack of convincing evidence that the manifest indicators of the continuance commitment latent variable did a good job in reflecting the construct they were tasked to reflect. Furthermore the RGROW (remuneration and growth) latent variable that is a dimension of satisfaction with career advancement was also excluded due to the significant overlap between the latent variable and satisfaction with pay. The modified model, excluding the continuance commitment latent variable and all the paths in which it was involved, is depicted in Figure 4.4

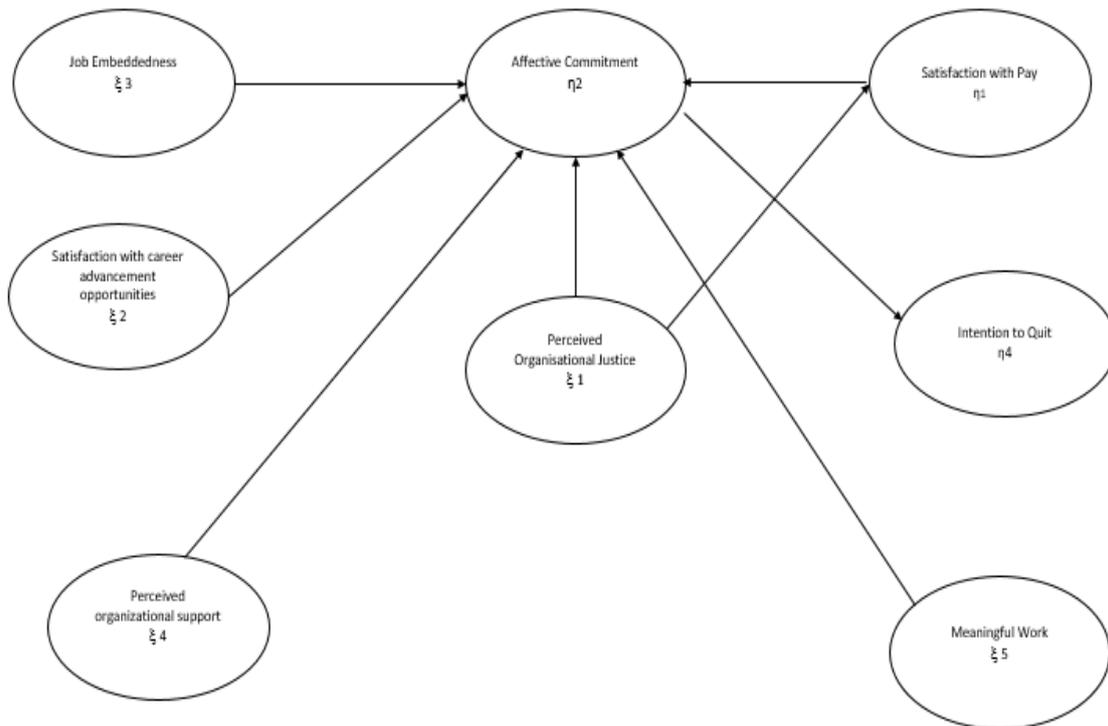


Figure 4.4: Modified structural model

As visible in Figure 4.4, the exclusion of the continuance commitment latent variable implied that all the hypothesis that include the continuance commitment latent variable no longer were testable. The following are the hypothesis in question:

- Hypothesis 2: *Continuance commitment is hypothesised to have a negative influence on intention to quit*
- Hypothesis 4: *Satisfaction with pay is hypothesised to have a positive influence on continuance commitment*
- Hypothesis 7: *Perceived organisational justice is hypothesised to have a positive influence on continuance commitment*
- Hypothesis 9: *Satisfaction with career advancement opportunities is hypothesised to have a positive influence on continuance commitment*
- Hypothesis 11: *Job Embeddedness is hypothesised to have a positive influence on continuance commitment*

LISREL 8.8 was used to evaluate the fit of the reduced structural model by fitting the comprehensive LISREL model. Robust maximum likelihood estimation method was used to produce the estimates. An admissible final solution of parameter estimates was obtained after 20 iterations. The full spectrum of fit indices provided by LISREL are indicated in Table 4.55 and Figure 4.4 depicts the path diagram of the completely standardised fitted comprehensive LISREL model. The next section discusses in detail the goodness-of-fit statistics.

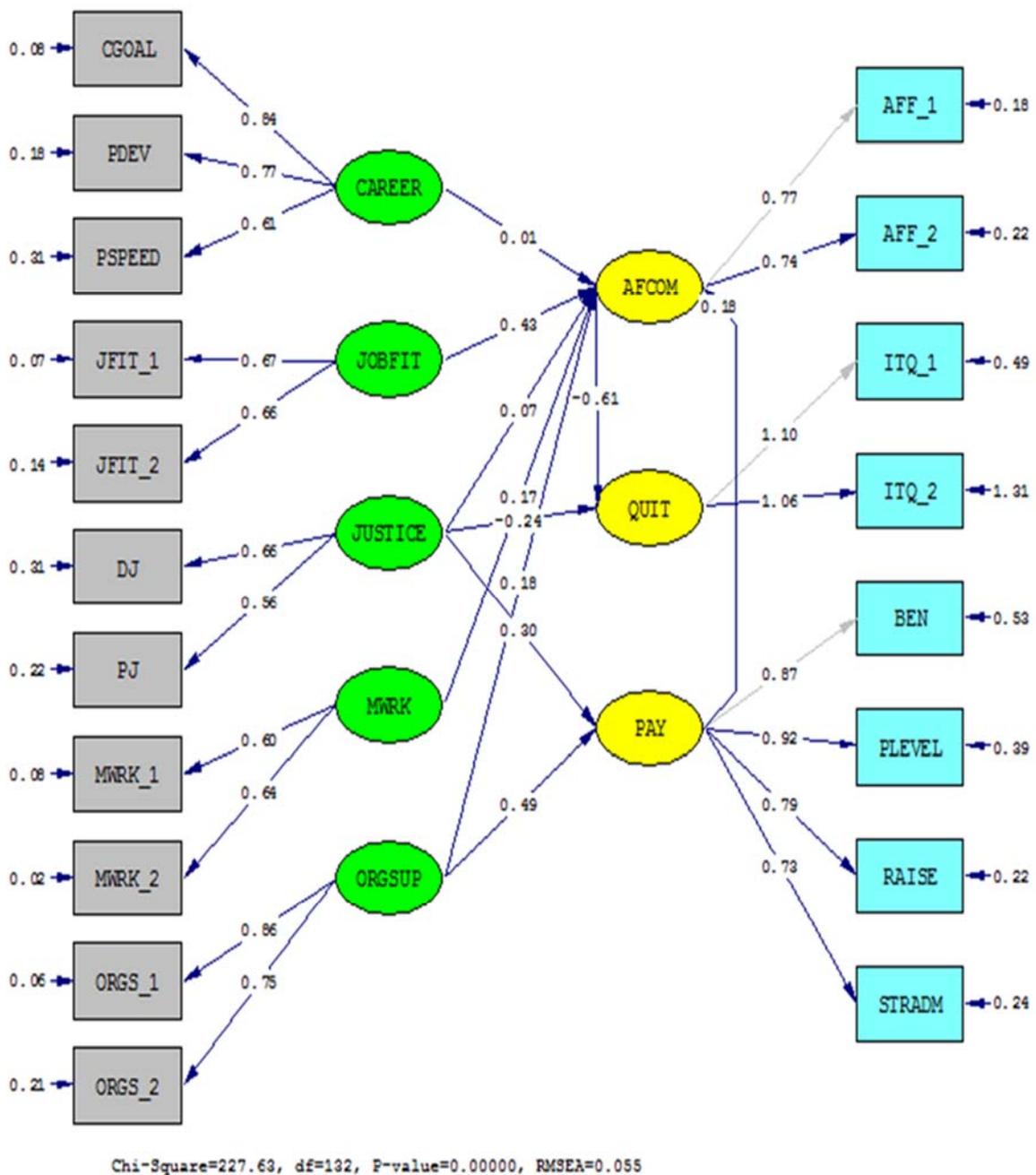


Figure 4.5: Representation of the fitted comprehensive LISREL model

Table 4.55***Goodness-of-fit statistics for the comprehensive structural model***

Goodness of Fit Statistics
Degrees of Freedom = 134
Minimum Fit Function Chi-Square = 288.152 (P = 0.00)
Normal Theory Weighted Least Squares Chi-Square = 298.270 (P = 0.00)
Satorra-Bentler Scaled Chi-Square = 272.771 (P = 0.00)
Chi-Square Corrected for Non-Normality = 600.015 (P = 0.0)
Estimated Non-centrality Parameter (NCP) = 138.771
90 Percent Confidence Interval for NCP = (95.421 ; 189.896)
Minimum Fit Function Value = 1.216
Population Discrepancy Function Value (F0) = 0.586
90 Percent Confidence Interval for F0 = (0.403 ; 0.801)
Root Mean Square Error of Approximation (RMSEA) = 0.0661
90 Percent Confidence Interval for RMSEA = (0.0548 ; 0.0773)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.0106
Expected Cross-Validation Index (ECVI) = 1.624
90 Percent Confidence Interval for ECVI = (1.441 ; 1.839)
ECVI for Saturated Model = 1.603
ECVI for Independence Model = 36.806
Chi-Square for Independence Model with 171 Degrees of Freedom = 8685.065
Independence AIC = 8723.065
Model AIC = 384.771
Saturated AIC = 380.000
Independence CAIC = 8808.038
Model CAIC = 635.218
Saturated CAIC = 1229.731
Normed Fit Index (NFI) = 0.969
Non-Normed Fit Index (NNFI) = 0.979
Parsimony Normed Fit Index (PNFI) = 0.759

Comparative Fit Index (CFI) = 0.984
Incremental Fit Index (IFI) = 0.984
Relative Fit Index (RFI) = 0.960
Critical N (CN) = 153.048
Root Mean Square Residual (RMR) = 0.0544
Standardized RMR = 0.0610
Goodness of Fit Index (GFI) = 0.883
Adjusted Goodness of Fit Index (AGFI) = 0.834
Parsimony Goodness of Fit Index (PGFI) = 0.623

Testing exact fit null hypothesis:Structural model $H_{0 \text{ exact fit}}$: RMSEA = 0Structural model $H_{a \text{ exact fit}}$: RMSEA > 0

Inspection of Table 4.55 indicates that the p-value associated with the Satorra-Bentler Scaled χ^2 is 272.771 ($p=0.00$). This denotes a significant test statistic ($p < .05$) which implies that there is a significant discrepancy between the covariance matrix implied by the model and the observed covariance matrix. Thus the exact fit null hypothesis (H_a : RMSEA = 0) was therefore rejected.

Testing close fit null hypothesis:Structural model $H_{0 \text{ close fit}}$: RMSEA \leq .05Structural model $H_{a \text{ close fit}}$: RMSEA > .05

Furthermore inspection of the p value for the close fit hypothesis indicates that the hypothesis of close fit also had to be rejected ($p < .05$: $p = .0106$). This implies that the position that the structural model shows close fit in the parameter is not permissible. Although this is not an ideal scenario, the goodness of fit indices were further inspected to shed more light on the judgement that can be drawn concerning the overall fit of the structural model.

The sample RMSEA estimate obtained was .0661 though slightly missing the .05 cut-off indicative of a good fit, shows that the comprehensive LISREL model fitted reasonably in the sample. The 90% confidence interval for the RMSEA reported in Table 4.54 (0.0548:0.0773) also corroborates the picture of a reasonably fitting model in that the lower bound fall above .05 but the upper bound falls below .08. Furthermore the SRMR value obtained was .0610 which is also indicative of a good to reasonable fitting model which bolsters confidence in the conclusion that the model shows good to reasonable fit.

The goodness of fit index has been recommended as the most reliable measure of absolute fit. Table 4.55 shows that the GFI value of .883 and AGFI value of .834 though marginally missing the .90 recommended cut off, seem to be highly satisfactory and acceptable thereby supporting the conclusion that the comprehensive LISREL model shows a good to reasonable fit.

The comparative fit indices show how much better the model fits compared to a baseline model usually the independent model. (Diamontopoulos & Sigauw, 2000). Table 4.55 showed that NFI (.996), NNFI (.979) and CFI (.984) indicated that the comparative fit statistics obtained were above the recommended .90 supporting the conclusion of a good fitting model.

4.10.1 Summary

Although the hypothesis of close fit was rejected which was not an ideal scenario, the interpretation of the goodness of fit indices discussed above indicated that the proposed structural model was able to reproduce the observed covariance matrix to the degree of accuracy that warranted the interpretation of the structural model parameter estimates.

4.10.2 Standardised residuals

The standardised covariance residuals were inspected and are indicated in Table 4.56 below.

Table 4.56

Summary statistics for the comprehensive LISREL model standardised residuals

Smallest Standardized Residual = -62.405
 Median Standardized Residual = 0.000
 Largest Standardized Residual = 6.621

Largest Negative Standardized Residuals

Residual for STRADM and ITQ_1	-2.699
Residual for CGOAL and AFF_2	-62.405
Residual for CGOAL and BEN	-3.043
Residual for CGOAL and PLEVEL	-3.138
Residual for PDEV and AFF_2	-4.038
Residual for JFIT_2 and ITQ_1	-3.375
Residual for DJ and BEN	-5.830
Residual for PJ and BEN	-3.576
Residual for MWRK_2 and PSPEED	-3.347
Residual for ORGS_1 and ITQ_1	-12.897
Residual for ORGS_1 and ITQ_2	-3.011

Largest Positive Standardized Residuals

Residual for ITQ_2 and AFF_1	4.567
Residual for PLEVEL and BEN	5.932
Residual for PSPEED and PLEVEL	2.795
Residual for PSPEED and RAISE	4.845
Residual for PSPEED and STRADM	4.643
Residual for DJ and PSPEED	2.811
Residual for PJ and DJ	2.888
Residual for MWRK_1 and CGOAL	2.869
Residual for ORGS_1 and STRADM	3.372
Residual for ORGS_1 and PSPEED	2.938
Residual for ORGS_1 and JFIT_1	6.621
Residual for ORGS_2 and STRADM	2.956

Table 4.51 indicates that the smallest standardised fitted residual is -62.405, the median is 0 and the largest fitted residual is 6.61. Furthermore Table 4.51 indicates that there are 11 large negative residuals and 12 positive residuals. These large residuals indicate that a total of 23 large residuals out of 190 observed variance and covariance terms in the observed sample covariance matrix that were poorly estimated by the derived model parameter estimates. In total less than 12% of residuals are large and this seems to paint a somewhat reasonable structural model fit.

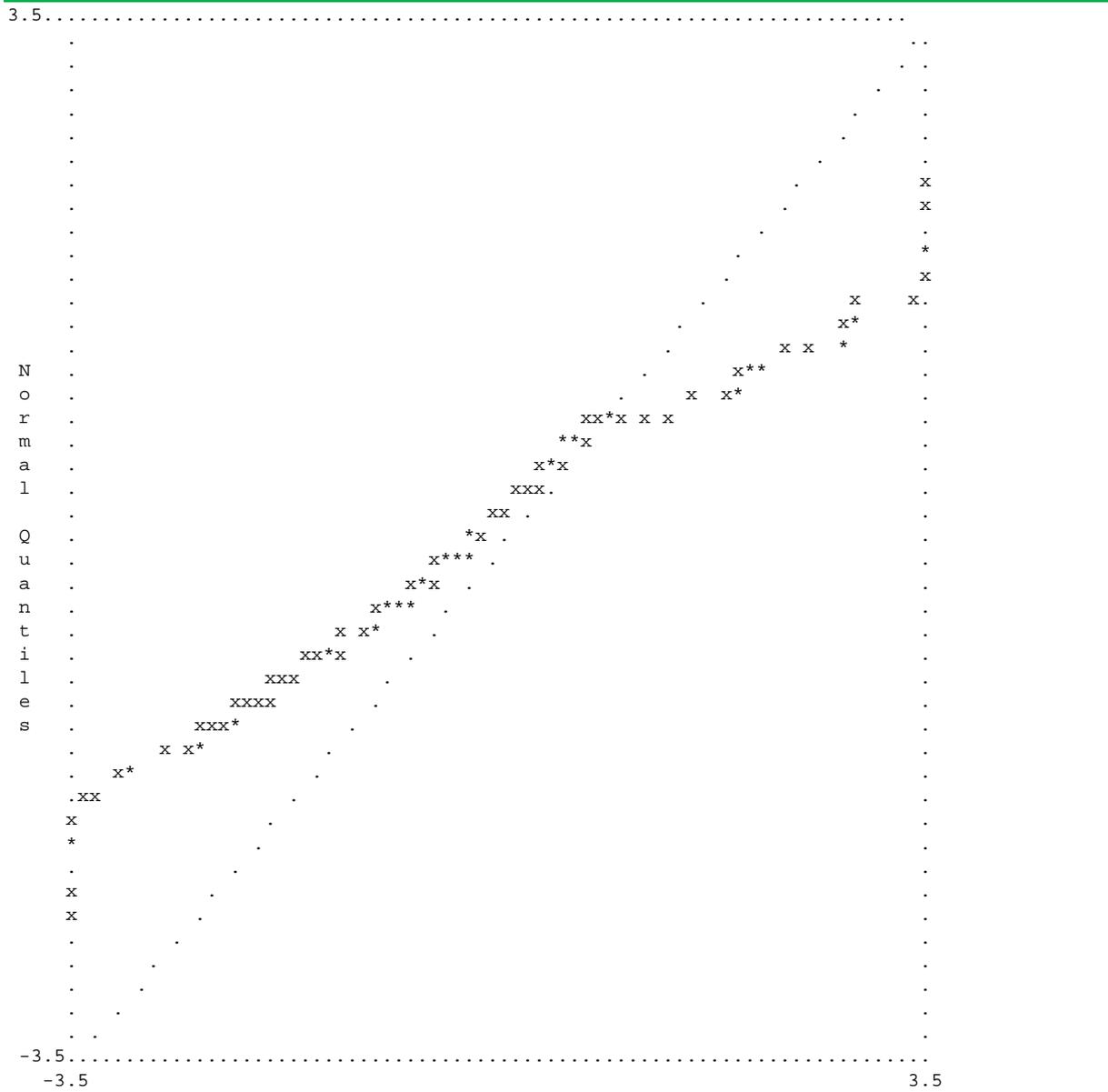


Figure 4.6: Q-plot for the structural model

Inspection of the Q-plot indicated in Figure 4.5 indicates that the points deviate away from the 45 degree reference line both in the lower and upper region of the x-axis. The deviation of the points away from 45-degree reference line indicates that the specification of the model and the model fit could be somewhat problematic.

4.10.3 Evaluating the hypothesised structural relationships

The objective of evaluating the fit of the structural model and the statistical significance of the structural model path coefficient estimates is to establish if the theoretical relationships specified during the conceptualisation of the model are supported by data. Thus attention is given to the linkages between the various endogenous and

exogenous variables depicted in Figure 4.5. Diamantopoulos and Siguaw (2000) stipulated three issues that are important and relevant when evaluating the structural model. Firstly the importance of evaluating whether the signs of the parameter estimates representing the paths between latent variables are consistent with the nature and direction (+ or -) of the relationship hypothesised to exist between the latent variables. Secondly Diamantopoulos and Siguaw (2000) the evaluation of the significance of the parameter estimates indicated by t values $|1.64|$. The critical cut off is $|1.64|$ since we are testing a directional hypothesis that only considered one side of the normal distribution. Furthermore they stipulated the importance of evaluating the magnitudes of the estimated parameters indicating the strength of the hypothesised relationships. Lastly they also stipulated the inspection of the squared multiple correlations (R^2) which indicate the amount of variance in each endogenous latent variable that are explained by the model.

The task of evaluating the structural model involved the examination of the freed elements of the GAMMA (Γ) and BETA (B). LISREL provided the unstandardised parameter estimates for the gamma and beta matrices including the z-values indicated in Table 4.57 and Table 4.58

4.10.3.1 The Gamma matrix

The unstandardised gamma matrix is indicated in Table 4.57 below.

Table 4.57

The unstandardised gamma matrix of the path coefficients of the structural model

	JUSTICE	CAREER	JOBFIT	ORGSUP	MWRK
PAY	0.746 (0.072) 10.404	- -	- -	- -	- -
AFCOM	0.178 (0.226)	-0.009 (0.105)	0.426 (0.102)	0.147 (0.131)	0.181 (0.080)
² QUIT	0.788	-0.085	4.194	1.122	2.271
	- -	- -	- -	- -	- -

PAY = Satisfaction with Pay; AFCOM = Affective Commitment; QUIT = Intention to Quit; JUSTICE = Perceived Organisational Justice; CAREER = Satisfaction with Career Advancement Opportunities; JOBFIT = Job Embeddedness; ORRSUP = Perceived Organisational Support; MWRK = Meaningful Work

² Note that η_3 in the matrix refers to η_4 (i.e. intention to quit) in the original structural model and the path specific hypothesis listed in Chapter 3.

he gamma matrix in Table 4.57 showed the parameter estimates, standard errors and values associated with the hypothesised relationship between the ξ variables (exogenous latent variables) and the η variables (endogenous variables) (Diamantopoulos & Siguaw, 2000). The unstandardised Γ matrix indicates the significance of the estimated paths coefficients γ_{ij} , expressing the strength of the influence of ξ_j (exogenous latent variables) on η_i (endogenous latent variables). The gamma parameters are significant if $z > |1.64|$ ($p < .05$). Therefore a significant γ estimate signalled by a z-value greater than $|1.64|$ implies that the corresponding null hypothesis is rejected in favour of the relevant alternative hypothesis. Thus inspection of the gamma matrix shown in Table 4.57, revealed that some of the hypothesised paths were not supported as evidenced by z-values obtained that were less than $|1.64|$ while others hypothesised paths were supported as evidenced by z-values obtained that were greater than $|1.64|$.

Hypothesis 5: $H_{05}: \gamma_{11}=0$; $H_{a5}: \gamma_{11}> 0$

Table 4.57 indicated that the hypothesised path between perceived organisational justice (ξ_1) and satisfaction with pay (η_1) obtained z-value greater than 1.64. This implied that the null hypothesis that proposed that perceived organisational justice does not have an influence on satisfaction with pay was rejected in favour of $H_{a5}: \gamma_{11}> 0$. This indicated that the hypothesised positive relationship between perceived organisational justice and satisfaction with pay was supported in this study. It is important to note that the path coefficient is a partial regression coefficient that reflect the influence of perceived organisational justice on satisfaction with pay while controlling for the other exogenous latent variables in the model.

Hypothesis 6: $H_{06}: \gamma_{21}=0$; $H_{a6}: \gamma_{21}> 0$

Table 4.57 indicated that the hypothesised path between perceived organisational justice (ξ_1) and affective commitment (η_2) obtained a z-value less than 1.64. This implied that the null hypothesis that proposed that perceived organisational justice does not have an influence on affective commitment was not rejected. Therefore $H_{a6}: \gamma_{21}> 0$ was not supported in this study.

Hypothesis 8: $H_{08}: \gamma_{22}=0$; $H_{a8}: \gamma_{22}> 0$

Table 4.57 indicated that the hypothesised path between satisfaction with career advancement opportunities (ξ_2) and affective commitment (η_2) obtained a z-value less than 1.64. This implied that the null hypothesis that proposed that satisfaction with career advancement opportunities does not have an influence on affective commitment cannot be rejected. Therefore $H_{a8}: \gamma_{22}> 0$ was not supported in this study.

Hypothesis 10: $H_{010}: \gamma_{23}=0$; $H_{a10}: \gamma_{23}> 0$

The hypothesised path between job embeddedness (ξ_3) and affective commitment (η_2) obtained a z-value greater than 1.64 as indicated in Table 4.57. This implies that the null hypothesis ($H_{010}: \gamma_{23}=0$) that proposed that job embeddedness does not have a relationship with affective commitment was rejected in favour of $H_{a10}: \gamma_{23}> 0$. This indicated that the hypothesised positive relationship between job embeddedness and affective commitment was corroborated. It is important to note that the path coefficient is a partial regression coefficient that reflect the influence of job embeddedness on affective commitment while controlling for the other exogenous latent variables in the model.

Hypothesis 12: $H_{012}: \gamma_{24}=0$; $H_{a12}: \gamma_{24}> 0$

Table 4.57 indicated that the hypothesised path between perceived organisational support (ξ_4) and affective commitment (η_2) obtained a z-value less than 1.64. This implied that null hypothesis ($H_{012}: \gamma_{24}=0$) that proposed that perceived organisational support does not have an influence on affective commitment was not rejected. This indicated that the hypothesised positive relationship between perceived organisational support and affective commitment was not corroborated in this study.

Hypothesis 13: $H_{013}: \gamma_{25}=0$; $H_{a13}: \gamma_{25}> 0$

The hypothesised path between meaningful work (ξ_5) and affective commitment (η_2) obtained a t value greater than 1.64 as indicated in Table 4.57. This implies that the null hypothesis ($H_{013}: \gamma_{23}=0$) that proposed that meaningful work does not have a relationship with affective commitment was rejected in favour of $H_{a13}: \gamma_{23}> 0$. This indicated that the hypothesised positive relationship between meaningful work and

affective commitment was corroborated in this study. It is important to note that the path coefficient is a partial regression coefficient that reflect the influence of meaningful work on affective commitment while controlling for the other exogenous latent variables in the model.

4.10.3.2 The Beta matrix

The beta matrix shows the parameter estimates, standard errors and z-values for the hypothesised relationships between the η -variables (i.e endogenous variables) (Diamontopoulos & Siguaw, 2000). The unstandardised B matrix indicates the significance of the estimated path coefficients β_{ij} , expressing the strength of the influence of η_j on η_i . The beta parameters are significant if $z > |1.64|$ ($p < 0.05$) (Diamantopoulos & Siguaw, 2000). Therefore a significant β estimate signalled by a z-value greater than $|1.64|$ implies that the corresponding null hypothesis is rejected in favour of the relevant alternative hypothesis.

The beta matrix is indicated in Table 4.58

Table 4.58

The Beta matrix of the path coefficients of the structural model

	PAY	AFCOM	QUIT
PAY	- -	- -	- -
AFCOM	0.140 (0.116) 1.204	- -	- -
³ QUIT	- -	-0.767 (0.071) -10.812	- -

PAY = Satisfaction with Pay; AFCOM = Affective Commitment; QUIT = Intention to Quit

Inspection of the beta matrix shown in Table 4.58, showed that one of the hypothesised path is not supported as evidenced by a z-value obtained that was less than $|1.64|$ while the other hypothesised path is supported as evidenced by a negative z-value obtained that is greater than $|1.64|$.

³ Note that η_3 in the matrix refers to η_4 (i.e. intention to quit) in the original structural model and the path specific hypothesis listed in Chapter 3.

Hypothesis 1: $H_{01}: \beta_{42}=0$; $H_{a1}: \beta_{42}<0$

Inspection of the beta matrix shown on Table 4.58 indicated that the parameter estimate for the relationship between affective commitment (η_2) and intention to quit (η_4) is significant and in the hypothesised (negative) direction. This implies that the null hypothesis that proposed that there is no relationship between affective commitment and intention to quit is rejected in favour of the alternative hypothesis $H_{a1}: \beta_{42}<0$. This indicated that the proposed negative relationship between affective commitment and intention to quit was corroborated in this study.

Hypothesis 3: $H_{03}: \beta_{21}=0$; $H_{a3}: \beta_{21}>0$

Table 4.58 also showed that the hypothesised path between satisfaction with pay (η_1) and affective commitment (η_2) obtained a t value that is less than 1.64. This implied that the null hypothesis ($H_{03}: \beta_{21}=0$) that proposed that satisfaction with pay does not have a relationship with affective commitment was not rejected. This indicated that the hypothesised positive relationship between perceived organisational support and affective commitment was not corroborated in this study.

4.10.4 Modification Indices

Modification indices indicate the extent to which the normal theory χ^2 fit statistic will decrease if a currently fixed parameter in the model is set free. Large modification indices values (> 6.6349) are indicative of the parameters that is set free would improve the fit of the model significantly ($p < .01$) (Diamantopoulos & Siguaw, 2000). Jöreskog and Sörbom (1993) offered a guide on how to apply model evaluation and modification when they stated that “one examines the modification indices and relaxes the parameter with the largest modification index if this parameter can be interpreted substantively. If it does not make sense to relax to relax the parameter with the largest modification index, one considers the second largest modification etc. If the signs of certain parameters are specified a priori, positive or negative, the expected parameter changes associated with the modification indices for these parameters can be used to exclude models with parameters having the wrong sign (p. 127). Thus the modification indices for **B** and **F** were inspected for large, statistically significant, modification index values (> 6.6349 at significance level of .01).

4.10.4.1 Modification indices for Beta

Modification indices for Beta are shown on Table 4.59

Table 4.59

Modification Indices for Beta

	PAY	AFCOM	QUIT
PAY	- -	- -	1.135
AFCOM	- -	- -	10.532
⁴ QUIT	3.487	- -	- -

PAY = Satisfaction with Pay; AFCOM = Affective Commitment; QUIT = Intention to Quit

Inspection of the modification indices for beta matrix shown in Table 4.59 indicated that one fixed parameters had a large value greater than 6.64. The path that had the largest modification (MI) value (10.532) is between INTENTIO (intention to quit) and AFFCOMM (affective commitment). As per the guidance by Jöreskog and Sörbom (1993), the researcher needs to evaluate if the proposed paths make substantive sense and if they do not, they should not be considered as possible modifications to the model. Evaluation of this proposed modification path did not seem to provide substantive sense as the relationship is expected to be negative and the other way round-meaning that high levels of affective commitment will result in low levels of intention to quit.

4.10.4.2 Modification Indices for Gamma

Furthermore the modification indices for gamma were also inspected and the gamma matrix is shown on Table 4.60

Table 4.60

Modification Indices for Gamma

	JUSTICE	CAREER	JOBFIT	ORGSUP	MWRK
PAY	- -	4.131	0.751	66.964	0.808
AFCOM	- -	- -	- -	- -	- -
⁵ QUIT	7.572	4.308	3.728	4.837	0.119

PAY = Satisfaction with Pay; AFCOM = Affective Commitment; QUIT = Intention to Quit; JUSTICE = Perceived Organisational Justice; CAREER = Satisfaction with Career Advancement Opportunities; JOBFIT = Job Embeddedness; ORRGSUP = Perceived Organisational Support; MWRK = Meaningful Work

⁴ Note that η_3 in the matrix refers to η_4 (i.e. intention to quit) in the original structural model and the path specific hypothesis listed in Chapter 3.

⁵ Note that η_3 in the matrix refers to η_4 (i.e. intention to quit) in the original structural model and the path specific hypothesis listed in Chapter 3.

Inspection of the modification indices for gamma shown in Table 4.60 indicates that two fixed parameters have large modification values greater than 6.64. The first path with largest MI value (66.964) greater than 6.64 is between ORGSUPP (perceived organisational support) and PAY (satisfaction with pay) while the second path with MI value (7.572) greater than 6.64 is between JUSTICE (perceived organisational justice) and INTENTIO (intention to quit). The path from ORGSUPP (perceived organisational support) to satisfaction with pay can be viewed as making theoretical sense in that perceived organisational support can be viewed as a non-monetary aspect of compensation and benefits that an organisation offers to its employees. For example organisational support can be rendered in the form of providing artisans and engineers with adequate tools and resources to do their work effectively, training and developing them to ensure that they continuously update their skills thereby enhancing their professional growth and development, and subsequently experiencing a sense of security in their jobs. According to discrepancy theory this may decrease the amount that employees believe that they should receive, and subsequently improve equity perceptions (Shapiro & Wahba, 1978). Hence, there was compelling motivation to consider adding this path in the model.

The path between perceived organisational justice and intention to quit also seems to make substantive sense. Employees that perceive that they are treated fairly are more likely to stay with their organisation. Thus it is plausible to expect that employees that perceive fairness in inputs and outputs they receive compared to a referral group as well as fairness in the processes and procedures that are used by the company to make decisions are likely to express less desire to leave the organisation. Turnover intentions have been reported to be high when distributive, procedural and interpersonal justice perceptions are low (Siers, 2007). Therefore there was also a good theoretical argument for the consideration of the addition of this path in the model.

Caution has been given with regard to freeing the path with the largest modification index as it can affect the remaining indices (Diamantopoulos & Sigua, 2000). Furthermore Diamantopoulos and Sigua (2000) noted that data driven modifications are susceptible to capitalisation on chance in that idiosyncratic characteristics of the sample may influence particular modifications that are performed. However based on the arguments above, the two additional paths discussed seemed to make substantive

sense and sound theoretical merit to include them in the subsequent modified model that was tested

4.10.5 Fitting of the modified structural model

As previously discussed, the inspection of the modification indices indicates that freeing two fixed parameters will improve the fit of the model significantly ($p < 0.01$ (Diamantopoulos & Siguaaw, 2000)). The first path with the MI value of 66.964 is between ORGSUPP (perceived organisational support) and PAY (satisfaction with pay). The second path had an MI value of 7.572 between JUSTICE (perceived organisational justice) and INTENTIO (intention to quit). These two paths seem to make substantive and theoretical sense and thus were adopted. The modified structural model with the inclusion of the afore mentioned paths is depicted in Figure 4.7

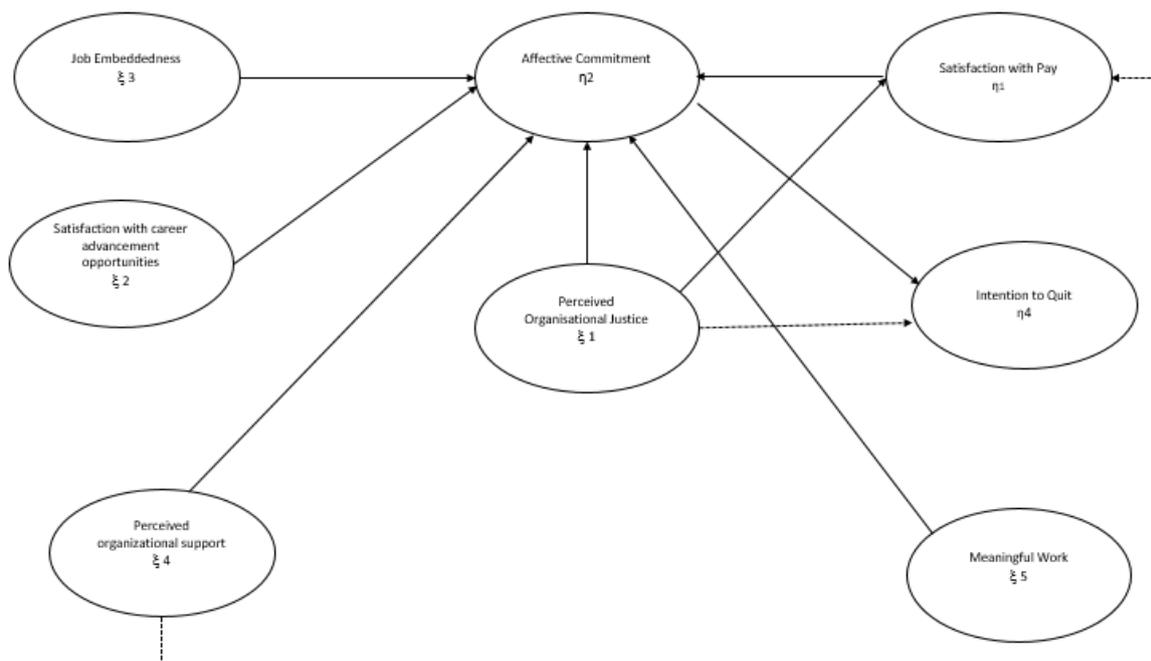


Figure 4.7: The modified structural model with two additional paths

The modified comprehensive LISREL model with 2 additional paths added to the structural model was fitted and Table 4.61 shows the results;

Table 4.61

Goodness-of-fit statistics for the comprehensive modified structural model

Goodness of Fit Statistics
 Degrees of Freedom = 132
 Minimum Fit Function Chi-Square = 252.461 (P = 0.00)
 Normal Theory Weighted Least Squares Chi-Square = 248.723 (P = 0.00)
 Satorra-Bentler Scaled Chi-Square = 227.632 (P = 0.000)
 Chi-Square Corrected for Non-Normality = 582.323 (P = 0.0)
 Estimated Non-centrality Parameter (NCP) = 95.632
 90 Percent Confidence Interval for NCP = (57.693 ; 141.440)
 Minimum Fit Function Value = 1.065
 Population Discrepancy Function Value (F0) = 0.404
 90 Percent Confidence Interval for F0 = (0.243 ; 0.597)
Root Mean Square Error of Approximation (RMSEA) = 0.0553
90 Percent Confidence Interval for RMSEA = (0.0429 ; 0.0672)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.229
 Expected Cross-Validation Index (ECVI) = 1.450
 90 Percent Confidence Interval for ECVI = (1.290 ; 1.643)
 ECVI for Saturated Model = 1.603
 ECVI for Independence Model = 36.806
 Chi-Square for Independence Model with 171 Degrees of Freedom = 8685.065
 Independence AIC = 8723.065
 Model AIC = 343.632
 Saturated AIC = 380.000
 Independence CAIC = 8808.038
 Model CAIC = 603.024
 Saturated CAIC = 1229.731
Normed Fit Index (NFI) = 0.974
Non-Normed Fit Index (NNFI) = 0.985
 Parsimony Normed Fit Index (PNFI) = 0.752
Comparative Fit Index (CFI) = 0.989
 Incremental Fit Index (IFI) = 0.989
 Relative Fit Index (RFI) = 0.966
Critical N (CN) = 180.819
Root Mean Square Residual (RMR) = 0.0488
Standardized RMR = 0.0581
Goodness of Fit Index (GFI) = 0.901
Adjusted Goodness of Fit Index (AGFI) = 0.857
 Parsimony Goodness of Fit Index (PGFI) = 0.626

Table 4.61 indicates that the modified structural model yielded a Satorra-Bentler χ^2 of 227.632 ($p=0.000$) that implies that the hypothesis of exact fit had to be rejected. However inspection of the p-value for close fit hypothesis indicates that the hypothesis of close fit now cannot be rejected ($p> .05$: .229). This implies that the position that the modified comprehensive LISREL model shows close fit in the parameter is permissible. Furthermore Table 4.61 indicates that the sample RMSEA value obtained is .0553 which paints a picture that the modified model demonstrates good fit.

Furthermore the goodness of fit (GFI) and adjusted goodness of fit (AGFI) values of .901 and .857 respectively also confirm a good fit for the modified structural model.

Table 4.61 also indicates that the comparative fit indices also painted a picture of a good structural model fit with NFI (.974), NNFI (.985) and CFI (.989) all having values above the .90 cut off. Finally the SRMR value obtained of .0581 is indicative of a good model fit which bolsters confidence in the conclusion that the modified structural model demonstrates. Also Inspection of Table 4.61 shows that the comparison of the obtained ECVI value of 1.450 was smaller than the ECVI values obtained for saturated model (1.603) and independence model (36.806) which served as evidence of a good fitting model and also indicates that the fitted structural model seems to have a better chance of being replicated in a cross validation sample compared to other models.

Therefore based on the basket of evidence discussed above, it is apparent that the modified structural model obtained a highly improved fit compared to the initial structural model. The modified structural model obtained close fit which implies that the position that the model shows close fit in the parameter is a tenable position. Thus the modified model seems to be able to reproduce the observed covariance matrix to the degree that warrants the interpretation of the modified structural model parameters.

4.10.5.1 Summary

The modified structural model performed better compared to the initial structural model. The modified structural model obtained close fit. The p-value for close fit hypothesis indicated that the hypothesis of close fit cannot be rejected ($p > .05$: .229). Furthermore the interpretation of the goodness of fit indices discussed above indicated that the modified structural model was able to reproduce the observed covariance matrix to the degree of accuracy than can be explained in terms of sampling error.

4.10.5.2 Standardised residuals

The standardised residuals were inspected and are indicated in Figure 4.6 and Table 4.62 below.

Inspection of the Q-plot indicated in Figure 4.9 again indicates that the points deviate away from the 45 degree reference line both in the lower and upper region of the X-axis. The deviation of the points away from 45-degree reference line indicates that the specification of the model and the model fit could be somewhat problematic.

4.10.6 Evaluating the hypothesised structural relationships

The objective of establishing the modified structural model is to establish if the theoretical relationships specified in the model are supported by data. Thus attention is given to the linkages between the various endogenous and exogenous variables depicted in Figure 2.1. As previous indicated, Diamontopoulos and Sigauw (2000) stipulated three issues that are important and relevant when evaluating the structural model. Firstly the importance of evaluating whether the signs of the parameters representing the paths between latent variables are consistent with the nature and direction (+ or -) of the relationship hypothesised to exist between the latent variables. Secondly Diamontopoulos and Sigauw (2000) stipulated the importance of evaluating the magnitudes of the estimated parameters indicating the strength of the hypothesised relationships. Furthermore they stipulated the evaluation of the significance of the parameter estimates indicated by t values $|1.64|$. The critical cut off is $|1.64|$ since we are testing a directional hypothesis that only considered one side of the normal distribution. Lastly they also stipulated the inspection of the squared multiple correlations (R^2) which indicates the amount of variance in each endogenous latent variable that are expected to impact upon it.

The task of evaluating the modified structural model involved the examination of the freed elements of the Gamma (Γ) and Beta (β). Lisrel provided the unstandardised parameter estimates for the Gamma and Beta matrices including the t values indicated in Table 4.5 and Table 4.57.

4.10.6.1 The Gamma matrix

The Gamma matrix is indicated in Table 4.63 below.

Table 4.63***The Gamma matrix of the path coefficients of the modified structural model***

	JUSTICE	CAREER	JOBFIT	ORGSUP	MWRK
PAY	0.303 (0.094) 3.211	--	--	0.485 (0.095) 5.135	--
AFCOM	0.069 (0.101)	0.015 (0.099)	0.432 (0.103)	0.178 (0.099)	0.172 (0.067)
⁶ QUIT	0.687 (0.097) -2.49	0.147	4.206	1.787	2.576

PAY = Satisfaction with Pay; AFCOM = Affective Commitment; QUIT = Intention to Quit; JUSTICE = Perceived Organisational Justice; CAREER = Satisfaction with Career Advancement Opportunities; JOBFIT = Job Embeddedness; ORRSUP = Perceived Organisational Support; MWRK = Meaningful Work

The gamma matrix in Table 4.63 showed the parameter estimates, standard errors and z-values associated with the relationship between the ξ variables (exogenous latent variables) and the η variables (endogenous variables) (Diamontopoulos & Siguaw, 2000). The unstandardised Γ matrix indicates the significance of the estimated paths coefficients γ_{ij} , expressing the strength of the influence of ξ_j (exogenous latent variables) on η_i (endogenous latent variables). The gamma parameter estimates are significant, given the directional H_a hypotheses, if $z > |1.64|$ ($p < .05$). Therefore a significant γ estimate signalled by a z-value greater than $|1.64|$ implies that the corresponding null hypothesis is rejected in favour of the relevant alternative hypothesis. Thus inspection of the gamma matrix shown in Table 4.63, indicates that with the exception of two paths, all paths were supported as evidenced by z-values obtained that were greater than $|1.64|$.

Hypothesis 5: $H_{05}: \gamma_{11}=0$; $H_{a5}: \gamma_{11}> 0$

Table 4.63 indicated that the hypothesised path between perceived organisational justice (ξ_1) and satisfaction with pay (η_1) obtained a t value greater than 1.64. This implied that the null hypothesis that proposed that perceived organisational justice does not have an influence on satisfaction was rejected in favour of $H_{a5}: \gamma_{11}> 0$. This indicated the hypothesised positive relationship between perceived organisational justice and satisfaction with pay was supported in this study. It is important to note that the path coefficient is a partial regression coefficient that reflects the influence of

⁶ Note that η_3 in the matrix refers to η_4 (i.e. intention to quit) in the original structural model and the path specific hypothesis listed in Chapter 3.

perceived organisational justice on pay satisfaction when controlling for the other exogenous variables in the structural equation model.

Hypothesis 6: $H_{06}: \gamma_{21}=0$; $H_{a6}: \gamma_{21}> 0$

Table 4.63 indicated that the hypothesised path between perceived organisational justice (ξ_1) and affective commitment (η_2) still obtained a z-value less than 1.64. This implies that the null hypothesis that proposed that perceived organisational justice does not have an influence on affective commitment was not rejected. Therefore $H_{a6}: \gamma_{21}> 0$ was not supported in this study.

Hypothesis 8: $H_{08}: \gamma_{22}=0$; $H_{a8}: \gamma_{22}> 0$

Table 4.63 indicated that the hypothesised path between satisfaction with career advancement opportunities (ξ_2) and affective commitment (η_2) obtained a z-value less than 1.64. This implies that the null hypothesis that proposed that satisfaction with career advancement opportunities does not have an influence on affective commitment cannot be rejected. Therefore $H_{a8}: \gamma_{22}> 0$ was not supported in supported in this study.

Hypothesis 10: $H_{010}: \gamma_{23}=0$; $H_{a10}: \gamma_{23}> 0$

The hypothesised path between job embeddedness (ξ_3) and affective commitment (η_2) obtained a t value greater than 1.64. This implies that the null hypothesis ($H_{010}: \gamma_{23}=0$) that proposed that job embeddedness does not have a relationship with affective commitment was rejected in favour of $H_{a10}: \gamma_{23}> 0$. This indicated that the hypothesised positive relationship between job embeddedness and affective commitment was corroborated. It is important to note that the path coefficient is a partial regression coefficient that reflects the influence of job embeddedness on affective commitment when controlling for the other exogenous variables in the structural equation model.

Hypothesis 12: $H_{012}: \gamma_{24}=0$; $H_{a12}: \gamma_{24}> 0$

Table 4.63 indicated that the hypothesised path between perceived organisational support (ξ_4) and affective commitment (η_2) now obtained a t value greater than 1.64. This implies that the null hypothesis ($H_{012}: \gamma_{24}=0$) that proposed that perceived

organisational support does not have an influence on affective commitment is rejected in favour of $H_{a12}: \gamma_{24} > 0$. This indicates that the hypothesised positive relationship between perceived organisational support and affective commitment is corroborated in this study. It is important to note that the path coefficient is a partial regression coefficient that reflects the influence of perceived organisational support on affective commitment when controlling for the other exogenous variables in the structural equation model.

Hypothesis 13: $H_{013}: \gamma_{25} = 0$; $H_{a13}: \gamma_{25} > 0$

The hypothesised path between meaningful work (ξ_5) and affective commitment (η_2) obtained a z-value greater than 1.64. This implies that the null hypothesis ($H_{013}: \gamma_{25} = 0$) that proposed that meaningful work does not have a relationship with affective commitment was rejected in favour of $H_{a13}: \gamma_{25} > 0$. This indicated that the hypothesised positive relationship between meaningful work and affective commitment is corroborated in this study. It is important to note that the path coefficient is a partial regression coefficient that reflects the influence of meaningful work on affective commitment when controlling for the other exogenous variables in the structural equation model.

Furthermore Table 4.63 also indicates that there was empirical support for the added path between perceived organisational support and satisfaction with pay. The z-value obtained (5.135) for this added path is greater than 1.64 which implies that the null hypothesis that proposed that perceived organisational support does not have a relationship with satisfaction with pay was rejected in favour of the alternative hypothesis. This indicates that the hypothesised positive relationship between perceived organisational support and satisfaction with pay is collaborated in this study. It is important to note that the path coefficient is a partial regression coefficient that reflects the influence of perceived organisational support on pay satisfaction when controlling for the other exogenous variables in the structural equation model.

Also Table 4.63 also indicates that there was empirical support for the second added path between perceived organisational justice and intention to quit. The z-value obtained (-2.497) for this added path is greater than 1.64 which implies that the null hypothesis that proposed that perceived organisational justice does not have a

relationship with intention to quit is rejected in favour of the alternative hypothesis. This indicates that the hypothesised negative relationship between perceived organisational justice and intention to quit is collaborated in this study. It is important to note that the path coefficient is a partial regression coefficient that reflects the influence of perceived organisational justice on intention to quit when controlling for the other exogenous variables in the structural equation model.

4.10.6.2 The Beta matrix

As previously discussed, the Beta matrix shows the parameter estimates, standard errors and z-values for the relationships between the η -variables (i.e. endogenous variables) (Diamantopoulos & Siguaw, 2000). The unstandardised **B** matrix indicates the significance of the estimated path coefficients β_{ij} , expressing the strength of the influence of η_j on η_i . The beta parameters are significant, given the directional H_a hypotheses, if $z > |1.64|$ ($p < 0.05$) (Diamantopoulos & Siguaw, 2000). Therefore a significant β estimate signalled by a z-value greater than $|1.64|$ implies that the corresponding null hypothesis is rejected in favour of the relevant alternative hypothesis. The Beta matrix is indicated in Table 4.64.

Table 4.64

The Beta matrix of the path coefficients of the modified structural model

	PAY	AFCOM	QUIT
PAY	- -	- -	- -
AFCOM	0.176 (0.087) 2.013	- -	- -
QUIT	- -	-0.607 (0.099) -6.122	- -

PAY = Satisfaction with Pay; AFCOM = Affective Commitment; QUIT = Intention to Quit

Inspection of the beta matrix shown in Table 4.64, showed that all the hypothesised paths were supported as evidenced by z-values obtained greater than $|1.64|$ highlighted in Table 4.56

Hypothesis 1: $H_{01}: \beta_{42}=0$; $H_{a1}: \beta_{42}<0$

⁷ Note that η_3 in the matrix refers to η_4 (i.e. intention to quit) in the original structural model and the path specific hypothesis listed in Chapter 3.

Inspection of the beta matrix shown on Table 4.64 indicated that the parameter estimate for the relationship between affective commitment (η_2) and intention to quit (η_4) is significant and in the hypothesised (negative) direction. This implies that the null hypothesis that proposed that there is no relationship between affective commitment and intention to quit is rejected in favour of the alternative hypothesis $H_{a1}: \beta_{42} < 0$. This indicated that the proposed negative relationship between affective commitment and intention to quit was corroborated in this study.

Hypothesis 3: $H_{03}: \beta_{21} = 0$; $H_{a3}: \beta_{21} > 0$

Table 4.64 also showed that the hypothesised path between satisfaction with pay (η_1) and affective commitment (η_2) obtained a t value that was greater than 1.64. This implied that the null hypothesis ($H_{03}: \beta_{21} = 0$) that proposed that satisfaction with pay does not have a relationship with affective commitment was rejected. This indicated that the hypothesised positive relationship between perceived organisational support and affective commitment was corroborated in this study.

4.10.7 Completely Standardised Solution

Diamantopoulos and Siguaaw (2000) recommended the examination of the completely standardised gamma (Γ) and beta (B) parameters since they are not affected by differences in the unit of measurement of the latent variables and therefore can be compared across equations. The completely standardised beta and gamma parameter estimates reflect the average change in an endogenous latent variable, directly resulting from one standard deviation change in another endogenous or exogenous latent variable to which it has been linked, holding the effect of all other variables constant (Diamantopoulos and Siguaaw, 2000). The completely standardised gamma and beta parameter estimates are shown in Tables 4.65 and Table 4.66

Table 4.65

Completely standardised Beta estimates

	PAY	AFCOM	QUIT
PAY	- -	- -	- -
AFCOM	0.176	- -	- -
⁸ QUIT	- -	-0.607	- -

⁸ Note that η_3 in the matrix refers to η_4 (i.e. intention to quit) in the original structural model and the path specific hypothesis listed in Chapter 3.

PAY = Satisfaction with Pay; *AFCOM* = Affective Commitment; *QUIT* = Intention to Quit

The strong negative effect of affective commitment on intention to quit (-.607) is noteworthy when interpreting the completely standardised beta. This supports the main argument in this study that affective commitment is an important proximal antecedent of turnover intention. Table 4.65 also indicates that satisfaction with pay has a relative small effect on affective commitment (.176) which somewhat supports the notion that affective commitment is in essence a function of internal motivators, and not external reward.

Table 4.66

Completely standardised Gamma estimates

	JUSTICE	CAREER	JOBFIT	ORGSUP	MWRK
PAY	0.303	--	--	0.485	--
AFCOM	0.069	0.015	0.432	0.178	0.172
⁹ QUIT	-0.241	--	--	--	--

The effects of organisational justice (.303) and organisational support (.485) on satisfaction with pay are both noteworthy. The relative greater impact of organisational support is an interesting finding. This challenges the idea that formal policies and procedures, including job evaluation systems designed to ensure distributive and procedural fairness in pay systems, are sufficient on its own to ensure satisfaction with pay. Employees ultimately also need to experience support from their organisation with respect to rewards. In other words, they need to feel that the organisation cares for them personally and has their best interest in mind, irrespective of procedural fairness.

Although significant, the standardised gamma estimates suggests that neither organisational support (.178) nor meaningful work (.172) has a strong effect on affective commitment. It should, however, be kept in mind that standardised beta coefficients should be interpreted as partial regression coefficients; the strength of the regression of η_i on η_j while holding all other independent latent variables constant. Job embeddedness (job fit) on the other hand has a relative large impact on affective

⁹ Note that η_3 in the matrix refers to η_4 (i.e. intention to quit) in the original structural model and the path specific hypothesis listed in Chapter 3.

commitment (.432), perhaps because both constructs speak towards value congruence.

Finally, the magnitude of the direct effect of organisational justice on intention to quit is noteworthy (-.241), but clearly not as profound as the effect of affective commitment (-.607). Moreover, inspection of indirect effects of KSI on ETA indicates that the indirect effect of organisational justice on intention to quit via affective commitment is insignificant.

4.10.8 Squared multiple correlations for Structural Equations

The squared multiple correlations, R^2 reflect the proportion of variance in each endogenous latent variable that can be explained by the weighted linear composite of effects linked to it in the model (Diamantopoulos and Siguaaw, 2000). Table 4.65 indicates the squared multiple correlations for the endogenous variables.

Table 4.67

Squared multiple correlations for structural equations

PAY	AFCOM	QUIT
0.512	0.726	0.594

PAY = Satisfaction with Pay; AFCOM = Affective Commitment; QUIT = Intention to Quit

The examination of R^2 values in Table 4.65 indicate that the model had a good ability of accounting for variance in the affective commitment, intention to quit and satisfaction with pay latent variables. The model was somewhat successful in explaining approximately 73% of variance in the affective commitment latent variable, 59% in the intention to quit latent variable and 51% in the satisfaction with pay latent variable. The model thus indicate a somewhat successful attempt to explain variance in the affective commitment, satisfaction with pay and intention to quit latent variables.

4.10.9 Modification indices for the modified structural model

The modification indices for the modified structural model for the Beta matrix and the Gamma matrix are depicted in Table 4.68 and Table 4.69.

4.10.9.1 Modification for Beta

Modification indices for Beta are shown on Table 4.68

Table 4.68

Modification Indices for Beta

	PAY	AFCOM	QUIT
PAY	- -	47.530	0.547
AFCOM	- -	- -	5.162
¹⁰ QUIT	0.775	- -	- -

PAY = Satisfaction with Pay; AFCOM = Affective Commitment; QUIT = Intention to Quit

Inspection of the modification indices for beta matrix shown in Table 4.65 indicated that one fixed parameters has a large value greater than 6.64. The path that had the largest modification (MI) value (47.530) was between AFCOM (*affective commitment*) and PAY (*satisfaction with pay*). As per the guidance by Jöreskog and Sörbom (1993), the researcher needs to evaluate if the proposed paths make substantive sense and if they do not, they should not be considered as possible modifications to the model. Evaluation of this proposed modification path did not seem to provide substantive sense and was not explored further.

4.10.9.2 Modification Indices for Gamma

Furthermore the modification indices for gamma were also inspected and the gamma matrix is shown on Table 4.69.

Table 4.69

Modification Indices for Gamma

	JUSTICE	CAREER	JOBFIT	ORGSUP	MWRK
PAY	- -	2.021	0.938	- -	8.788
AFCOM	- -	- -	- -	- -	- -
¹¹ QUIT	- -	1.107	3.305	2.160	0.350

PAY = Satisfaction with Pay; AFCOM = Affective Commitment; QUIT = Intention to Quit; JUSTICE = Perceived Organisational Justice; CAREER = Satisfaction with Career Advancement Opportunities; JOBFIT = Job Embeddedness; ORRGSUP = Perceived Organisational Support MWRK = Meaningful Work

¹⁰ Note that η_3 in the matrix refers to η_4 (i.e. intention to quit) in the original structural model and the path specific hypothesis listed in Chapter 3.

¹¹ Note that η_3 in the matrix refers to η_4 (i.e. intention to quit) in the original structural model and the path specific hypothesis listed in Chapter 3.

Inspection of the modification indices for gamma shown in Table 4.66 indicated that one fixed parameters had a large modification value greater than 6.64. The path with largest MI value (8.788) greater than 6.64 is between MWRK (*meaningful work*) and PAY (*satisfaction with pay*). The proposed path seem to make substantive sense when one regards that engaging in meaningful work is likely to trigger positive outcomes for the employee such as increased motivation, job satisfaction, engagement and well-being. This positive outcomes are likely to be viewed as non-monetary rewards that are incorporated by an employee when they assess the degree of their satisfaction with their pay.

Although the path between meaningful work and satisfaction with pay seemed to make substantive sense, caution has been given with regard to freeing the path with the largest modification index as it can affect the remaining indices (Diamantopoulos & Siguaaw, 2000). Furthermore Diamantopoulos and Siguaaw (2000) noted that data driven modifications are susceptible to capitalisation on chance in that idiosyncratic characteristics of the sample may influence particular modifications that are performed. Thus future studies should seek to include the modification index recommendation and validate the revised model with a different sample.

4.11 Summary

This chapter gave an extensive detail of the item analysis and dimensionality analysis that highlighted the psychometric properties of the instruments used in this study. The item and dimensionality analysis procedures helped to identify and eliminate poor items of the scales utilised in this study. The assumption of multivariate normality was tested and was not met hence robust maximum likelihood was used as the estimation method. The measurement model was initially fitted and the model fit indices were inspected. The results of the fitting of the initial measurement model painted a picture that seemed to depict a problematic reasonable fitting measurement model. It was problematic because the hypothesis of close fit was rejected ($p=.0000$) and one of item parcels for the continuance commitment latent variable was insignificant. Furthermore the theta-delta matrix in Table 4.47 indicated that the item parcels for the continuance commitment latent variable that is CCOM_1 (-1.311) and CCOM_2 (0.893) are very high and concerning theta-delta values. This implies that these item parcels are not doing a good job of reflecting the continuance commitment latent

variable they were tasked to reflect and this strongly compromises their validity. In fact CCOM_1 obtained an inadmissible value which raised a red flag on the validity of the item parcel. The squared multiple correlations also seemed to raise a red flag as the indicators of continuance commitment latent variable that is CCOM_1 (2.311) and CCOM_2 (0.107) also indicated that the continuance commitment scale seemed to present measurement challenges as the R^2 values for the two item parcel were very low thereby indicating that they did not do a good job of explaining variance of the underlying construct they were assigned to reflect. Again CCOM_1 also obtained an inadmissible value which further challenged the validity of the indicators (and thereby also the model as such). Due to these challenges regarding the operationalisation of the continuance commitment latent variable, it was decided to exclude continuance commitment latent variable in the model. The removal of the continuance commitment scale then implied that hypothesis $H_{02}: \beta_{43}=0$; $H_{04}: \beta_{31}$; $H_{07}: \gamma_{31}=0$; $H_{09}: \gamma_{32}=0$; $H_{011}: \gamma_{33}=0$ were no longer testable. Furthermore the RGROW (remuneration growth) seemed to load strongly on PAY (satisfaction with pay) with an MI value of 78.001 was also flagged. Due to the overlap between the remuneration growth and satisfaction with pay, it was decided to exclude the RGROW, a dimension of satisfaction with pay.

Thus the researcher had to re-run the modified measurement model that excluded the continuance commitment latent variable and the RGROW indicator, dimension of the satisfaction of pay. The modified model seemed to yield results that indicated improved model fit as the hypothesis of close fit was obtained. This seemed to bolster confidence that the measurement model shows close fit in the parameter. Furthermore the fit indices for the modified model that included RMSEA (.0531), p value for close fit (.335), GFI (.990), SRMR (.0520) and NNFI (.987) and CFI (.990) all painted a picture of a good model fit. Furthermore all the indicator variables were significant as indicated by significant unstandardised lambda-X as well as high standardised lambda-X values that were mostly above .71 cut off. This basket of evidence seemed to indicate the successful operationalisation of the measurement model and gave a green light to fit and evaluate the parameters of the comprehensive structural model.

Fitting the comprehensive structural model yielded results that indicated that both the hypothesis of exact and close fit had to be rejected. Although the rejection of close fit was not ideal, examination of the fit indices seemed to paint a picture of a reasonable

structural model fit. The RMSEA obtained was .0553 indicative of a good fit in the sample and the SRMR value of .0581 also indicated good model fit. Also goodness of fit indices (GFI=.901 and AGFI=.857) were indicative of a reasonable fit. Furthermore the comparative fit indices (NFI=.974; NNFI=.985; CFI=.989) also supported a good to reasonable structural model fit. Based on this basket of evidence that indicated a good to a reasonable fit structural, the interpretation of the structural model parameter estimates for beta and gamma was undertaken. The results indicated that 4 out of 8 paths were significant in the hypothesised direction ($z > |1.64|$) for directional hypothesis.

Inspection of the modification indices indicated the addition of two paths that is one path from perceived organisational support and satisfaction with pay and the second path from perceived organisational justice to intention to quit which seemed to make substantive sense. These modifications were implemented and the results of the modified structural model seem to indicate an enhanced model fit. With the addition of the two paths, the modified structural model obtained close fit (p value = .229) and the RMSEA value of .0553 which was indicative of a good fit. The two paths that were added because they made substantive sense were empirically supported. Furthermore two hypotheses previously not supported were now supported in the modified structural model. In total 8 out of 10 paths were significant in the hypothesised direction ($z > |1.64|$) for directional hypothesis.

CHAPTER 5

DISCUSSION OF RESULTS, MANAGERIAL RECOMMENDATIONS AND RECOMMENDATION FOR FUTURE RESEARCH

5.1 Introduction

The research initiating question of this study was formulated in Chapter 1 and sought to understand why there was variation of organisational commitment with specific reference to affective and continuance commitment and the impact thereof on intention to quit of artisans and engineers in a manufacturing organisation. Chapter 2 entailed the review of literature that culminated into a theoretical argument that resulted in a structural model that sought to provide a valid answer to the research initiating question. Chapter 3 discussed the research design and methodology that was utilised to empirically evaluate the structural model. The main objective for evaluating the structural model was to ascertain if the theoretical relationships specified in the structural model were supported by the data. Chapter 4 focused on discussing the results that emerged from the analysis of the data. Results of the item analysis, dimensionality analysis, test for normality, fit of initial measurement model, fit of the modified measurement model, the structural model and the modified structural model were discussed in detail in the previous chapter. This chapter will discuss conclusions that can be drawn from the data analysis as well as the practical implications of the results to South Africa organisations with regard to the retention of artisan and engineers.

5.2 Background

The attraction and retention of artisans and engineers has become a critical success factor for South African organisations and for the growth of the South African economy. Artisans have been considered as the backbone of infrastructure development and economic growth in South Africa. Thus the attraction and retention of artisans and engineers has become of paramount importance to organisations. There is a plausible argument that was articulated in Chapter 1 of this study that stated that organisational commitment should be regarded as a potentially useful construct for the retention of this critical organisational talent. Compelling research findings have linked higher levels of organisational commitment to lower levels on intention to quit (Delobbe &

Vandenberghe, 2000; Griffith et al, 2000; Meyer et al, 2002). Furthermore research findings have suggested that affective commitment has the highest retention power and is the most beneficial form of commitment as it has been found to be associated with desirable organisational outcomes that include performance, productivity, extra role behaviours and job satisfaction (Meyer et al, 2002). On the other hand continuance commitment has been found to be unrelated or negatively related to some of the positive work outcomes (Meyer et al, 2002). As a result the benefit of continuance commitment has been questioned and there has been recommendations that Human Resource Practitioners target policies, procedures and practices that will enhance affective commitment (Illes et al, 1999). It is therefore beneficial for Human Resource Practitioners to understand what antecedents are related to affective commitment among artisans and engineers. This empirical knowledge will assist them to implement pragmatic interventions to drive affective commitment that is linked to significantly lowering the intention to quit of individuals. This is aligned with research findings that have reported that affective commitment has the strongest negative relationship with intention to quit (Dockel et al, 2000; Delobbe & Vandenberghe, 2000; Meyer et al, 2002).

5.3 Results

5.3.1 Evaluation of the measurement model

The initial attempt to fit the measurement model provided mixed results. The hypothesis of close fit was rejected ($p = 0.000$) which was a big disappointment. However the other fit indices seemed to point a picture of a reasonable fitting model. Despite the rejection of the hypothesis of close fit, RMSEA value of .0779 demonstrated reasonable fit in the sample while GFI (.848) and AGFI (.778) seemed to be satisfactory through missing the .90 cut off. Furthermore comparative fit indices (NFI (.956), NNFI (.964) and CFI (.973) also painted a picture of a reasonably fitting model. The SRMR (.669) also corroborated a reasonably fitting model.

The item parcels or indicators of the latent variables loaded significantly on all the latent variables they were designed to reflect with the exception of 1 item parcel for the continuance commitment latent variable. The item parcel CCOM_2 had an insignificant factor loading which seemed to challenge the ability of the indicator to

reflect the construct it was tasked to reflect. Furthermore the R^2 values of item parcels were generally high with the exception of continuance commitment indicators CCOM_1 = 2.311 (extremely high and inadmissible) and CCOM_2 = .107 which seemed to further corroborate the challenges of measuring continuance commitment. Furthermore the measurement error variance for item parcels were generally low with the exception of the continuance commitment indicators that had extremely high theta-delta values. The item parcel CCOM_1 (-1.311) and CCOM_2 (0.893) seemed to point at these continuance commitment indicators as the most problematic as substantial proportion of variance in the observed variance was not explained by the continuance commitment latent variance. The inadmissible R^2 and theta-delta values obtained for CCOM_1 constitute improper, inadmissible estimates that shows the challenges of measuring continuance commitment in this study and compromised the whole fitted measurement model as such. Given this basket of evidence that seemed to paint a picture of the challenges with the successful operationalisation of continuance commitment it was decided to exclude this variable. The exclusion of the continuance commitment latent variable implied that hypothesis $H_02: \beta_{43}=0$; $H_04: \beta_{31}$; $H_07: \gamma_{31}=0$; $H_09: \gamma_{32}=0$; $H_{011}: \gamma_{33}=0$ were no longer testable. Furthermore the RGROW (remuneration growth) seemed to strongly load on PAY (satisfaction with pay) with an MI value of 78.001 and the cross load seemed to make theoretical sense due to the construct overlap. However instead of specifying a cross load it was decided to remove the RGROW indicator which was a dimension of the satisfaction with career advancement opportunities. Thus based on the decisions to exclude continuance commitment and the RGROW indicator, the initial measurement model was modified and fitted. The modified model seemed to yield results that indicated improved model fit as the hypothesis of close fit was obtained. This seemed to bolster confidence that the measurement model shows close fit in the parameter. Furthermore the fit indices for the modified model that included RMSEA (.0531), p value for close fit (.335), GFI (.990), SRMR (.0520) and NNFI (.987) and CFI (.990) all painted a picture of a good model fit. Furthermore all the indicator variables were significant as indicated by significant unstandardised lambda-X as well as high completely standardised lambda-X values that were mostly above .71 cut off. This basket of evidence seemed to indicate the successful operationalisation of the latent variables comprising the reduced structural model and gave a green light to fit the comprehensive LISREL model and evaluate the parameter estimates of the structural model.

5.3.2 Evaluation of the structural model

The objective of evaluating the structural model was to establish whether the theoretical relationships specified during the conceptualisation of the model was supported by the data (Diamontopoulos & Sigauw, 2000). The task of evaluating the structural model involved the examination of the hypothesis of exact and close with regards to the comprehensive LISREL model, as well as the fit indices. Furthermore it also involved examination of the gamma and beta matrices.

The exact fit null hypothesis for the initial comprehensive LISREL model was rejected ($p = .000$). Furthermore the p value for the close fit hypothesis indicated that the close fit hypothesis should be rejected ($p < .05: .0106$). The rejection of the hypothesis of close fit was not ideal but the goodness of fit indices were further inspected.

The RMSEA estimate that was obtained of .0661 was indicative of a reasonable fitting structural model. This was further supported by the 90% confidence interval for RMSEA reported (.0548: .0773) that painted a picture of a reasonable structural model fit. The SRMR value obtained was .0610 which further cemented the position that the structural model seemed to portray a reasonable model fit.

Inspection of the absolute fit indices seemed to indicate satisfactory values with GFI value of .883 and AGFI value of .834 which were indicative reasonable model fit. Furthermore the comparative fit indices that included NFI (.969), NNFI (.979) and CFI (.984) painted a good structural model fit. Thus although the hypothesis of close fit was rejected, the interpretation of the fit indices seemed to give confidence that the structural model was able to reproduce covariance matrix to the degree of accuracy that warranted the interpretation of the structural model parameters.

Furthermore examination of the distribution of the standardised residuals seemed to indicate a slightly positively skewed distribution with 5 negative large residuals and 8 positive large residuals which implied that the model slightly underestimated the covariance between the variables. Also the inspection of the Q-plot indicated that in lower and upper regions of the X-axis, the points deviated away from the 45 degrees reference line (See Figure 4.2). This seemed to imply that the specification of the model and the model fit was not perfect.

After fitting the initial structural model, the modification indices were evaluated. Evaluation of the modification indices seemed to guide the modification of the model through addition of two paths that seemed to make substantive sense. The first proposed path was from perceived organisational justice to intention to quit while the second proposed path was from perceived organisational support to satisfaction with pay. After adopting and implementing the proposed modifications, the modified structural model obtained close fit ($p > .05$: 0.229) which implied that the position that the modified structural model shows close fit in the parameter permissible. The obtained RMSEA value of .0581 was indicative of good fit of the modified structural model and the SRMR value of .0581 also corroborated a good fitting modified structural model. Furthermore inspection of the absolute fit indices and the comparative fit indices also seemed to paint a picture of a good fit of the modified structural model.

Also examination of the distribution of the standardised residuals of the modified structural model seemed to now indicate a slightly negatively skewed distribution with 11 negative large residuals and 9 positive large residuals which implied that the model slightly overestimated the covariance between the variables. Also the inspection of the Q-plot indicated that in lower and upper regions of the x-axis, the points deviated away from the 45 degrees reference line (See Figure 4.5). This seemed to imply that the specification of the model and the model fit was not perfect.

5.3.3 Beta Matrix

Inspection of the beta matrix (see Table 4.58 and Table 4.64) indicated that in both the initial structural model and the modified structural model, affective commitment had a negative structural relationship with intention to quit ($H_{a1}: \beta_{42} < 0$). This research finding supported the hypothesis that affective commitment is significantly and negatively ($\beta = -.767$) structurally related to intention to quit of artisans and engineers. The support of the negative structural relationship between affective commitment and intention to quit in this study is consistent with research findings that have reported the negative relationship between affective commitment and intention to quit (Delobbe & Vandenberghe, 2000; Dockel et al, 2006; Griffith et al, 2000; Meyer et al, 2002; Oehley, 2007).

Also inspection of the modified structural model beta matrix in Table 4.64 also showed that satisfaction with pay was positively structurally related to affective commitment. These results were consistent with the findings reported by Panaccio, Vanderberghe and Ayed (2014) that found pay satisfaction to be significantly and positively related to affective commitment ($r=.44$, $p < .01$).

5.3.4 Gamma matrix

Inspection of the modified structural model gamma matrix in Table 4.63 yielded empirical support for the hypothesised negative structural relationship between perceived organisational justice and intention to quit. These findings are aligned with the findings by Aramide and Aderibigbe (2014) and Dhurup and Isabirye (2014). In their study, Aramide and Aderibigbe (2014) reported that procedural justice had a negative relationship with turnover intentions in a sample of employees in the banking sector. Dhurup and Isabirye (2014) in their study also reported that procedural and distributive justice had a negative relationship with turnover intentions of sports and recreation officials.

Furthermore inspection of the gamma matrix of the modified structural model in Table 4.63 indicated that the hypothesis that stated that perceived organisational justice will be positively and significantly structurally related to pay satisfaction was corroborated in this study. These findings are aligned with the results reported by Tremblay, Sire and Balkin (2000) that found that procedural justice explained 24% of variance in satisfaction with pay while distributive justice explained 26% of the variance in satisfaction with pay. Furthermore research findings reported by Till and Karren (2011) also indicated that employees that experienced individual equity and distributive equity when it comes to the various components of their pay showed higher levels of satisfaction with pay.

Furthermore the gamma matrix of the modified structural model in Table 4.63 indicated support for the hypothesis that stated that perceived organisational support had a positive structural relationship with affective commitment. This finding is consistent with other research findings reported in the body of literature (O'Driscoll & Randall, 1999; Rhoades et al, 2001). This finding cement the view that organisations that demonstrate that they care about the welfare and wellbeing of their employees as well as value their contributions are likely to strongly influence their emotional attachment

and identification with organisation. This emotional attachment and identification with the organisation has been found to be negatively structurally related to intention to quit of artisans and engineers in this study.

Also the gamma matrix of the modified structural model also indicated that perceived organisational support was positively structurally related to satisfaction with pay. Organisational support can be viewed as non-monetary compensation that has an incremental influence on the satisfaction that one has with their pay. Both non-monetary and monetary aspects of compensation play a critical role in influencing one's overall satisfaction with their total rewards.

The gamma matrix of the initial structural model (see Table 4.57) and the modified structural model (see Table 4.63) also yielded support for the hypothesised structural relationship between meaningful work and affective commitment. These findings are consistent with the results reported by Geldenhuys, Laba and Venter (2014) that indicated that psychological meaningfulness had a significant and positive relationship with positive organisational commitment. This implies that artisans and engineers that experience their work as meaningful are likely to exhibit affective commitment that has been reported to be negatively related to their intention to quit.

Lastly the gamma matrix of the initial structural model (see Table 4.57) and modified structural model (Table 4.63) seemed to yield empirical support for the structural relationship between job embeddedness and affective commitment. Ferreira and Coetzee (2013) also reported that job embedded fit strongly influenced affective and continuance commitment. Also research results from a study by Mensele and Coetzee (2014) supported the link between job embedded fit and organisational commitment. Their study reported that higher education employees that perceived compatibility with their jobs and organisations (fit) showed higher levels of organisational commitment and this organisational commitment was significantly linked to intention to stay (Mensele & Coetzee, 2014). These findings substantiate the importance of job embedded fit in driving affective commitment that has been found to strongly influence the intention to stay of artisans and engineers in this study.

5.4 Practical Implications

This research reported the critical role played by affective commitment in lowering the intention to quit of artisans and engineers in this organisation. Continuance commitment was eventually excluded in this study due to the inability to successfully operationalise the latent variable in the sample. In the absence of continuance commitment, the results of this study seem to confirm the utility of affective commitment as a determinant of intention to stay/long tenure of artisans and engineers. These findings are potentially important to South African organisations as they demonstrate that affective commitment is a key variable in the retention of artisans and engineers. Furthermore perceived organisational justice was found to be negatively related to the turnover intentions of artisans and engineers that participated in this study. Thus major practical implication to retain artisans and engineers suggested in this study is to cultivate and enhance both affective commitment and perceived organisational justice which is envisaged to lower the intention to quit of artisans and engineers and subsequently increase their tenure.

Since the results of this study seem to indicate that affective commitment is a predictor of intention to stay, organisations can enhance employee affective commitment by providing their artisans and engineers with meaningful work. Meaningful work can be facilitated by work role fit. Research findings have indicated that work roles that are compatible with an employee's self-concept are likely to trigger psychological meaningfulness. The compatibility between work role and self-concept become a platform for an employee to express their authentic self (May et al, 2004). May (2003) substantiated the link between work role fit and meaningfulness when his study showed that work role fit significantly influenced the psychological meaningfulness experienced by employees in a manufacturing organisation. Furthermore organisations should explore fostering meaningfulness through meaningfulness in work practices such as effective job design, job enrichment programs and employee involvement practices (Pratt and Ashforth, 2003). These interventions are likely to promote meaningfulness that is derived from the job or work that the employee is conducting.

Also engaging in effective job design, job enrichment and employee involvement programs is likely to increase job embedded fit that has been reported to be significantly related to affective commitment in this study. Job embedded fit will be enhanced and increased as the outputs of effective job design and enrichment programs will be jobs that are aligned and match the employee's skills, knowledge and abilities. Increasing job embedded fit is also likely to increase the value and meaningfulness of the work that artisans and engineers will be doing.

Furthermore organisations should strive to increase fairness in their policies and procedures as perceived organisational justice has been found to have a negative relationship with intention to quit. In a study by Van Rooyen (2010) fair and competitive remuneration was ranked as the most retention factor for artisans. Thus an organisation's compensation and benefits structure should be perceived as fair and equitable since this study found that perceived organisational justice was positively related to satisfaction with pay and intention to quit. This implies that understanding market trends and salary benchmarking will be important steps to ensure that the compensation and benefits structure of the organisation are designed to ensure that they are aligned with market trends and benchmarks. Employees are thus likely to perceive the salary and benefits of their organisation as fair and equitable if there do not see a discrepancy between what the organisation is offering in comparison to a referral group(s). If employees perceive that the company's salaries and benefits structure is fair and just, they are more likely to be satisfied with their pay and benefits and this can trigger the emotional attachment to the organisation that has been found to lower the intention to quit of artisans and engineers in this study. Providing competitive and market related salaries and benefits will also demonstrate that the organisation cares and values their employee's contributions thereby enhancing organisational support that has also been found to be related to affective commitment in this study.

Also organisations should engage in pay communication interventions that have been found to significantly increase the level of justice that is experienced by employees when they review their compensation and benefits (Day, 2011). In this regard organisations should strive to comprehensively and accurately communicate compensation and benefits related information as a way of enhancing understanding of compensation and benefits policies and procedures of the organisation. This would increase understanding of how compensation and benefits are determined which is

likely to promote a higher degree of satisfaction. Furthermore line managers should be trained to be able to effectively handle compensation discussions with their direct reports in a transparent and professional manner. These measures will help to enhance understanding and knowledge related to organisational's compensation and benefits policies and procedures and ultimately increase the level of fairness that is perceived in those policies and procedures. If employees perceive fairness in the compensation policies and procedures, there are likely to have lower turnover cognitions as this study has empirically supported a negative relationship between perceived organisational justice and intention to quit.

In summary, this study seem to be indicating that organisations should be predominantly focus on fostering affective commitment and enhance perceived organisational justice of artisans and engineers as it has been reported to significantly lower their intention to quit. Based on the results of this study, organisations should focus on providing meaningful work, organisational support, fair, competitive and market related salaries and benefits as well as enhance the job embedded fit of their employees as these have been found to be related to affective commitment. Affective commitment in this study has been reported to be negatively related to intention to quit. Furthermore affective commitment has been found to be linked to various positive work outcomes that include attendance, extra role behaviour, performance and productivity (Meyer et al, 2002). Furthermore enhancing organisational justice through consistent application of policies and procedures and ensuring that employees are treated equally and fairly will also lower the turnover cognitions of artisans and engineers as this study reported a negative relationship between perceived organisational justice and intention to quit.

5.5 Limitations of this study and suggestions for future research

Although the study yielded some valuable insights to organisations that are interested in the retention of artisans and engineers, it was however plagued by some limitations. This section discussed the limitations that were encountered as well as proffer suggestions for future research.

One of the limitations of this study was the challenge of the operationalisation of the continuance commitment and the intention to quit latent variables. The indicators of the continuance commitment latent variable seemed not to paint a picture that they

were doing a good job of reflecting the continuance commitment latent variable. The measurement challenges experienced with regards to continuance commitment necessitated the exclusion of the latent variable in the model. The removal of the continuance commitment scale then implied that hypothesis H₀₂: $\beta_{43}=0$; H₀₄: β_{31} ; H₀₇: $\gamma_{31}=0$; H₀₉: $\gamma_{32}=0$; H₀₁₁: $\gamma_{33}=0$ were no longer testable. The aim of this study was to account for why there is variance in the nature of commitment with specific reference to continuance and affective commitment experienced by artisans and engineers and the impact thereof on intention to quit. Thus the removal of the continuance commitment latent variable negatively impacted the initial aim of the study.

Furthermore this study employed self-report measures that are prone to social desirability effects. Social desirability refers to a process in which research participants respond to scale items in ways that portray a positive or favorable view with regards to the construct under study. In this process, respondents will tend to inflate their responses to create an impression of possessing desirable attitudes or characteristics and underreport attitudes or characteristics that are deemed not socially acceptable (Zammuner & Galli, 2005). One can argue that maybe the continuance commitment indicators could have been prone to social desirability and impression management effects hence this could have impacted the reported levels of the continuance commitment latent variable which could have resulted in the challenges experienced with the continuance commitment indicators.

Another limitation of this study was the lack of generalisability of the study findings to the broader population of artisans and engineers. The sample that constituted the respondents in this study was drawn from a single manufacturing organisation which limits the generalisability of the findings to broader and diverse population of artisans and engineers across different industries and business sectors. Furthermore this study utilised a non-probability sampling method in the form of convenience sampling that relied on recruiting respondents that are available and willing to participate. In this regard, the sample was not representative of the target population of artisans and engineers in this manufacturing organisation. Therefore future research can replicate the study with different samples from different industrial sectors.

Furthermore, the study did not include latent variables that characterise the external employment market as well as the employees' perceptions of these characteristics. Latent variables such as perceived alternative opportunities, perceived utility of movement, perceived human capital are some of the useful external employment market variables that have been indicated as very useful by Bezuidenhout (2013) in understanding turnover cognitions. Inclusion of these external market employment variables would provide insights on the complexities of the psychological mechanism that operate to determine the levels of intention to quit and thus enhance the efforts of organisations that are faced with a challenge of retaining their artisans and engineers. In this regard, future research should acknowledge that intention to quite is complexly determined and the ability to successfully control the intention to quit depends on the extent to which the full complexity of the psychological mechanism that operates to determine the levels of intention to quit is understood.

Also the researcher did not conduct confirmatory factor analysis to examine the construct validity of the multi-dimensional measures used to assess multi-dimensional latent variables in the structural model that included satisfaction with pay, satisfaction with career advancement opportunities, perceived organisational support as well as organisational commitment.

The use of the *ex post facto* research design also posed a limitation to the study. Compared to experimental designs where the researcher can manipulate the independent variables so as to determine their impact on the dependent variable, the *ex post facto* design lacks such control. Thus whilst the structural model can exhibit good fit indices and statistically significant path coefficients, this does not in any way prove causality and therefore one cannot conclude that the exogenous variable caused changes in the endogenous variable. Therefore even if one obtains good model fit and statistically significant path coefficients, it does not imply causality. This limitation can be counteracted by future studies that use longitudinal studies that have been deemed superior in testing causality (Moorman, 1991).

5.6 Conclusion

Although this study was affected by some limitations discussed above, the study also yielded very useful findings that give organisations a guide of retain their artisan/technician and engineering talent pipeline. The results of this study provided support for the position that affective commitment is a determinant of intention to stay of artisans and engineers. Furthermore the results reported also confirmed the perceived organisational justice is important in lowering the turnover intentions of artisans and engineers. As discussed previously, the results of this study seem to be guiding organisations to focus on fostering affective commitment and enhancing perceived organisational justice. Organisations can focus on satisfaction with pay, providing organisational support and meaningful as well as enhancing job embedded fit since these variables have been found to be positively related with affective commitment that has been found to be a predictor of intention to stay. Furthermore organisations should ensure that their policies and procedures are driven by the principle of fairness as this study has confirmed that perceived organisational justice is negatively related to intention to quit. Thus according to the results of this study, a workforce that is emotionally attached to the organisation and that perceives its organisation as just and fair is less likely to leave that organisational which translates to long tenure and lower attrition rates of artisans and engineers.

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Appendix A: Informed Consent Form and Research Questionnaire



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jou kennisvenoot • your knowledge partner

Exploring organisational commitment and its determinants among artisans and engineers and the influence thereof on intention to quit

Informed Consent Form

You are asked to participate in a research study conducted by Samuel Siwela, a Master's student from the Department of Industrial Psychology at Stellenbosch University.

1. PURPOSE OF THE STUDY

The objective of the research study is to explore organisational commitment and its determinants among artisans and engineers in the organisation as well as the influence of organisational commitment on intention to quit. Understanding the determining factors of affective and continuance commitment is very important to organisations as it will inform their HR practices such as retention and remuneration initiatives. It has been noted that employees that have high affective commitment levels are the most productive and therefore understanding what influences affective commitment can be a lever of competitive advantage.

2. WHY HAVE I BEEN INVITED TO PARTICIPATE IN THIS PROJECT?

You were selected as a possible participant in this study because you are an artisan/technician or engineer by profession which satisfies the sample requirements for this study.

3. PROCEDURES

If you volunteer to participate in this study, you will be asked to complete a paper -based survey questionnaire or if you have access to a laptop, you will be directed to a survey link to complete the online questionnaire.

3.1. COMPLETION OF THE SURVEY

You will be required to complete the electronic survey or paper based survey individually. The survey will take approximately 10– 20 minutes to complete. There is however no time limit placed on the completion of the survey. There are no right or wrong answers.

3.2. QUESTIONNAIRE COLLECTION

Once you have completed the questionnaire, the electronic system used will record the data automatically. For the paper survey, you will have to complete the questionnaire in a boardroom pre-booked for this purpose and after completing the survey you will throw your response in a collection box that will be in the boardroom.

4. POTENTIAL RISKS AND DISCOMFORTS

There is a potential inconvenience associated with participation in this study which relates to time and energy required to complete the survey. Furthermore given that you will be required to assess your own intention to quit and satisfaction with pay, there is a slight risk of discomfort that may be posed by this self-reflection. In addition your assessment of your satisfaction with pay and your feelings of wanting to quit your job may be reflected in your completion of the questionnaire measures of satisfaction with and intention to quit. However, please note that your responses will be completely confidential and anonymous (a coding system will be used to protect your identity) and no information will be shared with any decision makers in the participating company. The data will only be utilised solely for research purposes

If you do not want to participate in the study, you are allowed to decline participation, and can withdraw participation at any time during the study. You may also withdraw from the study even after you have already completed the questionnaire.

5. POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

Participation in the research study will not directly benefit you. However, the results of the study will be used by the HR Talent Management Department to understand the salient and important factors that influence organisational commitment and intention to quit among artisans and engineers in the organisation. Furthermore, this research will contribute to the academic field of Industrial Psychology.

6. PAYMENT FOR PARTICIPATION

Neither you, nor your organisation will receive any payment for participating in this research study.

7. CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by restricting access to the data to the researchers (Samuel Siwela and Francios van der Bank), and will only be reported as aggregate statistics.

The results will be distributed in an unrestricted electronic thesis. A summary of the findings will be presented to the stakeholders including those that participated in the study. In none of these instances will the identity of any research participant be revealed.

8. PARTICIPATION AND WITHDRAWAL

Participation in this study is voluntary. If for any reason you decide to withdraw your participation, you may do so at any time without consequences of any kind.

You may also refuse to answer any questions you don't want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

9. IDENTIFICATION OF INVESTIGATORS

If you have any questions or concerns about the research, please feel free to contact Samuel Siwela (0115898494 or jw044@cummins.com) or Francois van der Bank (021 808 3016 or fvdb@sun.ac.za)

10. RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this

research study. If you have questions regarding your rights as a research subject, contact Ms Maléne Fouché [mfouche@sun.ac.za; 021 808 4622] at the Division for Research Development of Stellenbosch University.

INFORMED CONSENT

Please indicate which statement applies to you, by ticking the appropriate tick box below the statement (You should therefore only select one option):

I have read and understood the information provided above and voluntarily consent to participate in the research study under the stipulated conditions.

I have read and understood the information provided above and decline the invitation to participate in the research study under the stipulated conditions.

Instructions

Your responses to this questionnaire will be treated with **complete confidentiality**

1. DO NOT write your name, surname or Employment Number anywhere in this questionnaire
2. Indicate your response to each question by circling the number that best represent your standing on the question
3. Please complete ALL questions

Thank you for completing this questionnaire. Your participation is really appreciated.

Research Questionnaire

Section A

Your biographical information in this study is very important and is will be purely used for statistical purposes. For example, we would want to analyse if salient factors that influence organisational commitment of artisans and engineers varies across age, gender, race, education and tenure. Therefore the demographic information required will be used specifically for this purpose

Please answer the following questions by marking with a tick in the appropriate space:

Age Range	Tick
18 - 24	
25 – 34	
35 – 44	
45 - 54	
55+	

Gender	Tick
Male	
Female	

Race	Tick
Black	
Coloured	
White	
Indian/Asian	

Employee Type	Tick
Technician/Artisan	
Engineer	

Highest Qualification	Tick
Trade Test Certificate	
Diploma	
Degree	
Masters	

Years of Service	Tick
Less than 2 years	
2-5 years	
5-10 years	
More than 10 years	

Organisational Commitment

Listed below is a series of statements that represent the employee's attachment to the organisation and the benefits and investments that bind him/her to his employer. With respect to the statements below indicate your level of agreement or disagreement with the statements

Statements	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
I would be very happy to spend the rest of my career in this organisation	1	2	3	4	5
I really feel as if this organisation's problems are my own	1	2	3	4	5
I feel like 'part of my family' at this organisation	1	2	3	4	5
I do not feel 'emotionally attached' to this organisation	1	2	3	4	5
I feel a strong sense of belonging to this organisation	1	2	3	4	5
This organisation has a great deal of personal meaning for me	1	2	3	4	5
It would be very hard for me to leave my job at this organisation right now even if I wanted to	1	2	3	4	5
Too much of my life will be disrupted if I leave my organisation	1	2	3	4	5
Right now, staying with my job at this organisation is a matter of necessity as much as desire	1	2	3	4	5
I believe I have too few options to consider leaving this organisation	1	2	3	4	5
One of the few negative consequences of leaving my job at this organisation would be the scarcity of available alternative elsewhere	1	2	3	4	5
One of the major reasons I continue to work for this organisation is that leaving would require considerable personal sacrifice	1	2	3	4	5

Satisfaction With Pay

Listed below is a series of statements that assess your levels of satisfaction with various aspects of your pay. With respect to the statements below indicate your level of agreement or disagreement with the statements

Statements	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
I am satisfied with my take home pay	1	2	3	4	5
I am satisfied with my current salary	1	2	3	4	5
I am satisfied with my overall level of pay	1	2	3	4	5
I am satisfied with the size of my current salary	1	2	3	4	5
I am satisfied with my benefit package	1	2	3	4	5
I am satisfied with the amount the company pays toward my benefits	1	2	3	4	5
I am satisfied with the value of my benefits	1	2	3	4	5
I am satisfied with the number of benefits I receive	1	2	3	4	5
I am satisfied with my most recent increase	1	2	3	4	5
I am satisfied with the Influence my supervisor has over my pay	1	2	3	4	5
I am satisfied with the raises I have typically received in the past	1	2	3	4	5
I am satisfied with how my raises are determined	1	2	3	4	5
I am satisfied with the company's pay structure	1	2	3	4	5
I am satisfied with information the company gives about pay issues of concern to me	1	2	3	4	5
I am satisfied with pay of other jobs in the company	1	2	3	4	5
I am satisfied with the consistency of the company's pay policies	1	2	3	4	5
I am satisfied with the differences in pay among jobs in the company	1	2	3	4	5
I am satisfied with how the company administers pay	1	2	3	4	5

Job Embeddedness

Listed below is a series of statements that assess the forces that keep a person from leaving his or her job. With respect to the statements below indicate your level of agreement or disagreement with the statements

Statements	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
I like the members of my work group	1	2	3	4	5
My coworkers are similar to me	1	2	3	4	5
My job utilises my skills and talents well	1	2	3	4	5
I feel like I am a good match for this company	1	2	3	4	5
I fit with the company's culture	1	2	3	4	5
I like the authority and responsibility I have at this company	1	2	3	4	5
My values are compatible with organisation's values	1	2	3	4	5
I can reach my professional goals working for this organisation	1	2	3	4	5
I feel good about my professional growth and development	1	2	3	4	5

Meaningful Work

Listed below is a series of statements that assess the perceptions of individuals regarding the degree of meaning that they perceive in their work related activities. With respect to the statements below indicate your level of agreement or disagreement with the statements

Statements	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
The work I do on this job is very important to me.	1	2	3	4	5
My job activities are personally meaningful to me.	1	2	3	4	5
The work I do on this job is worthwhile.	1	2	3	4	5
My job activities are significant to me.	1	2	3	4	5
The work I do on this job is meaningful to me.	1	2	3	4	5
I feel that the work I do on my job is valuable.	1	2	3	4	5

Organisational Support

Listed below is a series of statements that assess the perceptions of individuals regarding their how the organisation cares for them and values their contribution. With respect to the statements below indicate your level of agreement or disagreement with the statements

Statements	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
My organisation really cares about my well-being.	1	2	3	4	5
My organisation strongly considers my goals and values.	1	2	3	4	5
My organisation shows little concern for me.	1	2	3	4	5
My organisation cares about my opinions.	1	2	3	4	5
My organisation is willing to help me if I need a special favour.	1	2	3	4	5
Help is available from my organisation when I have a problem.	1	2	3	4	5
My organisation would forgive an honest mistake on my part.	1	2	3	4	5
If given the opportunity, my organisation would take advantage of me.	1	2	3	4	5

Perceived Organisational Justice

Listed below is a series of statements that assess your perception of fairness with regards to how decisions on outcomes and resource allocations are made as well as the methods, mechanisms and procedures used to determine those outcomes. With respect to the statements below indicate your level of agreement or disagreement with the statements

Statements	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
Do the outcomes you receive reflect the effort you have put into your work?	1	2	3	4	5
Are the outcomes you receive appropriate for the work you have completed?	1	2	3	4	5
Do your outcomes reflect what you have contributed to the organisation?	1	2	3	4	5
Are your outcomes justified given your performance?	1	2	3	4	5
Have you been able to express your views and feelings during those procedures?	1	2	3	4	5
Have you had influence over the outcomes arrived at by those procedures?	1	2	3	4	5
Have those procedures been applied consistently?	1	2	3	4	5
Have those procedures been free of bias?	1	2	3	4	5
Have those procedures been based on accurate information?	1	2	3	4	5
Have you been able to appeal the outcomes arrived at by those procedures?	1	2	3	4	5
Have those procedures upheld ethical and moral standards?	1	2	3	4	5

Satisfaction With Career Advancement Opportunities

Listed below is a series of statements that assess your satisfaction with the career advancement opportunities that you perceive to be available in your organisation. With respect to the statements below indicate your level of agreement or disagreement with the statements

Statements	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
My present job moves me closer to my career goals	1	2	3	4	5
My present job encourages me to accumulate richer work experiences	1	2	3	4	5
The probability of being promoted in this organisation is high	1	2	3	4	5
My salary is growing quickly in my present organisation	1	2	3	4	5
My present job is relevant to my career goals and vocational growth	1	2	3	4	5
Compared to my colleagues, I am being promoted faster	1	2	3	4	5
My present job sets the foundation for the realisation of my career goals	1	2	3	4	5
In this organisation, the possibility of my salary being increased is very high	1	2	3	4	5
My present job encourage me to continuously gain new job-related knowledge	1	2	3	4	5
Compared with previous organisations, my position in my present one is ideal	1	2	3	4	5
My present job enables me to continuously improve my professional capabilities	1	2	3	4	5
My promotion speed in this organisation is fast	1	2	3	4	5
Compared to my colleagues, my salary has grown more quickly	1	2	3	4	5
My present job encourages me to continuously gain new and job related skills	1	2	3	4	5
My present job provides me with good opportunities to realize my career goals	1	2	3	4	5

Turnover Intentions

Listed below is a series of statements that assess you're your intentions to stay or leave your organisation in the future. With respect to the statements below indicate your level of agreement or disagreement with the statements

Statements	Never	Seldom	Sometimes	Often	Almost Always	Always
How often have you considered leaving your current job?	1	2	3	4	5	6
To what extent is your current job not addressing your important personal needs?	1	2	3	4	5	6
How frequently do you scan newspapers for job opportunities	1	2	3	4	5	6
How often are opportunities to achieve your most important goals at work jeopardised	1	2	3	4	5	6
How often are your most important personal values at work compromised?	1	2	3	4	5	6
How frequently are you see yourself in a job that suits your personal needs	1	2	3	4	5	6
What is the probability that you will leave your job, if you get another suitable offer?	1	2	3	4	5	6
How frequently do you look forward to another day at work?	1	2	3	4	5	6
How often do you think about starting your own business?	1	2	3	4	5	6
How often do only family responsibilities preventing you from quitting?	1	2	3	4	5	6
How frequently are you emotionally agitated when arriving home after work?	1	2	3	4	5	6
How often do only vested personal interest (pension fund, fund, etc.) prevent you from quitting?	1	2	3	4	5	6
How often is your current job affecting on your personal wellbeing?	1	2	3	4	5	6
How often do the troubles associated with relocating, prevent you from quitting?	1	2	3	4	5	6

Appendix B: Organisational Consent Form



UNIVERSITEIT • STELLENBOSCH • UNIVERSITY
jou kennisvenoot • your knowledge partner

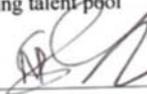
ORGANISATIONAL CONSENT FORM

I Neil Solomon hereby confirm that I give Samuel Siwela (Master's student at the University of Stellenbosch) permission to distribute questionnaires comprising the relevant measures for the purpose of generating data for his Organisational Commitment and Intention to Quit master's thesis within Cummins Africa. The purpose of the study was and has been re-explained to me as well as the manner in which the data generated will be used

Mr Samuel Siwela will hand out hard copy and electronic copies to the target audience of technicians/artisans and engineers in the organisation. To this end, I give Samuel Siwela access to the workshop facilities where artisans and engineers are based and he will recruit the participants without management involvement. Furthermore, I give him authority to send the participants that have access to laptops an allegiance survey link using the internal mailing system so that they complete the survey online. All this should be done in keeping with the principle of voluntary participation

I have been assured that the information gathered in this study will solely be used for research purposes and the anonymity of all participants will be guaranteed. Furthermore the results will be used by HR Talent Management Department to understand the salient factors that influence Organisational Commitment and Intention to Quit among this engineering talent-pool

Signed (please print name and sign):

 Neil Solomon

Position in the participating organisation:

Technical Training leader

Date: 24/02/2017

Departement Bedryfsielkunde • Department of Industrial Psychology
Privaat Sak/Private Bag X1 • Matieland 7602 • Suid-Afrika/South Africa
Tel +27 21 808 3005/3012 • Faks/Fax: +27 21 808 3007
E-pos/E-mail: cmcillie@sun.ac.za

Appendix C: Organisational Consent Form

Stellenbosch University
jou kennisvennoot • your knowledge partner

ORGANISATIONAL CONSENT FORM

I Nokulunga Mkhize representing the organisation, hereby confirm that I give Samuel Siwela (Master's student at the University of Stellenbosch) permission to distribute questionnaires comprising the relevant measures for the purpose of generating data for his Organisational Commitment and Intention to Quit master's thesis within Cummins Africa. The purpose of the study was explained and has been re-explained to me as well as the manner in which the data generated will be used

Mr Samuel Siwela will hand out hard copy and electronic copies to the target audience of technicians/artisans and engineers in the organisation. To this end, I representing the organisation, give Samuel Siwela access to the workshop facilities where artisans and engineers are based and he will recruit the participants without management involvement. Furthermore, I give him authority to send the participants that have access to laptops an allegiance survey link using the internal mailing system so that they complete the survey online. All this should be done in keeping with the principle of voluntary participation.

I have been assured that the information gathered in this study will solely be used for research purposes and the anonymity of all participants will be guaranteed. Furthermore the results will be used by HR Talent Management Department to understand the salient factors that influence Organisational Commitment and Intention to Quit among this engineering talent pool

Signed (please print name and sign): NOKULUNGA MKHIZE 
Position in the participating organisation: HUMAN RESOURCES LEADER
Date: 27-02-2017

Departement Bedryfsielkunde • Department of Industrial Psychology
Privaat Sak/Private Bag X1 • Matieland 7602 • Suid-Afrika/South Africa
Tel +27 21 808 3005/3012 • Faks/Fax: +27 21 808 3007
E-pos/E-mail: cmcillie@sun.ac.za

