THE ELABORATION AND EMPIRICAL EVALUATION OF A PARTIAL TALENT MANAGEMENT COMPETENCY MODEL IN THE NURSING PROFESSION

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Thesis presented in partial fulfilment of the requirements for the degree of Masters of Commerce at Stellenbosch University

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December 2011

DECLARATION

By submitting this thesis electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the owner of the copyright thereof (unless to the extent explicitly otherwise stated) and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

Date: December 2011

OPSOMMING

Hierdie studie spruit uit ‘n dringende behoefte om te verstaan watter faktore daartoe bydra dat verpleegkundiges die voorneme ontwikkel om ‘n organisasie te verlaat, en gevolglik wat organisasies kan doen om verpleegkundiges wel te behou. Toenemende druk word in die gesondheidsorgsektor ervaar, meer spesifiek op verpleging, weens ernstige tekorte in hierdie dissipline. Hierdie tekorte is nie ‘n geïsoleerde verskynsel nie, maar raak die privaatsektor sowel as die publieke sektor wêreldwyd, sowel as Suid-Afrika.

‘n Veelvoud van faktore dra daartoe by dat verpleegkunde ‘n skaars vaardigheid wêreldwyd is. Sekere faktore is beheerbaar, ander nie. Deur die beheerbare faktore te isoleer, kan organisasies en bestuurders aksieplanne in plek stel om die impak van hierdie krisis te verminder. Prosesse en aksieplanne om byvoorbeeld die verplegingpoel te vergroot, en ook om die huidige werksmag te behou, kan bydra tot die oorbrugging van hierdie uitdaging.

Daar is bewyse dat die implementering van ‘n gestruktureerde talentbestuurprogram kan bydra om hierdie uitdaging te oorkom. ‘n Sleutelrol in so ‘n talentbestuurprogram, is die lynbestuurder en sy/haar bevoegdheid ten opsigte van die bestuur van personeel. Hierdie studie het ten doel om ‘n bestaande talentbestuurmodel vir lynbestuurders te her-evalueer en addisionele veranderlikes voor te stel wat organisasie-uitkomste soos werkstevredenheid, organisasie-verbondenheid en voorneme om te bedank beïnvloed. Deur te verstaan watter lynbestuurbevoegdhede organisasie-uitkomste beïnvloed en die wyse waarop hierdie bevoegdhede op hierdie uitkomste inwerk, kan lynbestuurders, sowel as organisasies, toegerus word om prosesse en programme te formuleer. Hierdie programme kan ‘n bydra lewer tot die behoud van ‘n skaars vaardigheid, en sodoende die impak van ‘n wêreldwye krisis minimaliseer.

Die resultate van die studie het aangetoon dat die operasionalisering van die talentbestuurbevoegdhede onsuksesvol was. Die oorspronklik voorgestelde model moes gevolglik gereduseer word deur die talentbestuur-latente veranderlikes uit die model te verwyder. Swak modelpassing is vir die gereduseerde model bevind. Wysigings is egter aan die gereduseerde model aangebring gebaseer op modifikasie-indeksvoorstelle afgelei uit die data. Die gewysigde model het goeie passing getoon en steun is vir al die bane in

die gewysigde model gevind. Kruisvalidasie van die gewysigde gereduseerde model is aanbeveel.

ABSTRACT

This study stems from an urgent need to understand which factors contribute to nurse practitioners' intention to quit, and consequently what organisations can do to retain these practitioners. There is increased pressure on the healthcare sector, more specifically nursing, due to a severe shortage in this discipline. These shortages are not an isolated phenomenon, but influence the private as well as public sector worldwide, as well as in South Africa.

A multitude of factors contribute to the fact that nursing is a scarce skill worldwide. Some factors are controllable, others not. By isolating the controllable factors, organisations and managers can be equipped to put action plans in place to decrease the impact of this crisis. Processes and action plans to enlarge the nursing pool, and also to retain the current workforce, can contribute to overcoming this challenge.

There is proof that the implementation of a structured talent management programme can contribute to overcoming this challenge. Line managers and their competence regarding the management of personnel play a key role in such a talent management programme. This study has as its objective to re-evaluate an existing talent management competency model for line managers, and to propose additional variables that can influence organisational outcomes like job satisfaction, organisational commitment and turnover intention. By understanding which line manager competencies influence organisational outcomes, and the manner in which they influence these outcomes, line managers as well as organisations can be equipped to formulate processes and programmes that can contribute to the retention of a scarce skill, and importantly, also minimise the impact of a worldwide crisis.

The results of the study indicated that the operationalisation of the talent management competencies failed. The originally proposed model consequently had to be reduced by deleting all talent management latent variables from the model. Poor model fit was obtained for the reduced model. Modifications were, however, made to the reduced model based on modification index suggestions derived from the data. The modified model showed good fit and support was obtained for all the paths in the modified model. Cross-validation of the modified model was recommended.

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ACKNOWLEDGEMENTS

I would like to express my sincere appreciation to the following people who played a valuable role in assisting me with the completion of my thesis:

To the managers and staff of the organisation who volunteered to take part in this study. When the schedules were tight, you nonetheless set the time aside and gave your input. Your effort and willingness is much appreciated.

To my supervisor, Professor Callie Theron, a big thank you to you. Thank you so much for walking this long and hard road with me. Your support means much more to me than what I am able to describe.

I would also like to express my sincere thanks to my husband, Theuns, and my twins, Johan and Mian, who had to endure many sacrifices with me.

And lastly, I would like to dedicate this thesis to my late mother, whose memories stayed with me during every page I wrote. I miss you dearly!

CHAPTER 1
RESEARCH PROBLEM AND RESEARCH OBJECTIVES

1.1 INTRODUCTION

Having a proper sustainable healthcare system plays a vital role in not only the economy of a country, but also to the health and well-being of its people. Adequate healthcare is a primary enabler of socio-economic growth. Without proper healthcare, no economy, business strategy, legal system, or profession is sustainable.

A spectrum of health care professionals, all play an important role in ensuring a well functioning, effective health care system. At the centre of any proper healthcare system is competent nursing staff. In collaboration with other healthcare professionals, nurses are responsible for the treatment, recovery and safety of patients in a variety of healthcare scenarios. Nurses play a key role in preventing illness among communities, and alleviate suffering amongst their patients as well as family members.

Unfortunately, for many years, attracting and retaining competent nursing staff has been a global challenge threatening the healthcare system of many countries. The magnitude of the shortage is perceived to threaten health systems around the world (Kingma, 2006), including South Africa. Providing access to proper healthcare is dependent on adequate staffing levels, but the scarcity of nurses is proving to be an enormous challenge to the services that public as well as private organisations are providing. In Gauteng alone, the previous Health Minister, Dr Manto Tshabalala-Msimang indicated that in 2008, there were around 8 419 vacancies in the public sector. In KwaZulu-Natal, there were more than 11 000 vacancies for professional nurses and nursing assistants (Kassiem, 2008). Netcare, the biggest private hospital group in South Africa, which operates 54 hospitals and 100 clinics, has indicated that they have 1 000 vacancies nationally (Comins, 2008). To aggravate the situation further, it has been reported that an estimated 300 nurses are leaving South Africa

every month - a situation that could plunge the country into a serious healthcare crisis (SA faces nursing crisis, 2000).

Given the enormity of the challenge and the pivotal role played by the nursing profession in ensuring a well functioning health care system, it is of crucial importance that attempts are made to address the shortage of nursing staff. Interventions to overcome this challenge should focus on two aspects, namely the enlargement of the nursing pool by attracting competent individuals into the nursing profession, and by retaining the current nursing corps. Responsibility for addressing the shortage of nursing staff should be shouldered by private as well as state owned health care institutions. In both sectors, the human resource management function will have to spearhead the campaign to remedy the nursing problem. One human resource management strategy that has proven to bear fruit (Cohn, Khurana & Reeves, 2005; Griffin, 2003; Hiltrop, 1999; Kesler, 2002) when used to address the abovementioned challenges is a well structured talent management program in which the process of talent management, the parties involved and the outcomes are clearly defined.

The work behaviour of employees is not random. The work behaviour of employees is rather systematically, albeit complexly determined, by a nomological network of latent variables characterising the employees and their (perception of) their work environment. Talent management interventions focusing on the enlargement of the nursing pool, and/or the retention of the current nursing corps, will therefore only be successful if the reasons/factors that determine why people join and exit the nursing profession, as well the reasons why people leave organisations, are accurately understood. Knowing what these factors are and how they combine to determine intentions to join or leave the nursing profession will contribute towards the purposeful management of behaviour leading to the scarcity of nursing staff. But even if the contributing factors and the manner in which they combine are known, it could still be a great challenge to solve the scarcity crisis. This is due to the fact that it might be easier said than done to manipulate some of these factors to conditions or levels that would be conducive for the retention of nurses. It is therefore important to develop and empirically test a comprehensive explanatory employee retention structural model that identifies the most influential causal factors and the manner in

which they structurally combine to affect nurses intention to remain in the employment of a their current employer and to remain in the profession.

Such an explanatory structural model has been proposed and empirically evaluated by Oehley (2007). Although the model has not been explicitly developed to explain the intention to quit of nursing staff, but rather the intention to quit of employees within a large South African telecommunications organisation, the proposed model nonetheless also has relevance for the retention of nursing staff. Oehley (2007) suggested a talent management process, and proposed specific talent management competencies that are required by line management if they are to successfully facilitate specific organisational outcomes required to ensure a low level of employee intention to quit. The hypothesis was based on a definition of talent management proposed by the Society for Human Resource Management (SHRM) that has a strong strategic focus. The SHRM (as cited in Oehley, 2007, p. 13) defines talent management as "the implementation of integrated strategies or systems designed to increase workplace productivity by developing processes for attracting, developing, retaining and utilizing people with the required skills and aptitude to meet current and future business needs".

Oehley (2007) argued that line managers have to accept responsibility for and display involvement in the talent management process. A central tenant of her explanatory intention to quit structural model is that line managers have a substantial role to play in the retention of a talented workforce. She argued that through specific line management talent management behaviours or competencies, the retention of a skilled workforce can be facilitated by minimizing their intention to quit. She hypothesized though that the effect of the level of competence in the critical line management talent management competencies on intention to quit would for the most part not be direct but rather would be mediated by specific outcomes of talent management, namely job satisfaction and affective commitment.

Oehley (2007) found support for her argument as reflected in her proposed intention to quit structural model. Her hypothesized model showed close model fit with the close fit null hypothesis (H_{02}: RMSEA ≤ 0.05) not being rejected ($p > 0.05$). Despite sound theoretical arguments she, however, failed to find support for all the specific

hypothesized paths in the model. A number of the hypothesized structural relationships were confirmed, but most of the hypotheses were not corroborated.

Oehley's (2007) basic premise that the competence with which employees are managed by their immediate superior should impact on the employees' intention to remain with the organisation seems theoretically sound. Moreover it would seem premature to discard the specific talent management competencies that Oehley (2007) identified in her model based on the results of a single empirical study.

Earlier it was argued that the work behaviour of employees is complexly determined, by a nomological network of latent variables characterizing the employees and their (perception of) their work environment. It was moreover argued that attempts to influence the work behaviour of employees will succeed to the extent that this complexity is accurately understood. The critical question therefore arises in which way the structural network of influences underlying employee behaviour should be considered to be complex. Three aspects are suggested to be of importance here. The structural network of influences underlying employee behaviour should firstly be considered to be complex, in that a large number of latent variables combine to determine any employee's standing on the latent variables comprising the behavioural phenomenon of interest (in this case intention to quit). The structural network of influences should secondly be considered complex in that these latent variables are richly interconnected so that almost every latent variable is directly or indirectly affected by every other latent variable. Related to this idea, the structural network of influences should lastly be considered complex in that feedback loops exist that link latent outcome variables back to the person-centred latent variables and behavioural latent variables that (directly and indirectly) determine the outcome latent variables so as to create a dynamic system (Cilliers, 1998). The latter two aspects imply that the structural network of influences contain few if any exogenous latent variables (Diamantopoulos & Siguaw, 2000). Structural models are more likely to fit well, display significant path coefficients and return large squared multiple correlations for endogenous latent variables if they acknowledge these three design principles.

It is highly unlikely that a single explanatory research study will result in an accurate understanding of the comprehensive nomological network of latent variables that determine the phenomenon of interest. The likelihood of meaningful progress towards a more expansive and more penetrating understanding of the psychological processes underlying the phenomenon of interest (e.g. intention to quit) increases if explicit attempts are made to formally model the structural relations governing the phenomenon of interest. Progress towards greater understanding would also be made if successive research studies attempt to expand and elaborate the latest version of the explanatory structural model. The call for greater continuity in and integration of successive research studies is not new. Gorden, Kleiman and Hanie (1978, p. 901) argued the importance of cumulative research studies in which researchers expand and elaborate on the research of their predecessors some thirty years ago.

> The short-lived interest that industrial-organisational psychologists display in their work promotes severe intellectual disarray. Lack of commitment to thorough exploration of a subject is inimical to the creation of viable psychological theory. By continuing to ignore the integrative role of theory, industrial-organisational psychologists are likely to share a fate that Ring (1967) forecast for social psychologists: We approach our work with a kind of restless pioneer spirit: a new (or seemingly new) territory is discovered, explored for a while, and then usually abandoned when the going gets rough or uninteresting. We are a field of many frontiersmen, but few settlers. And, to the degree that this remains true, the history of social psychology will be written in terms not of flourishing interlocking communities, but of ghost towns, (pp. 119 - 120).

Rather than abandoning the Oehley (2007) model and starting afresh with the development of a new model, the foregoing argument suggests that a more prudent option would be to modify and elaborate the existing model.

1.2 RESEARCH OBJECTIVE

Oehley (2007) argued that the core talent management competencies she identified would for the most part not affect intention to quit directly. She modelled job satisfaction and affective commitment as two latent variables that mediate the effect

of the core talent management competencies on intention to quit. The process operating in reality is, however, probably more complex than this. The effect of the core talent management competencies on intention to quit is probably mediated by a layer of latent variables characterized by the nature of the work environment that in turn affect a layer of attitudinal latent variables that characterize employees' psychological response to the perceived nature of their work environment. Line managers affect through their actions the nature of the work environment and thereby the attitudinal latent variables that determine employees' intention to quit.

The objective of this study consequently is to modify and elaborate the partial talent management competency model proposed by Oehley (2007) by elaborating the network of latent variables through which the core competencies have to work to affect the intention to quit latent variable.

Well thought through human resource strategies are imperative to retain talented current staff. Companies and governmental health care organisations that are able to successfully retain their nursing staff will benefit greatly in terms of their competitive advantage as well as in terms of the sustainability of their services. The retention of nursing staff is a global challenge facing public as well as private health care organisations. If this study would succeed in its objective to refine and elaborate Oehley's (2007) model, the development of the core talent management competencies in the immediate superiors of nursing staff would hold promise in reducing the turnover amongst nursing staff.

CHAPTER 2
LITERATURE REVIEW: TALENT MANAGEMENT COMPETENCY MODEL

2.1 LITERATURE REVIEW: MODIFICATION AND ELABORATION OF THE OEHLEY MODEL

The objective of this study is to modify and elaborate Oehley's (2007) proposed partial talent management competency model and to empirically test the elaborated model. Since the objective of this study is to build on the foundations laid by Oehley (2007) it is necessary to first: a) describe Oehley's (2007) model; b) explain the theoretical argument underlying her proposed model, c) report on the fit of the proposed structural model, and d) report on the findings regarding the specific causal relationships that she proposed.

Oehley (2007) proposed a talent management competency (TMC) model with intention to quit as the primary outcome variable. The TMC model can be described as an attempt to explain intention to quit/leave an organisation. Although talent retention is focused more on turnover, it is sometimes difficult to obtain the relevant data and measure the variables under discussion. Where an exit interview process is not followed, it is difficult to get hold of employees who voluntary left an organisation and measure variables like job satisfaction and organisational commitment. Studies have however found that intention to quit is the best single predictor of an individual's turnover behaviour (Arnold & Feldman, 1982; Cotton & Tuttle, 1986; Currivan, 1999; Griffeth, Hom & Gaertner, 2000; Igbaria & Greenhaus, 1992; Tett & Meyer, 1993). Oehley (2007) argued that intention to quit is influenced by specific line manager competencies, but that these competencies do not all exert a direct causal influence on intention to quit. The majority of the line manager competencies are hypothesized to influence turnover intention indirectly through their effect on job satisfaction and organisational commitment which function as mediator variables in these relationships.

2.2 IDENTIFICATION OF TALENT MANAGEMENT COMPETENCIES

To identify the core talent management competencies through which line managers influence their subordinates' intention to quit, Oehley (2007) first had to define the term talent management competencies to serve as the foundation of the study. Oehley (2007) could, however, not find a suitable definition in the literature, necessitating the separate analysis of the two terms comprising the composite term 'competencies' and 'talent management' in order to combine these definitions to guide the identification of the talent management competencies.

There are a variety of approaches, definitions and views explaining talent management and its related processes. Some theorists and researchers view talent management as an administrative process referring to the process of recruiting and developing employees to serve an organisation's current workforce needs. This view of talent management has however evolved over the years to incorporate more of a strategic focus that drives organisational outcomes (Fegley as cited in Oehley, 2007).

Oehley (2007) utilised the talent management definition by the Society for Human Resource Management (SHRM), which defines talent management as "the implementation of integrated strategies or systems designed to increase workplace productivity by developing improved processes for attracting, developing, retaining and utilizing people with the required skills and aptitude to meet current and future business needs" (SHRM as cited in Oehley, 2007, p. 13). She concludes that this definition of talent management (amongst others) "advocate the use of various HR processes and line management responsibilities which are aligned with organisational strategies, to be used with the intent of improving organisational success (Oehley, 2007, p. 13). These line management responsibilities will be detailed further on in this study.

A diversity of definitions exists for the term 'competency', illustrating the wide variety of ways in which this term is utilised (Bailey, Bartram & Kurz, 2001; Cheng, Dainty & Moore, 2003; Hoffman, 1999; Rees & Garnsey, 2003; Whiddett & Hollyforde, 2000

as cited in Oehley, 2007). According to Hoffman (as cited in Oehley, 2007), the meaning of the term competency differs according to the context of its use and the requirements of the user.

Some theorists view competencies as those characteristics of a person in an occupational role, which will distinguish superior performers from average performers" (Boyatzis, 1982; Fletcher, 1997; Mitrani, Dalziel & Fitt, 1993; Spencer & Spencer, 1993; Weightman, 1995; Whiddett & Hollyforde, 2000 as cited in Oehley, 2007). These underlying characteristics can refer to "a motive, trait, skill, an aspect of one's self-image or social role, or a body of knowledge which he or she uses" (Boyatzis as cited in Oehley, 2007, p. 14). Others see competencies as "relatively stable sets of behaviours that are instrumental in the delivery of superior performance defined in terms of outcomes for which the individual is held accountable" (Oehley, 2007, p. 14). Oehley's (2007) main focus in her study was on the talent management outcome latent variables and how these structurally link to intention to quit. She argued that

> The talent management outcome latent variables of interest characterize the follower and are presumed to affect the follower's intention to quit. The assumption is that these outcome variables are at least to some degree sensitive to the manner in which the manager behaves towards the follower (Oehley, 2007, p. 15).

In the context of Oehley's (2007) study (but also in this study) the term competencies is therefore interpreted to refer to the talent management behaviours displayed by line managers. She identified Woodruffe's (1993) definition as most suitable for her study. Woodruffe (as cited by Oehley, 2007, p. 29) defines competencies as "…the set of behaviour patterns that the incumbent needs to bring to a position in order to performs its tasks and functions with competence".

Taking the variety of views and arguments into consideration, for the purpose of her study, the term talent management competencies was defined by Oehley (2007, p. 16) as "sets of behaviour patterns that line managers need to bring to a position in order to attract, select, engage, develop and retain talented employees in order to reach specific desirable business objectives for the organisation". This definition will

also form the basis of the current study's attempt to elaborate the Oehley (2007) model.

Using the foregoing definition, Oehley (2007) explored various HR/talent management processes to identify which processes' line management are responsible for and could thus be included in the proposed competency model.

2.3 OUTCOMES LINKED TO TALENT MANAGEMENT COMPETENCIES AND MODEL FORMULATION

One of the intended outcomes of a talent management strategy is to retain talented employees (Oehley, 2007). Oehley (2007) thus considered measurable antecedents to turnover and found job satisfaction, organisational commitment and intention to quit to be the attitudinal latent variables that could possibly mediate the effect of the talent management competencies on actual turnover. These antecedents were combined and a basic model was proposed. The basic model essentially hypothesises that the various line managers' talent management competencies exert their influence on intention to quit through the talent management outcomes of job satisfaction and affective commitment, but that some of the talent management competencies also exert a direct influence on intention to quit. The basic model reflecting the fundamental argument underlying the expanded Oehley (2007) structural model is illustrated in Figure 2.1.

In this model, the talent management competencies are portrayed as the exogenous latent variable, with affective commitment, job satisfaction and intention to quit as the endogenous latent variables. Oehley (2007) suggested that certain talent management competency dimensions will play a role in the development of affective commitment and that other specific talent management competency dimensions will play a role in increased job satisfaction. This she argued should result in reduced intention to quit.

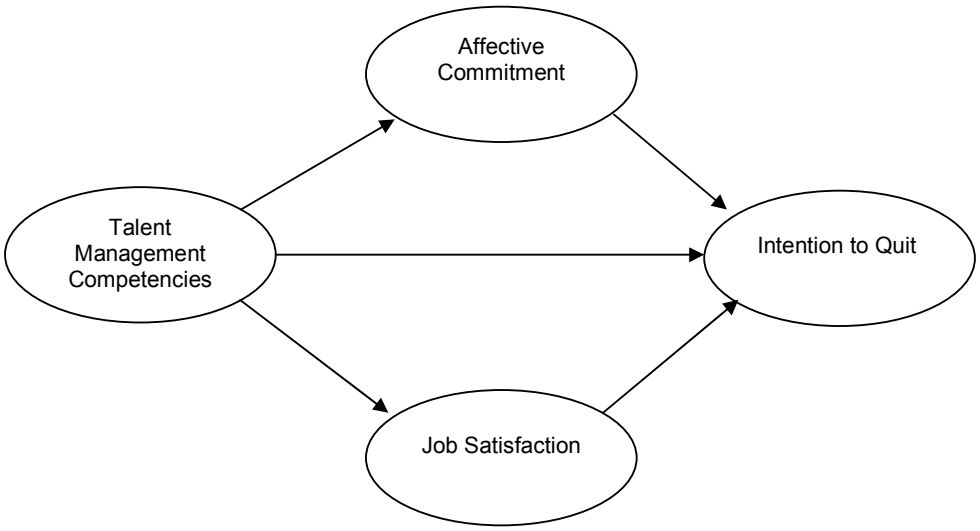

Figure 2.1 **Fundamental partial Talent Management competency model**

(Oehley, 2007, p. 49)

The model depicted in Figure 2.1 was subsequently elaborated based on the definitions and processes explained, mapping out each of the dimensions of the talent management competencies (e.g.,. *Develops Others*, *Work-Life Balance*, *Attracts and Recruits Talent*). The various competencies were linked to the different outcomes in the model. Initially the satisfaction latent variable was included as a single latent variable in the model.

Subsequent statistical analysis on the Job Descriptive Index measurement model however, indicated the need to adapt the measurement model slightly. Through exploratory factor analysis it was discovered that two factors underlie the observed correlation matrix calculated for the Job Descriptive Index scores which represents the job satisfaction latent variable. The originally proposed structural model was consequently adapted to accommodate these two factors, namely organisational job satisfaction, and supervisory job satisfaction. The adapted structural model is illustrated in Figure 2.2.

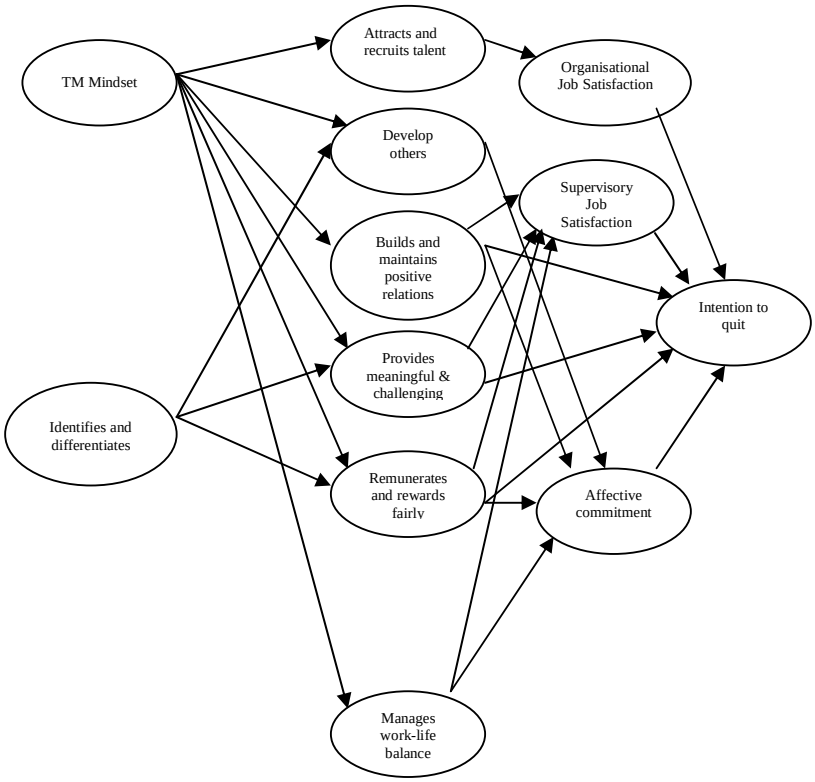

Figure 2.2 **Expanded partial talent management competency model**

(Oehley, 2007, p. 55)

Oehley's (2007) definition of each of the eight talent management competencies are shown in Table 2.1.

Table 2.1

Definitions of the core talent management competencies

Displays a Talent Management Mindset: Persistently and continuously displays a belief that having better talent at all levels provides the means to outperform other organisations. Regularly emphasizes this view to others.
Attracts and Recruits Talent: Attract and recruits competent and committed employees. Ensures that employees have the correct technical expertise and are achievement orientated and motivated.
Identifies and Differentiates Talented Employees: Identifies and differentiates different levels of employees according to performance, with the purpose of adjusting management decisions and actions according to this evaluation.
Develops Others: Accurately assesses people's development needs, provides opportunities and ensures that needs are met in order to fully develop the potential of all employees.

Builds and Maintains Relationships:
Understands the importance of interpersonal awareness and has the ability to establish and maintain relationships with employees.

Provides Meaningful and Challenging Work:
Ensures that subordinates are able to link their individual contribution to organisational and divisional strategic direction. Actively creates opportunities for employees to be engaged in work that is challenging.

Remunerates and Rewards Fairly:
Recognizes the achievements of employees and provides rewards and recognition accordingly.

Manages Work-Life Balance:
Controls work factors which might have a negative impact on the employee's personal or family life.

(Oehley, 2007, p. 59)

The outcome variables were defined as follows:

Affective Commitment:

"An employee's emotional attachment to, identification with, and involvement in the organisation" (Allen & Meyer as cited in Oehley, 2007, p. 40).

Job Satisfaction:

"A pleasurable or positive emotional state resulting from the appraisal of one's job or job experience (Locke as cited in Oehley, 2007, p. 44). The Job Descriptive Index (JDI) by Smith, Kendall and Hulin utilised in this study, make provision for five subscales that measure different facets of job satisfaction, namely pay, satisfaction with the job, satisfaction with promotion opportunities, satisfaction with the supervision and satisfaction with co-workers (Ironside, Smith, Brannick, Gibson & Paul as cited in Oehley, 2007, p. 45).

Intention to Quit:

A conscious and deliberate wilfulness to leave the organisation (Tett & Meyer as cited in Oehley, 2007, p. 47).

2.4 FITTING THE STRUCTURAL MODEL

2.4.1 Structural Model Fit

The structural model constitutes a specific structural hypothesis on the psychological process that underlies employees' intention to quit. As such the structural model presents an explanation as to why the indicator variables are correlated in the

specific way they do in the observed covariance matrix. If estimates for the freed structural model parameters could be found (given that it has been shown that the measurement model fits closely) that can at least reasonably accurately reproduce the observed covariance matrix, the hypothesised structural model can be said to fit the data (Hair et al., 2006). According to Diamantopoulos and Sigauw (2000) the aim of testing structural model fit is to ascertain whether the data supports the theoretical relationships proposed in a model. Close structural model fit, however, cannot be interpreted that the structural relationships proposed by the model necessarily are correct. It only means that the structural model presents one plausible account of the process that underlies intention to quit (Diamantopoulos & Sigauw, 2000).

The fit statistics calculated for the talent management competency model depicted in Figure 2.2 are shown in Table 2.2. The fit statistics indicate that the null hypothesis of exact fit was rejected, but the null hypothesis of close fit was not rejected (Oehley, 2007). The estimates derived for the freed model parameters thus approximately reproduced the observed covariance matrix, but not perfectly.

Table 2.2

Goodness of fit statistics for structural model fit

Degrees of Freedom	274
Minimum Fit Function Chi-Square	443.64 (P = 0.00)
Normal Theory Weighted Least Squares Chi-Square	405.16 (P = 0.00)
Satorra-Bentler Scaled Chi-Square	375.48 (P = 0.00)
Estimated Non-centrality Parameter (NCP)	101.48
90 Percent Confidence Interval for NCP	(54.67; 156.34)
Minimum Fit Function Value	4.19
Population Discrepancy Function Value (F0)	0.96
90 Percent Confidence Interval for F0	(0.52; 1.47)
Root Mean Square Error of Approximation (RMSEA)	0.059
90 Percent Confidence Interval for RMSEA	(0.043 ; 0.073)
P-Value for Test of Close Fit (RMSEA < 0,05)	0.16
Expected Cross-Validation Index (ECVI)	5.00
90 Percent Confidence Interval for ECVI	(4.55; 5.51)
ECVI for Saturated Model	6.62
ECVI for Independence Model	59.53
Chi-Square for Independence Model with 325 Degrees of Freedom	6257.86
Independence AIC	6309.86
Model AIC	529.48
Saturated AIC	702.00
Independence CAIC	6405.36
Model CAIC	812.28
Saturated CAIC	1991.16
Normed Fit Index (NFI)	0.93

Non-Normed Fit Index (NNFI)	0.97
Parsimony Normed Fit Index (PNFI)	0.78
Comparative Fit Index (CFI)	0.97
Incremental Fit Index (IFI)	0.97
Relative Fit Index (RFI)	0.92
Critical N (CN)	80.18
Root Mean Square Residual (RMR)	0.58
Standardized RMR	0.081
Goodness of Fit Index (GFI)	0.77
Adjusted Goodness of Fit Index (AGFI)	0.71
Parsimony Goodness of Fit Index (PGFI)	0.60

Figure 2.3 summarises the results of the Oehley (2007) study indicating which of the hypothesized structural relationships were supported, and which structural relationships were not.

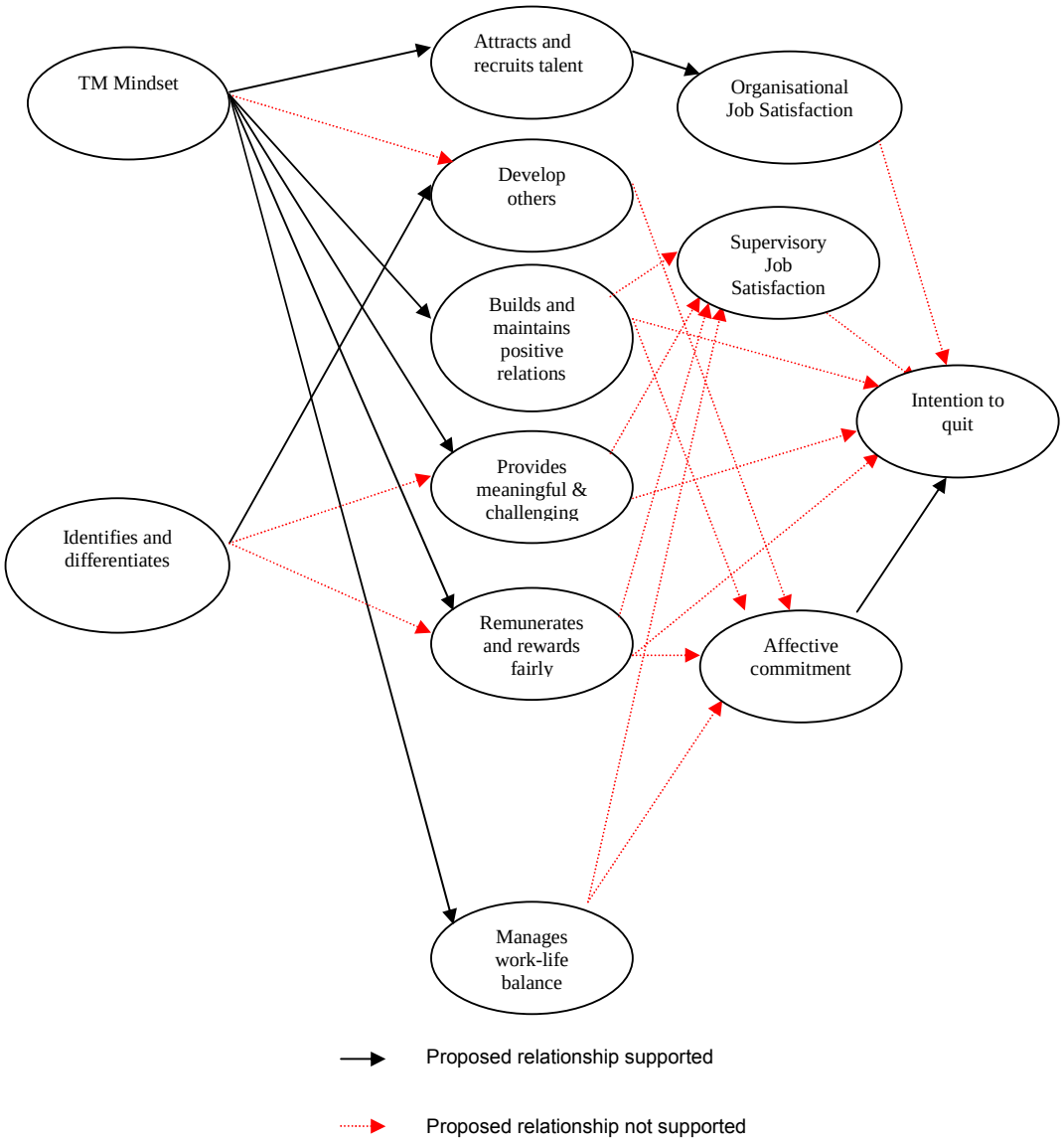

Figure 2.3 **Expanded partial talent management competency model illustrating findings by Oehley (2007)**

CHAPTER 3
PROPOSED MODEL ALTERATIONS AND EXTENTIONS

3.1 PROPOSED MODEL ALTERATIONS

When reviewing the talent management competency model proposed by Oehley (2007) with the objective of extending the research she initiated, the question should be asked whether the existing model should be structurally adapted by deleting any of the existing paths or by adding additional paths. A decision on the deletion of existing paths will be taken by taking into consideration her findings on the significance of the path coefficients estimates and the persuasiveness of the arguments and theory presented in support of the existing structural hypotheses. A total of twenty-four structural paths/hypotheses were suggested by Oehley (2007). Ten of these paths were corroborated. Her arguments in support of each of the structural hypotheses will be explained when reporting on the significance of the freed gamma and beta estimates.

When contemplating ways in which the existing Oehley (2007) structural model should be modified and elaborated the soundness of the fundamental argument underlying the expanded Oehley (2007) structural model as depicted in Figure 2.1 should moreover be reconsidered. The question therefore should be asked if the various line managers' talent management competencies exert their influence on intention to quit by directly by influencing the talent management outcomes of job satisfaction and affective commitment. Or do managers through their actions have to materially alter the nature of the work environment to which followers then respond with specific work and organisation attitudes?

3.2 GAMMA MATRIX

The first series of hypotheses proposed by Oehley proposed structural links between the exogenous latent variable, a *Talent Management Mindset* and the line management competencies (endogenous latent variables), *Attracts and Recruits Talent, Develops Others, Builds and Maintains Positive Relations, Provides*

Meaningful and Challenging Work, Remunerates and Rewards Fairly and *Manages Work-life Balance*. The *Talent Management Mindset* competency was defined as the extent to which line managers "persistently and continuously displays a belief that having better talent at all levels provides the means to outperform other organisations and regularly emphasizes this view to others" (Oehley, 2007, p. 62).

Oehley based these hypotheses on various authors' and researchers' findings on the importance of having a talent management mindset. The strongest arguments for these hypotheses were firstly derived from the 'War for Talent Survey, 2000' by McKinsey and Company as cited by Oehley (2007). They found that 49% of high performing companies identified the improvement of talent as one of their top three priorities for the organisation. Only 30% of average performing organisations identified this as a priority. She further highlighted a study by Antonucci which "found a direct negative link between the level of executive commitment to Talent Management and the incidence of significant leadership shortages within organisations" (Antonucci as cited in Oehley, 2007, p. 20). The conclusion was therefore made that "Talent Management strategies will not prove to be successful unless they are driven by the Talent Management mindset of both executives and line managers" (Oehley, 2007, p. 20).

Of these six paths hypothesised, only one was not supported, namely the relationship between a *Talent Management Mindset* and *Develops Others*.

The non-significance of the relationship between *Talent Management Mindset* and *Develops Others* is contrary to the initial theoretical expectations. It was proposed by Oehley (2007) that the HRD structures and procedures within the organisation that participated in the study could have provided a possible explanation for this finding. Upon further enquiries it was evident that a strategic decision had been made at executive level that the development of employees in this particular company creates a competitive advantage for them and hence this was identified as one of the company's core focus areas. It could thus be argued that participants in the study (i.e. employees) viewed development as a strategic focus of the HRD department, and not necessarily as a core function of the line manager. This argument is weakened by the fact that a similar strategic decision is also applicable

to the organisation's remuneration strategy but despite this *Talent Management Mindset* has been found to be statistically significantly related to *Remunerates and Rewards Fairly*. In the light of these arguments, it was proposed in this study that the relationship between a *Talent Management Mindset* and the competency *Develops Others* is retained in the revised and elaborated model.

Oehley (2007) further found a significant and positive relationship between *Identifies and Differentiates Talented Employees* and the competency *Develops Others*. The relationship between this exogenous latent variable and *Remunerates and Rewards Fairly* and *Provides Meaningful and Challenging Work* has however not been supported. This finding was contrary to previous research findings. According to Michaels et al. (as cited in Oehley, 2007) to enable the retention of employees, it is important to differentiate between top performers and employees that are not achieving the desired outcomes, or more specifically, A, B and C players. Through differentiation, one then needs to prioritize the development and compensation of the different categories accordingly.

Oehley (2007) also cited the results of the McKinsey and Company's War for Talent 2000 Survey as support for the proposed hypothesis. The results of this survey demonstrated that managers who identify and differentiate their employees will use this knowledge to allocate promotional opportunities, will compensate accordingly and will provide challenging assignments and development opportunities. The expectation is that this will bring about a reduction in employee turnover and facilitate beneficial/positive outcomes for the organisation.

Within the specific organisation in which Oehley (2007) conducted her research, specific HR policies and procedures regarding the performance appraisal process and the manner in which poor performance should be addressed were in place. It could thus be argued that employees could have seen the competency *Identifies and Differentiates Talented Employees* merely as an expression of HR procedures such as the performance appraisal process. This argument, however, is eroded by the fact that a significant relationship has been found between *Identifies and Differentiates Talented Employees* and *Remunerates and Rewards Fairly*.

Considering the relatively strong theoretical argument for these hypotheses, it is proposed that the relationship between the exogenous latent variable *Identifies and Differentiates Talented Employees* and *Provides Meaningful and Challenging Work*, as well as its relationship with *Remunerates and Rewards Fairly* be tested again in this study.

For the current study, it is thus proposed that all the hypotheses originally proposed by Oehley (2007) in the gamma matrix remain unchanged. An additional path is, however, hypothesized between the latent variable *Talent Management Mindset* and the latent variable *Identifies and Differentiates Talented Employees*. The latter latent variable is thereby reclassified as an endogenous latent variable in the revised model. The modification is motivated by the fact that it is unlikely that managers will take the trouble to identify and differentiate different levels of employees in terms of performance so as to adjust decisions and actions accordingly, unless they hold the belief that having better talent at all levels provides the means to outperform other organisations.

3.3 BETA MATRIX

Affective commitment is the employee's emotional attachment to, identification with, and involvement in the organisation (Meyer & Allen, 1991). Oehley (2007) found a significant and negative relationship between *Affective Commitment* and *Intention to Quit*. This is in line with the multiplicity of research that has shown organisational commitment, and more specifically affective commitment, to have a significant negative effect on turnover and turnover intentions (Oehley, 2007).

Oehley (2007) initially proposed that the *Job Satisfaction* latent variable could be operationalised by the subscale measures of the Job Descriptive Index (JDI) in the proposed talent management competency model. In evaluating the success of her operationalisation of the latent variables in the structural model Oehley (2007), however, found that a measurement model in which the JDI dimension scores load on a single satisfaction latent variable showed poor fit. Through exploratory factor analysis it has been shown that job satisfaction (as measured by the Job Descriptive

Index) consists of two factors, namely *Organisational Job Satisfaction*, and *Supervisory Job Satisfaction*. The Job Descriptive Index dimensions of satisfaction with pay and satisfaction with co-workers, (i.e., are they helpful, intelligent, responsible, etc.) (Stanton, Sinar, Balzer, Julian, Thoresen, Aziz, Fischer & Smith, 2001 as cited in Oehley, 2007) load onto *Organisational Job Satisfaction*. Oehley (2007) consequently adapted her initial structural model accordingly. It was found that *Organisational Job Satisfaction* has a significant negative effect on *Intention to Quit* As stated by Oehley (2007, p. 46), "there is considerable empirical evidence to show that job satisfaction has a negative effect on intention to search for an alternative position (Arnold & Feldman, 1982), intention to quit (Chen, 2006, Elangovan, 2001; Rasch & Harrel, 1990; Spector, 1985; Scott et al., 2006), and actual quitting (Arnold & Feldman, 1982; Freeman, 1978)". The hypothesised effect of *Organisational Job Satisfaction* on *Intention to Quit* proposed in the Oehley (2007) study is thus thoroughly supported by theory and previous researchers.

Somewhat surprisingly Oehley (2007) found that *Supervisory Job Satisfaction* was not significantly related to *Intention to Quit*. The JDI facets of satisfaction with work, promotion, supervision and the job in general load onto *Supervisory Job Satisfaction*. *Remuneration and Rewards Fairly* was significantly related to *Supervisory Job Satisfaction*, but the total effect of the former on *Intention to Quit* was found not to be significant. This finding was not in line with previous research. Numerous studies link job satisfaction with a decrease in turnover behaviour. She argued that the reason for this finding might lie in the measurement tool used to test this relationship. The Job Descriptive Index measurement model showed reasonable, but less than perfect fit. Some statistics highlighted areas for concern, i.e. modest factor loadings, positive and negative extreme residuals and the reasonably small proportion of variance in the indicators explained by the latent variables they were meant to reflect (Oehley, 2007). It was suggested by Oehley (2007) that the facets of the Job Descriptive Index might not be suitable measures of job satisfaction for her study. She further suggested that, based on a meta-analysis done by Kinicki et al. (2002), the Minnesota Satisfaction Questionnaire possibly might be a more suitable measure for job satisfaction as conceptualised in her model.

In this study, the relationship between *Job Satisfaction* and *Intention to Quit* as originally proposed by Oehley (2007) will be retained, and the proposal to rather use the Minnesota Satisfaction Questionnaire (shorter version) will be accepted.

Attracts and Recruits Talent has been found to be significantly related to *Organisational Job Satisfaction*. The indirect effect of *Talent Management Mindset* on *Organisational Job Satisfaction*, mediated by *Attracts and Recruits Talent*, has been found to be significant (Oehley, 2007) and will therefore remain in the proposed new model.

Support could not be found for the other hypotheses proposed by Oehley (2007) on the manner in which the endogenous latent variables are structurally linked. The following relationships were not significant ($p>0.05$) and null hypotheses associated with these hypothesised effects were not rejected:

a) The effect of *Develops Others* on *Affective Commitment*.

This hypothesis was based on the findings of Garger and Stallworth (as cited in Oehley, 2007) who found that an organisation benefits from the training they provide to employees in the form of increased commitment to the organisation. Specifically Garger et al. found that mentoring and role-modelling is a highly correlated antecedent of affective commitment, where mentoring and role-modelling are methods utilised as part of leadership development initiatives. Garger et al. found that "when employees see a constructive and individual return from the training they receive, their organisation usually gains in the form of increased commitment, employee satisfaction and retention" (as cited in Oehley, 2007, p. 29). It is proposed that this argument should be re-evaluated and psychological empowerment brought in as a mediating variable. This will be discussed further in section 3.4, Proposed Model Extensions.

b) The effect of *Builds and Maintains Relationships* on *Supervisory Job Satisfaction*, the effect of *Builds and Maintains Relationships* on *Intention to Quit*, and the effect of *Builds and Maintains Relationships* on *Affective Commitment*.

The argument supporting these hypotheses was based on a variety of researchers' findings of the important role that line managers play in terms of their relationship with employees and the outcomes that this relationship facilitates. Griffeth et al. (as cited in Oehley, 2007, p. 32) found that "employee's dissatisfaction with the quality of their relationship with their boss is the strongest single predictor of decisions to quit". According to an article published in the *Corporate Leadership Council (CLC)* as cited in Oehley (2007) the line manager is the most important factor that enables employees to be committed to their jobs, team and organisation. Furthermore, Levin and Rosse (as cited in Oehley, 2007) found that employee retention is greatly influenced by an effective working relationship between a line manager and employee, and is one of the most effective ways to retain employees.

This theoretical argument makes sufficient sense to retain the hypotheses that *Builds and Maintains Relationships* affects *Supervisory Job Satisfaction*, that *Builds and Maintains Relationships* affects *Intention to Quit*, and that *Builds and Maintains Relationships* affects *Affective Commitment*. It was proposed that a possible reason why Oehley (2007) did not find support for these hypotheses might lie in the question whether the latent variable, *Builds and Maintains Positive Relationships*, was appropriately conceptualised and whether the correct behavioural indicators were used to operationalise the latent variable. Oehley (2007) cites a variety of management behaviours that employees value, i.e. open and honest two-way communication channel (Gaylard, Sutherland & Viedge as cited in Oehley, 2007), helping employees accomplish performance objectives (Levin & Rosse as cited in Oehley, 2007), manager integrity and quality (Birt, Wallis & Winternitz as cited in Oehley, 2007), participative management (Griffeth et al. as cited in Oehley, 2007), supportive management (Kaye & Jordan-Evans as cited in Oehley, 2007), and providing feedback (Martel as cited in Oehley, 2007). Some of these management behaviours were incorporated in the conceptualisation of this competency (i.e. communicates openly with staff). Some were, however, either stated differently (suggested but not overtly stated, i.e. builds trust with team members and demonstrates sound ethical behaviour with colleagues, instead of manager integrity), or completely left out (i.e. provides regular feedback, support employees to achieve objectives, has a participative management style). The descriptions of this variable also referred to different stakeholders, namely others, team members, colleagues

and staff, although this competency is defined as "Understands the importance of interpersonal awareness and has the ability to establish and maintain relationships with employees" (Oehley, 2007, p. 62). The issue at hand, as well as the objectives of her study were furthermore focused on employee job satisfaction, affective commitment, and intention to quit. Although item analysis on the *Builds and Maintains Relationships* variable returned a Cronbach alpha of 0.906, it is suggested that the constitutive definition of this latent variable should be reconsidered as well as the items included in the subscale to operationalise this competency, and that the originally proposed hypotheses should be tested again.

c) The effect of *Provides Meaningful and Challenging Work* on *Supervisory Job Satisfaction* and the effect of *Provides Meaningful and Challenging Work* on *Intention to Quit*.

These hypotheses were based on the findings of Chambers, Foulon et al., Garger, Levin and Rosse, and Martel (as cited in Oehley, 2007) which showed that providing employees with exciting and challenging work is one of the top factors that enables the engagement and retention of talent. Similarly, Birt, Wallis and Winternitz, and Sutherland and Jordan (as cited in Oehley, 2007) found that not providing employees with challenging work is the most important variable affecting the retention cognitions of employees. Abdel-Halim, Katz, Goldstein and Rockart, Kinicki et al., Curry, Wakefield, Price and Mueller (as cited by Oehley, 2007) report that having to use a variety of skills, or complex tasks, are amongst the antecedents that have the greatest impact on job satisfaction. With these research findings as reference, it is suggested that these hypotheses be slightly revised and then tested again in the current study. Rather than hypothesizing direct effects it is hypothesized that the effect of *Provides Meaningful and Challenging Work* on *Satisfaction* and *Intention to Quit* should be mediated by the extent to which the employee perceives the job to be meaningful and feels psychologically empowered by the nature of the job. The argument underlying the revised hypotheses will be elaborated in section 3.4.

d) The effect of *Remunerates and Rewards Fairly* on *Affective Commitment*.

There is ample evidence that supports the link between organisational and job characteristics that line managers have control over and organisational commitment (Oehley, 2007). Specifically relating to remuneration, Oehley (2007) cites the findings from Rayton who found that level of pay is a variable that significantly impacts organisational commitment. The impact of various forms of recognition on commitment is however not explicitly stated or theoretically motivated.

There are a variety of latent variables that potentially can be influenced by the talent management competencies of line managers. Oehley (2007) attempted to theoretically motivate the inclusion of organisational commitment as one of these variables in her study. The challenge she faced lied in the comparison of the results of various research studies. This is due to the fact that the available studies use a variety of measures of commitment, some results are based only on certain dimensions of organisational commitment, or the antecedents of commitment were researched in general. However, Oehley (2007) decided to explore the specific dimension of affective commitment "as the primary dimension of organisational commitment that mediates the affect of the level of competence achieved on the proposed talent management competencies on the intention to quit" (Oehley, 2007, p. 42). The antecedents to affective commitment, according to Meyer and Allen (as cited in Oehley, 2007) fall into the categories of personal characteristics, work experience and organisational-structure. None of these categories explicitly relates to remuneration or non-monetary rewards. It is therefore suggested that a possible reason why the null hypothesis was not rejected, is that the argument for the hypothesis was not theoretically sound.

It is suggested that the effect of *Remunerates and Rewards Fairly* on *Commitment* is determined by the extent to which employees feel psychologically empowered. The rationale for the revised hypothesis will be elaborated in section 3.4.

e) The effect of *Remunerates and Rewards Fairly* on *Intention to Quit*

CLC, Gaylard et al., and Marques, Sutherland and Jordan (as cited in Oehley, 2007) found that when employees are satisfied with their total compensation, it will increase their intention to stay. According to Martel (as cited in Oehley, 2007, p. 33) employees want a compensation package which they regard as "fair and equitable in exchange for their work effort and skills". It is however debatable to what extent line managers have control over this. Generally, to ensure internal equity, salaries are determined on a centralised basis. Line managers have very little influence over centralised policy and whether salaries are market related. In the organisation that this talent management competency model will be tested in (in this current study), line managers can influence whether salaries are re-evaluated (i.e. where a position's scope of responsibility has changed) and benchmarked to the external market, but they have no authority to change the company's remuneration structure / models and the policy of internal equity.

Line managers do, however, have control over non-monetary recognition, i.e. verbal recognition, the allocation of increases, etc. It is therefore concluded that the original hypothesis is based on sound theory, but that the descriptors of this latent variable should be changed slightly, to only include factors that line mangers have control over. It is proposed that the descriptor *"ensures that salaries are marked related"* should be excluded, and also *"nominates employees for various company awards,* such as *"on-the-spot"* and *"circle-of-excellence"* awards which are too company-specific*.* It is furthermore proposed that that the effect of *Remunerates and Rewards Fairly* on *Intention to Quit* is mediated by *Psychological Empowerment* and *Organisational Commitment.* The argument for these hypotheses will be elaborated in section 3.4.

f) The effect of *Manages Work-life Balance* on *Supervisory Job Satisfaction* and the effect of *Manages Work-life Balance* on *Affective Commitment*

Garger (as cited in Oehley, 2007) found that non-financial rewards (i.e. having more control over work and work hours) can add quality to employees' work life and

enhance their feelings of affiliation to the organisation. Minimising stress levels by having a good balance between work and personal life contributes towards retaining employees according to Gaylard et al. (as cited in Oehley, 2007). These factors are within the control of a line manager, and therefore these hypotheses make sound theoretical sense. It is proposed that these hypotheses are retained and tested again.

g) The effect of *Supervisory Job Satisfaction* on *Intention to Quit*.

There are numerous studies that confirm the link between job satisfaction and intention to quit (Oehley, 2007). Studies from Chen, Elangovan, Rasch and Harrel, Scott et al., and Spector (as cited in Oehley, 2007) found job satisfaction to have a negative effect on intention to quit. It is thus surprising that Oehley did not find support for this hypothesis. Due to the sound theoretical argument and previous empirical support for this hypothesis, it is suggested that this hypothesis should be retained and tested again.

Oehley (2007) cited a number of possible reasons to be considered why the proposed hypothesis was not supported. The first group of possible reasons are recommendations by Diamantopoulos and Sigauw (2000) regarding the theoretical framework (conceptualisation) of the model. Firstly, by excluding important or critical variables (e.g., psychological empowerment) a specification error will result where the proposed model will not be a true characterization of the population and the variables involved (Oehley, 2007). Through the inclusion of mediating or moderating variables (e.g., perceived job characteristics and psychological empowerment) the relationships between the talent management competency variables might be better explained. It is proposed in this study that empowerment should be included as a possible mediating variable. The rationale for the inclusion of empowerment will be discussed in section 3.4.

The second possible explanation for the lack of significant pathways in the proposed model is model fit. There was reasonable to good fit of the measurement as well as the structural models, but some improvements of the model could be considered. Oehley (2007) proposed that organisational commitment as an endogenous latent

variable includes not only affective commitment, but also normative and continuance commitment. Furthermore, although the Job Descriptive Index could not be considered as a poor measure in its totality, the measurement model showed reasonable, but less than perfect fit. Some issues were also raised regarding the factor loadings, positive and negative extreme residuals, and the proportion of variance explained in the indicators. In a meta-analysis exploring the construct validity of the Minnesota Satisfaction Questionnaire (MSQ), it is suggested that this measurement instrument may be a better overall measure of pay, promotion, co-worker and supervision satisfaction (Kinicki et al. as cited in Oehley, 2007). It also includes a broader conceptualisation of job satisfaction, since it contains subscales like achievement, ability utilisation, activity, creativity, independence and variety.

3.4 PROPOSED MODEL EXTENTIONS

The inclusion of psychological empowerment as a mediating variable between line managers' talent management competencies, employees' organisational satisfaction, commitment and turnover intentions, can be justified by considering outcomes of psychological empowerment, as well the antecedents of this latent variable.

Psychological empowerment is defined as the psychological state that employees experience when managerial empowerment interventions are successful. It is a multifaceted construct which reflects an individual's orientation to his/her work role (Thomas & Velthouse, 1990). It is a motivational construct that is manifested in four cognitions, namely meaning, competence, self-determination and impact (Spreitzer, 1995).

Meaning is the value that a work goal or purpose has for an individual in relation to his/her own ideals or standards (Thomas & Velthouse, 1990). It involves a fit between the requirements of a work role and the individual's beliefs, values, and behaviours (Brief & Nord, 1990; Hackman & Oldham, 1980 as cited in Spreitzer, 1995).

Competence, which relates to self-efficacy, is an individual's belief in his/her capacity to perform activities with the required skill (Gist, 1987 as cited in Spreitzer, 1995).

Self-determination refers to an individual's sense of having a choice in initiating and regulating actions (Deci, Connell, & Ryan as cited in Spreitzer, 1995). It refers to autonomy in the initiation and continuation of work behaviours and processes (Bell & Staw, 1989, Spector, 1986 as cited in Spreitzer, 1995).

Impact is "the degree to which an individual can influence strategic, administrative, or operating outcomes at work" (Ashforth, 1989 as cited in Spreitzer, 1995, p. 1443) and is influenced by the work context.

This definition of psychological empowerment necessitates the clarification of certain assumptions. First, empowerment is a set of cognitions shaped by a work environment (Thomas & Velthouse, 1990), and not a personality trait that generalises across situations. People's perceptions about themselves in relation to their work environment can therefore change. Second, empowerment is a continuous variable, where people can be more or less empowered, rather than empowered or not empowered (Spreitzer, 1995; Spreitzer, Kizilos, & Nason, 1997). Third, empowerment relates specifically to the work domain and not to different life situations and roles.

Liden, Wayne and Sparrowe (2000, p. 407) states that: "perceptions of psychological empowerment may be based in part on external factors that surround individuals." Many factors in the work environment play a role in contributing whether an individual perceives himself as being empowered. It has been proposed that empowerment is not only a consequence from the individual's assessment of his/her work tasks, but that contextual factors, such as the input from superiors, also has a big role to play whether an individual perceives himself as being empowered (Seibert, Silver & Randolph, 2004; Patrick & Laschinger, 2006; Thomas & Velthouse as cited in Liden, Wayne, & Sparrowe, 2000). Thomas and Velthouse's explanation that empowerment is a set of cognitions shaped by a work environment further implies that management can influence psychological empowerment perceptions by influencing specific features of the work environment.

According to Koberg et al. as cited in Meyerson and Kline (2007, p. 448) “managers and supervisors can help employees feel empowered by providing them the necessary means, ability and authority to achieve success”. Similarly, Lee and Koh in Meyerson et al. (2007, p. 448) suggest that “empowerment means being influenced by the behaviour of a superior”.

Talent management competencies manifest themselves in specific behaviour, and contribute to the construction of the work environment in which an individual functions. The work environment created by management is cognitively assessed (Chan & Taylor, 2008) and psychologically interpreted by employees. It is fundamentally this psychological interpretation of the work environment, rather than the objective reality itself, that expresses itself in organisation and job attitudes like job satisfaction and organisational commitment (Castro, Periñan & Bueno, 2008). It is thereby, however, not denied that the managerial competencies might also be psychologically interpreted (amongst others in terms of its intention) by the employee and that these interpretations could also explain variance in job satisfaction and commitment. It is, on the other hand, possible that a certain (ideal) work environment can be created by line managers (in this case via the talent management competencies), but that the behaviour that creates the environment is either not noticed by employees and/or that the ideal environment is not experienced. Bandura (1989) proposed that people actively perceive environments, rather than being completely dependent on or determined by a certain environment. Therefore people are influenced by their own perceptions, rather than some objective reality. This links to the suggestion made by Thomas and Velthouse (1990) that individuals’ judgements about observable organisational conditions are shaped by their interpretations, which go beyond verifiable reality.

This could provide a possible explanation why Oehley (2007) failed to find support for the causal paths she proposed between specific talent management competencies and job satisfaction, organisational commitment, and turnover intention. The foregoing argument firstly suggests that managerial action in and by itself will typically not result in satisfaction and commitment. The managerial actions need to produce material benefits. It is, however, not the objective reality that

directly affects employee behaviour. The importance of perceptual reality suggests that the work environment line managers create through their talent management competencies, needs to be observed, found relevant or important, and internalised by employees before satisfaction with their jobs and commitment to the organisation will be enhanced, and as an end result, intention to leave the organisation reduced. The causal leap in the Oehley model as depicted in Figure 2.2 between line managers' competencies and the expected outcomes is too big. The model needs to make provision for specific organisational outcomes brought about by specific talent management competencies and for the mediating role of the psychological interpretation of these features of the work environment created through the talent management competencies.

For the purposes of explaining the individual and organisational outcomes of line managers' talent management competencies, it is proposed that *Psychological Empowerment* should be included as a mediating variable. It is suggested that the inclusion of *Psychological Empowerment* might shed some light on the antecedents of turnover intention and explain the effect of managers' talent management competencies on turnover behaviour.

Empowerment is considered to be an important construct because of the potential it has to benefit both positive outcomes for the individual as well as the organisation (Liden & Tewksbury as cited in Liden, Wayne & Sparrowe, 2000).

3.4.1. Antecedents of Psychological Empowerment

Determining the manner in which *Psychological Empowerment* should be structurally related to line managers' talent management competencies and ultimately employees' turnover intention, opens the debate whether managerial competencies directly empower their subordinates, or whether line managers create a certain environment which can potentially be perceived by employees as empowering.

Competencies manifest themselves in specific behaviour and contribute to the construction of the work environment in which an individual functions. Referring to

the talent management competency descriptors Oehley (2007) proposed that the talent management competency latent variables are observable in acts like encouragement of employees, giving feedback, coaching, ethical behaviour and open communication (Oehley, 2007, Appendix A, p. 147). These are acts that create a specific work environment for an employee. According to Miller et al., Laschinger et al., and Laschinger and Finegan as cited in Wagner et al., 2010, (p. 449) these acts refer to structural empowerment, and highlights access to opportunities within the organisation, information, resources, support, formal power and informal power as examples. This particular study by Wagner et al. (2010) also found significant positive correlations between structural empowerment, which include opportunities in the organisation, information, resources and support, and psychological empowerment, specifically of staff nurses.

It is therefore implied that a line manager does facilitate *Psychological Empowerment* indirectly by creating organisational conditions that evoke these cognitions (Coberg, Boss, Senjem & Goodman 1999). According to Laschinger et al. as cited in Wagner et al. (2010, p. 449) "structural empowerment, or the individual's awareness of empowering workplace surroundings, has been demonstrated to have significant measurable impact on health care personnel when psychological empowerment, or the psychological state that employees must experience for empowerment interventions to be successful, is also present." An organisational condition is therefore created (structural empowerment) that an employee interprets and reacts to with psychologically empowerment. This was also indicated in a study conducted by Manojlovich and Laschinger (2002). However, the question remains what these organisational conditions are?

Analysing psychological empowerment, Siegall and Gardner (2000), conceptualise empowerment as affecting employees' inner natures, their expressed behaviour, or both. Central to all forms of empowerment is the internal state of intrinsic motivation (Conger and Kanungo, Gagne et al., & Wilkinson as cited in Siegall & Gardner, 2000). Siegall and Gardner (2000, p. 705) further claim that "…the true benefits of empowerment (however defined) will not be seen unless people first perceive themselves as being empowered". They explain this by describing a scenario where an organisation gives an employee permission to act autonomously (structural

empowerment), but the employee does not believe that he/she has the capability to act effectively. Autonomy in and by itself will not result in improved outcomes for the employee or the organisation. When there is no corresponding perceptual registration of the structural empowerment that the work environment offers, employees will not feel empowered. For employees to feel empowered, they need to perceive a work environment that is empowering. The work environment can, on the other hand, only be perceived as empowering if structural empowerment actually occurred. This argument also applies to the talent management competency model. For example, a manager can give feedback to an employee and display the behaviour required to be considered competent in the *Developing Others* talent management competency. If, however, the employee does not perceive this feedback to be relevant, and does not internalise the feedback, the chances are good that it will have no effect on the employee and his/her empowerment cognitions. If the feedback does not speak to the employee on some affective level, the employee is unlikely to perceive him-/her-self as being empowered, or feel psychologically empowered.

Thomas and Velthouse (1990) suggested that an organisational environment has a powerful influence on cognitions of empowerment. This implies once again that it is the environment that is created (by managers) and perceived (by employees) that leads to empowerment.

It is therefore proposed that there isn't a direct relationship between the talent management competencies of line managers and *Psychological Empowerment*, but rather that the effect of these competencies on *Psychological Empowerment* are mediated by organisational variables that employees need to perceive as empowering.

There are ample studies that support the causal relationship between fair remuneration and reward practices and turnover intentions as was highlighted in paragraph 3.2. Oehley (2007, p 32) furthermore cited a powerful statement and finding by Chambers, Foulon, et al. namely "making sure that top performers' compensation is considerably higher than that of their average colleagues is a relatively straight forward way to keep the exit price high and raise barriers to

poaching". Oehley also highlighted studies which concluded that "an employee's satisfaction with their total compensation will increase their intent to stay" (Oehley, 2007, p. 32). However, the same argument used with regards to the talent management competency *Develop Others* as highlighted above, can be applied to the competency *Remunerates and Rewards Fairly*. Where this competency is defined as "recognising the achievements of employees and provides rewards and recognition accordingly" (Oehley, 2007, p. 62), it is argued that if employees do not see/experience remuneration practices to be fair, and if the forms of recognition provided by their manager are not psychologically recognised, turnover intentions will not be positively affected. It is therefore hypothesised that there isn't a direct link between *Remunerates and Rewards Fairly* and *Intention to Quit,* but rather that *Remunerates and Rewards Fairly* impacts *Intention to Quit* through *Organisational Commitment,* but that its effect on *Organisational Commitment* is mediated by *Psychological Empowerment.* No direct causal path is hypothesised between *Remunerates and Rewards Fairly* and *Intention to Quit*.

The competency *Develops Others* is defined as accurately assessing people's development needs; providing opportunities and ensuring that needs are met in order to fully develop the potential of all employees. Linking this to the abovementioned argument it is suggested that employees will only experience the line manager's behaviour as empowering, if they actually perceive the development opportunities that the manager provides. For example, if one considers one of the indicators of this competency (for example, gives honest feedback for developmental purposes), it can be argued that employees will only experience empowerment if they internalise this feedback and perceive this feedback as a development opportunity. It is therefore hypothesised that there exists a positive causal path between *Develops Others* and *Perceived Development Opportunities*, where the latter latent variable is defined as "having a clear perception that personal development opportunities are available to enhance competence and performance in the workplace and that these opportunities are accessible". It is moreover hypothesized that *Perceived Development Opportunities* mediate the effect of *Develops Others* on *Psychological Empowerment*. No direct causal path is hypothesized to exist between *Perceived Development Opportunities* and *Psychological Empowerment*.

Providing individuals with information regarding the mission of an organisation contributes to the creation of a sense of meaning and purpose according to Spreitzer (Bordin, Bartram & Casimir, 2007). Knowing what the mission of the organisation is may help an employee to understand how their own work can contribute to the goals of the organisation. According to Bowen and Lawler (1992), giving employees access to organisational information, allows them to see the big picture and their role in the organisation's operations. The feeling of empowerment requires that employees understand their work units and how they can contribute to achieve its goals (Spreitzer, 1996). Access to strategic information is seen as an antecedent of psychological empowerment (Bhatnagar, 2005). According to Gist and Mitchell (1992), social cognition theory suggests that having access to information supports self-efficacy. Furthermore, a sense of meaning and purpose is created by having information about the organisational vision (Conger & Kanungo, 1988). Block (cited in Spreitzer, 1996) debated that the creation of an empowering environment requires that managers filter information throughout an organisation. The sharing of information by leaders with sub-ordinates is also supported in a study conducted by Mok and Au-Yeung (2002) amongst nurses.

The competency *Provides Meaningful and Challenging Work* is defined as ensuring that subordinates are able to link their individual contribution to organisational and divisional strategic direction. In terms of this competency the manager actively creates opportunities for employees to be engaged in work that is challenging. Based on this definition and the previous argument, it is hypothesised that there exists a positive causal path between *Provides Meaningful and Challenging Work* and the latent variable *A Sense of Mission*. *A Sense of Mission* is defined as understanding the bigger picture and how work outputs contribute to the achievement of department/unit goals. It is further hypothesised that *A Sense of Mission* is positively causally related to *Psychological Empowerment*.

The characteristics of the job an employee is assigned to probably constitute the most salient feature of an employee's work environment. Hackman and Oldham (1975) identified five critical job characteristics that shape employee's psychological reaction to their work. Skill variety, autonomy, feedback, task identity and task

significance determine, according to Hackman and Oldham (1975), the manner in which employees psychologically respond to their jobs. Constitutive definitions of the five job characteristic dimensions are provided in Table 3.1.

Table 3.1

Constitutive definition of the five job characteristic dimensions (Hackman & Oldham, 1975, pp. 161-162)

Job characteristic dimension	Definition
Skill variety	"The degree to which a job requires a variety of different activities in carrying out the work, which involve the use of a number of different skills and talents of the employee."
Autonomy	"The degree to which the job provides substantial freedom, independence, and discretion to the employee in scheduling the work and in determining the procedures to be used in carrying it out."
Feedback	"The degree to which carrying out the work activities required by the job results in the employee obtaining direct and clear information about the effectiveness of his or her performance."
Task identity	"The degree to which the job requires completion of a "whole" and identifiable piece of work—that is, doing a job from beginning to end with a visible outcome."
Task significance	"The degree to which the job has a substantial impact on the lives or work of other people—whether in the immediate organisation or in the external environment."

Hackman and Oldham's hypothesis has received sufficient empirical research support (Boonzaier, Ficker & Rust, 2001) to make the inclusion of *Perceived Job Characteristics* in an explanatory intention to quit structural model almost mandatory. The talent management competency *Provides Meaningful and Challenging Work* is hypothesized to positively affect *Perceived Job Characteristics*.

The question needs to be asked, however, whether in the nursing industry nursing managers have the necessary authority to engineer the job characteristics of nursing jobs. The nursing profession is highly regulated. The duties and responsibilities of nurses are to a large degree determined by regulatory bodies like the South African Nursing Council. Nursing managers seemingly have very little discretion in enriching the job of a nurse by altering one or more of the critical job characteristics that could shape an employee's psychological reaction to their work. This would, however, present an overly bleak picture. Although nursing managers are significantly curtailed in the degree to which they can redesign the jobs of nurses they

nonetheless are not completely prevented from at least affecting some of the job characteristic dimensions. The degree to which nurses receive direct feedback for example from patients, family of patients and doctors, constitutes a job characteristic that could be engineered by the nursing manager.

In addition it could be argued that the extent to which a job is perceived to allow for skill variety, autonomy, feedback, task identity and task significance not only depends on the nature of the job but also the nature of the job incumbent. The same job (in this case the nursing position) could therefore be evaluated differently in terms of the five critical job characteristics by different employees. Especially task significance and to a somewhat lesser degree task identity could possibly be expected to be influenced by employee characteristics. This line of reasoning highlights the important question: which specific employee characteristics would facilitate a positive evaluation of these job characteristics in the nursing profession?

The foregoing argument seems to suggest, contrary to initial expectations, that perceived nursing job characteristics could vary across nurses, firstly, as a function of the ability of the nursing manager to influence some of these characteristics (albeit to a limited degree) and secondly as a function of specific nurse characteristics. Whether a nurse will experience meaning, competence, self-determination and impact (Spreitzer, 1995) at work could therefore be hypothesized to, at least in part, depend on the extent to which the job an employee has been assigned to is perceived to score high on the five critical job characteristics identified by Hackman and Oldham (1975). *Perceived Job Characteristics* could therefore be hypothesized to positively impact on the *Psychological Empowerment* of nurses.

3.4.2 The Relationship Between the Talent Management Competencies and the Job Characteristic Dimensions

The argument presented in the preceding paragraphs is that line managers exert an influence on their subordinates' intention to quit by affecting through their managerial actions the nature of the work environment in which followers work. Subordinates respond to the nature of the work environment as they psychologically interpret the

objective reality with specific work and organisation attitudes. The question is which of the talent management competencies could be expected to influence the perceived job characteristics?

The competency *Provides Meaningful and Challenging Work* is defined as ensuring that subordinates are able to link their individual contribution to organisational and divisional strategic direction and actively creating opportunities for employees to be engaged in work that is challenging (Oehley, 2007). Based on this definition, the definitions of the critical job characteristics and the previous argument, it is hypothesised that a positive causal path exists between *Provides Meaningful and Challenging Work* and the latent variable *Perceived Job Characteristics*.

3.4.3 Outcomes of Psychological Empowerment

3.4.3.1 Organisational Commitment

Kuokkanen, Leino-Kilpi and Katajisto (2003) as well as Liden et al. (as cited in Bordin et al., 2007) has shown that *Organisational Commitment* is an important outcome of *Psychological Empowerment*. Bhatnager (2005) similarly found that the three components of *Organisational Commitment* as conceptualised by Meyer and Allen (1991) is an outcome of *Psychological Empowerment.* It has been claimed that if employees feel empowered, they are more likely to reciprocate by being more committed to the organisation (Avolio, Zhu, Koh & Bhatia, 2004; Spreitzer, 1995; Liden et al., 2000; Castro et al., 2008; Honold, 1997; Koberg et al., 1999). Based on these findings, Bartram and Casimir (2007) hypothesised that *Organisational Commitment* will correlate positively with *Psychological Empowerment* and found support for this hypothesis.

Kanter as cited in Laschinger, Finegan, Shamian and Wilk (2001) further supports the relationship between *Psychological Empowerment* and *Organisational Commitment* by maintaining that work environments which are empowering through employees' access to information, resources, support, and the opportunity to learn and develop, is conducive to committed behaviour/commitment attitude. She argues

that employees' behaviour is a reaction to the situation in which they find themselves. When work environments are structured in such a way that it empowers employees, employees' experience feelings of autonomy and self-efficacy (which Spreitzer refers to as psychological empowerment) with the ultimate outcome of commitment to the organisation. Bhatnager (2007) found support for the relationship between *Psychological Empowerment* and *Organisational Commitment.* Kramer, Siebert and Liden in Laschinger et al. (2001) found support for the relationship between *Psychological Empowerment* and *Organisational Commitment*, specifically in both the nursing and non-nursing environments.

It is thus hypothesised that there is a positive causal relationship between *Psychological Empowerment* and *Organisational Commitment*.

3.4.3.2 Job Satisfaction

It is suggested that the different facets of *Psychological Empowerment* links to *Job Satisfaction*. More specifically, Spreitzer as cited in Bordin et al. (2007) argues that an individual can only be satisfied with their work when he/she is engaged in a meaningful job. Similarly, self-determination is linked to *Job Satisfaction* in the sense that self-determination is a psychological need and a key part of intrinsic motivation. It is further argued by Liden et al. in Bordin et al. (2007) that when employees feel that their outputs can influence certain outcomes of the organisation, they are likely to feel more involved and thus gain a sense of satisfaction with their job. Bordin et al. (2007) lastly argues around the competence dimension of *Psychological Empowerment* and states that individuals who feel more competent in performing their job, are more likely to feel satisfied with their job.

A study by Jun and Lee (as cited in Hechanova, Alampay & Franco, 2006) found that the four empowerment factors suggested by Spreitzer significantly predicted job satisfaction. Similarly, Manojlovich et al., (2002) found *Psychological Empowerment* strongly influenced nurses *Job Satisfaction.* In a study of nurses in the south-eastern USA, Fuller, Morrison, Jones, Bridger & Brown (1999) found that *Psychological Empowerment* moderated (i.e. enhanced) the relationship between transformational leadership and job satisfaction. Hechanova et al. (2006) in their study using the

MSQ and Spreitzer's 12-item psychological empowerment scale, reported a moderate correlation between *Psychological Empowerment* and *Job Satisfaction*.

It is thus hypothesised that there is a positive causal relationship between *Psychological Empowerment* and the outcome *Job Satisfaction*.

The proposed model extensions are illustrated in Figure 3.1

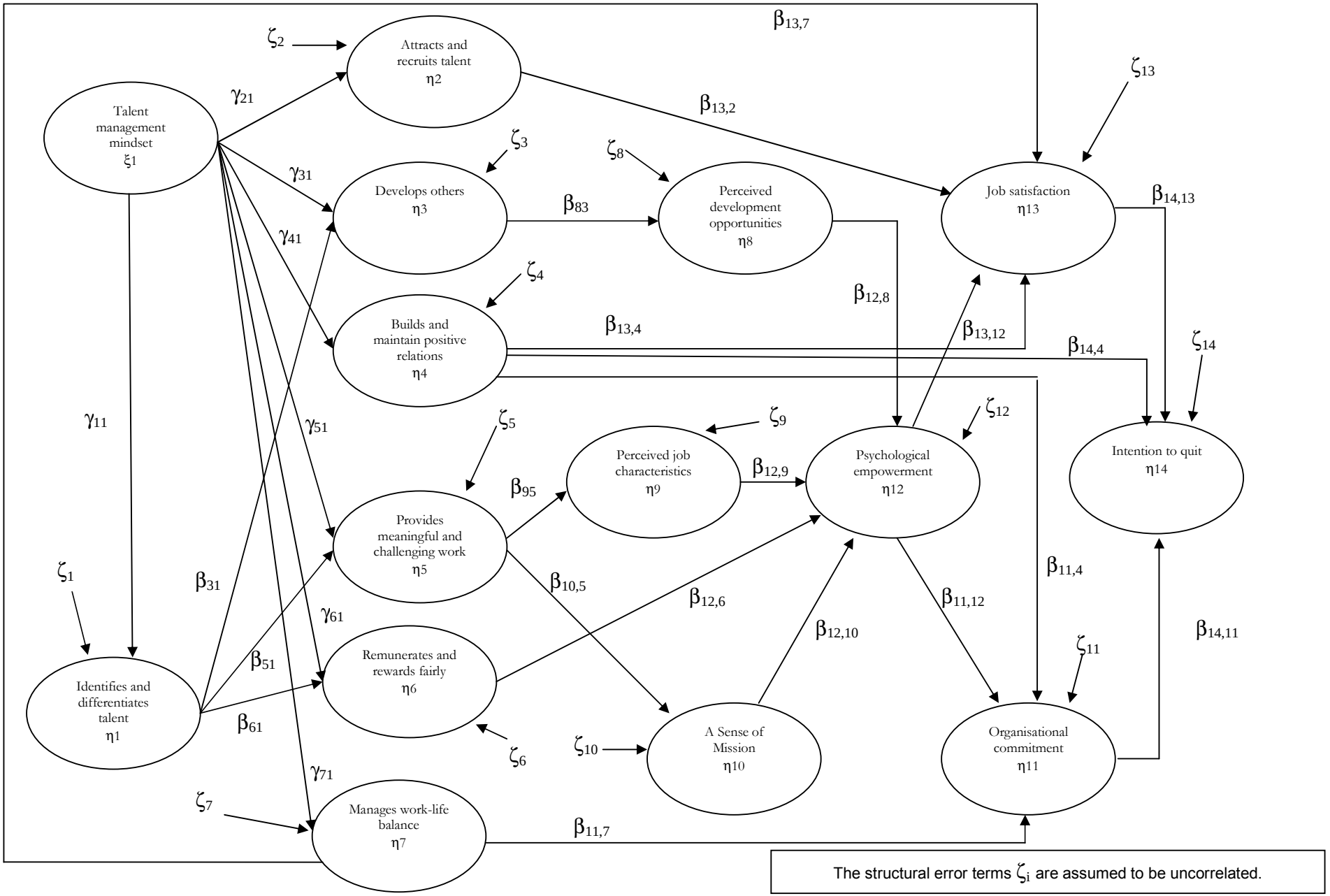

Figure 3.1 **Proposed extended talent management competency model**

CHAPTER 4
RESEARCH DESIGN AND METHODOLOGY

4.1 INTRODUCTION

Research methodology serves the epistemic ideal of science. Science is committed to an "epistemic imperative" (Babbie & Mouton, 2001, p. 8) to search for valid explanations. Explanations can be considered valid (or permissible) to the extent that the explanation closely fits the available data (Babbie & Mouton, 2001). Research methodology serves the epistemic ideal through two characteristics of the scientific method, namely objectivity and rationality. Objectivity refers to a conscious, explicit focus on the reduction of error. The scientific method of inquiry requires careful reflection at various critical points in the process where the epistemic ideal is potentially threatened and that appropriate steps be taken at these points to maximize the likelihood of valid findings. Science is rational in the sense that it provides an opportunity for subject matter experts, academics and theorists, to critically evaluate research findings and the validity of the proposed contribution to the body of knowledge by evaluating the methodological rigour of the process that was used to arrive at the conclusions (Babbie & Mouton, 2001). An important prerequisite, however, to facilitate this process is that an accurate description and a thorough motivation be provided of the methodological choices that were made at the various critical points in the method where the epistemic ideal is potentially threatened. A comprehensive account of how the methodology was approached allows knowledgeable peers to identify methodological flaws and to point out the implication of these for the validity of the conclusions.

4.2 SUBSTANTIVE RESEARCH HYPOTHESES

There are a variety of research design strategies to assist in providing answers to an empirical research problem. To best understand the appropriate approach, it is important to look at the purpose of this study.

The objective of this study is to modify and elaborate the partial talent management competency model proposed by Oehley (2007) by elaborating the network of latent variables through which the core competencies have to work to affect the intention to quit latent variable. The theoretical argument presented in the literature study resulted in the inclusion of job characteristics, perceived development opportunities, sense of mission and psychological empowerment as an additional latent variable in the original model and the modification of the causal paths. The resultant elaborated and modified structural model is depicted in Figure 3.1.

The overarching substantive hypothesis of this study is that the structural model depicted in Figure 3.1 provides a valid account of the psychological process that determines the level of employees' intention to quit. The overarching substantive research hypothesis can be dissected into the following twenty-seven more detailed, specific (direct effect) substantive research hypotheses[1]:

Hypothesis 1: The level of competence of line managers on the *Talent Management Mindset* competency (ξ_1) has a positive linear effect on the level of competence achieved on the *Identifies and Differentiates Talent* competency (η_1).

Hypothesis 2: The level of competence of line managers on the *Talent Management Mindset* competency (ξ_1) has a positive linear effect on the level of competence achieved on the *Attracts and Recruits Talent* competency (η_2).

Hypothesis 3: The level of competence of line managers on the *Talent Management Mindset* competency (ξ_1) has a positive linear effect on the level of competence achieved on the *Develop Others* competency (η_3).

Hypothesis 4: The level of competence of line managers on the *Talent Management Mindset* competency (ξ_1) has a positive linear effect on the level of competence achieved on the *Builds and Maintain Positive Relations* competency (η_4).

Hypothesis 5: The level of competence of line managers on the *Talent Management Mindset* competency (ξ_1) has a positive linear effect on the level of

[1] Indirect effect substantive hypotheses in which mediator variables mediate the effect of $\xi_i$on η_j or the effect of η_i on η_j are not formally stated. Neither will formal statistical hypotheses be formulated for these effects. The significance of the indirect effects will nonetheless be tested.

competence achieved on the *Provides Meaningful and Challenging Work* competency (η_5).

Hypothesis 6: The level of competence of line managers on the *Talent Management Mindset* competency (ξ_1) has a positive linear effect on the level of competence achieved on the *Remunerates and Rewards Fairly* competency (η_6).

Hypothesis 7: The level of competence of line managers on the *Talent Management Mindset* competency (ξ_1) has a positive linear effect on the level of competence achieved on the *Manages Work-Life Balance* competency (η_7).

Hypothesis 8: The level of competence of line managers on the *Identifies and Differentiates Talent* competency (η_1) has a positive linear effect on the level of competence achieved on the *Develops Others* talent management competency (η_3).

Hypothesis 9: The level of competence of line managers on the *Identifies and Differentiates Talent* competency (η_1) has a positive linear effect on the level of competence achieved on the *Provides Meaningful and Challenging Work* talent management competency (η_5).

Hypothesis 10: The level of competence of line managers on the *Identifies and Differentiates Talent* competency (η_1) has a positive linear effect on the level of competence achieved on the *Remunerates and Rewards Fairly* talent management competency (η_6).

Hypothesis 11: The level of competence of line managers on the *Attracts and Recruits Talent* competency (η_2) has a positive linear effect on the outcome of *Job Satisfaction* (η_{13}).

Hypothesis 12: The level of competence of line managers on the *Develop Others* competency (η_3) has a positive linear effect on *Perceived Development Opportunities* (η_8).

Hypothesis 13: The level of competence of line managers on the *Builds and Maintain Positive Relations* competency (η_4) has a positive linear effect on the outcome of *Job Satisfaction* (η_{13}).

Hypothesis 14: The level of competence of line managers on the *Builds and Maintain Positive Relations* competency (η_4) has a negative linear effect on the outcome of *Intention to Quit* (η_{14}).

Hypothesis 15: The level of competence of line managers on the *Builds and Maintain Positive Relations* competency (η_4) has a positive linear effect on the outcome of *Organisational Commitment* (η_{11}).

Hypothesis 16: The level of competence of line managers on the *Provides Meaningful and Challenging Work* competency (η_5) has a positive linear effect on *Perceived Job Characteristics* (η_9)

Hypothesis 17: *Perceived Job Characteristics* (η_9) has a positive linear effect on *Psychological Empowerment* (η_{12})

Hypothesis 18: *Psychological Empowerment* (η_{12}) has a positive linear effect on the outcome of *Organisational Commitment* (η_{11}).

Hypothesis 19: The level of competence of line managers on the *Provides Meaningful and Challenging Work* competency (η_5) has a positive linear effect on *A Sense of Mission* (η_{10}).

Hypothesis 20: *A Sense of Mission* (η_{10}) has a positive linear effect on the outcome of *Psychological Empowerment* (η_{12}).

Hypothesis 21: *Psychological Empowerment* (η_{12}) has a positive linear effect on the outcome of *Job Satisfaction* (η_{13}).

Hypothesis 22: *Perceived Development Opportunities* (η_8) has a positive linear effect on *Psychological Empowerment* (η_{12}).

Hypothesis 23: The level of competence of line managers on the *Remunerates and Rewards Fairly* competency (η_6) has a positive linear effect on the outcome of *Psychological Empowerment* (η_{12}).

Hypothesis 24: The level of competence of line managers on the *Manages Work-Life Balance* competency (η_7) has a positive linear effect on the outcome of *Organisational Commitment* (η_{11}).

Hypothesis 25: The level of competence of line managers on the *Manages Work-Life Balance* competency (η_7) has a positive linear effect on the outcome of *Job Satisfaction* (η_{13}).

Hypothesis 26: An employee's level of *Job Satisfaction* (η_{13}) has a negative linear effect on the outcome *Intention to Quit* (η_{14}).

Hypothesis 27: An employee's level of *Organisational Commitment* (η_{11}) has a negative linear effect on the outcome *Intention to Quit* (η_{14}).

4.3 RESEARCH DESIGN

The overarching substantive research hypotheses formulated under section 4.2 make specific claims with regards to the intention to quit structural model. The intention to quit structural model as depicted in Figure 3.1 hypothesizes specific structural relations between the various latent variables contained in the model.

To empirically test the merit of the structural relations hypothesized by the proposed intention to quit structural model requires a plan or strategy that will guide the gathering of empirical evidence to test the operational hypotheses. The research design constitutes this plan or strategy (Kerlinger & Lee, 2000). Research design is a plan, guidelines or blueprint of how research will be conducted (Babbie & Mouton, 2001). Which design will best suit the intended research is mainly dictated by the research problem and the type of evidence required to address the problem. The function of the research design is to attempt to ensure empirical evidence that can be interpreted unambiguously for or against the hypothesis being tested.

This study uses an *ex post facto* correlational research design to test the overarching substantive research hypothesis. In terms of the logic of the *ex post facto* correlational design the researcher obtains measures on the observed variables[2] and calculates the observed covariance matrix (Kerlinger & Lee, 2000). Estimates for the freed structural and measurement model parameters are obtained in an iterative fashion with the objective of reproducing the observed covariance matrix as closely as possible (Diamantopoulos & Sigauw, 2000). If the fitted model fails to accurately reproduce the observed covariance matrix (Diamantopoulos & Sigauw, 2000; Kelloway, 1998) the conclusion would inevitably follow that the elaborated intention to quit structural model does not provide an acceptable explanation for the

[2] In fitting the intention to quit structural linear composites of individual items will be used to represent latent variables.

observed covariance matrix. It then follows that the structural relationships hypothesized by the model do not provide an accurate portrayal of the psychological process shaping employees' intention to quit[3]. The opposite, however, is not true. If the covariance matrix derived from the estimated structural and measurement model parameters closely agrees with the observed covariance matrix it would not imply that the psychological dynamics postulated by the structural model necessarily produced the observed covariance matrix. It can therefore not be concluded that the psychological process depicted in the model necessarily must have produced the levels of intention to quit occurring in the employees sampled for the study. A high degree of fit between the observed and estimated covariance matrices would only imply that the psychological processes portrayed in the structural model provide one plausible explanation for the observed covariance matrix.

4.4 STATISTICAL HYPOTHESES

The format in which the statistical hypotheses are formulated depend on the logic underlying the proposed research design as well as the nature of the envisaged statistical analyses. The argument presented in section 4.3 already assumed the utilization of structural equation modelling to evaluate the stated substantive research hypotheses. The notational system used in the formulation of the hypotheses follows the structural equation modelling convention associated with LISREL (Du Toit & Du Toit, 2000; Jöreskog & Sörbom, 1996b).

The overarching substantive research hypothesis states that the structural model depicted in Figure 3.1 provides a valid account of the psychological process that determines the level of employees' intention to quit. If the overarching substantive research hypothesis would be interpreted to mean that the structural model provides a perfect account of the manner in which psychological empowerment, affective commitment and job satisfaction mediate the effect of the talent management competencies on the intention to quit in subordinates, the substantive research hypothesis translates into the following exact fit null hypothesis:

[3] This conclusion, however, would only be warranted if prior evidence would exist that the measurement model fits closely.

H_{01}:RMSEA = 0

H_{a1}:RMSEA > 0

If the overarching substantive research hypothesis would be interpreted to mean that the structural model provides an approximate account of the manner in which psychological empowerment, affective commitment and job satisfaction mediate the effect of the talent management competencies on the intention to quit in subordinates, the substantive research hypothesis translates into the following close fit null hypothesis:

H_{02}:RMSEA ≤ 0.05

H_{a2}:RMSEA > 0.05

The overarching substantive research hypothesis was dissected into twenty-seven more detailed, specific substantive research hypotheses. These twenty-seven detailed research hypotheses translate into the path coefficient statistical hypotheses depicted in Table 4.1

Table 4.1

Path coefficient statistical hypotheses

Hypothesis 1	Hypothesis 6	Hypothesis 11	Hypothesis 16	Hypothesis 21	Hypothesis 26
$H_{03}:\gamma_{11} = 0$	$H_{08}:\gamma_{61} = 0$	$H_{013}:\beta_{13,2} = 0$	$H_{018}:\beta_{95} = 0$	$H_{023}:\beta_{13,2} = 0$	$H_{028}:\beta_{14,13} = 0$
$H_{a3}:\gamma_{11} > 0$	$H_{a8}:\gamma_{61} > 0$	$H_{a13}:\beta_{13,2} > 0$	$H_{a18}:\beta_{95} > 0$	$H_{a23}:\beta_{13,2} > 0$	$H_{a28}:\beta_{14,13} < 0$
Hypothesis 2	Hypothesis 7	Hypothesis 12	Hypothesis 17	Hypothesis 22	Hypothesis 27
$H_{04}:\gamma_{21} = 0$	$H_{09}:\gamma_{71} = 0$	$H_{014}:\beta_{83} = 0$	$H_{019}:\beta_{12,9} = 0$	$H_{024}:\beta_{12,8} = 0$	$H_{029}:\beta_{14,11} = 0$
$H_{a4}:\gamma_{21} > 0$	$H_{a9}:\gamma_{71} > 0$	$H_{a14}:\beta_{83} > 0$	$H_{a19}:\beta_{12,9} > 0$	$H_{a24}:\beta_{12,8} > 0$	$H_{a29}:\beta_{14,11} < 0$
Hypothesis 3	Hypothesis 8	Hypothesis 13	Hypothesis 18	Hypothesis 23	
$H_{05}:\gamma_{31} = 0$	$H_{012}:\beta_{31} = 0$	$H_{015}:\beta_{13,4} = 0$	$H_{020}:\beta_{11,12} = 0$	$H_{025}:\beta_{12,6} = 0$	
$H_{a5}:\gamma_{31} > 0$	$H_{a12}:\beta_{31} > 0$	$H_{a15}:\beta_{13,4} > 0$	$H_{a20}:\beta_{11,12} > 0$	$H_{a25}:\beta_{12,6} > 0$	
Hypothesis 4	Hypothesis 9	Hypothesis 14	Hypothesis 19	Hypothesis 24	
$H_{06}:\gamma_{41} = 0$	$H_{012}:\beta_{51} = 0$	$H_{016}:\beta_{14,4} = 0$	$H_{021}:\beta_{10,5} = 0$	$H_{026}:\beta_{11,7} = 0$	
$H_{a6}:\gamma_{41} > 0$	$H_{a12}:\beta_{51} > 0$	$H_{a16}:\beta_{14,4} < 0$	$H_{a21}:\beta_{10,5} > 0$	$H_{a26}:\beta_{11,7} > 0$	
Hypothesis 5	Hypothesis 10	Hypothesis 15	Hypothesis 20	Hypothesis 25	
$H_{07}:\gamma_{51} = 0$	$H_{012}:\beta_{61} = 0$	$H_{017}:\beta_{11,4} = 0$	$H_{022}:\beta_{12,10} = 0$	$H_{027}:\beta_{13,7} = 0$	
$H_{a7}:\gamma_{51} > 0$	$H_{a12}:\beta_{61} > 0$	$H_{a17}:\beta_{11,4} > 0$	$H_{a22}:\beta_{12,10} > 0$	$H_{a27}:\beta_{13,7} > 0$	

4.5 SAMPLE

The purpose of this research is to constructively contribute to the retention of talented nursing staff in South Africa. The focus of this research falls specifically on the retention of registered and enrolled/staff nurses. The proposed structural model hypothesises that the intention to quit of these nurses will be influenced by the talent management competencies of their immediate superiors that supervise their day-to-day work life.

The general management structure within the nursing discipline in a hospital setting involves a nursing manager, who functions as the head of the nursing function within the hospital and who is responsible for strategy formulation, budgeting, recruitment and the general running of the nursing function of the hospital. Unit managers report to the nursing manager, and registered nurses (RN) and enrolled/staff nurses (EN) report to the unit manager. Nursing assistants and administrative staff within the unit also report to the unit manager. A unit manager is fully responsible for the specific unit/ward that he/she is assigned to. They perform the role of a line manager to the staff in his/her unit, which encompasses general line management duties like goal setting, scheduling and staffing of the unit, performance management, training and development. He/she also has administrative tasks like the management of ward stock levels, linen and patient records.

The unit manager plays a crucial role in the type of work environment that is created for staff, since he/she is based within the unit itself (rather than located in a remote office in the management office block) and works with staff in the unit on a daily basis. Due to shortages of nursing staff, a unit manager is usually operationally involved in the day-to-day care of patients and family members as well, although this is not his/her core function. The close proximity of this working relationship lends itself to ample opportunity for communication, performance observations, feedback, mentoring and support. The unit manager has therefore immense influencing power in his/her unit.

Given the nature of the structural model it was proposed that two samples should be utilised to test the model. The first sample comprised a number of nursing managers to assess the competence of unit managers on the talent management competencies. The second sample group was the subordinates of these unit managers to assess their standing on the outcome variables, namely perceived job characteristics, psychological empowerment, perceived development opportunities, sense of mission, job satisfaction, organisational commitment and intention to quit.

Sample sizes of at least 200 observations are seemingly satisfactory for most SEM applications (Kelloway, 1998; MacCallum, Browne & Sugawara, 1996). Three issues should be considered when deciding on the appropriate sample size for a study that intends using SEM. The first consideration is the ratio of sample size to the number of parameters to be estimated. At a bare minimum requirement one would not regard a situation as desirable when more freed parameters have to be estimated than there are observations in the sample. Elaborate measurement and structural models contain more variables and therefore have more freed parameters that have to be estimated. Such models require larger sample sizes. Bentler and Chou (cited in Kelloway, 1998) recommend that the sample size to estimated parameter ratio should fall between 5:1 and 10:1. The proposed structural model (Figure 3.1) and the proposed procedure for operationalising the latent variables (see section 4.6) would in terms of the Bentler and Chou (cited in Kelloway, 1998) guideline require a sample of 420-840 nurses to provide a convincing test of the structural model (99 freed parameters).

The statistical power associated with the test of the hypothesis of close fit (H_0: RMSEA $\leq$ 0.05) against the alternative hypothesis of mediocre fit (H_a: RMSEA > 0.05) is a second consideration to take into account when deciding on the appropriate sample size. Statistical power in the SEM context refers to the probability of rejecting the null hypothesis of close fit (H_0: RMSEA $\leq$ 0.05) when in fact it should be rejected (i.e., the model fit actually is mediocre, (H_a: RMSEA > 0.05). Too high statistical power would mean that any attempt to obtain formal empirical proof for the validity of the model would be futile. Even a small deviation from close fit would result in a rejection of the close fit null hypothesis. Conversely,

however, too low power would mean that even if the model fails to fit closely the close fit null hypothesis would still not be rejected. Not rejecting the close fit under conditions of low power does not provide very convincing evidence on the validity of the model. Power tables were compiled by MacCallum et al. (1996). These tables were used to derive sample size estimates for the test of close fit, given the effect sizes assumed above, a significance level (α) of 0.05, a power level of 0.80 and degrees of freedom (v) of (½[(p+q][p+q+1]-t)[4]=666-99=567. The MacCallum et al. (1996) table indicate that a sample of less than 132 observations would be required to ensure statistical power of 0.80 in testing the null hypothesis of close fit for the elaborated intention to quit structural model.

The third consideration to take into account when deciding on the appropriate sample size is practical and logistical considerations like cost, availability of suitable respondents and the willingness of the employer to commit large numbers of employees to the research.

Taking all three the above considerations into account it was suggested that a sample of 200 – 250 subordinates, more specifically registered and enrolled/staff nurses, should be selected by means of a probability sampling procedure. However, only 142 were able to participate. Only 137 of these questionnaires could be utilised in this study. A non-probability convenience sample of eight hospitals from a hospital group in South Africa was selected. Registered and enrolled/staff nurses were the unit of analysis in this study. The talent management competencies of the Unit Managers that fulfilled a supervisory role over the selected nurses were evaluated by their managers, the Nursing Manager of the hospital. A total of 38 Unit Managers' talent management competencies were evaluated. The level of competence that these Unit Managers displayed on the talent management competencies were used as variables to describe the working context of the selected nurses.

Informed consent was obtained from all selected nurses and nursing managers.

[4] The symbol p represents the number of exogenous indicator variables, q the number of endogenous indicator variables and t refers to the number of parameters in the comprehensive LISRWEL model that were freed to be estimated.

4.6 MEASUREMENT INSTRUMENTS

To evaluate the fit of the elaborated intention to quit structural model depicted in Figure 3.1 in accordance with the directives of the *ex post facto* correlational design the latent variables comprising the model had to be operationalised. Effect indicators were used to represent each latent variable. To improve the likelihood that the operationalised structural model will be identified (Diamantopoulos & Sigauw, 2000) the requirement was adopted to have at least two or more indicator variables per latent variable.

The validity and credibility of the claim that lack of model fit discredits the specific structural relations hypothesised by the model depicted in Figure 3.2 hinges on the assumption that the indicator variables provide reliable, valid and unbiased measures of the latent variables they are required to represent. Research evidence available in the literature on the reliability and validity of the selected instruments was consequently reviewed to justify the choice of measuring instruments. The success with which the indicator variables represent the latent variables comprising the structural model in this specific study were evaluated empirically via item analysis, exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). The necessity of these analyses is argued in section 4.8.

4.6.1 Talent Management Competencies

The talent management competencies were measured with the questionnaire that was developed by Oehley (2007). Item parcels were calculated by taking the mean of the even-numbered and uneven-numbered items to form two composite indicator variables for each of the eight talent management competency latent variables.

The questionnaire consists of eight subscales, representing the eight talent management competencies, and is answered by using a five point Likert-type scale, where responses can range from Never to Always. Provision is made for an “unable to rate” category. In the study conducted by Oehley, all eight of the subscales showed Cronbach alpha values greater than 0.80 (Oehley, 2007, p. 74).

In the Oehley (2007) study, principal axis factoring with Varimax rotation was conducted on the subscales of the Talent Management Competency questionnaire. The results confirmed the uni-dimensionality of all the subscales and factor loadings were found to vary between 0.569 and 0.895, with a mean of 0.755 and a median of 0.762 (Oehley, 2007, p. 77).

The *Builds and Maintains Positive Relationships subscale* was revised for the purpose of this study by editing existing items, removing existing items and adding new items as discussed earlier under section 3.2.1 (b).

4.6.2 Psychological Empowerment

This latent variable was measured by the questionnaire developed by Gretchen Spreitzer (Spreitzer, 1995). It is a 12-item questionnaire which measures the four cognitions of *Psychological Empowerment*. It is answered using a six point Likert-type response format that ranges from Very Strongly Agree to Very Strongly Disagree. The Cronbach alpha reliability coefficient for the overall empowerment construct ranges between 0.62 and 0.72 (Spreitzer, 1995).

Second-order confirmatory factor analysis was used to assess the convergent and discriminant validity of this instrument in a study conducted by Spreitzer (1995). Reasonable model fit was obtained (Spreitzer, 1995).

4.6.3 Job Satisfaction

Job Satisfaction was measured by the short version of the Minnesota Satisfaction Questionnaire. The Minnesota Satisfaction Questionnaire (MSQ) is designed to measure an employee's satisfaction with his/her job by focusing on aspects of a job that an individual can find rewarding (Weiss, David, England, & Lofquist, 1967). It therefore helps to create a more individualised picture of satisfaction with work and the work environment. The MSQ (short version) consists of 20 items from the longer version that best represent each of the 20 scales. Scores are obtained for the two factors, intrinsic and extrinsic satisfaction, which underlies the MSQ (short version).

The intrinsic and extrinsic satisfaction scores were used to operationalise the satisfaction latent variable.

For the intrinsic motivation score, reliability coefficients range from 0.84 to 0.91. For the extrinsic motivation score, reliability coefficients range from 0.77 to 0.82 (Weiss et al., 1967).

4.6.4 Organisational Commitment

This variable in the extended talent management competency model was measured by the three component model (TCM) Employee Commitment Survey. Based on the TCM of commitment (Meyer & Allen, 1991), the TCM Employee Commitment Survey measures three forms of employee commitment to an organisation: desire-based (affective commitment), obligation-based (normative commitment) and cost-based (continuance commitment). The survey includes three validated scales: the Affective Commitment Scale (ACS), the Normative Commitment Scale (NCS) and the Continuance Commitment Scale (CCS). Each is scored separately and can be used to identify the "commitment profile" of employees within an organisation (Meyer & Allen, 2004). Employees respond to a series of statements which relates to their relationship with the organisation and their reason for staying.

In a study conducted by Allen et al. (1990), a reliability coefficient of 0.87 was found for the ACS, 0.75 for the CCS, and 0.79 for the NCS. Factor analysis with Varimax rotation provided support for the claim for the hypothesized three factor structure and showed that the ACS accounted for 58.8% of the variance, the CCS for 25.8 %, and the NCS for 15.4 %.

In this study two item parcels were calculated by taking the mean of the even-numbered and uneven-numbered items of the commitment scale to form two composite indicator variables for the commitment latent variable in the structural model.

4.6.5 Intention To Quit

A modified version of Arnold and Feldman's Intention to Quit scale developed by Oehley (2007) was utilised. It consists of 4 items, where responses can range from never (1) to always (5). Items are: 1) Wanting to leave the organisation, 2) Searching for another position, 3) Planning to leave the organisation, and 4) Actually leaving the organisation within the next year (Oehley, 2007).

Two item parcels were calculated by taking the mean of the even-numbered and uneven-numbered items to form two composite indicator variables for the *Intention to Quit* latent variable in the structural model.

4.6.6 Perceived Job Characteristics

The revised Job Diagnostic Survey (Hackman & Oldham, 1975) was used. This questionnaire assesses the five dimensions that make up the job characteristics model, namely skills variety, task identity, task significance, autonomy and feedback. Under each dimension, statements are made about an incumbents' job that need to be answered on a 7-point Likert type scale. Responses can range from 1) Very Inaccurate, to 7) Very Accurate. A study conducted by Buys, Olckers and Schaap (2007) have found that the alpha coefficients for these sub-scales ranged between 0.67 and 0.79, indicating a reliable measuring instrument, specifically also in the South African context. The five dimension scores were used to operationalise the perceived job characteristics latent variable.

4.6.7 A Sense of Mission

To measure this latent variable, a set of questions was developed based on the constitutive definition of the latent variable. Item analysis and dimensionality analysis were performed on the scale to determine to what extent the items all reflect a common underlying latent variable and successfully differentiate between different states of the latent variable. Poor items were considered for deletion.

Two item parcels were calculated by taking the mean of the even-numbered and uneven-numbered items to form two composite indicator variables for the *Sense of Mission* latent variable in the structural model.

4.6.8 Perceived Development Opportunities

This variable was measured by the means of a set of questions that was developed based on the constitutive definition of the latent variable. Item analysis was performed to determine to what extent the items all reflect a common underlying latent variable and all sensitively differentiate between different states of the latent variable. Poor items were considered for deletion.

Two item parcels were calculated by taking the mean of the even-numbered and uneven-numbered items to form two composite indicator variables for the *Perceived Development Opportunities* latent variable in the structural model.

4.7 MISSING VALUES

The presence of missing values needed to be addressed before the data could be analysed. The method used depended on the number of missing values as well as the nature of the data, especially whether the data follows a multivariate normal distribution.

Various possible options to treat the problem of missing values were investigated, including:

- List-wise deletion
- Pair-wise deletion
- Imputation by matching
- Multiple imputations
- Full information maximum likelihood

List-wise deletion requires the deletion of complete cases where there is missing values for any of the variables. Pair-wise deletion focuses on deleting cases only for analysis on variables where values are missing (Dunbar-Isaacson, 2006).

Imputation by matching imputes values from other cases with similar observed values on a set of matching variables. A minimisation criterion is applied on a set of matching variables (Jöreskog & Sörbom as cited in Dunbar-Isaacson, 2006). Imputation does not take place for a case if the minimization criterion is not satisfied or if no observation exists that has complete data on the set of matching variables (Enders et al. as cited in Dunbar-Isaacson, 2006).

The multiple imputation method conducts several imputations for each missing value. Each imputation creates a completed data set, which could be analysed separately in order to obtain multiple estimates of the parameters of the model (Davey et al, Raghunatha & Schafer as cited in Dunbar-Isaacson, 2006). In LISREL missing values for each case are substituted with the average of the values imputed in each of the data sets (Du Toit & Du Toit, 2001). Plausible values are therefore delivered whilst also reflecting the uncertainty in the estimates. Multiple imputation assumes that data is missing at random and that the observed data follows an underlying multivariate normal distribution (Du Toit & Du Toit, 2001).

Full information maximum likelihood (FIML) utilises a repetitive approach, the expectation-maximisation (EM) algorithm, which computes a case-wise likelihood function using only the variables that are observed for specific cases. Estimates of missing values are obtained based on the incomplete observed data to maximise the observed data likelihood (Enders & Bandalos as cited in Dunbar-Isaacson, 2006). FIML directly returns a covariance matrix calculated from the imputed data. Further item analysis, dimensionality analysis and the calculation of item parcels is therefore not possible. FIML also assumes that data is missing at random and that the observed data follows an underlying multivariate normal distribution (Du Toit & Du Toit, 2001).

Based on the foregoing considerations it was decided to use multiple imputation to treat the problem of missing values.

4.8 DATA ANALYSIS

Item analysis, exploratory factor analysis and structural equation modelling (SEM) were used to analyse the questionnaire data and to test the proposed modified talent management competency model as depicted in Figure 3.1.

4.8.1 Item Analysis

The various scales used to operationalise the latent variables comprising the structural model depicted in Figure 3.1 were developed to measure a specific construct or dimension of a construct carrying a specific constitutive definition. Items have been developed to reflect the standing of test takers on these specific latent variables. The items were developed to function as stimulus sets to which test takers respond with behaviour that is a relatively uncontaminated expression primarily of a specific underlying latent variable. If these design intentions were successful it should reflect in a number of item statistics.

Item analysis was conducted to determine the internal consistency of the items of the measuring instruments utilised to test the newly proposed talent management competency model. The objective of item analysis was to identify items that do not successfully reflect the intended latent variable[5]. Poor items are items that fail to discriminate between different states of the latent variable they are meant to reflect and items that do not, in conjunction with their subscale colleagues, reflect a common latent variable. Items that do not contribute to an internally consistent description of the sub-scales of the measuring instruments were identified and their elimination considered (Henning, Theron & Spangenberg, 2004). Item analysis was conducted on each of the eight talent management competency scales, the *Intention to Quit* scale, each of the five *Psychological Empowerment* scales, the three sub-scales of the TCM Employee Commitment scale, the *Sense of Mission* measure, the *Perceived Development Opportunities* measure, the five subscales of the Job

[5] Neither the item analyses nor the exploratory factor analyses of the various scales provide sufficient evidence to permit a conclusive verdict on the success with which the specific latent variable, as constitutively defined, is measured. To obtain more conclusive evidence on the construct validity of the various scales the measurement models mapping the items on the latent variables will have to be elaborated into fully fledged structural models that also map the latent variables onto outcome latent variables in accordance with the directives of the constitutive definitions of the latent variables.

Diagnostic Survey and the various subscales of the Minnesota Satisfaction Questionnaire. Items were considered for removal based on a basket of evidence. The basket of evidence included amongst others the following classical measurement theory item statistics: the item-total correlation, the squared multiple correlation, the change in subscale reliability when the item is deleted, the change in subscale variance if the item is deleted, the inter-item correlations, the item mean and the item standard deviation (Murphy & Davidshofer, 2005).

Item analysis was performed on the data before and after the treatment of missing values to assess the impact of the chosen procedure on the quality of item level measurements.

PASW version 18 (PASW, 2011) was used to perform the item analyses.

4.8.2 Exploratory Factor Analysis

The architecture of each of the scales used to operationalise the latent variables comprising the elaborated intention to quit structural model reflects the intention to construct essentially one-dimensional sets of items. These items are meant to operate as stimulus sets to which test takers respond with behaviour that is primarily an expression of a specific uni-dimensional underlying latent personality variable. The behavioural response to each item is however never only dependent on the latent variable of interest but also influenced by a number of other non-relevant latent variables and random error influences (Guion, 1998). The assumption, however, is that only the relevant latent variable is a common source of variance across all the items comprising a subscale. The assumption is therefore that if the latent variable of interest would be statistically controlled that the partial correlation between items would approach zero (Hulin, Drasgow & Parson, 1983). That would imply the existence of a single underlying common factor. The intention is moreover to obtain relatively uncontaminated measures of the specific underlying latent variable via the items comprising the scale.

To examine the uni-dimensionality assumption and the assumption that the target latent variable explains a substantial proportion of the variance observed in each item, exploratory factor analyses was performed on each of the subscales referred to in section 4.8.2. Principal axis factor analysis was used as the extraction technique (Tabachnick & Fidell, 2001). In the case of factor fission, the extracted solution was subjected to oblique rotation (Tabachnick & Fidell, 2001). Principal axis factoring (PAF) was preferred over principal component factor analysis (PCA) as the former only analyses common variance shared between the items comprising a subscale whereas PCA analyses all the variance. Oblique rotation, although slightly more difficult to interpret than orthogonal rotation, makes better provision for the possibility, that if factor fission would occur, the extracted factors could be correlated. A factor loading will be considered acceptable if $\lambda_{ij} > 0.50$. Hair et al. (2006) recommend in the context of confirmatory factor analysis that factor loadings should be considered satisfactory if $\lambda_{ij} > 0.71$. The latter critical cut-off value is regarded as a bit stringent in the case of individual items but will be utilised when interpreting the factor loadings of the item parcels in the measurement model fitted prior to the evaluation of the fit of the structural model.

PASW version 18 (PASW, 2011) was used to perform the dimensionality analyses.

4.8.3 Structural Equation Modelling

4.8.3.1 Variable type

The appropriate moment matrix to analyse and the appropriate estimation technique to use to estimate freed model parameters depend on the measurement level on which the indicator variables are measured. Section 4.6 indicated that two linear composites of individual items will be formed to represent each of the latent variables when evaluating the fit of the structural model. Apart from simplifying the task of fitting the structural model, the creation of two linear composite indicator variables for each latent variable has the added advantage of creating more reliable indicator variables (Nunnally, 1978). Marsh, Hau, Balla and Grayson (1998), however, warn that solutions in confirmatory factor analysis tend to improve with increasing number of indicators per factor. The complexity of the comprehensive LISREL model that

would have resulted if the individual items would have been used as indicator variables and the size of the sample that would have been required to allow credible parameter estimates[6] swayed the decision towards parcelling. The assumption is made that the indicator variables are continuous variables, measured on an interval level (Jöreskog & Sörbom, 1996a; 1996b; Mels, 2003). The covariance matrix will therefore be analysed with maximum likelihood estimation provided the multivariate normality assumption is satisfied (Du Toit & Du Toit, 2001; Mels, 2003).

4.8.3.2 Multivariate normality

The maximum likelihood estimation technique assumes that the indicator variables used to operationalise the latent variables in the structural model follow a multivariate normal distribution. The null hypothesis that this assumption is satisfied was formally tested. If the data did not follow a multivariate normal distribution, normalisation will be attempted (Jöreskog & Sörbom 1996a). If this attempt would not be successful, robust maximum likelihood estimation will be used (Mels, 2003).

4.8.3.3 Confirmatory factor analysis

Structural model fit indices can only be interpreted unambiguously for or against the fitted structural model if it can be shown that the indicator variables used to operationalise the latent variables when fitting the structural model successfully reflected the latent variables they were assigned to represent. The fit of the measurement model used to operationalise the structural model therefore needs to be evaluated prior to fitting the structural model.

The measurement model was fitted by analysing the covariance matrix. Maximum likelihood estimation will be used if the multivariate normality assumption is satisfied (before or after normalization). Where normalization failed to achieve multivariate normality in the observed data robust maximum likelihood estimation will be used.

[6] An increase in the number of indicator variables increases the number of factor loading and error variance parameters that have to be estimated.

LISREL 8.8 (Du Toit & Du Toit, 2001) was used to perform the confirmatory factor analysis.

The measurement hypothesis being evaluated is that the measurement model provides a valid account of the process that produced the observed covariance matrix (Hair et al., 2006). If the measurement hypothesis is interpreted to mean that the measurement model provides a perfect account of the manner in which the latent variables manifest themselves in the indicator variables, the measurement hypothesis translates into the following exact fit null hypothesis:

H_{030}:RMSEA = 0
H_{a30}:RMSEA > 0

If the measurement hypothesis is interpreted to mean that the measurement model only provides an approximate description of the process that produced the observed covariance matrix, the measurement hypothesis translates into the following close fit null hypothesis:

H_{031}:RMSEA ≤ 0.05
H_{a31}:RMSEA > 0.05

4.8.3.4 Interpretation of measurement model fit and parameter estimates

Measurement model fit was interpreted by inspecting the full array of fit indices provided by LISREL (Diamantopoulos & Sigauw, 2000). Further consideration was also given to the magnitude and distribution of the standardized residuals and the magnitude of model modification indices calculated for Λ_X, Θ_δ and Θ_ε. Large modification index values indicate measurement model parameters that, if set free, would improve the fit of the model. Large numbers of large and significant modification index values comment negatively on the fit of the model in as far as it suggests that numerous possibilities exist to improve the fit of the model proposed by the researcher. Inspection of the model modification indices for the

aforementioned matrices here serve the sole purpose of commenting on the model fit.

Where H_{031} failed to be rejected or if at least reasonable measurement model fit was obtained, H_{0p}: $\lambda_{ij} = 0$; p = 32, 33, …, 67[7]; i = 1, 2, …, 36; j = 1, 2, …, 15 was tested for the freed factor loadings against H_{ap}: $\lambda_{ij} > 0$; p = 32, 33, …, 67; I = 1, 2, …, 36; j = 1, 2, …, 15. Factor loading estimates was considered to be satisfactory if the completely standardized factor loading estimates exceeded 0.71 (Hair et al., 2006). Satisfaction of this criterion would imply that at least 50% of the variance in the indicator variables can be explained by the latent variables they were assigned to represent.

4.8.3.5 Fitting of the structural model

If H_{031} failed to be rejected or if at least reasonable measurement model fit was obtained, if H_{032} – H_{067} were rejected and if the completely standardized factor loading estimates was considered to be satisfactory, H_{01} and H_{02} was tested by fitting the structural model. The structural model was fitted by analysing the covariance matrix. Maximum likelihood estimation was used if the multivariate normality assumption were satisfied (before or after normalization). Where normalization failed to achieve multivariate normality in the observed data robust maximum likelihood estimation was used. LISREL 8.8 (Du Toit & Du Toit, 2001) was used to perform the structural equation analysis.

4.8.3.6 Interpretation of structural model fit and parameter estimates

Structural model fit was interpreted by inspecting the full array of fit indices provided by LISREL (Diamantopoulos& Sigauw., 2000). Further consideration was also given to the magnitude and distribution of the standardized residuals and the magnitude of model modification indices calculated for Γ, B and Ψ. Large modification index values indicated structural model parameters that, if set free, would improve the fit of

[7] There are 36 factor loadings freed in the 36 x 15 Λ_x factor loading matrix.

the model. Large numbers of large and significant modification index values comment negatively on the fit of the model in as far as it suggests that numerous possibilities exist to improve the fit of the model proposed by the researcher. Inspection of the model modification indices for the aforementioned matrices here primarily served the purpose of commenting on the model fit. Inspection of the model modification calculated for the Γ and B matrices was, however, also used to explore possible modifications to the current structural model (see section 4.8.3.7) if such modifications make substantive theoretical sense.

If H_{02} failed to be rejected or where at least reasonable structural model fit was obtained, H_{03} – H_{029} was tested. The magnitude of the direct effect completely standardized path coefficients were interpreted for all significant path coefficients. The significance and magnitude of the indirect and total effects were calculated for each hypothesized influence[8] in the model[9]. The proportion of variance explained in each of the endogenous latent variables by the model was interpreted.

The psychological explanation of intention to quit provided by the structural model depicted in Figure 3.1 will be considered to be a satisfactory explanation to the extent that the model fits the data well, the path coefficients for the hypothesized structural relations are significant and the model explained a substantial proportion of the variance in each of the endogenous latent variables (especially *Intention to Quit*).

4.8.3.7 Considering possible structural model modification

The modification indices and completely standardized expected change values (Diamantopoulos& Sigauw, 2000) calculated for the Γ and B matrices were inspected to determine whether any meaningful possibilities were indicated to improve the fit of the model through the addition of additional paths. Modification of the model was however only considered if such alternations were theoretically sound (Diamantopoulos & Sigauw, 2000; Henning et al., 2004).

[8] The term influence refers here to either the effect of ξ_j on η_i or the effect of η_j on η_i.
[9] Strictly speaking formal statistical hypotheses should have been explicitly stated for the indirect and total effects in the model.

CHAPTER 5
RESULTS: PRESENTATION OF RESEARCH RESULTS

5.1 INTRODUCTION

The objective of this study was to modify and elaborate the partial talent management competency model proposed by Oehley (2007) by elaborating the network of latent variables through which the core competencies have to work to affect the intention to quit latent variable. The theoretical argument presented in the literature study resulted in the inclusion of perceived job characteristics, perceived development opportunities, sense of mission and psychological empowerment as an additional latent variable in the original model and the modification of the causal paths. The resultant elaborated and modified structural model was depicted in Figure 3.1. The overarching substantive hypothesis was that the structural model depicted in Figure 3.1 provides a valid account of the psychological process that determines the level of employees' intention to quit. The overarching substantive research hypothesis is dissected into twenty-seven more detailed, specific (direct effect) substantive research hypotheses. The overarching and specific substantive research hypotheses were translated into statistical hypotheses. The purpose of this chapter is to report on the results of the statistical analyses aimed at testing the stated null hypotheses. The chapter will, however, first discuss the treatment of missing values and will subsequently provide detailed results of the dimensionality analyses and item analyses performed to establish the psychometric integrity of the indicator variables used to represent the various latent variables.

5.2 MISSING VALUES

Missing values presented a problem that had to be addressed before the data could be analysed. Missing values did not seriously plague the majority of the items comprising the scales used to operationalise the latent variables in the model. The maximum number of respondents who failed to respond to any individual item was sixty. Table 5.1 depicts the distribution of missing values across items. The talent

management questionnaire items (and especially the items measuring the *Attracts and Recruits Talent* competency) were seemingly more prone to non-responses.

Table 5.1

Number of missing values per item

SoMQ1	SoMQ2	SoMQ3	SoMQ4	DevOpQ1	DevOpQ2	DevOpQ3	DevOpQ4
2	1	3	2	3	2	4	2
ComQ1	ComQ2	ComQ3	ComQ4	ComQ5	ComQ6	ComQ7	ComQ8
1	1	0	2	2	2	0	1
ComQ9	ComQ10	ComQ11	ComQ12	ComQ13	ComQ14	ComQ15	ComQ16
1	0	2	4	4	3	2	4
ComQ17	ComQ18	ITQQ1	ITQQ2	ITQQ3	ITQQ4	PEQ1	PEQ2
3	2	2	2	3	2	0	1
PEQ3	PEQ4	PEQ5	PEQ6	PEQ7	PEQ8	PEQ9	PEQ10
2	1	1	0	0	0	2	1
PEQ11	PEQ12	JSQ1	JSQ2	JSQ3	JSQ4	JSQ5	JSQ6
1	0	5	4	3	3	3	3
JSQ7	JSQ8	JSQ9	JSQ10	JSQ11	JSQ12	JSQ13	JSQ14
4	4	3	3	3	4	2	5
JSQ15	JSQ16	JSQ17	JSQ18	JSQ19	JSQ20	JDS1Q1	JDS1Q2
1	1	3	1	1	2	4	4
JDS1Q3	JDS1Q4	JDS1Q5	JDS2Q1	JDS2Q2	JDS2Q3	JDS2Q4	JDS2Q5
5	4	5	3	5	4	5	5
JDS2Q6	JDS2Q7	JDS2Q8	JDS2Q9	JDS2Q10	Mindset1	Mindset2	Mindset3
4	5	4	5	5	9	8	8
Mindset4	Recruit1	Recruit2	Recruit3	Recruit4	Recruit5	Dif1	Dif2
7	21	21	49	60	49	7	7
Dif3	Dif4	Dif5	Dif6	Dev1	Dev2	Dev3	Dev4
18	7	7	8	7	7	7	19
Dev5	Dev6	Rel1	Rel2	Rel3	Rel4	Rel5	Rel6
7	8	7	7	7	7	7	7
Mean1	Mean2	Mean3	Mean4	Mean5	Rem1	Rem2	Rem3
7	7	7	7	7	8	7	41
Rem4	Bal1	Bal2	Bal3	Bal4	Bal5	ConQ3R	ConQ4R	ConQ5R
8	7	7	12	7	7	0	2	2

Various options to solve the missing value problem were considered. The classical treatment of the missing value problem through list-wise deletion of cases would have resulted in an effective sample size of only 31 cases. Replacing the missing values with item means was not considered an appropriate option because it would

in effect wash out some of the structure that exists in the data. Pair-wise deletion of cases was not deemded a satisfactory option in that it results in a correlation matrix in which the N-values vary considerably (a maximum of 135[10] and a minimum of 79 in this particular case). According to Jöreskog and Sörbom (1996), matrices in which the N-values vary markedly sometimes fail to be positive-definite.

It was decided to use multiple imputation (MI) as a method to solve the problem. The multiple imputation method conducts several imputations for each missing value. Each imputation creates a completed data set, which could be analysed separately in order to obtain multiple estimates of the parameters of the model (Davey et al, Raghunatha and Schafer as cited in Dunbar-Isaacson, p.29, 2006). In LISREL missing values for each case are substituted with the average of the values imputed in each of the data sets (Du Toit & Du Toit, 2001). Plausible values are therefore delivered whilst also reflecting the uncertainty in the estimates. The advantage of the MI procedure is that all cases are retained in the imputed data set (Du Toit & Du Toit, 2001). The MI procedures available in LISREL 8.8 assume that the values are missing at random and that observed variables are continuous and follow a multivariate normal distribution. The individual responses to the PI items are given on a five point Likert scale and therefore may permissibly be treated as continuous variables (Muthén & Kaplan, 1985).

5.3 ITEM ANALYSIS

To identify and eliminate possible items that do not contribute to an internally consistent description of the various latent variables forming part of the proposed revised talent management competency model (Theron, 2011), item analysis was performed on the items of the different measuring instruments. These instruments include the *Talent Management Competency* scale, the *Sense of Mission* scale, *Perceived Development Opportunities* scale, *Commitment* scale, *Intention to Quit scale*, *Psychological Empowerment* scale, *Job Satisfaction* scale, and the *Perceived Job Characteristics* scale. Item analyses were conducted on all the scales after

[10] Four cases were deleted from the initial data set of 141 cases because no talent management competency measures were returned for these cases.

imputation. Problematic items were not used to represent latent variables in the model and were not included in the calculation of composite indicator variables. The PASW Reliability Procedure (PASW 18 for Windows, 2011) was utilised.

5.3.1 Item Analysis of the Sense of Mission Scale

This self-developed scale comprised of four items (see Appendix B). Table 5.2 presents the item statistics for the *Sense of Mission* scale. The Cronbach coefficient of internal consistency for the original scale (0.753) falls below the critical cut-off value of 0.80. Item 3 was flagged as problematic. The inter-item correlations of item 3 with the remainder of the items, the item-total correlation (0.443) , the squared multiple correlation (0.208) and the increase in Cronbach's alpha (0.753 to 0.802) raised the concern that item 3 shares insufficient variance with the remainder of the items in the scale. This basket of evidence was considered sufficient to justify the removal of this item. The item analysis was subsequently repeated on the remaining three items but no further items were identified that ought to be considered for deletion.

Table 5.2

Item statistics for the Sense of Mission scale

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.753	.787	4

	Mean	Std. Deviation	N
SoMQ1	4.26	.738	137
SoMQ2	4.42	.650	137
SoMQ3	3.69	1.068	137
SoMQ4	4.23	.738	137

	SoMQ1	SoMQ2	SoMQ3	SoMQ4
SoMQ1	1.000	.631	.380	.501
SoMQ2	.631	1.000	.432	.612
SoMQ3	.380	.432	1.000	.322
SoMQ4	.501	.612	.322	1.000

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
SoMQ1	12.34	3.801	.608	.431	.668
SoMQ2	12.18	3.881	.700	.539	.638
SoMQ3	12.91	3.248	.443	.208	.802
SoMQ4	12.37	3.912	.562	.398	.692

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.150	3.693	4.423	.730	1.198	.100	4
Item Variances	.663	.422	1.141	.718	2.700	.105	4
Inter-Item Correlations	.480	.322	.631	.309	1.960	.014	4

5.3.2 Item Analysis of the Perceived Development Opportunities Scale

This self-developed scale comprised of four items (see Appendix B). Table 5.3 presents the item statistics for the *Perceived Development Opportunities* scale. The Cronbach coefficient of internal consistency for the original scale (0.855) exceeds the critical cut-off value of 0.80. No items were flagged as problematic.

Table 5.3

Item statistics for the Perceived Development Opportunities scale

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.855	.855	4

	Mean	Std. Deviation	N
DevOpQ1	4.21	.742	137
DevOpQ2	4.16	.833	137
DevOpQ3	4.05	.869	137
DevOpQ4	4.11	.792	137

	DevOpQ1	DevOpQ2	DevOpQ3	DevOpQ4
DevOpQ1	1.000	.611	.588	.511
DevOpQ2	.611	1.000	.679	.541
DevOpQ3	.588	.679	1.000	.644
DevOpQ4	.511	.541	.644	1.000

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
DevOpQ1	12.32	4.661	.660	.443	.832
DevOpQ2	12.37	4.177	.720	.536	.806
DevOpQ3	12.48	3.943	.761	.587	.788
DevOpQ4	12.42	4.496	.655	.449	.833

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.133	4.051	4.212	.161	1.040	.005	4
Item Variances	.657	.550	.755	.204	1.371	.008	4
Inter-Item Correlations	.595	.511	.679	.168	1.330	.004	4

The results of the item analysis of the *Perceived Development Opportunities* scale did not raise any concerns and no items were deleted.

5.3.3 Item Analysis of the Affective Commitment Scale

The *Affective Commitment* scale of the Employee Commitment Survey (Meyer & Allen, 1991; 1997) comprised of six items (see Appendix B). Three of the affective commitments items are negatively keyed. These items were reflected before proceeding with the item analysis. Table 5.4 presents the item statistics for the *Affective Commitment* scale.

Table 5.4

Item statistics for the Affective Commitment scale

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.815	.814	6

	Mean	Std. Deviation	N
ComQ1	4.92	1.787	137
ComQ2	4.69	1.722	137
ComQ6	5.09	1.691	137
ComQ3R	4.97	1.728	137
ComQ4R	4.67	1.937	137
ComQ5R	4.99	1.805	137

	ComQ1	ComQ2	ComQ6	ComQ3R	ComQ4R	ComQ5R
ComQ1	1.000	.436	.443	.352	.330	.367
ComQ2	.436	1.000	.540	.298	.352	.297
ComQ6	.443	.540	1.000	.202	.355	.258
ComQ3R	.352	.298	.202	1.000	.681	.729
ComQ4R	.330	.352	.355	.681	1.000	.677
ComQ5R	.367	.297	.258	.729	.677	1.000

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
ComQ1	24.41	43.846	.515	.309	.799
ComQ2	24.64	44.452	.514	.361	.799
ComQ6	24.24	45.464	.478	.377	.806
ComQ3R	24.36	42.011	.635	.608	.773
ComQ4R	24.66	39.227	.669	.568	.764
ComQ5R	24.34	40.901	.653	.599	.769

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.888	4.672	5.088	.416	1.089	.029	6
Item Variances	3.169	2.860	3.752	.892	1.312	.104	6
Inter-Item Correlations	.421	.202	.729	.526	3.603	.026	6

The Cronbach alpha value (0.815) is considered satisfactory. No problematic items were indicated by the item statistics. No items were deleted.

5.3.4 Item Analysis of the Continuance Commitment Scale

The *Continuance Commitment* scale of the Employee Commitment Survey (Meyer & Allen, 1991; 1997) comprised six items (see Appendix B). Table 5.5 presents the item statistics for the *Continuance Commitment* scale.

Table 5.5

Item statistics for the Continuance Commitment scale (all items included)

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.724	.728	6

	Mean	Std. Deviation	N
ComQ7	5.20	1.790	137
ComQ8	4.96	1.905	137
ComQ9	4.74	1.968	137
ComQ10	3.99	2.035	137
ComQ11	3.69	2.082	137
ComQ12	3.28	2.064	137

	ComQ7	ComQ8	ComQ9	ComQ10	ComQ11	ComQ12
ComQ7	1.000	.516	.489	.204	.115	.184
ComQ8	.516	1.000	.703	.463	.091	.168
ComQ9	.489	.703	1.000	.461	.209	.284
ComQ10	.204	.463	.461	1.000	.090	.330
ComQ11	.115	.091	.209	.090	1.000	.327
ComQ12	.184	.168	.284	.330	.327	1.000

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
ComQ7	20.65	45.185	.443	.310	.690
ComQ8	20.89	41.010	.591	.568	.646
ComQ9	21.11	38.760	.670	.563	.619
ComQ10	21.85	42.626	.463	.309	.684
ComQ11	22.16	47.856	.238	.130	.751
ComQ12	22.57	44.232	.385	.218	.708

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.308	3.277	5.197	1.920	1.586	.589	6
Item Variances	3.907	3.204	4.335	1.131	1.353	.187	6
Inter-Item Correlations	.309	.090	.703	.613	7.835	.032	6

Item 11 of the *Continuance Commitment* sub-scales was flagged as a problematic item. With Cronbach's alpha changing from 0.724 to 0.751 if the item is deleted, inter-item correlations generally substantially lower than the mean inter-item correlation, a low item-total correlation (0.238) and a low squared multiple correlation (0.130) it was decided to remove item 11. In a subsequent item analysis[11] item 12 was flagged as a problematic item. The results indicated that the deletion of item 12 would increase Cronbach's alpha from 0.751 to 0.781. Item 12 consistently correlated lower than the mean inter-item correlation with the other remaining items in the scale. The low squared multiple correlation (0.148) indicated that a weighted linear composite of the remaining items only explained approximately 15% of the variance in item 12. It was consequently decided to also remove item 12 from the *Continuance Commitment* sub-scale. The remaining items were item analysed again and this time item 10 was indicated as problematic. The results indicated that Cronbach's alpha would change from 0.781 to 0.800 if this item was to be deleted. Only 28% of the variance in this item was explained by the weighted linear composite of the remaining items (R^2=0.275).

An exploratory factor analysis of the original *Continuance Commitment* subscale using principal axis factoring with oblique rotation (see section 5.4.4) indicated that two factors would be required to adequately explain the observed inter-item correlation matrix. PASW was, however, unable to extract a solution because of

[11] Only the results of the initial item analysis is shown in table 5.5. The results of subsequent analyses are not shown in Table 5.5.

inadmissible communality values. Utilising principal component analysis in a subsequent run successfully circumvented the problem and indicated that item 11 and item 12 load on a second principal component whereas the remaining items load on the first principal component. Item 10, however, only shows a modest loading (0.593) in the pattern matrix. It was consequently decided to also delete item 10.

Item analysis was performed again, and again another item was flagged as problematic. This time the results revealed that the removal of item 7 would increase Cronbach's alpha from 0.800 to 0.825. Although the removal of item 7 would substantially raise Cronbach's alpha it was decided not to delete this item because of the acceptable albeit modest factor loading of item 7 on a single underlying factor (0.559; see section 5.4.4).

5.3.5 Item Analysis of the Normative Commitment Scale

The *Normative Commitmen*t scale of the Employee Commitment Survey (Meyer & Allen, 1991; 1997) comprised six items (see Appendix B). Table 5.6 presents the item statistics for the *Normative Commitment* scale. Item 13 of the *Normative Commitment* scale is a negatively keyed item. Item 13 was consequently reflected before proceeding with the item analysis.

Table 5.6

Item statistics for the Normative Commitment scale

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.791	.793	6

	Mean	Std. Deviation	N
ComQ14	4.0949	1.98481	137
ComQ15	4.1898	2.04915	137
ComQ16	5.3358	1.65066	137
ComQ17	4.7299	1.93080	137
ComQ18	4.5255	1.98924	137
ComQ13R	4.7153	1.90568	137

	ComQ14	ComQ15	ComQ16	ComQ17	ComQ18	ComQ13R
ComQ14	1.000	.663	.383	.356	.332	.101
ComQ15	.663	1.000	.370	.491	.417	.214
ComQ16	.383	.370	1.000	.509	.537	.351
ComQ17	.356	.491	.509	1.000	.694	.251
ComQ18	.332	.417	.537	.694	1.000	.177
ComQ13R	.101	.214	.351	.251	.177	1.000

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
ComQ14	23.4964	47.193	.514	.470	.767
ComQ15	23.4015	44.095	.619	.523	.740
ComQ16	22.2555	48.427	.609	.411	.748
ComQ17	22.8613	44.385	.662	.550	.730
ComQ18	23.0657	44.959	.608	.534	.743
ComQ13R	22.8759	53.683	.280	.153	.818

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.599	4.095	5.336	1.241	1.303	.200	6
Item Variances	3.697	2.725	4.199	1.474	1.541	.266	6
Inter-Item Correlations	.390	.101	.694	.593	6.904	.028	6

Even after reflection item 13 presented itself as a problematic item. Table 5.6 indicate inter-item correlations consistently lower than the mean inter-item correlation, a low item-total correlation and a low squared multiple correlation for item 13R. Deletion of item 13 would also result in a substantial increase in Cronbach's alpha (0.791 to 0.818). It was consequently decided to delete item 13 from the *Normative Commitment* scale. Subsequent item analysis on the remaining items revealed no further problematic items.

5.3.6 Item Analysis of the Intention To Quit Scale

The *Intention to Quit* scale comprised four items (see Appendix B). Table 5.7 presents the item statistics for the *Intention to Quit* scale.

Table 5.7

Item statistics for the Intention to Quit scale

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.880	.884	4

	Mean	Std. Deviation	N
ITQQ1	2.87	1.049	137
ITQQ2	2.64	1.328	137
ITQQ3	2.64	1.241	137
ITQQ4	2.17	1.348	137

	ITQQ1	ITQQ2	ITQQ3	ITQQ4
ITQQ1	1.000	.567	.805	.572
ITQQ2	.567	1.000	.652	.606
ITQQ3	.805	.652	1.000	.735
ITQQ4	.572	.606	.735	1.000

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
ITQQ1	7.45	11.896	.732	.653	.854
ITQQ2	7.68	10.631	.681	.466	.871
ITQQ3	7.67	10.046	.852	.772	.801
ITQQ4	8.15	10.229	.724	.570	.854

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	2.578	2.168	2.869	.701	1.323	.087	4
Item Variances	1.555	1.100	1.817	.717	1.652	.106	4
Inter-Item Correlations	.656	.567	.805	.238	1.420	.008	4

Table 5.7 reveals a highly satisfactory coefficient alpha value. The item statistics did not flag any problematic items. All the items were therefore retained.

5.3.7 Item Analysis of the Psychological Empowerment Scale

The *Psychological Empowerment* scale developed by Spreitzer (Spreitzer, 1995) comprised 12 items (see Appendix B). The scale measures four different dimensions of psychological empowerment (see section 4.6.2) with three items dedicated to each dimension. Item analysis was performed on the total scale and not on the subscale level. Table 5.8 presents the item statistics for the *Psychological Empowerment* scale.

Table 5.8

Item statistics for the Psychological Empowerment scale

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.861	.877	12

	Mean	Std. Deviation	N
PEQ1	6.55	.674	137
PEQ2	6.66	.489	137
PEQ3	6.11	1.155	137
PEQ4	6.12	1.118	137
PEQ5	6.36	.785	137
PEQ6	5.26	1.633	137
PEQ7	5.32	1.798	137
PEQ8	5.23	1.651	137
PEQ9	6.17	1.019	137
PEQ10	6.51	.676	137
PEQ11	5.25	1.657	137
PEQ12	6.42	.724	137

	PEQ1	PEQ2	PEQ3	PEQ4	PEQ5	PEQ6	PEQ7	PEQ8	PEQ9	PEQ10	PEQ11	PEQ12
PEQ1	1.000	.591	.422	.342	.337	.107	.240	.226	.431	.309	.126	.608
PEQ2	.591	1.000	.547	.462	.475	.203	.157	.262	.261	.567	.185	.480
PEQ3	.422	.547	1.000	.531	.394	.359	.394	.449	.166	.286	.378	.473
PEQ4	.342	.462	.531	1.000	.412	.309	.241	.300	.228	.251	.325	.375
PEQ5	.337	.475	.394	.412	1.000	.355	.328	.382	.327	.671	.326	.443
PEQ6	.107	.203	.359	.309	.355	1.000	.612	.667	.239	.210	.758	.181
PEQ7	.240	.157	.394	.241	.328	.612	1.000	.787	.344	.233	.582	.185
PEQ8	.226	.262	.449	.300	.382	.667	.787	1.000	.370	.301	.688	.293
PEQ9	.431	.261	.166	.228	.327	.239	.344	.370	1.000	.429	.385	.453
PEQ10	.309	.567	.286	.251	.671	.210	.233	.301	.429	1.000	.247	.358
PEQ11	.126	.185	.378	.325	.326	.758	.582	.688	.385	.247	1.000	.293
PEQ12	.608	.480	.473	.375	.443	.181	.185	.293	.453	.358	.293	1.000

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
PEQ1	65.42	76.509	.423	.570	.858
PEQ2	65.31	77.538	.485	.630	.858
PEQ3	65.86	69.488	.578	.529	.847
PEQ4	65.85	71.670	.477	.385	.854
PEQ5	65.61	73.770	.562	.568	.851
PEQ6	66.71	62.355	.657	.653	.842
PEQ7	66.65	60.288	.660	.673	.844
PEQ8	66.74	59.842	.759	.723	.832
PEQ9	65.80	72.777	.468	.450	.854
PEQ10	65.46	76.103	.457	.610	.857
PEQ11	66.72	61.231	.693	.677	.839
PEQ12	65.55	75.264	.491	.531	.855

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	5.998	5.234	6.664	1.431	1.273	.321	12
Item Variances	1.440	.239	3.234	2.995	13.512	1.199	12
Inter-Item Correlations	.374	.107	.787	.680	7.352	.024	12

Table 5.8 reveals a highly satisfactory coefficient alpha value that exceeds the reliability coefficient values reported by (Spreitzer, 1995) (see section 4.6.2). The ability of item 2 to discriminate between different levels of psychological empowerment can be questioned given a somewhat lower standard deviation (0.489). The remainder of the item statistics, however, do not really corroborate the problem status of item 2. All items were retained.

5.3.8 Item Analysis of the Job Satisfaction Scale

The short version of the Minnesota Satisfaction Questionnaire (MSQ) (Weiss et al., 1967) comprised 20 items (see Appendix B). The MSQ (short version) consists of 20 items from the longer version that best represent each of 20 scales. Scores are obtained for two factors, intrinsic and extrinsic satisfaction, which underlies the MSQ (short version). Item analysis was performed on the total scale and not on the subscale level. Table 5.9 presents the item statistics for the *Job Satisfaction* scale.

Table 5.9 presents a highly satisfactory coefficient alpha value (0.882) that corresponds to the reliability coefficient values reported in the technical manual for the Minnesota Satisfaction Questionnaire (1967). The item statistics only flagged item 2 as a potentially problematic item. The nature of the item statistics were, however, not persuasive enough to delete item 2. All the items were therefore retained at this stage of the analysis. A number of items were, however, subsequently deleted based on the results of the dimensionality analysis reported in section 5.4.8.

Table 5.9

Item statistics for the Job Satisfaction scale

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.882	.883	20

	Mean	Std. Deviation	N
JSQ1	4.10	.825	137
JSQ2	3.62	1.158	137
JSQ3	4.02	.835	137
JSQ4	3.91	.903	137
JSQ5	3.59	1.198	137
JSQ6	3.88	.955	137
JSQ7	3.91	.931	137
JSQ8	4.12	.849	137
JSQ9	4.46	.707	137
JSQ10	3.74	.798	137
JSQ11	4.20	.784	137
JSQ12	3.50	1.099	137
JSQ13	2.39	1.262	137
JSQ14	3.45	1.050	137
JSQ15	3.66	.965	137
JSQ16	3.47	.932	137
JSQ17	3.42	1.247	137
JSQ18	3.67	1.065	137
JSQ19	3.34	1.244	137
JSQ20	3.96	.943	137

	JSQ1	JSQ2	JSQ3	JSQ4	JSQ5	JSQ6	JSQ7	JSQ8	JSQ9	JSQ10	JSQ11	JSQ12	JSQ13	JSQ14	JSQ15	JSQ16	JSQ17	JSQ18	JSQ19	JSQ20
JSQ1	1.000	.410	.370	.269	.184	.183	.271	.182	.221	.242	.287	.356	.258	.278	.284	.263	.158	.189	.009	.203
JSQ2	.410	1.000	.389	.291	.025	.053	.089	.075	.152	.178	.164	.053	.118	.170	.208	.241	.102	.226	.058	.169
JSQ3	.370	.389	1.000	.480	.178	.132	.116	.235	.232	.185	.386	.164	.103	.257	.256	.308	.076	.124	.014	.085
JSQ4	.269	.291	.480	1.000	.300	.320	.069	.263	.225	.345	.326	.334	.282	.321	.380	.372	.236	.176	.268	.221
JSQ5	.184	.025	.178	.300	1.000	.691	.275	.315	.180	.133	.055	.398	.394	.315	.313	.186	.353	.338	.404	.189
JSQ6	.183	.053	.132	.320	.691	1.000	.401	.352	.189	.181	.149	.470	.264	.346	.396	.268	.418	.511	.472	.257
JSQ7	.271	.089	.116	.069	.275	.401	1.000	.442	.313	.224	.257	.227	.176	.209	.349	.280	.162	.295	.186	.239
JSQ8	.182	.075	.235	.263	.315	.352	.442	1.000	.473	.187	.429	.330	.204	.213	.353	.274	.300	.148	.157	.354
JSQ9	.221	.152	.232	.225	.180	.189	.313	.473	1.000	.307	.405	.201	.141	.188	.293	.118	.069	.124	.099	.235

JSQ10	.242	.178	.185	.345	.133	.181	.224	.187	.307	1.000	.330	.270	.293	.281	.228	.285	.083	.149	.186	.144
JSQ11	.287	.164	.386	.326	.055	.149	.257	.429	.405	.330	1.000	.302	.181	.250	.331	.386	.117	.113	.015	.219
JSQ12	.356	.053	.164	.334	.398	.470	.227	.330	.201	.270	.302	1.000	.460	.486	.431	.372	.396	.369	.413	.309
JSQ13	.258	.118	.103	.282	.394	.264	.176	.204	.141	.293	.181	.460	1.000	.488	.405	.342	.426	.168	.458	.315
JSQ14	.278	.170	.257	.321	.315	.346	.209	.213	.188	.281	.250	.486	.488	1.000	.570	.462	.377	.375	.605	.433
JSQ15	.284	.208	.256	.380	.313	.396	.349	.353	.293	.228	.331	.431	.405	.570	1.000	.724	.339	.336	.468	.423
JSQ16	.263	.241	.308	.372	.186	.268	.280	.274	.118	.285	.386	.372	.342	.462	.724	1.000	.278	.141	.339	.430
JSQ17	.158	.102	.076	.236	.353	.418	.162	.300	.069	.083	.117	.396	.426	.377	.339	.278	1.000	.327	.619	.395
JSQ18	.189	.226	.124	.176	.338	.511	.295	.148	.124	.149	.113	.369	.168	.375	.336	.141	.327	1.000	.433	.215
JSQ19	.009	.058	.014	.268	.404	.472	.186	.157	.099	.186	.015	.413	.458	.605	.468	.339	.619	.433	1.000	.487
JSQ20	.203	.169	.085	.221	.189	.257	.239	.354	.235	.144	.219	.309	.315	.433	.423	.430	.395	.215	.487	1.000

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
JSQ1	70.31	115.349	.422	.418	.878
JSQ2	70.80	115.355	.274	.333	.884
JSQ3	70.39	116.314	.361	.426	.880
JSQ4	70.50	112.943	.508	.428	.876
JSQ5	70.82	109.425	.505	.565	.876
JSQ6	70.53	110.663	.594	.645	.873
JSQ7	70.51	114.384	.415	.382	.879
JSQ8	70.30	114.094	.479	.487	.877
JSQ9	69.96	117.410	.365	.388	.880
JSQ10	70.68	116.293	.382	.298	.879
JSQ11	70.22	115.996	.408	.431	.879
JSQ12	70.91	108.345	.610	.483	.872
JSQ13	72.02	107.948	.532	.449	.875
JSQ14	70.97	108.279	.647	.567	.871
JSQ15	70.75	108.923	.678	.671	.870
JSQ16	70.95	111.416	.571	.643	.874
JSQ17	70.99	108.478	.519	.496	.876
JSQ18	70.74	111.971	.462	.429	.877
JSQ19	71.08	107.207	.573	.689	.873
JSQ20	70.45	112.426	.510	.413	.876

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.721	2.394	4.460	2.066	1.863	.186	20
Item Variances	1.002	.500	1.593	1.093	3.186	.117	20
Inter-Item Correlations	.274	.009	.724	.714	77.775	.017	20

5.3.9 Item Analysis of the Job Diagnostic Survey

The short version of the Job Diagnostic Survey (JDS) (Hackman & Oldham, 1975) comprised of 15 items (see Appendix B). The JDS assesses the five dimensions that make up the job characteristics model (Hackman & Oldham, 1975), with three items each. The JDS comprises two sections, both measuring the five job characteristics. Separate item analyses were performed on the items comprising the two sections. Table 5.10a presents the item statistics for Section 1 of the JDS.

Table 5.10a

Item statistics for the Section 1 of the JDS

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.788	.788	5

	Mean	Std. Deviation	N
JDS1Q1	4.48	1.318	137
JDS1Q2	4.89	1.327	137
JDS1Q3	5.01	1.638	137
JDS1Q4	5.82	1.350	137
JDS1Q5	4.85	1.453	137

	JDS1Q1	JDS1Q2	JDS1Q3	JDS1Q4	JDS1Q5
JDS1Q1	1.000	.447	.451	.337	.371
JDS1Q2	.447	1.000	.413	.330	.400
JDS1Q3	.451	.413	1.000	.509	.485
JDS1Q4	.337	.330	.509	1.000	.523
JDS1Q5	.371	.400	.485	.523	1.000

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
JDS1Q1	20.58	19.511	.527	.299	.761
JDS1Q2	20.17	19.538	.519	.288	.763
JDS1Q3	20.05	16.387	.626	.399	.729
JDS1Q4	19.23	18.872	.570	.364	.748
JDS1Q5	20.20	17.943	.595	.374	.739

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	5.012	4.482	5.825	1.343	1.300	.245	5
Item Variances	2.023	1.737	2.684	.947	1.545	.159	5
Inter-Item Correlations	.427	.330	.523	.193	1.585	.004	5

Table 5.10a indicates a somewhat marginal value for the Cronbach coefficient of internal consistency (0.788) which is not altogether surprising given the nature and the length of the subscale. The values of the item statistics did not really warrant the deletion of any items. All items were retained.

Table 5.10b

Item statistics for the Section 2 of the JDS

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.898	.900	10

	Mean	Std. Deviation	N
JDS2Q1	5.82	1.379	137
JDS2Q2	5.15	1.780	137
JDS2Q3	5.28	1.377	137
JDS2Q4	5.78	1.304	137
JDS2Q5	6.01	1.383	137
JDS2Q6	5.52	1.534	137
JDS2Q7	5.24	1.683	137
JDS2Q8	5.76	1.359	137
JDS2Q9	5.26	1.534	137
JDS2Q10	5.96	1.203	137

	JDS2Q 1	JDS2Q 2	JDS2Q 3	JDS2Q 4	JDS2Q 5	JDS2Q 6	JDS2Q 7	JDS2Q 8	JDS2Q 9	JDS2Q 10
JDS2Q1	1.000	.323	.303	.640	.426	.424	.289	.436	.335	.524
JDS2Q2	.323	1.000	.595	.368	.381	.459	.712	.477	.457	.267
JDS2Q3	.303	.595	1.000	.399	.311	.403	.503	.430	.428	.264
JDS2Q4	.640	.368	.399	1.000	.475	.627	.520	.555	.506	.613
JDS2Q5	.426	.381	.311	.475	1.000	.568	.378	.397	.289	.447
JDS2Q6	.424	.459	.403	.627	.568	1.000	.566	.628	.640	.520
JDS2Q7	.289	.712	.503	.520	.378	.566	1.000	.611	.606	.469
JDS2Q8	.436	.477	.430	.555	.397	.628	.611	1.000	.668	.624
JDS2Q9	.335	.457	.428	.506	.289	.640	.606	.668	1.000	.439
JDS2Q10	.524	.267	.264	.613	.447	.520	.469	.624	.439	1.000

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
JDS2Q1	49.96	95.227	.542	.492	.894
JDS2Q2	50.64	87.719	.624	.624	.891
JDS2Q3	50.50	94.796	.560	.407	.893
JDS2Q4	50.00	92.132	.713	.629	.884
JDS2Q5	49.77	95.019	.548	.416	.894
JDS2Q6	50.26	87.945	.744	.630	.881
JDS2Q7	50.54	86.147	.727	.676	.882
JDS2Q8	50.02	90.610	.744	.628	.882
JDS2Q9	50.53	89.825	.671	.578	.886
JDS2Q10	49.82	95.606	.623	.550	.890

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	5.578	5.146	6.015	.869	1.169	.107	10
Item Variances	2.141	1.447	3.170	1.723	2.190	.284	10
Inter-Item Correlations	.473	.264	.712	.448	2.700	.014	10

Table 5.10b indicates a highly satisfactory value for the Cronbach coefficient of internal consistency (0.898). The values of the item statistics did not warrant the deletion of any items. All items were retained.

5.3.10 Item Analysis of talent Management Questionnaire [TMQ]

The Talent Management Questionnaire developed by Oehley (2007) comprises eight subscales each measuring a specific talent management competency. Separate item analyses were performed on the items comprising the eight subscales.

5.3.10.1 Item Analysis of the Displays a Talent Management Mindset Subscale of the TMQ

The *Displays a Talent Management Mindset* subscale of the TMQ comprised 4 items (see Appendix A). Table 5.11 presents the item statistics for the *Displays a Talent Management Mindset* subscale.

Table 5.11

Item statistics for the Displays a Talent Management Mindset subscale

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.677	.674	4

	Mean	Std. Deviation	N
Mindset1	3.99	1.141	137
Mindset2	4.28	.745	137
Mindset3	3.87	1.130	137
Mindset4	4.27	.912	137

	Mindset 1	Mindset 2	Mindset 3	Mindset 4
Mindset1	1.000	.591	.592	.051

Mindset2	.591	1.000	.489	.040
Mindset3	.592	.489	1.000	.277
Mindset4	.051	.040	.277	1.000

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Mindset1	12.42	4.112	.570	.476	.529
Mindset2	12.13	5.615	.533	.381	.589
Mindset3	12.54	3.853	.659	.441	.454
Mindset4	12.14	6.488	.158	.100	.776

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.150	3.693	4.423	.730	1.198	.100	4
Item Variances	.663	.422	1.141	.718	2.700	.105	4
Inter-Item Correlations	.480	.322	.631	.309	1.960	.014	4

The Cronbach coefficient of internal consistency for the original scale (0.677) falls substantially below the critical cut-off value of 0.80. This stand in sharp contrast to the reliability coefficient value (0.822) originally reported by Oehley (2007). Item 4 was flagged as problematic. The low inter-item correlations of item 4 with the remainder of the items, the low item-total correlation (0.158), the low squared multiple correlation (0.100) and the increase in Cronbach's alpha (0.677 to 0.766) raised the concern that item 4 shares insufficient variance with the remainder of the items in the scale. This basket of evidence was considered sufficient to justify the removal of this item. The Item analysis was subsequently repeated on the remaining three items but no further items could be identified for deletion to raise the Cronbach coefficient above the 0.80 cut-off value.

5.3.10.2 Item Analysis of the Attracts and Recruits Talent Subscale of the TMQ

The *Attracts and Recruits Talent* subscale of the TMQ comprised 5 items (see Appendix A). Table 5.12 presents the item statistics for the *Attracts and Recruits Talent* subscale.

Table 5.12

Item statistics for the Attracts and Recruits Talent subscale

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.844	.836	5

	Mean	Std. Deviation	N
Recruit1	4.34	1.067	137
Recruit2	4.04	.988	137
Recruit3	3.50	1.219	137
Recruit4	3.50	1.389	137
Recruit5	3.61	1.319	137

	Recruit1	Recruit2	Recruit3	Recruit4	Recruit5
Recruit1	1.000	.588	.397	.465	.567
Recruit2	.588	1.000	.143	.271	.265
Recruit3	.397	.143	1.000	.702	.750
Recruit4	.465	.271	.702	1.000	.894
Recruit5	.567	.265	.750	.894	1.000

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Recruit1	14.64	15.981	.615	.544	.822
Recruit2	14.95	18.372	.356	.376	.877
Recruit3	15.48	14.707	.660	.572	.809
Recruit4	15.49	12.663	.787	.811	.771
Recruit5	15.38	12.649	.850	.856	.750

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.797	3.496	4.343	.847	1.242	.142	5
Item Variances	1.454	.977	1.928	.952	1.974	.159	5
Inter-Item Correlations	.504	.143	.894	.751	6.242	.055	5

Table 5.12 presents a satisfactory coefficient alpha value (0.844) that corresponds well to the finding (0.843) of Oehley (2007). Despite this item 2 of this subscale had to be flagged as a problematic item because of the relatively lower item-total correlation (0.356), the low squared multiple correlation (0.376) and the increase in Cronbach's alpha (0.844 to 0.877), should the item be removed from the scale. The deletion of item 2, however, brought item 1 to the fore as problematic item. Inspection of the factor structure of this subscale revealed the existence of two underlying factors (see section 5.4.10.2). Items 1 and 2 loaded on the second factor. The identity of the two extracted factors could, however, not be established. It was

therefore decided to delete item 1 from the original item pool. The deletion of item 1 increased the Cronbach alpha to 0.915 but resulted in item 3 being flagged as a problematic item. Although the deletion of item 3 would have increased the subscale reliability to 0.944 it was decided to retain the item because of the dwindling length of the subscale.

5.3.10.3 Item Analysis of the Identifies and Differentiates Talented Employees Subscale of the TMQ

The *Identifies and Differentiates Talented Employees* subscale of the TMQ comprised 6 items (see Appendix A). Table 5.13 presents the item statistics for the *Identifies and Differentiates Talented Employees* subscale.

Table 5.13

Item statistics for the Identifies and Differentiates Talented Employees subscale

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.761	.796	6

	Mean	Std. Deviation	N
Dif1	4.51	.530	137
Dif2	4.50	.677	137
Dif3	4.13	.938	137
Dif4	4.32	.641	137
Dif5	4.61	.489	137
Dif6	3.82	1.063	137

	Dif1	Dif2	Dif3	Dif4	Dif5	Dif6
Dif1	1.000	.436	.101	.487	.314	.512
Dif2	.436	1.000	.163	.494	.385	.377
Dif3	.101	.163	1.000	.553	.416	.244
Dif4	.487	.494	.553	1.000	.493	.515
Dif5	.314	.385	.416	.493	1.000	.420
Dif6	.512	.377	.244	.515	.420	1.000

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Dif1	21.39	7.533	.510	.388	.733
Dif2	21.40	7.095	.484	.330	.732
Dif3	21.77	6.577	.383	.390	.771
Dif4	21.58	6.452	.748	.586	.671
Dif5	21.28	7.514	.577	.341	.724
Dif6	22.07	5.421	.555	.383	.727

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.316	3.825	4.613	.788	1.206	.087	6
Item Variances	.567	.239	1.131	.892	4.733	.128	6
Inter-Item Correlations	.394	.101	.553	.453	5.499	.018	6

The Cronbach coefficient of internal consistency for the original scale (0.761) falls below the cut-off value of 0.80. This stand in contrast to the reliability coefficient value (0.827) originally reported by Oehley (2007). Item 3 was flagged as problematic. With Cronbach's alpha only increasing marginally with the removal of item 3 (0.761 to 0.771), it was decided to not remove item 3.

5.3.10.4 Item Analysis of the Develops Others Subscale of the TMQ

The *Develops Others* subscale of the TMQ comprised 6 items (see Appendix A). Table 5.14 presents the item statistics for the *Develops Others* subscale.

Table 5.14

Item statistics for the Develops Others subscale

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.840	.846	6

	Mean	Std. Deviation	N
Dev1	4.34	.612	137
Dev2	4.20	.695	137
Dev3	4.14	.666	137
Dev4	4.18	.797	137
Dev5	4.07	.952	137
Dev6	3.98	.818	137

	Dev1	Dev2	Dev3	Dev4	Dev5	Dev6
Dev1	1.000	.653	.424	.549	.462	.280
Dev2	.653	1.000	.496	.505	.456	.448
Dev3	.424	.496	1.000	.506	.413	.424
Dev4	.549	.505	.506	1.000	.854	.401
Dev5	.462	.456	.413	.854	1.000	.304
Dev6	.280	.448	.424	.401	.304	1.000

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Dev1	20.57	9.085	.611	.500	.818
Dev2	20.72	8.543	.661	.535	.807
Dev3	20.77	8.941	.584	.364	.821

Dev4	20.73	7.625	.784	.783	.779
Dev5	20.84	7.371	.665	.735	.808
Dev6	20.93	8.797	.463	.288	.846

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.152	3.978	4.343	.365	1.092	.015	6
Item Variances	.585	.374	.906	.532	2.423	.038	6
Inter-Item Correlations	.478	.280	.854	.574	3.053	.018	6

Table 5.14 presents a satisfactory coefficient alpha value (0.840) that is somewhat lower than the value (0.900) reported by Oehley (2007). Despite this item 6 of this subscale had to be flagged as a problematic item because of the relatively lower item-total correlation (0.463), the low squared multiple correlation (0.288) and the increase in Cronbach's alpha (0.840 to 0.846). No further problematic items emerged upon the deletion of item 6.

5.3.10.5 Item Analysis of the Builds and Maintains Positive Relationships Subscale of the TMQ

The *Builds and Maintains Positive Relationships* subscale of the TMQ comprised 6 items (see Appendix A). Table 5.15 presents the item statistics for the *Builds and Maintains Positive Relationships* subscale.

Table 5.15

Item statistics for the Builds and Maintains Positive Relationships subscale

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.935	.936	6

	Mean	Std. Deviation	N
Rel1	4.30	.958	137
Rel2	4.41	.743	137
Rel3	4.21	.790	137
Rel4	4.42	.773	137
Rel5	4.49	.729	137
Rel6	4.50	.749	137

	Rel1	Rel2	Rel3	Rel4	Rel5	Rel6
Rel1	1.000	.767	.722	.883	.790	.742
Rel2	.767	1.000	.553	.802	.687	.803
Rel3	.722	.553	1.000	.673	.560	.465
Rel4	.883	.802	.673	1.000	.772	.677
Rel5	.790	.687	.560	.772	1.000	.745
Rel6	.742	.803	.465	.677	.745	1.000

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Rel1	22.03	10.558	.909	.853	.911
Rel2	21.92	12.280	.826	.774	.921
Rel3	22.12	12.751	.666	.541	.940
Rel4	21.91	11.831	.885	.841	.913
Rel5	21.84	12.430	.812	.705	.923
Rel6	21.82	12.469	.776	.749	.927

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.388	4.212	4.504	.292	1.069	.013	6
Item Variances	.630	.531	.917	.386	1.727	.021	6
Inter-Item Correlations	.709	.465	.883	.418	1.900	.012	6

The Cronbach coefficient of internal consistency for the original scale (0.935) far exceeds the critical cut-off value of 0.80. Oehley (2007) reported a similarly impressive but only slightly lower value (0.906) for this subscale. No items were flagged as problematic.

5.3.10.6 Item Analysis of the Provides Meaningful and Challenging Work Subscale of the TMQ

The *Provides Meaningful and Challenging Work* subscale of the TMQ comprised 5 items (see Appendix A). Table 5.16 presents the item statistics for the *Provides Meaningful and Challenging Work* subscale.

Table 5.16

Item statistics for the Provides Meaningful and Challenging Work subscale

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.898	.904	5

	Mean	Std. Deviation	N
Mean1	4.01	.762	137
Mean2	4.09	.658	137
Mean3	3.90	.843	137
Mean4	4.20	.898	137
Mean5	4.24	.791	137

	Mean1	Mean2	Mean3	Mean4	Mean5
Mean1	1.000	.761	.665	.567	.619
Mean2	.761	1.000	.679	.592	.807
Mean3	.665	.679	1.000	.464	.600
Mean4	.567	.592	.464	1.000	.782
Mean5	.619	.807	.600	.782	1.000

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Mean1	16.42	7.481	.753	.650	.874
Mean2	16.34	7.712	.836	.783	.863
Mean3	16.53	7.383	.679	.522	.892
Mean4	16.23	7.107	.687	.646	.892
Mean5	16.19	7.081	.831	.802	.857

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.086	3.898	4.241	.343	1.088	.019	5
Item Variances	.631	.433	.806	.373	1.861	.020	5
Inter-Item Correlations	.654	.464	.807	.342	1.738	.011	5

The Cronbach coefficient of internal consistency for the original scale (0.898) exceeds the critical cut-off value of 0.80. Oehley (2007) reported a similar but slightly lower value (0.859) for this subscale. No items were flagged as problematic.

5.3.10.7 Item Analysis of the Remunerates and Rewards Fairly Subscale of the TMQ

The *Remunerates and Rewards Fairly* subscale of the TMQ comprised 4 items (see Appendix A). Table 5.17 presents the item statistics for the *Remunerates and Rewards Fairly* subscale.

Table 5.17

Item statistics for the Remunerates and Rewards Fairly subscale

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.939	.943	4

	Mean	Std. Deviation	N
Rem1	3.85	1.124	137
Rem2	4.01	1.018	137
Rem3	4.25	.873	137
Rem4	3.69	1.141	137

	Rem1	Rem2	Rem3	Rem4
Rem1	1.000	.926	.774	.771
Rem2	.926	1.000	.792	.774
Rem3	.774	.792	1.000	.786
Rem4	.771	.774	.786	1.000

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Rem1	11.95	7.872	.891	.866	.909
Rem2	11.79	8.389	.903	.874	.905
Rem3	11.55	9.500	.835	.704	.931
Rem4	12.10	8.107	.822	.688	.934

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.949	3.693	4.248	.555	1.150	.056	4
Item Variances	1.091	.761	1.302	.541	1.710	.062	4
Inter-Item Correlations	.804	.771	.926	.155	1.201	.003	4

The Cronbach coefficient of internal consistency for the original scale (0.939) far exceeds the critical cut-off value of 0.80. Oehley (2007) reported a similar but slightly lower value (0.910) for this subscale. No items were flagged as problematic.

5.3.10.8 Item Analysis of The Manages Work-Life Balance Subscale of the TMQ

The *Manages Work-Life Balance* subscale of the TMQ comprised 5 items (see Appendix A). Table 5.18 presents the item statistics for the *Manages Work-Life Balance* subscale.

Table 5.18

Item statistics for the Manages Work-Life Balance subscale

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.748	.720	5

	Mean	Std. Deviation	N
Bal1	4.25	.793	137
Bal2	4.62	.583	137
Bal3	4.08	1.008	137
Bal4	4.26	.858	137
Bal5	4.56	.736	137

	Bal1	Bal2	Bal3	Bal4	Bal5
Bal1	1.000	-.097	.407	.522	.565
Bal2	-.097	1.000	-.023	.092	.089
Bal3	.407	-.023	1.000	.793	.414
Bal4	.522	.092	.793	1.000	.633
Bal5	.565	.089	.414	.633	1.000

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Bal1	17.52	5.560	.516	.390	.702
Bal2	17.15	7.729	.016	.069	.829
Bal3	17.69	4.496	.611	.650	.667
Bal4	17.51	4.413	.825	.752	.570
Bal5	17.20	5.429	.627	.499	.665

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.353	4.080	4.620	.540	1.132	.053	5
Item Variances	.653	.340	1.016	.675	2.985	.062	5
Inter-Item Correlations	.340	-.097	.793	.890	-8.183	.087	5

The Cronbach coefficient of internal consistency for the original scale (0.748) falls below the critical cut-off value of 0.80. Item 2 was flagged as problematic. The inter-item correlations of item 2 with the remainder of the items, the item-total correlation (0.016) , the squared multiple correlation (0.069) and the increase in Cronbach's alpha (0.748 to 0.829) raised the concern that item 2 shares insufficient variance with the remainder of the items in the scale. This basket of evidence was considered sufficient to justify the removal of this item. The item analysis was subsequently repeated on the remaining four items but no further items were identified that ought to be considered for deletion.

5.3.11 Summary of the item analysis results

The results of the item analysis performed on the various scales used to operationalise the latent variable in the structural model are summarized in Table 5.19.

Table 5.19

Summary of the item analysis results

Scale	Mean of final scale	Std. Deviation of final scale	Cronbach alpha of final scale	Number of items deleted	Number of items retained in scale
Sense of Mission	12.91	1.802	0.802	1	3
Perceived Development Opportunity	16.53	2.706	0.855	0	4
Affective Commitment	29.33	7.685	0.815	0	6
Continuance Commitment	14.89	4.789	0.800	3	3
Normative Commitment	22.88	7.237	0.818	1	5
Intention to Quit	10.31	4.277	0.880	0	4
Psychological Empowerment	71.97	9.053	0.861	0	12
Job Satisfaction	74.42	11.113	0.882	0	20
Job Diagnostic Survey (Section 1)	25.06	5.232	0.778	0	5
Job Diagnostic Survey (Section 2)	55.78	10.569	0.898	0	10
Talent Management Mindset	12.14	2.567	0.766	1	3
Attracts and Recruits Talent	11.45	3.325	0.877	2	3
Identifies and Differentiates Talent	25.90	3.049	0.761	0	6
Develops Others	20.93	2.966	0.846	1	5
Builds and Maintains Positive Relations	26.33	4.139	0.935	0	6
Provides Meaningful and Challenging work	20.43	3.347	0.898	0	5
Remunerates and Rewards Fairly	15.80	3.841	0.939	0	4
Manages Work-Life Balance	17.15	2.780	0.829	1	4

The reliability of the final scales used to represent the latent variables in the structural model depicted in Figure 3.1 can generally be considered satisfactory. The reliability of section 1 of the Job Diagnostic Survey, the *Talent Management Mindset* scale and the *Identifies and Differentiates Talent* scale, however provides some reason for concern.

5.4 DIMENSIONALITY ANALYSIS

Specific design intentions guided the construction of the various scales used to operationalise the latent variables in the structural model (Figure 3.1) being tested in this study. The items comprising the scales and subscales were designed to operate as stimulus sets to which test takers respond with behaviour that is primarily an expression of a specific underlying latent variable. Unrestricted principal axis factor analyses with oblique rotation were performed on the various scales and subscales. The objective of the analyses was to evaluate this assumption and to evaluate the success with which each

item, along with the rest of the items in the particular subscale, measures the specific latent variable it was designed to reflect. The items that were deleted in the preceding item analyses were not included in the factor analyses.

The decision on how many factors are required to adequately explain the observed correlation matrix was based on the eigenvalue-greater-than-one rule and on the scree test (Tabachnick & Fidell, 2001). Factor loadings of items on the factor they were designated to reflect will be considered satisfactory if they are greater than 0.50. The adequacy of the extracted solution as an explanation of the observed inter-item correlation matrix was evaluated by calculating the percentage large (> 0.05) residual correlations.

5.4.1 Dimensionality Analysis: Sense of Mission Scale

The *Sense of Mission* latent variable was conceptualised as a unidimensional construct. The PASW exploratory factor analysis results indicated that a single underlying factor explained the observed correlations between the items of the subscale. Only one factor has an eigenvalue greater than unity. The scree plot also suggests the extraction of a single factor. The extracted factor structure is shown in Table 5.20. The items comprising the reduced *Sense of Mission* scale all load satisfactory on the single underlying factor.

Table 5.20

Extracted factor matrix for the Sense of Mission scale

	Factor 1
SoMQ2	.876
SoMQ1	.720
SoMQ4	.697

None (0%) of the non-redundant residuals obtained absolute values greater than 0.05. This indicated that the factor solution provided a very credible explanation for the observed inter-item correlation matrix.

The basket of evidence provided by the item analysis and the exploratory factor analysis of the *Sense of Mission* scale suggests that the reduced scale can be used to represent the *Sense of Mission* latent variable when testing the fit of the structural model depicted in Figure 3.1.

5.4.2 Dimensionality Analysis: Perceived Development Opportunities Scale

The *Perceived Development Opportunities* latent variable was conceptualised as a unidimensional construct. The PASW exploratory factor analysis results indicated that a single underlying factor explained the observed correlations between the items of the subscale. Only one factor obtained an eigenvalue greater than unity. The scree plot also suggested the extraction of a single factor. The extracted factor structure is shown in Table 5.21. The items comprising the original *Perceived Development Opportunities* scale all loaded satisfactory on the single underlying factor.

Table 5.21

Extracted factor matrix for the Perceived Development Opportunities scale

	Factor 1
DevOpQ3	.854
DevOpQ2	.799
DevOpQ1	.721
DevOpQ4	.715

None (0%) of the non-redundant residuals have absolute values greater than 0.05. The extracted factor solution therefore provided a very credible explanation for the observed inter-item correlation matrix.

The basket of evidence provided by the item analysis and the exploratory factor analysis of the *Perceived Development Opportunities* scale indicated that the original scale could be used to represent the *Perceived Development*

Opportunities latent variable when testing the fit of the structural model depicted in Figure 3.1.

5.4.3 Dimensionality Analysis: Affective Commitment Scale

The *Organisational Commitment* latent variable is conceptualised as a construct comprising three correlated latent dimensions: *affective commitment, continuance commitment* and *normative commitment* (Meyer & Allen, 1991; 1997). Each of the latent dimensions were conceptualised as unidimensional constructs that are not further divisible into more specific factors. The PASW exploratory factor analysis results nonetheless indicated that two underlying factors were needed to adequately explain the observed inter-item correlation matrix for the *Affective Commitment* subscale. Two factors obtained an eigenvalue greater than unity. The scree plot also suggested the extraction of two factors. The rotated pattern matrix is shown in Table 5.22a. The three negatively keyed items loaded on factor 1. The three positively keyed items load on factor two. The factors therefore represent two method factors. All the items comprising the original *Affective Commitment* subscale showed satisfactory loadings although the loading of item 1 was somewhat borderline.

Table 5.22a

Rotated pattern matrix for the Affective Commitment subscale

	Factor	
	1	2
ComQ3R	.901	-.066
ComQ5R	.852	-.004
ComQ4R	.723	.128
ComQ6	-.095	.816
ComQ2	.022	.701
ComQ1	.159	.514

To examine how well the six affective commitment items represent a single underlying factor the extraction of a single factor was forced. The resultant factor matrix is shown below in Table 5.22b. In the 1-factor solution the item

loadings generally are still reasonable but for item 6 that now dips below the 0.50 critical loading.

Table 5.22b

Factor matrix when forcing the extraction of a single factor (Affective Commitment)

	Factor 1
ComQ4R	.793
ComQ5R	.780
ComQ3R	.760
ComQ1	.541
ComQ2	.527
ComQ6	.486

The residuals correlations were computed for both the 2-factor and the 1-factor solution. For the 2-factor solution none (0%) of non-redundant residuals had absolute values greater than 0.05 thus suggesting that the rotated factor solution provides a very credible explanation for the observed inter-item correlation matrix. The 1-factor solution, however, failed to provide a credible explanation in that 14 (93%) of the residual correlations were greater than 0.05.

The basket of evidence provided by the item analysis and the exploratory factor analysis of the *Affective Commitment* subscale suggested that the subscale can be used to represent the *Affective Commitment* latent dimension of the *Organisational Commitment* latent variable when testing the fit of the structural model depicted in Figure 3.1.

5.4.4 Dimensionality Analysis: Continuance Commitment Subscale

Continuance Commitment was conceptualised as a unidimensional latent dimension of the *Organisational Commitment* construct that is not further divisible into more specific factors. The PASW exploratory factor analysis results indicated that a single underlying factor explained the observed correlations between the items that remained in the subscale after the item

analysis. Only one factor obtained an eigenvalue greater than unity. The scree plot also suggested the extraction of a single factor. The extracted factor structure is shown in Table 5.23. Two of the items (items 8 and 9) in the reduced *Continuance Commitment* subscale loaded satisfactory on the single underlying factor whereas item 7 displayed a somewhat borderline loading.

Table 5.23

Extracted factor matrix for the Continuance Commitment subscale

	Factor 1
ComQ8	.859
ComQ9	.818
ComQ7	.599

None (0%) of the non-redundant residuals showed absolute values greater than 0.05. The extracted factor solution therefore provided a very credible explanation for the observed inter-item correlation matrix.

The basket of evidence provided by the item analysis and the exploratory factor analysis of the reduced *Continuance Commitment* subscale indicated that the revised scale could be used to represent the *Continuance Commitment* latent dimension of the *Organisational Commitment* latent variable when testing the fit of the structural model depicted in Figure 3.1.

5.4.5 Dimensionality Analysis: Normative Commitment Subscale

Normative Commitment was conceptualised as a unidimensional latent dimension of the *Organisational Commitment* construct that is not further divisible into more specific factors. The PASW exploratory factor analysis results indicated that a single underlying factor explained the observed correlations between the items that remained in the subscale after the item analysis. Only one factor obtained an eigenvalue greater than unity. The scree plot also suggested the extraction of a single factor. The extracted factor structure is shown in Table 5.24. All five items in the reduced *Normative*

Commitment subscale loaded reasonably satisfactory on the single underlying factor.

Table 5.24

Extracted factor matrix for the Normative Commitment sub scale

	Factor 1
ComQ17	.774
ComQ18	.740
ComQ15	.690
ComQ16	.643
ComQ14	.601

The credibility of the extracted solution as an explanation of the observed correlation matrix was, however, somewhat doubtful in that seven (70%) of non-redundant residuals obtained absolute values greater than 0.05.

The basket of evidence provided by the item analysis and the exploratory factor analysis of the reduced *Normative Commitment* subscale only provided somewhat tentative support for the use of the revised scale to represent the *Normative Commitment* latent dimension of the *Organisational Commitment* latent variable when testing the fit of the structural model depicted in Figure 3.1.

5.4.6 Dimensionality Analysis: Intention to Quit Scale

The *Intention to Quit* latent variable was conceptualised as a unidimensional construct. The PASW exploratory factor analysis results indicated that a single underlying factor explained the observed correlations between the items of the subscale. Only one factor obtained an eigenvalue greater than unity. The scree plot also suggested the extraction of a single factor. The extracted factor structure is shown in Table 5.25. The items comprising the original *Intention to Quit* scale all loaded satisfactory on the single underlying factor.

Table 5.25

Extracted factor matrix for the Intention to Quit scale

	Factor 1
ITQQ3	.960
ITQQ1	.799
ITQQ4	.770
ITQQ2	.718

One (16%) of the non-redundant residuals obtained an absolute value greater than 0.05. The extracted factor solution therefore provided a very credible explanation for the observed inter-item correlation matrix.

The basket of evidence provided by the item analysis and the exploratory factor analysis of the *Intention to Quit* scale indicated that the original scale could be used to represent the *Intention to Quit* latent variable when testing the fit of the structural model depicted in Figure 3.1.

5.4.7 Dimensionality Analysis: Psychological Empowerment Scale

The *Psychological Empowerment* latent variable was conceptualised as a construct comprising four correlated latent dimensions: meaning, competence, self-determination and impact (Spreitzer, 1995). The structural model developed in response to the research initiating question utilises *Psychological Empowerment* as a composite construct and does not distinguish the specific latent dimensions of the construct. The dimensionality analysis was consequently performed on all 12 items of the scale. The initial PASW exploratory factor analysis results indicated that three underlying factors were needed to explain the observed correlations between the items of the scale. Three factors obtained eigenvalue greater than unity. The scree plot could further be interpreted to suggest the extraction of two or three factors. The attempt to extract an admissible three-factor structure utilising principal axis factoring (PAF), however, failed[12]. A three factor solution

[12] The communality of one or more items exceeded unity after 800 iterations.

moreover is not in line with the constitutive definition of the *Psychological Empowerment* latent variable. A four factor solution was subsequently requested but the attempt to extract an admissible four-factor structure utilising PAF also failed. An attempt to extract an admissible four-factor structure utilising principal component analysis (PCA) did succeed. The pattern matrix did, however, not correspond to the scoring key of the *Psychological Empowerment* scale (Spreitzer, 1995).

The extraction of a single factor was subsequently forced. The resultant factor structure is shown in Table 5.26

Table 5.26

Factor matrix when forcing the extraction of a single factor (Psychological Empowerment scale)

	Factor 1
PEQ8	.723
PEQ5	.659
PEQ3	.658
PEQ11	.653
PEQ7	.626
PEQ6	.613
PEQ2	.610
PEQ12	.603
PEQ10	.566
PEQ4	.557
PEQ1	.540
PEQ9	.528

All twelve items in the *Psychological Empowerment* scale loaded reasonably satisfactory on the single underlying factor.

As can be expected the credibility of the extracted one-factor solution as an explanation of the observed correlation matrix was, however, somewhat doubtful in that forty-eight (72%) of non-redundant residuals obtained absolute values greater than 0.05.

The basket of evidence provided by the item analysis and the exploratory factor analysis of the *Psychological Empowerment* scale only provides

somewhat tentative support for the use of the scale to represent the *Psychological Empowerment* latent variable when testing the fit of the structural model depicted in Figure 3.1.

5.4.8 Dimensionality Analysis: Job Satisfaction Scale

The *Job Satisfaction* latent variable was conceptualised as a construct comprising two correlated latent dimensions: *intrinsic* and *extrinsic satisfaction* (Weiss et al., 1967). The structural model developed in response to the research initiating question utilises *Job Satisfaction* as a composite construct and does not distinguish the specific latent dimensions of the construct. The dimensionality analysis was consequently performed on all 20 items of the scale.

The initial PASW exploratory factor analysis results indicated that five underlying factors were needed to explain the observed correlations between the items of the scale. The rotated pattern matrix did not reveal a meaningful interpretation of the five extracted factors. In line with the constitutive definition of the construct a two-factor solution was subsequently requested. The rotated pattern matrix did not correspond to the scoring key of the MSQ (Weiss et al., 1967).

The extraction of a single factor was subsequently forced. The resultant factor structure is shown in Table 5.27.

Table 5.27

Factor matrix when forcing the extraction of a single factor (Job Satisfaction scale)

	Factor 1
JSQ15	.736
JSQ14	.691
JSQ12	.656
JSQ6	.623
JSQ16	.622
JSQ19	.616

JSQ13	.569
JSQ17	.550
JSQ20	.547
JSQ5	.540
JSQ4	.531
JSQ8	.514
JSQ18	.483
JSQ7	.449
JSQ11	.442
JSQ1	.430
JSQ10	.405
JSQ9	.389
JSQ3	.375
JSQ2	.288

Table 5.27 indicates eight items with loadings lower than 0.50. These items were subsequently deleted and the item analysis was re-run. The results of the item analysis on the reduced *Job satisfaction* scale are shown in Table 5.28.

Table 5.28

Item statistics for the reduced Job Satisfaction scale

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.876	.877	12

	JSQ4	JSQ5	JSQ6	JSQ8	JSQ12	JSQ13	JSQ14	JSQ15	JSQ16	JSQ17	JSQ19	JSQ20
JSQ4	1.000	.300	.320	.263	.334	.282	.321	.380	.372	.236	.268	.221
JSQ5	.300	1.000	.691	.315	.398	.394	.315	.313	.186	.353	.404	.189
JSQ6	.320	.691	1.000	.352	.470	.264	.346	.396	.268	.418	.472	.257
JSQ8	.263	.315	.352	1.000	.330	.204	.213	.353	.274	.300	.157	.354
JSQ12	.334	.398	.470	.330	1.000	.460	.486	.431	.372	.396	.413	.309
JSQ13	.282	.394	.264	.204	.460	1.000	.488	.405	.342	.426	.458	.315
JSQ14	.321	.315	.346	.213	.486	.488	1.000	.570	.462	.377	.605	.433
JSQ15	.380	.313	.396	.353	.431	.405	.570	1.000	.724	.339	.468	.423
JSQ16	.372	.186	.268	.274	.372	.342	.462	.724	1.000	.278	.339	.430
JSQ17	.236	.353	.418	.300	.396	.426	.377	.339	.278	1.000	.619	.395
JSQ19	.268	.404	.472	.157	.413	.458	.605	.468	.339	.619	1.000	.487
JSQ20	.221	.189	.257	.354	.309	.315	.433	.423	.430	.395	.487	1.000

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
JSQ4	38.79	61.712	.445	.873
JSQ5	39.11	57.686	.534	.868
JSQ6	38.82	59.121	.600	.864
JSQ8	38.58	62.524	.417	.874
JSQ12	39.20	57.395	.615	.863
JSQ13	40.31	56.449	.569	.866
JSQ14	39.26	57.368	.652	.861
JSQ15	39.04	58.153	.663	.861
JSQ16	39.23	60.063	.548	.867
JSQ17	39.28	56.349	.584	.865

JSQ19	39.36	54.910	.672	.859
JSQ20	38.74	60.283	.524	.868

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.558	2.394	4.117	1.723	1.720	.197	12
Item Variances	1.131	.722	1.593	.872	2.208	.104	12
Inter-Item Correlations	.372	.157	.724	.566	4.598	.013	12

5.4.9 Dimensionality Analysis: Job Diagnostic Survey

The *Perceived Job Characteristics* latent variable is conceptualised as a construct comprising five correlated latent dimensions: skills variety, task identity, task significance, autonomy and feedback (Hackman & Oldham, 1975). The structural model developed in response to the research initiating question utilises *Perceived Job Characteristics* as composite construct and does not distinguish the specific latent dimensions of the construct. The JDS comprises two sections, both measuring the five job characteristics. Separate exploratory factor analyses were initially performed on the items comprising the two sections. Table 5.29a presents the extracted factor structure for the section 1 of the JDS. A single factor was extracted to explain the observed correlations between the items of section 1 of the JDS.

Table 5.29a

Extracted factor matrix for Section 1 of the JDS

	Factor 1
JDS1Q3	.733
JDS1Q5	.691
JDS1Q4	.658
JDS1Q1	.598
JDS1Q2	.589

Four (40%) of the non-redundant residuals obtained absolute values greater than 0.05. The credibility of the extracted factor solution was therefore somewhat tenuous.

Table 5.29b presents the rotated pattern matrix for section 2 of the JDS. Two factors are extracted to explain the observed correlations between the items of section 2 of the JDS.

Table 5.29b

Extracted factor matrix for Section 2 of the JDS

	Factor	
	1	2
JDS2Q4	.819	-.020
JDS2Q10	.811	.070
JDS2Q1	.727	.089
JDS2Q6	.571	-.297
JDS2Q8	.516	-.356
JDS2Q5	.515	-.118
JDS2Q2	-.115	-.897
JDS2Q7	.110	-.775
JDS2Q3	.046	-.618
JDS2Q9	.332	-.466

No meaningful identity could be inferred from the loading pattern shown in Table 5.29b. The extracted solution did not correspond to the scoring key of the JDS.

The structural model developed in response to the research initiating question utilises *Perceived Job Characteristics* as a composite construct and does not make a distinction between the five specific latent dimensions of the construct. The dimensionality analysis was consequently also performed on all 15 items of the scale across the two sections comprising the scale. Three factors were extracted to explain the observed correlations between all the items of the JDS. The extraction of a single factor was subsequently forced. The resultant factor structure is depicted in Table 5.29c.

Table 5.29c

Extracted factor matrix for Section 1 and 2 combined of the JDS

	Factor
	1
JDS2Q6	.792
JDS2Q8	.745
JDS2Q7	.742
JDS2Q4	.740

JDS2Q9	.703
JDS2Q2	.660
JDS2Q10	.624
JDS2Q3	.612
JDS2Q5	.585
JDS2Q1	.541
JDS1Q3	.443
JDS1Q5	.433
JDS1Q4	.351
JDS1Q1	.332
JDS1Q2	.308

All the items from section 1 of the JDS that obtained loadings lower than 0.50 on the single extracted factor when all the items were combined in a single analysis. Section 1 was consequently not used to operationalise the *Perceived Job Characteristics* latent variable to evaluate the fit of the structural model.

5.4.10 Dimensionality Analysis: Talent Management Questionnaire

The Talent Management Questionnaire (TMQ) developed by Oehley (2007) comprises eight subscales each measuring a specific talent management competency. Separate exploratory factor analyses were performed on the items comprising the eight subscales.

5.4.10.1 Dimensionality analysis: Displays a Talent Management Mindset Subscale of the TMQ

The *Displays a Talent Management Mindset* latent variable was conceptualised as a unidimensional construct. The PASW exploratory factor analysis results indicated that a single underlying factor was needed to explain the observed correlations between the items of the subscale. Only one factor obtained an eigenvalue greater than unity. The scree plot also suggested the extraction of a single factor. The extracted factor structure is shown in Table 5.30. The items comprising the reduced *Displays a Talent Management Mindset* subscale all loaded satisfactory on the single underlying factor.

Table 5.30

Extracted factor matrix for the Displays a Talent Management Mindset scale

	Factor 1
Mindset1	.844
Mindset3	.701
Mindset2	.699

None (0%) of the non-redundant residuals obtained absolute values greater than 0.05. This indicated that the factor solution provides a very credible explanation for the observed inter-item correlation matrix.

The basket of evidence provided by the item analysis and the exploratory factor analysis of the *Displays a Talent Management Mindset* scale suggested that the reduced scale can be used to represent the *Displays a Talent Management Mindset* latent variable when testing the fit of the structural model depicted in Figure 3.1.

5.4.10.2 Dimensionality analysis: Attracts and Recruits Talent Subscale of the TMQ

The *Attracts and Recruits Talent* latent variable was conceptualised as a unidimensional construct. The initial PASW exploratory factor analysis results indicated that two underlying factors were needed to explain the observed correlations between the items of the scale. This was in conflict with the initial design intention. Item 1 and item 2 of the *Attracts and Recruits Talent* subscale loaded on the second extracted factor. However, the rotated structure matrix, as illustrated in Table 5.31a, did not reveal a meaningful interpretation of the two extracted factors. There was no common theme shared by the items loading on factor 1 or on factor 2. Meaningful factor fission did therefore not present a convincing explanation for the emergence of the second factor.

Table 5.31a

Rotated pattern matrix for the Attracts and Recruits Talent subscale

	Factor	
	1	2
Recruit5	.991	.408
Recruit4	.897	.370
Recruit3	.773	.247
Recruit2	.251	.901
Recruit1	.535	.684

The results of the item analysis (see section 5.3.10.2) indicated the deletion of item 1 and item 2. The remaining three items were again subjected to principal axis factor analysis. The resultant factor structure is shown in Table 5.31b.

Table 5.31b

Extracted factor matrix for the Attracts and Recruits Talent subscale

	Factor
	1
Recruit5	.976
Recruit4	.916
Recruit3	.768

All the factor loadings can be considered satisfactory. None (0%) of the non-redundant residuals obtained absolute values greater than 0.05. The basket of evidence provided by the item analysis and the exploratory factor analysis of the *Attracts and Recruits Talent* scale suggested that the reduced scale could be used to represent the *Attracts and Recruits Talent* latent variable when testing the fit of the structural model depicted in Figure 3.1.

5.4.10.3 Dimensionality analysis: Identifies and Differentiates Talented Employees Subscale of the TMQ

The *Identifies and Differentiates Talented Employees* latent variable was conceptualised as a unidimensional construct. The PASW exploratory factor analysis results indicated that a single underlying factor was needed to explain the observed correlations between the items of the subscale. Only one factor obtained an eigenvalue greater than unity. The scree plot also suggested the extraction of a single factor. The extracted factor structure is shown in Table 5.32. The items comprising the *Identifies and Differentiates Talented Employees* subscale all loaded satisfactory on the single underlying factor, but for item 3. Item 3 was also flagged as problematic in the item analysis (see section 5.3.10.3). However, because the Cronbach's alpha would only increase marginally with the removal of item 3 (0.761 to 0.771), it was decided to not remove item 3. Table 5.32 suggests that the decision not to delete item 3 was questionable. It was nonetheless decided to retain item 3 for the remained of the analyses.

Table 5.32

Extracted factor matrix for the Identifies and Differentiates Talented Employees

	Factor 1
Dif4	.853
Dif6	.660
Dif5	.629
Dif1	.591
Dif2	.586
Dif3	.466

Eight (53%) of the non-redundant residuals obtained absolute values greater than 0.05. The credibility of the extracted factor solution was therefore somewhat questionable.

The basket of evidence provided by the item analysis and the exploratory factor analysis of the *Identifies and Differentiates Talented Employees* subscale only provided somewhat tentative support for the use of the scale to represent the *Identifies and Differentiates Talented Employees* latent variable when testing the fit of the structural model depicted in Figure 3.1.

5.4.10.4 *Dimensionality analysis: Develops Others Subscale of the TMQ*

The *Develops Others* latent variable was conceptualised as a unidimensional construct. The PASW exploratory factor analysis results indicated that a single underlying factor was needed to explain the observed correlations between the items of the subscale. Only one factor obtained an eigenvalue greater than unity. The scree plot also suggested the extraction of a single factor. The extracted factor structure is shown in Table 5.33. The items comprising the reduced *Develops Others* subscale all loaded satisfactory on the single underlying factor.

Table 5.33

Extracted factor matrix for the Develops Others scale

	Factor 1
Dev4	.879
Dev5	.779
Dev2	.698
Dev1	.698
Dev3	.598

The credibility of the extracted solution as an explanation of the observed correlation matrix was, however, somewhat doubtful in that seven (80%) of non-redundant residuals obtained absolute values greater than 0.05.

The basket of evidence provided by the item analysis and the exploratory factor analysis of the reduced *Develops Others* subscale only provided somewhat tentative support for the use of the revised subscale to represent the *Develops Others* latent variable when testing the fit of the structural model depicted in Figure 3.1.

5.4.10.5 *Dimensionality analysis: Builds and Maintains Positive Relationships Subscale of the TMQ*

The *Builds and Maintains Positive Relationships* latent variable was conceptualised as a unidimensional construct. The PASW exploratory factor analysis results indicated that a single underlying factor was needed to explain the observed correlations between the items of the subscale. Only one factor obtained an eigenvalue greater than unity. The scree plot also suggested the extraction of a single factor. The extracted factor structure is shown in Table 5.34. The items comprising the *Builds and Maintains Positive Relationships* subscale all loaded satisfactory on the single underlying factor.

Table 5.34

Extracted factor matrix for the Displays a Talent Management Mindset scale

	Factor 1
Rel1	.946
Rel4	.919
Rel2	.860
Rel5	.842
Rel6	.810
Rel3	.683

Five (33%) of the non-redundant residuals obtained absolute values greater than 0.05. This indicated that the factor solution provides a sufficient albeit borderline explanation for the observed inter-item correlation matrix.

The basket of evidence provided by the item analysis and the exploratory factor analysis of the *Builds and Maintains Positive Relationships* subscale

suggested that the scale could be used to represent the *Builds and Maintains Positive Relationships* latent variable when testing the fit of the structural model depicted in Figure 3.1.

5.4.10.6 *Dimensionality analysis: Provides Meaningful and Challenging Work Subscale of the TMQ*

The *Provides Meaningful and Challenging Work* latent variable was conceptualised as a unidimensional construct. The PASW exploratory factor analysis results indicated that a single underlying factor explained the observed correlations between the items of the subscale. Only one factor obtained an eigenvalue greater than unity. The scree plot also suggested the extraction of a single factor. The extracted factor structure is shown in Table 5.35. The items comprising the *Builds and Maintains Positive Relationships* subscale all loaded satisfactory on the single underlying factor.

Table 5.35

Extracted factor matrix for the Provides Meaningful and Challenging Work scale

	Factor 1
Mean2	.905
Mean5	.886
Mean1	.802
Mean4	.729
Mean3	.727

Five (50%) of the non-redundant residuals returned absolute values greater than 0.05. The credibility of the extracted factor solution was therefore somewhat tenuous.

The basket of evidence provided by the item analysis and the exploratory factor analysis of the *Provides Meaningful and Challenging Work* subscale provided only somewhat tentative support for the use of the scale to represent the *Provides Meaningful and Challenging Work* latent variable when testing the fit of the structural model depicted in Figure 3.1.

5.4.10.7 *Dimensionality analysis: Remunerates and Rewards Fairly Subscale of the TMQ*

The *Remunerates and Rewards Fairly* latent variable was conceptualised as a unidimensional construct. The PASW exploratory factor analysis results indicated that a single underlying factor was needed to explain the observed correlations between the items of the subscale. Only one factor obtained an eigenvalue greater than unity. The scree plot also suggested the extraction of a single factor. The extracted factor structure is shown in Table 5.36. The items comprising the *Remunerates and Rewards Fairly* subscale all loaded satisfactory on the single underlying factor.

Table 5.36

Extracted factor matrix for the Remunerates and Rewards Fairly scale

	Factor 1
Rem2	.945
Rem1	.933
Rem3	.860
Rem4	.849

Only one (16%) of the non-redundant residuals returned an absolute value greater than 0.05. The extracted factor solution therefore provided a credible explanation for the observed inter-item correlation matrix.

The basket of evidence provided by the item analysis and the exploratory factor analysis of the *Remunerates and Rewards Fairly* subscale provided support for the use of the scale to represent the *Remunerates and Rewards Fairly* latent variable when testing the fit of the structural model depicted in Figure 3.1.

5.4.10.8 *Dimensionality analysis: Manages Work-Life Balance Subscale of the TMQ*

The *Manages Work-Life Balance* latent variable was conceptualised as a unidimensional construct. The PASW exploratory factor analysis results

indicated that a single underlying factor was needed to explain the observed correlations between the items of the subscale. Only one factor obtained an eigenvalue greater than unity. The scree plot also suggested the extraction of a single factor. The extracted factor structure is shown in Table 5.37. The items comprising the reduced *Manages Work-Life Balance* subscale all loaded satisfactory on the single underlying factor.

Table 5.37

Extracted factor matrix for the Manages Work-Life Balance scale

	Factor 1
Bal4	.966
Bal3	.731
Bal5	.684
Bal1	.614

Four (66%) of the non-redundant residuals returned absolute values greater than 0.05. The credibility of the extracted factor solution was therefore somewhat tenuous.

The basket of evidence provided by the item analysis and the exploratory factor analysis of the *Manages Work-Life Balance* scale provided somewhat tentative support for the use of the subscale to represent the *Manages Work-Life Balance* latent variable when testing the fit of the structural model depicted in Figure 3.1.

5.5 ITEM PARCELING

The manner in which each latent variable would be operationalised to test the fit of the hypothesised structural model was described in section 4.6. The results of the item and dimensionality analyses reported in paragraph 5.3 and in paragraph 5.4 necessitated a departure from the initial plans in a number of instances. Only the items that remained in the scale after the item and dimensionality analyses were executed, were used in the calculation of

indicator variables to represent each of the latent variables in the structural model.

The manner in which the indicator variables were calculated is summarised in the PASW syntax file shown in Appendix C.

5.6 MEASUREMENT MODEL FIT

The structural model depicted in Figure 3.1 hypothesises specific structural relations between specific latent variables. To empirically test the validity of these structural hypotheses the latent variables were operationalised via indicator variables. Operationalisation of the latent variables creates a measurement model that describes specific structural relations that are hypothesised to exist between the latent variables and the indicator variables. The comprehensive LISREL model is an integration of the structural and measurement model. To derive valid and credible conclusions on the validity of the structural hypotheses evidence is needed that the indicator variables are valid and reliable measures of the latent variables they were designated to reflect. Unless the operational measures could be trusted to be valid and reliable indicators of the latent variables they have been tasked to reflect, it will not be possible to derive any unambiguous inference on the fit of the structural model from the fit of the comprehensive LISREL model. Therefore the evaluation of the measurement part of the comprehensive LISREL model should precede the detailed evaluation of the structural part of the model (Diamantopoulos & Siguaw, 2000). Instead of fitting a single measurement model the Talent Management Competencies measurement model and the Talent Management Outcomes measurement model was fitted separately to evaluate the success with which the latent variables had been operationalised. The hypothesised model only contains a single exogenous latent variable represented by two indicators. Fitting the exogenous and endogenous measurement models separately therefore was not possible.

5.6.1 Fitting the Talent Management Competencies Measurement Model

5.6.1.1 Parameter estimation method

The Talent Management Competency Questionnaire utilises a five-point Likert scale to record the responses of respondents. This permits the treatment of the individual items as approximations of continuous variables (Muthén & Kaplan, 1985). Most of the indicator variables used to operationalise the talent management competency latent variables are, however, composite measures calculated by taking the mean of two or more items. These composite variables may legitimately be considered continuous variables. In the case of measurement (or structural) models operationalised by means of continuous indicator variables Jöreskog and Sörbom (1996a) recommend that the covariance matrix (rather than the polychoric correlation matrix) should be analysed and that maximum likelihood estimation should be used to obtain estimates for the freed model parameters.

5.6.1.2 Testing for multivariate normality

The default method of estimation when fitting models to continuous data (maximum likelihood) does, however, assume that the distribution of indicator variables follow a multivariate normal distribution (Mels, 2003). Failure to satisfy this assumption would result in incorrect standard errors and chi-square estimates (Du Toit & Du Toit, 2001; Mels, 2003). The multivariate normality of the indicator variable distribution was consequently evaluated via PRELIS (Jöreskog & Sörbom, 1996a). The results of the test of multivariate normality are shown in Table 5.38a.

Table 5.38a

Test of multivariate normality for the Talent Management Competencies indicator variables before normalisation

Skewness			Kurtosis			Skewness and Kurtosis	
Value	Z-Score	P-Value	Value	Z-Score	P-Value	Chi-Square	P-Value
210.542	48.863	0.000	392.115	11.577	0.000	2521.633	0.000

Table 5.38a indicates that the null hypothesis of multivariate normality had to be rejected ($p<0.05$). The indicator variable distribution was subsequently normalised through PRELIS (Jöreskog & Sörbom, 1996a). Table 5.38b indicates that the normalisation procedure failed to rectify the multivariate normality problem ($p < 0.05$) although it succeeded in marginally improving the multivariate symmetry and kurtosis of the indicator variable distribution.

Table 5.38b

Test of multivariate normality for the Talent Management Competencies indicator variables after normalisation

Skewness			Kurtosis			Skewness and Kurtosis	
Value	Z-Score	P-Value	Value	Z-Score	P-Value	Chi-Square	P-Value
191.522	45.463	0.000	370.046	10.330	0.000	2173.587	0.000

The Talent Management Competencies measurement model was consequently fitted using robust maximum likelihood estimation (Du Toit & Du Toit, 2001; Mels, 2003).

5.6.1.3 Measurement model fit

The Talent Management Competencies measurement model fitted poorly. The full spectrum of fit statistics is shown in Table 5.39. The null hypotheses of exact and close fit are both rejected ($p<0.05$). The sample estimate (0.178) of the root mean square error of approximation (RMSEA) exceeded the critical cut-off value of 0.10 reflecting poor fit (Browne & Cudeck, 1993).

Table 5.39

Fit statistics for the Talent Management Competencies measurement model

Degrees of Freedom = 78
Minimum Fit Function Chi-Square = 504.840 (P = 0.0)
Normal Theory Weighted Least Squares Chi-Square = 471.614 (P = 0.0)
Satorra-Bentler Scaled Chi-Square = 413.842 (P = 0.0)
Estimated Non-centrality Parameter (NCP) = 335.842
90 Percent Confidence Interval for NCP = (275.866 ; 403.337)
Minimum Fit Function Value = 3.712
Population Discrepancy Function Value (F0) = 2.469
90 Percent Confidence Interval for F0 = (2.028 ; 2.966)
Root Mean Square Error of Approximation (RMSEA) = 0.178
90 Percent Confidence Interval for RMSEA = (0.161 ; 0.195)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.000
Expected Cross-Validation Index (ECVI) = 3.896
90 Percent Confidence Interval for ECVI = (3.455 ; 4.392)
ECVI for Saturated Model = 2.000
ECVI for Independence Model = 33.584
Chi-Square for Independence Model with 120 Degrees of Freedom = 4535.459
Independence AIC = 4567.459
Model AIC = 529.842
Saturated AIC = 272.000
Independence CAIC = 4630.179
Model CAIC = 757.201
Saturated CAIC = 805.117
Normed Fit Index (NFI) = 0.909
Non-Normed Fit Index (NNFI) = 0.883
Parsimony Normed Fit Index (PNFI) = 0.591
Comparative Fit Index (CFI) = 0.924
Incremental Fit Index (IFI) = 0.925
Relative Fit Index (RFI) = 0.860
Critical N (CN) = 37.136
Root Mean Square Residual (RMR) = 0.115
Standardized RMR = 0.132
Goodness of Fit Index (GFI) = 0.698
Adjusted Goodness of Fit Index (AGFI) = 0.473
Parsimony Goodness of Fit Index (PGFI) = 0.400

This finding stands in sharp contrast to the finding of Oehley (2007) that obtained close fit on the Talent Management Competencies measurement model. The poor fit of the model precludes any interpretation of the model parameter estimates. The poor fit of the model, more importantly, indicated that the attempt at operationalising the Talent Management Competency latent variables in this study, failed.

5.6.2 Fitting the Talent Management Outcomes Measurement Model

5.6.2.1 Parameter estimation method

Most of the indicator variables used to operationalise the talent management outcome latent variables is composite measures calculated by taking the mean of two or more items. These composite variables may legitimately be considered continuous variables. The first indicator variable for the *Sense of Mission* latent variable was the only exception. Two item parcels were created, however, a single item served as the first indicator of this latent variable. The *Sense of Mission* scale utilised a five-point Likert scale to record the responses of respondents. This permitted the treatment of the individual item as an approximation of a continuous variable (Muthén & Kaplan, 1985). Fitting the Talent Management Outcomes measurement model therefore also required analysing the covariance matrix (rather than the polychoric correlation matrix) and using maximum likelihood estimation to obtain estimates for the freed model parameters (Jöreskog & Sörbom, 1996a).

5.6.2.2 Testing for multivariate normality

The multivariate normality of the indicator variable distribution was consequently evaluated via PRELIS (Jöreskog & Sörbom, 1996a). The results of the test of multivariate normality are shown in Table 5.40a.

Table 5.40a

Test of multivariate normality for the Talent Management Outcome indicator variables before normalisation

Skewness			Kurtosis			Skewness and Kurtosis	
Value	Z-Score	P-Value	Value	Z-Score	P-Value	Chi-Square	P-Value
65.489	19.464	0.000	288.805	9.575	0.000	470.551	0.000

Table 5.40a indicates that the null hypothesis of multivariate normality had to be rejected ($p<0.05$). The indicator variable distribution was subsequently normalised through PRELIS (Jöreskog & Sörbom, 1996a). Table 5.40b

indicates that the normalisation procedure failed to rectify the multivariate normality problem ($p<0.05$) although it succeeded in marginally improving the multivariate symmetry and kurtosis of the indicator variable distribution.

Table 5.40b

Test of multivariate normality for the Talent Management Outcome indicator variables after normalisation

Skewness			Kurtosis			Skewness and Kurtosis	
Value	Z-Score	P-Value	Value	Z-Score	P-Value	Chi-Square	P-Value
41.354	9.570	0.000	253.142	6.091	0.000	128.678	0.000

The Talent Management Outcomes measurement model was consequently fitted using robust maximum likelihood estimation (Du Toit & Du Toit, 2001; Mels, 2003).

5.6.2.3 Measurement model fit

The Talent Management Outcomes measurement model showed good fit. The full spectrum of fit statistics is shown in Table 5.41. The null hypotheses of exact fit was rejected ($p<0.05$). The null hypothesis of close fit was not rejected ($p>0.05$). The sample estimate of the RMSEA fell below the critical cut-off value of 0.05 reflecting good fit (Browne & Cudeck, 1993). The standardized root mean square residual (RMR) (0.0313) indicated very good fit. Diamantopoulos and Sigauw (2000) indicate that values less than 0.05 on the latter index are regarded as indicative of a model that fits the data well. Only one large negative standardized residual (-2.653) was obtained.

Table 5.41

Fit statistics for the Talent Management Outcomes measurement model

Degrees of Freedom = 56
Minimum Fit Function Chi-Square = 73.708 (P = 0.0565)
Normal Theory Weighted Least Squares Chi-Square = 73.119 (P = 0.0619)
Satorra-Bentler Scaled Chi-Square = 65.401 (P = 0.183)
Chi-Square Corrected for Non-Normality = 100.700 (P = 0.000232)
Estimated Non-centrality Parameter (NCP) = 9.401

90 Percent Confidence Interval for NCP = (0.0 ; 33.718)

Minimum Fit Function Value = 0.542
Population Discrepancy Function Value (F0) = 0.0691
90 Percent Confidence Interval for F0 = (0.0 ; 0.248)
Root Mean Square Error of Approximation (RMSEA) = 0.0351
90 Percent Confidence Interval for RMSEA = (0.0 ; 0.0665)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.750

Expected Cross-Validation Index (ECVI) = 1.201
90 Percent Confidence Interval for ECVI = (1.132 ; 1.380)
ECVI for Saturated Model = 1.544
ECVI for Independence Model = 16.818

Chi-Square for Independence Model with 91 Degrees of Freedom = 2259.301
Independence AIC = 2287.301
Model AIC = 163.401
Saturated AIC = 210.000
Independence CAIC = 2342.181
Model CAIC = 355.480
Saturated CAIC = 621.598

Normed Fit Index (NFI) = 0.971
Non-Normed Fit Index (NNFI) = 0.993
Parsimony Normed Fit Index (PNFI) = 0.598
Comparative Fit Index (CFI) = 0.996
Incremental Fit Index (IFI) = 0.996
Relative Fit Index (RFI) = 0.953

Critical N (CN) = 174.666

Root Mean Square Residual (RMR) = 0.0260
Standardized RMR = 0.0313
Goodness of Fit Index (GFI) = 0.929
Adjusted Goodness of Fit Index (AGFI) = 0.866
Parsimony Goodness of Fit Index (PGFI) = 0.495

The good fit of the model warranted further interpretation of the model parameter estimates. Good model fit does not in and by itself indicate that the operationalisation of the Talent Management Outcome latent variables succeeded.

5.6.2.4 Evaluation of the measurement model parameter estimates

All the factor loadings were statistically significant ($p<0.05$). The completely standardised factor loadings varied between 0.785 and 0.979. Between 62% and 96% of the variance in the indicator variables were explained by the latent variables they have been tasked to reflect. Between 38% and 4% of the variance in the indicator variables was error variance. The basket of evidence

indicated that the operationalisation of the Talent Management Outcome latent variables succeeded.

5.7 STRUCTURAL MODEL FIT

5.7.1 Reduced Structural Model

The poor fit of the Talent Management Competencies measurement model precluded the empirical evaluation of the full hypothesised structural model depicted in Figure 3.1. The original structural model was consequently reduced by eliminating all the Talent Management Competency latent variables from the model. The reduced structural model is shown in Figure 5.1.

The original overarching substantive hypothesis was thereby rephrased that the structural model depicted in Figure 5.1 provides a valid account of the psychological process that determines the level of employees' intention to quit. The revised overarching substantive research hypothesis can be dissected into the following seven more detailed, specific (direct effect) substantive research hypotheses. The original numbering of the substantive hypotheses was retained. The following hypotheses, as discussed in section 4.2 and as illustrated in Figure 3.1 and in Figure 5.1, were consequently tested:

Hypothesis 17: *Perceived Job Characteristics* (η_9) has a positive linear effect on *Psychological Empowerment* (η_{12}).

Hypothesis 18: Psychological Empowerment (η_{12}) has a positive linear effect on the outcome of Organisational Commitment (η_{11}).

Hypothesis 20: *A Sense of Mission* (η_{10}) has a positive linear effect on the outcome of *Psychological Empowerment* (η_{12}).

Hypothesis 21: *Psychological Empowerment* (η_{12}) has a positive linear effect on the outcome of *Job Satisfaction* (η_{13}).

Hypothesis 22: *Perceived Development Opportunities* (η_8) has a positive linear effect on *Psychological Empowerment* (η_{12}).

Hypothesis 26: An employee's level of *Job Satisfaction* (η_{13}) has a negative linear effect on the outcome *Intention to Quit* (η_{14}).

Hypothesis 27: An employee's level of *Organisational Commitment* (η_{11}) has a negative linear effect on the *Intention to Quit* (η_{14}).

The revised substantive research hypothesis still translates into the following exact and close fit null hypotheses:

H_{01}:RMSEA = 0

H_{a1}:RMSEA > 0

H_{02}:RMSEA ≤ 0.05

H_{a2}:RMSEA > 0.05

The seven detailed research hypotheses translate into the revised path coefficient statistical hypotheses depicted in Table 5.42. The original numbering of the statistical hypotheses were retained.

Table 5.42

Revised path coefficient statistical hypotheses

Hypothesis 17	Hypothesis 22
$H_{019}:\beta_{12,9} = 0$	$H_{024}:\beta_{12,8} = 0$
$H_{a19}:\beta_{12,9} > 0$	$H_{a24}:\beta_{12,8} > 0$
Hypothesis 18	Hypothesis 26
$H_{020}:\beta_{11,12} = 0$	$H_{028}:\beta_{14,13} = 0$
$H_{a20}:\beta_{11,12} > 0$	$H_{a28}:\beta_{14,13} < 0$
Hypothesis 20	Hypothesis 27
$H_{022}:\beta_{12,10} = 0$	$H_{029}:\beta_{14,11} = 0$
$H_{a22}:\beta_{12,10} > 0$	$H_{a29}:\beta_{14,11} < 0$
Hypothesis 21	
$H_{023}:\beta_{13,2} = 0$	
$H_{a23}:\beta_{13,2} > 0$	

5.7.2 Fitting the Reduced Talent Management Competency Model

LISREL 8.80 (Jöreskog & Sörbom, 1996b) was used to evaluate the fit of the reduced Talent Management Competency model shown in Figure 5.1. The covariance matrix was analysed due to the continuous nature of the indicator variables. Robust maximum likelihood estimation was used due to the lack of multivariate normality in the data as discussed in section 5.6.2.2.

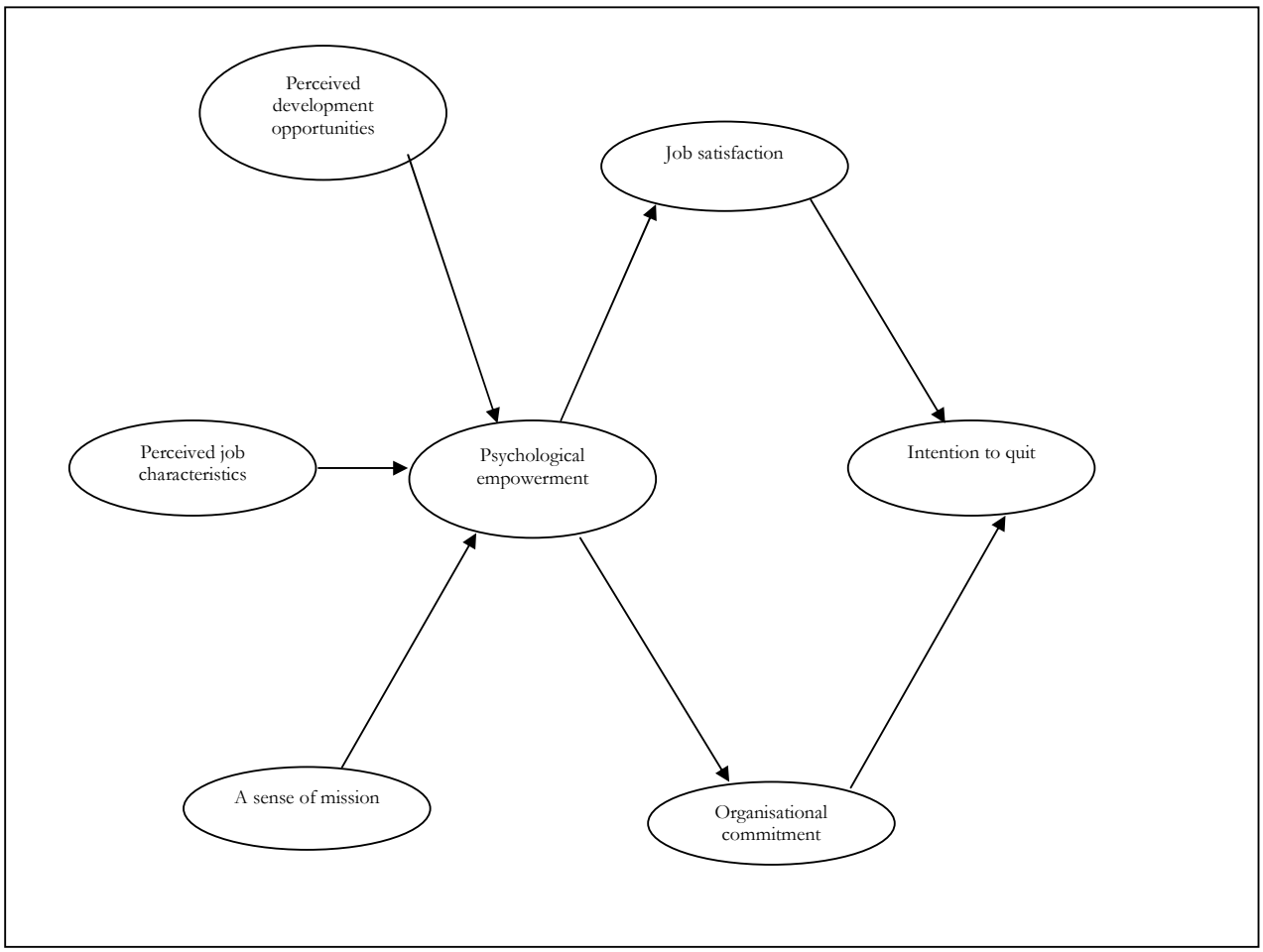

Figure 5.1 **Reduced Intention to Quit structural model**

5.7.3 Structural Model Goodness of Fit Statistics

The reduced structural model converged in 21 iterations. The model depicted in Figure 5.1, however, showed poor fit. The full spectrum of fit statistics is shown in Table 5.43.

Table 5.43

Goodness of fit statistics for (reduced) structural model

Degrees of Freedom = 67
Minimum Fit Function Chi-Square = 176.710 (P = 0.00)
Normal Theory Weighted Least Squares Chi-Square = 168.672 (P = 0.00)
Satorra-Bentler Scaled Chi-Square = 158.738 (P = 0.00)
Chi-Square Corrected for Non-Normality = 195.973 (P = 0.00)
Estimated Non-centrality Parameter (NCP) = 91.738
90 Percent Confidence Interval for NCP = (58.715 ; 132.470)
Minimum Fit Function Value = 1.402
Population Discrepancy Function Value (F0) = 0.728
90 Percent Confidence Interval for F0 = (0.466 ; 1.051)
Root Mean Square Error of Approximation (RMSEA) = 0.104
90 Percent Confidence Interval for RMSEA = (0.0834 ; 0.125)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.000
Expected Cross-Validation Index (ECVI) = 1.863
90 Percent Confidence Interval for ECVI = (1.601 ; 2.186)
ECVI for Saturated Model = 1.667
ECVI for Independence Model = 16.524
Chi-Square for Independence Model with 91 Degrees of Freedom = 2054.052
Independence AIC = 2082.052
Model AIC = 234.738
Saturated AIC = 210.000
Independence CAIC = 2135.871
Model CAIC = 380.817
Saturated CAIC = 613.640
Normed Fit Index (NFI) = 0.923
Non-Normed Fit Index (NNFI) = 0.937
Parsimony Normed Fit Index (PNFI) = 0.679
Comparative Fit Index (CFI) = 0.953
Incremental Fit Index (IFI) = 0.954
Relative Fit Index (RFI) = 0.895
Critical N (CN) = 77.859
Root Mean Square Residual (RMR) = 0.167
Standardized RMR = 0.186
Goodness of Fit Index (GFI) = 0.839
Adjusted Goodness of Fit Index (AGFI) = 0.748
Parsimony Goodness of Fit Index (PGFI) = 0.536

The *Satorra-Bentler Scaled Chi-Square* = 158.738 (p = 0.00) indicated that the null hypothesis of exact fit H_{01}RMSEA=0 should be rejected (p<0.05). A significant χ^2 implies that there is significant discrepancy between the covariance matrix implied by the model and the observed covariance matrix. The aim is to not reject the null hypothesis, therefore indicating good fit (Diamantopoulos & Sigauw, 2000). Rejection of the null hypothesis indicates imperfect model fit and rejection of the model (Kelloway, 1998). The *Root Mean Square Error of Approximation (RMSEA)* of 0.104 indicates very poor fit. The *p-value for Test of Close Fit* indicates that the close fit null hypothesis

(H_{02}: RMSEA≤0.05) was also rejected. It was therefore concluded that the reduced structural model did not show good fit.

Determining and evaluating the fit of the structural model indicates to what extent the fitted model reproduces the observed sample covariance matrix (Diamantopoulos & Sigauw, 2000). The foregoing evidence indicated that the reduced structural model was unable to reproduce the observed covariance matrix to a degree of accuracy that warranted any faith in the structural model and the derived parameter estimates.

5.7.4 Further Modification to the Reduced Structural Model

The modification indices calculated by LISREL were subsequently inspected to explore possible ways of improving the fit of the model. Model modification indices answer the question whether freeing any of the currently fixed parameters in the model will significantly improve the fit of the model. This is determined by calculating the extent to which the χ^2 fit statistic decreases when each of the currently fixed parameters in the model is freed and the model re-estimated (Jöreskog & Sörbom, 1993). Structural parameters currently fixed to zero with large modification index values (>6.6349) are parameters that, if set free, would improve the fit of the model significantly ($p<0.01$) (Diamantopoulos & Siguaw, 2000; Jöreskog & Sörbom, 1993). Parameters with high MI values should, however, only be freed if it makes substantive sense to do so (Kelloway, 1998). A convincing theoretical argument should be put forward in support of the proposed causal linkage. The completely standardised expected change for the parameter is the extent to which it would change from its currently fixed value of zero in the completely standardised solution if it is freed. The magnitude of the completely standardised expected change should be substantial enough to warrant freeing the parameter. The sign of the completely standardised expected change should in addition make sense in terms of the theoretical argument put forward in support of the proposed path (Jöreskog & Sörbom, 1993).

Jöreskog and Sörbom (1993) suggest that the modification indices calculated for the various matrices defining the structural model (i.e., Γ, $\mathbf{B}$ and Ψ) should be inspected to identify the parameter with the highest modification index value. The parameter with the largest modification index is then freed if a convincing theoretical argument can be put forward in support of the proposed causal linkage. If a convincing theoretical argument cannot be put forward in support of the proposed causal linkage the parameter with the second largest modification index should be considered. For the purpose of modifying the reduced structural model depicted in Figure 5.1 only the Γ and $\mathbf{B}$ matrices were inspected. The fixed off-diagonal elements of the variance-covariance matrix Ψ was not considered. Putting forward a theoretical rational for freeing currently fixed covariance terms in Ψ in a cross-sectional research design would require the introduction of additional latent variables currently not included in the model.

Inspection of the modification indices for the Γ- and **B**–matrices revealed that β_{14} obtained the highest modification index value. This suggested that the addition of a path from *Job Satisfaction* to *Commitment* would significantly improve the fit of the model. The modification indices for **B** are shown in Table 5.44. All the modification indices for **B** were statistically significant ($p<0.01$). A structural linkage from *Satisfaction* to *Commitment* made substantive theoretical sense. Experiencing job satisfaction at work should generalise to an attachment to the organisation in which the job is nested. This line of reasoning is well documented in the literature (Aryee, Wyatt & Min, 1991; Bateman & Strasser, 1984 & Recihers as cited in Liou, 2008). Support for this linkage is also documented in studies conducted amongst nurses specifically (Alhussami, 2009; Eker, Eker & Pala, 2008). See section 6.3.3 for a further discussion.

Table 5.44

Modification Indices for Beta

	Commitment	Intention To Quit	Psychological Empowerment	Satisfaction
Commitment	-	35.772	-	53.402
Intention To Quit	-	-	11.712	-
Psychological Empowerment	14.566	27.476	-	9.379
Satisfaction	**51.032**	34.709	-	-

When considering the modification of an initially proposed structural model the question should, however, also be examined as to whether any of the existing paths should be removed. The question is therefore whether any of the currently freed parameters in Γ and **B** should be fixed to zero. Inspection of the **B** matrix (not shown) showed that all four β_{ij} estimates were statistically significant ($p<0.05$). Further analysis of the Γ matrix (see Table 5.45), however, indicated that the path between *A Sense of Mission* and *Psychological Empowerment* (t-value = 1.174) should be removed, as well as the path between *Development Opportunities* and *Psychological Empowerment* (t-value = 0.162) since both the path coefficients were not significant ($p>0.05$).

Table 5.45

Γ matrix for the reduced structural model

	Sense of Mission	Development Opportunities	Job Characteristics
Commitment	-	-	-
Intention to Quit	-	-	-
Psychological Empowerment	**0.191** **(0.162)** **1.174**	**0.028** **(0.172)** **0.162**	0.335 (0.137) 2.444
Satisfaction	-	-	-

5.7.4.1 Modified Reduced Structural Model 1

The reduced structural model (Figure 5.1) was subsequently modified by inserting a path from *Job Satisfaction* to *Commitment* and by removing the path between *A Sense of Mission* and *Psychological Empowerment* and the path between *Development Opportunities* and *Psychological Empowerment*. With these changes, the structural model was fitted again. The resultant fit statistics are shown in Table 5.46.

Table 5.46

Goodness of fit statistics for modified reduced structural model 1

Degrees of Freedom = 68
Minimum Fit Function Chi-Square = 115.946 (P = 0.000261)
Normal Theory Weighted Least Squares Chi-Square = 103.577 (P = 0.00353)
Satorra-Bentler Scaled Chi-Square = 96.814 (P = 0.0124)
Chi-Square Corrected for Non-Normality = 220.472 (P = 0.0)
Estimated Non-centrality Parameter (NCP) = 28.814
90 Percent Confidence Interval for NCP = (6.676 ; 58.966)
Minimum Fit Function Value = 0.920
Population Discrepancy Function Value (F0) = 0.229
90 Percent Confidence Interval for F0 = (0.0530 ; 0.468)
Root Mean Square Error of Approximation (RMSEA) = 0.0580
90 Percent Confidence Interval for RMSEA = (0.0279 ; 0.0830)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.296
Expected Cross-Validation Index (ECVI) = 1.356
90 Percent Confidence Interval for ECVI = (1.180 ; 1.595)
ECVI for Saturated Model = 1.667
ECVI for Independence Model = 16.524
Chi-Square for Independence Model with 91 Degrees of Freedom = 2054.052
Independence AIC = 2082.052
Model AIC = 170.814
Saturated AIC = 210.000
Independence CAIC = 2135.871
Model CAIC = 313.049
Saturated CAIC = 613.640
Normed Fit Index (NFI) = 0.953
Non-Normed Fit Index (NNFI) = 0.980
Parsimony Normed Fit Index (PNFI) = 0.712
Comparative Fit Index (CFI) = 0.985
Incremental Fit Index (IFI) = 0.985
Relative Fit Index (RFI) = 0.937
Critical N (CN) = 128.581
Root Mean Square Residual (RMR) = 0.138
Standardized RMR = 0.163
Goodness of Fit Index (GFI) = 0.895
Adjusted Goodness of Fit Index (AGFI) = 0.838
Parsimony Goodness of Fit Index (PGFI) = 0.580

The *Satorra-Bentler Scaled Chi-Square* = 96.814 (p=0.0124) indicates that the null hypothesis of exact fit is again rejected (p<0.05). The RMSEA value of 0.0580 however indicates good fit. The *p-value for Test of Close Fit* also supports that the null hypothesis of close fit cannot be rejected (p = 0.296).

Inspection of the **B** matrix (Table 5.47) shows that the newly inserted path from *Satisfaction* to *Commitment* is statistically significant (p<0.05). Table 5.47, however, also indicates that the path from *Psychological Empowerment* to *Commitment* is statistically insignificant (p>0.05). The path from *Perceived Job Characteristics* to *Psychological Empowerment* is statistically significant (Γ not shown).

Table 5.47

B matrix for the modified reduced structural model 1

	Commitment	Intention to Quit	Psychological Empowerment	Job Satisfaction
Commitment			**0.031**	0.706
	-	-	**(0.089)**	(0.080)
			0.352	8.870
Intention to Quit	-0.552			-0.266
	(0.162)	-	-	(0.134)
	-3.415			1.979
Psychological Empowerment	-	-	-	
Satisfaction			0.395	
	-	-	(0.096)	
			4.124	

Analysis of the modification indices for the Γ matrix (Table 5.48) in addition indicated a possible relationship between *Development Opportunities* and *Job Satisfaction.* The proposed path made substantive theoretical sense. Employees that perceive the opportunity to develop and grow in their current work environment can be expected to experience job satisfaction. This line of reasoning is supported by Gardulf et al. (2008) who found significant relationships between development type of activities and job satisfaction. Similarly, Weng et al. (2010) found a significant positive relationship between career development opportunities and job satisfaction for nurses (see section 6.3.2. for further discussion). Numerous significant modification index values are also indicated for **B** but these are all smaller than the MI_{42} value. When

modifying the structural model it is important to free one path at a time and to free the path with the highest modification index value that makes substantive theoretical sense (Jöreskog and Sörbom, 1993).

Table 5.48

Modification indices for the Γ matrix

	Sense of Mission	Development Opportunities	Job Characteristics
Commitment	9.279	8.614	4.828
Intention to Quit	0.015	0.116	0.243
Psychological Empowerment	5.796	3.317	-
Job Satisfaction	7.576	**19.043**	10.050

5.7.4.2 Modified reduced structural model 2

The modified reduced structural model 1 was subsequently further modified by inserting a path from *Development Opportunities* to *Job Satisfaction* and by removing the path from *Psychological Empowerment* to *Commitment*. The modified reduced model 2 was fitted again. The resultant fit statistics are shown in Table 5.49.

Table 5.49

Goodness of fit statistics for modified reduced structural model 2

Degrees of Freedom = 68
Minimum Fit Function Chi-Square = 92.219 (P = 0.0270)
Normal Theory Weighted Least Squares Chi-Square = 88.268 (P = 0.0499)
Satorra-Bentler Scaled Chi-Square = 82.643 (P = 0.109)
Chi-Square Corrected for Non-Normality = 150.275 (P = 0.000)
Estimated Non-centrality Parameter (NCP) = 14.643
90 Percent Confidence Interval for NCP = (0.0 ; 41.753)
Minimum Fit Function Value = 0.732
Population Discrepancy Function Value (F0) = 0.116
90 Percent Confidence Interval for F0 = (0.0 ; 0.331)
Root Mean Square Error of Approximation (RMSEA) = 0.0413
90 Percent Confidence Interval for RMSEA = (0.0 ; 0.0698)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.660
Expected Cross-Validation Index (ECVI) = 1.243
90 Percent Confidence Interval for ECVI = (1.127 ; 1.458)
ECVI for Saturated Model = 1.667
ECVI for Independence Model = 16.524
Chi-Square for Independence Model with 91 Degrees of Freedom = 2054.052
Independence AIC = 2082.052
Model AIC = 156.643

Saturated AIC = 210.000
Independence CAIC = 2135.871
Model CAIC = 298.878
Saturated CAIC = 613.640
Normed Fit Index (NFI) = 0.960
Non-Normed Fit Index (NNFI) = 0.990
Parsimony Normed Fit Index (PNFI) = 0.717
Comparative Fit Index (CFI) = 0.993
Incremental Fit Index (IFI) = 0.993
Relative Fit Index (RFI) = 0.946
Critical N (CN) = 150.458
Root Mean Square Residual (RMR) = 0.0654
Standardized RMR = 0.0706
Goodness of Fit Index (GFI) = 0.909
Adjusted Goodness of Fit Index (AGFI) = 0.860
Parsimony Goodness of Fit Index (PGFI) = 0.589

The *Satorra-Bentler Scaled Chi-Square* = 82.643 (p=0.109), indicated that the null hypothesis of exact fit should not be rejected (p>0.05). The *RMSEA* value of 0.0413 indicated excellent fit and that the model fits the sample data better than the previous model. The *p-value for test of Close fit* (0.660) indicates that the null hypothesis of close fit cannot be rejected, and therefore the structural model shows very good fit.

In the modified reduced structural model 2 both γ-coefficients (Γ not shown) are statistically significant (p<0.05). The two paths from *Perceived Job Characteristics* and *Perceived Development Opportunities* to *Job Satisfaction* are therefore both statistically significant (p<0.05). In the **B** matrix all the paths are statistically significant but for the path from *Satisfaction* to *Intention to Quit* (Table 5.50).

Table 5.50

B matrix for the modified reduced structural model 2

	Commitment	Intention to Quit	Psychological Empowerment	Job Satisfaction
Commitment				0.740 (0.072) 10.292
Intention to Quit	-0.553 (0.168) -3.286			**-0.255** **(0.144)** **1.779**
Psychological Empowerment	-	-	-	
Satisfaction	-	-	0.271 (0.083) 3.257	

The path from *Satisfaction* to *Intention to Quit* is, however, so firmly supported by research evidence (Chen, Ployhart, Thomas, Anderson & Bliese, 2011; Tett & Meyer, 1993; Böckermann & Ilmakunnas, 2009; Scott, Gravell, Simoens, Bojke & Sibbald, 2006; Singh & Loncar, 2010) that it was decided not to remove this path (see 6.3.3 for a further discussion).

It was however decided to scrutinise whether the model could be improved further, and with the analysis of the modification indices for the **B**–matrix, it was suggested that a path from *Psychological Empowerment* to *Intention to Quit* will significantly improve the fit of the model ($p<0.01$). The standardised expected change associated with this path, however indicated a positive path coefficient ($\beta_{23}=0.222$). This would suggest that an increase in *Psychological Empowerment* would result in an increase in *Intention to Quit*. This runs counter to the whole rationale of enhancing the experience of psychological empowerment in employees through job enrichment and structural empowerment. It was consequently decided not to insert the proposed path from *Psychological Empowerment* to *Intention to Quit.*

Table 5.51

Modification indices for Beta-matrix for the modified reduced structural model 2

	Commitment	Intention to Quit	Psychological Empowerment	Job Satisfaction
Commitment	-	-	0.000	-
Intention to Quit	-	-	**8.624**	-
Psychological Empowerment	0.255	5.652	-	0.064
Satisfaction	1.413	0.011	-	-

The next highest modification index value was for the path between *Sense of Mission* and *Commitment* (Table 5.52). A path was therefore proposed from *Sense of Mission* to *Commitment*. The proposed path makes substantive theoretical sense. When employees identify with the mission of the organisation they thereby develop an attachment to the organisation. This is supported by Weng et al. (2010) who confirmed the importance of staff members having an understanding of how they fit, and can contribute, to the

goals of their organisation. Brickman et al. as cited in Liou (2008) also found that the highest level of commitment is seen in individuals who internalise the organisation's goals and values into their own cognitive patterns and habits (see paragraph 6.3.2 for further discussion).

Table 5.52

Modification indices for the Γ matrix

	Sense of Mission	Development Opportunities	Job Characteristics
Commitment	**7.723**	6.947	2.734
Intention to Quit	0.003	0.025	0.373
Psychological Empowerment	5.263	2.767	- -
Satisfaction	0.619	- -	2.271

5.7.4.3 Modified reduced structural model 3

The modified reduced structural model 2 was subsequently further modified by inserting a path from *Sense of Mission* to *Commitment*. The modified reduced model 3 was fitted again. The resultant fit statistics are shown in Table 5.53.

Table 5.53

Goodness of fit statistics for modified reduced structural model 3

Degrees of Freedom = 67
Minimum Fit Function Chi-Square = 84.249 (P = 0.0756)
Normal Theory Weighted Least Squares Chi-Square = 81.267 (P = 0.113)
Satorra-Bentler Scaled Chi-Square = 76.641 (P = 0.197)
Chi-Square Corrected for Non-Normality = 153.334 (P = 0.000)
Estimated Non-centrality Parameter (NCP) = 9.641
90 Percent Confidence Interval for NCP = (0.0 ; 35.456)
Minimum Fit Function Value = 0.669
Population Discrepancy Function Value (F0) = 0.0765
90 Percent Confidence Interval for F0 = (0.0 ; 0.281)
Root Mean Square Error of Approximation (RMSEA) = 0.0338
90 Percent Confidence Interval for RMSEA = (0.0 ; 0.0648)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.775
Expected Cross-Validation Index (ECVI) = 1.211
90 Percent Confidence Interval for ECVI = (1.135 ; 1.416)
ECVI for Saturated Model = 1.667
ECVI for Independence Model = 16.524
Chi-Square for Independence Model with 91 Degrees of Freedom = 2054.052
Independence AIC = 2082.052
Model AIC = 152.641

Saturated AIC = 210.000
Independence CAIC = 2135.871
Model CAIC = 298.720
Saturated CAIC = 613.640
Normed Fit Index (NFI) = 0.963
Non-Normed Fit Index (NNFI) = 0.993
Parsimony Normed Fit Index (PNFI) = 0.709
Comparative Fit Index (CFI) = 0.995
Incremental Fit Index (IFI) = 0.995
Relative Fit Index (RFI) = 0.949
Critical N (CN) = 160.190
Root Mean Square Residual (RMR) = 0.0523
Standardized RMR = 0.0602
Goodness of Fit Index (GFI) = 0.916
Adjusted Goodness of Fit Index (AGFI) = 0.868
Parsimony Goodness of Fit Index (PGFI) = 0.584

5.8 MODIFIED REDUCED STRUCTURAL MODEL FIT

The *Satorra-Bentler Scaled Chi-Square* = 76.641 (p=0.197) indicated that the null hypothesis of exact fit was not rejected (p>0.05). There is therefore not a statistically significant discrepancy between the covariance matrix implied by the adapted model and the observed covariance matrix. The *RMSEA* value of 0.0338 showed better fit and improvement from the previous measurement (0.0413) indicating that the modified reduced model 3 fitted the data extremely well and better than model 2[13]. The *p-value for Test of Close Fit (RMSEA<0.05)* with a value of 0.775 indicates that the null hypothesis of close fit could not rejected (p>0.05).

The root mean square residual (RMR=0.0523), represents the average value of the covariance residuals, and the standardised RMR, which represents the fitted residuals divided by their estimated standard errors, (0.0602) indicate reasonable model fit. Diamantopoulos and Siguaw (2000) indicate that values less than 0.05 on the standardised RMR indicate models that fit the data well. The obtained value is somewhat surprising given the extremely favourable RMSEA value found for model 3.

Model fit can be improved by adding more paths to the model and estimating more parameters until perfect fit is achieved in the form of a saturated or just-

[13] The significance of the improvement in fit has, however, not been formally tested.

identified model with no degrees of freedom (Kelloway, 1998). The objective in model building is, however, to find the most parsimonious model that fits well with as few model parameters as possible (Jöreskog & Sörbom, 1993). Indices of parsimonious fit weigh the increase achieved in terms of improved fit and the loss in degrees of freedom lost (Jöreskog & Sörbom, 1993). The Aiken information criterion (AIC = 152.641) shown in Table 5.53 indicates that the fitted structural model provides a more parsimonious fit than both the independence model (2135.871) and the saturated model (210.00). Smaller values on the Aiken information criterion indicate a more parsimonious model (Kelloway, 1998). The values for the consistent Aiken information criterion (CAIC = 298.720) also suggested that the fitted structural model provided a more parsimonious fit than both the independence model (2135.871) and the saturated model (613.640).

The expected cross-validation index (ECVI) reflects the difference between the reproduced sample covariance matrix derived from the estimated model parameters obtained in the current sample and the expected covariance matrix that would be obtained in an independent sample of the same size from the same population (Byrne, 1989; Diamantopoulos & Siguaw, 2000). Since the model ECVI (1.211) was smaller than the value obtained for the independence model (16.524) and the ECVI value obtained for the saturated model (1.667), a model resembling the fitted model seems to have a better chance of being replicated in a cross-validation sample than the independence model or the saturated model. This finding was corroborated by the Aiken information criterion and the consistent Aiken information criterion results. The modified reduced structural model 3 therefore does not seem to be overly elaborate in how it conceptualizes the causal dynamics underlying nurses' *Intention to Quit*. At the same time the modified reduced structural model 3 does not appear to under-represent the causal dynamics.

Integrating the full spectrum of fit statistics depicted in Table 5.44 seems to suggest a well fitting model that clearly outperforms the independence model and that seems to approximate the complexity of the psychological dynamics leading to nurses' *Intention to Quit*.

5.8.1 Inspection of Structural Model Residuals

Residual covariances represent the differences between the observed and reproduced covariance matrices (Jöreskog & Sörbom, 1993). As such standardised residual covariances, can provide valuable insight in the fit of the structural model (Jöreskog & Sörbom., 1993; Kelloway, 1998). A standardised residual refers to a residual that is divided by its estimated standard error (Jöreskog & Sörbom, 1993).

Standardised residuals are z-scores. Standardised residuals can be interpreted as large if they exceed +2.58 or –2.58 (Diamantopoulos & Siguaw, 2000). A large positive residual indicates that the model underestimates the covariance between two variables, while a large negative residual indicates that the model overestimates the covariance between variables. If the model generally underestimates covariance terms it indicates that additional explanatory paths should be added to the model, which could better account for the covariance between the variables. If, however, the model tends to overestimate the covariance between indicator variables paths that are associated with the particular covariance terms should be deleted from the model (Jöreskog & Sörbom, 1993). The standardized residuals for the modified reduced structural model 3 are shown in Figure 5.2. The Smallest Standardized Residual is -2.131, the median standardized Residual is 0 and the largest Standardized Residual is 2.388. There are therefore no large positive or negative residuals. This comments very favourably on the fit of the modified reduced structural model 3.

```
-20|30
-18|
-16|98
-14|
-12|
-10|10
- 8|3
- 6|4164
- 4|1753
- 2|6633003
- 0|84108300000000000000000000000000000000
0|01668
2|055029
4|94
6|1266702
8|9178
10|7
12|1615
14|10
16|33823788
18|236
20|1
22|59
```

Figure 5.2 **Stem-leaf plot for of standardised residuals for the modified reduced structural model 3**

Further evidence of good structural model fit is indicated in the standardised residuals for all pairs of observed variables lying close to the 45 reference line in the Q-plot (see Figure 5.3).

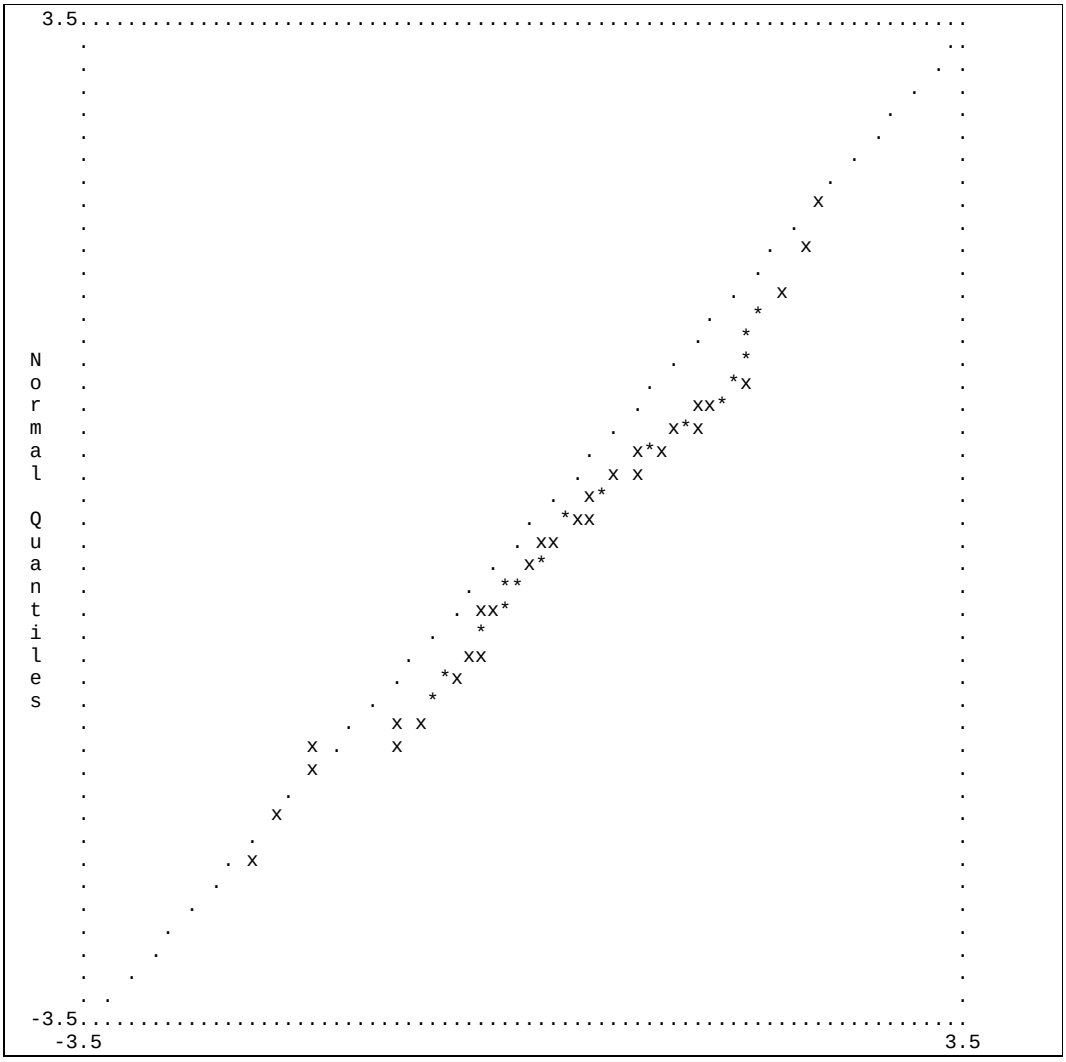

Figure 5.3 **Q-plot of standardised residuals for the modified reduced structural model 3**

The available basket of evidence indicates a well fitting structural model. The interpretation of the structural model parameters is therefore warranted.

5.8.2 INTERPRETATION OF STRUCTURAL MODEL PARAMETERS

The completely standardised solution for the modified reduced structural model 3 is shown in Figure 5.4.

The substantive research hypotheses and the associated statistical hypotheses formulated for the reduced structural model depicted in Figure 5.1 do not apply to the modified reduced structural model 3 depicted in Figure 5.4. The specific substantive research hypotheses formulated in paragraph 5.7.1 all hypothesise specific causal relationships between specific latent variables in a model where specific other structural relationships are hypothesised (the reduced model). The γ and β path coefficients should therefore be interpreted as partial regression coefficients that are affected by the other effects that are included in the model.

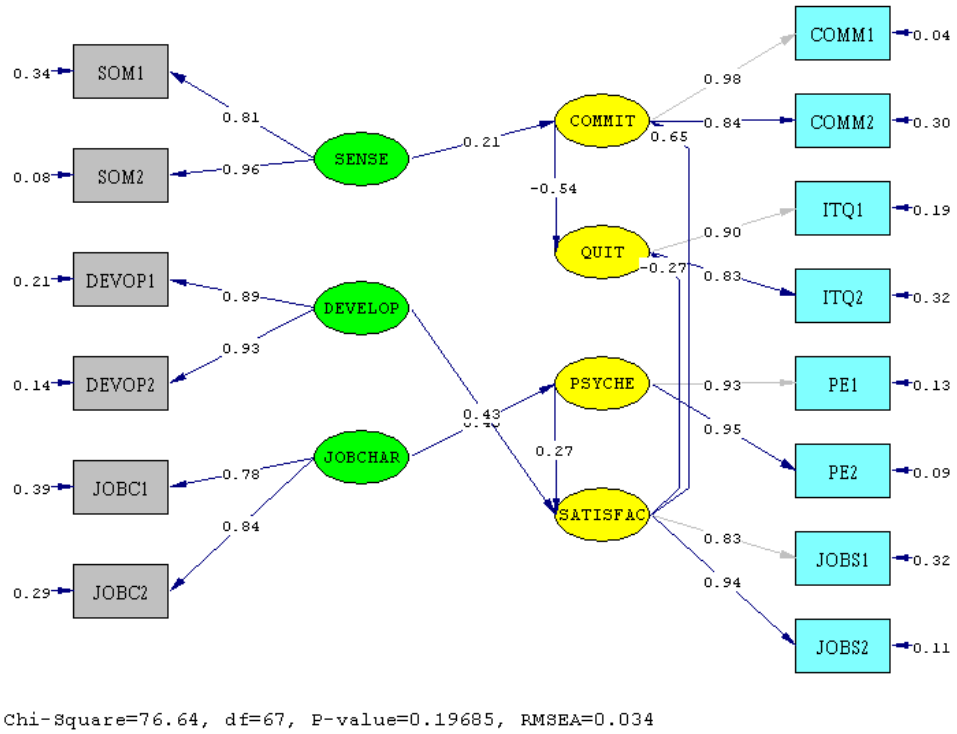

Figure 5.4 **Modified reduced structural model 3 (completely standardised solution)**

All the path coefficients in the modified reduced structural model 3 were statistically significant ($p<0.05$). The completely standardised β-coefficient estimates, their standard errors and the corresponding t-values are indicated in Table 5.54. The completely standardised γ-coefficient estimates, their standard errors and the corresponding t-values are indicated in Table 5.54.

Table 5.54

Completely standardised BETA path coefficient matrix for the modified reduced structural model 3

	Commitment	Intention to Quit	Psychological Empowerment	Job Satisfaction
Commitment				**0.646** (0.073) 8.819*
Intention to Quit	**-0.542** (0.160) -3.382*			**-0.271** (0.136) -1.993*
Psychological Empowerment				
Job Satisfaction			**0.267** (0.084) 3.169*	

Note: Completely standardised path coefficients in **bold type**; standard error estimates in brackets; *t*-values = |1,96| indicate significant parameter estimates*

The β-estimates can be interpreted as partial regression slopes. The completely standardised estimate for β_{ij} therefore indicates the average change in η_i, expressed in standard deviation units, associated with 1 standard deviation increase in η_j when holding the other effects included in the structural equation for η_i constant. Table 5.54 indicates that *Job Satisfaction* has a reasonably pronounced positive effect on *Commitment* and that *Commitment* has a reasonably marked negative effect on *Intention to Quit*. Table 5.54 further indicates that the positive effect of *Psychological Empowerment* on *Job Satisfaction* is rather modest, albeit statistically significant ($p<0.05$). The negative effect of *Job Satisfaction* of *Intention to Quit* is likewise fairly small but nonetheless statistically significant ($p<0.05$).

Table 5.55

Completely standardised GAMMA matrix of path coefficients for the structural model

	Sense of Mission	Perceived Development Opportunities	Perceived Job Characteristics
Commitment	**0.213** (0.082) 2.600*		
Intention to Quit			
Psychological Empowerment			**0.453** (0.112) 4.030*
Job Satisfaction		**0.430** (0.102) 4.192*	

Note: Completely standardised path coefficients in **bold type**; standard error estimates in brackets; *t*-values = |1,96| indicate significant parameter estimates*

The γ-estimates can be interpreted in essentially the same manner as the β-coefficient estimates. The completely standardised estimate for γ_{ij} therefore indicates the average change in η_i, expressed in standard deviation units, associated with 1 standard deviation increase in ξ_j when holding the other effects included in the structural equation for η_i constant. Table 5.55 indicates that *Sense of Mission* has a moderate positive influence on *Commitment*, *Perceived Development Opportunities* has a moderate positive influence on *Job Satisfaction* and *Perceived Job Characteristics* has a moderate positive influence on *Psychological Empowerment* although all three effects are statistically significant.

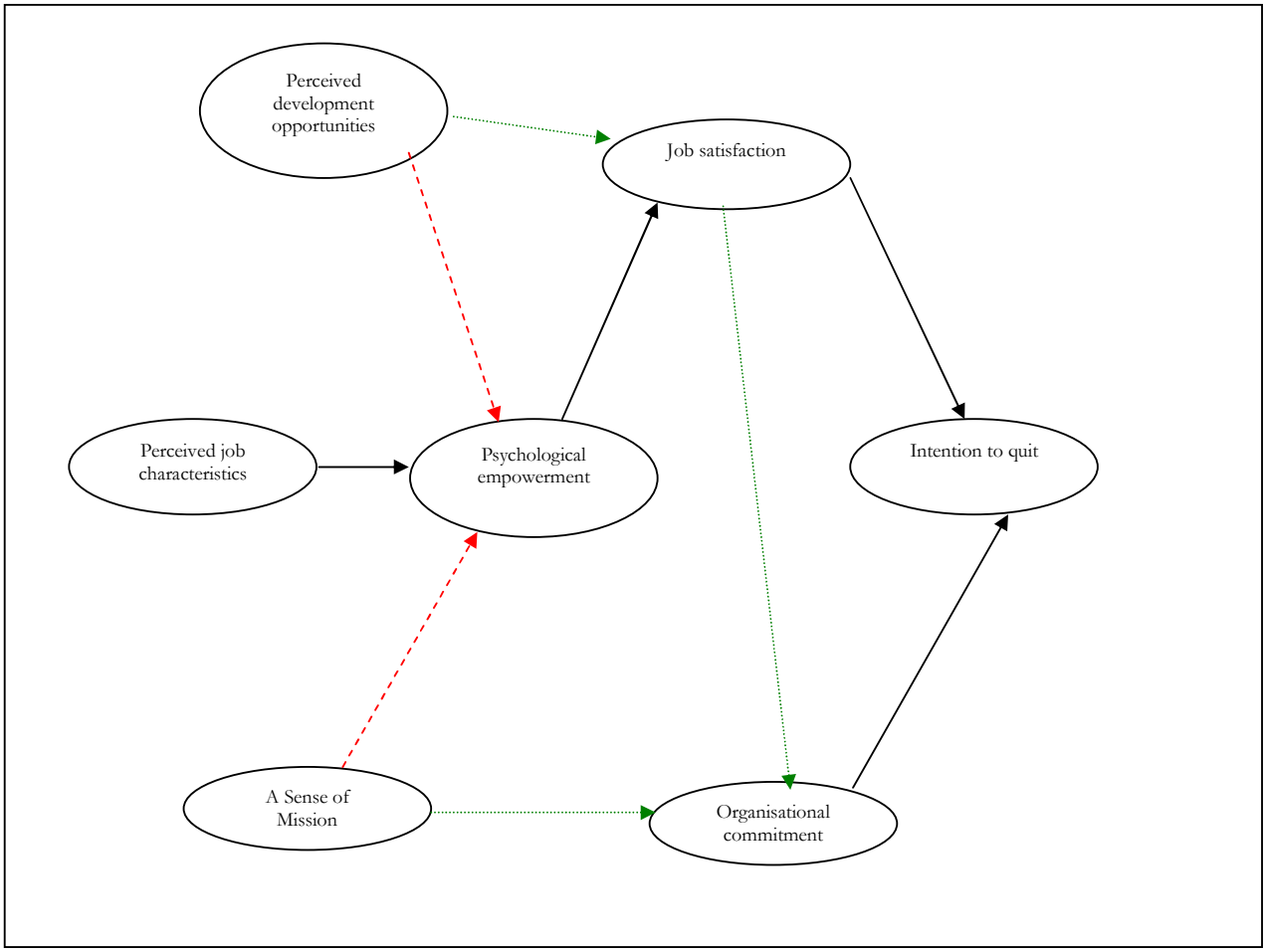

Figure 5.5 **Modified reduced structural model 3 indicating supported, not supported and new paths**

5.8.3 Variance Explained In Endogenous Latent Variables

The completely standardised structural error variances are shown in Table 5.56.

Table 5.56

Structural error variances for the endogenous latent variables in the modified reduced structural model 3

Commitment	Intention to Quit	Psychological Empowerment	Job Satisfaction
0.438	0.420	0.795	0.693
(0.095)	(0.100)	(0.140)	(0.106)
4.595	4.197	5.683	6.564

All the structural error variance estimates are statistically significant ($p<0.05$). For each of the endogenous latent variables a statistically significant proportion of the variance is brought about by effects currently not included in the model. Especially *Psychological Empowerment* and *Job Satisfaction* is relatively poorly explained by the model.

The proportion of the variance in each endogenous latent variable that is explained by the structural model is shown in Table 5.57.

Table 5.57

Squared multiple correlations for the structural equations in the modified reduced structural model 3

Commitment	Intention to Quit	Psychological Empowerment	Job Satisfaction
0.562	0.580	0.205	0.307

The results in Table 5.57 echo the findings in Table 5.56. The structural model explains satisfactory proportions of the variance in *Commitment* and *Intention to Quit*. Especially the latter finding is rather gratifying. The

structural model explains only a rather modest proportion of the variance in *Job Satisfaction* and especially *Psychological Empowerment*.

5.8.4 Modification indices and possible further model modification options

All the modification index values calculated for Γ are statistically insignificant (p>0.01). Freeing any of the parameters in Γ currently fixed to zero will not produce a statistically significant improvement in the fit of the modified reduced structural model 3. Table 5.58, however, indicates that the same path proposed earlier in Table 5.54 is again nominated for release. Allowing for a path from *Psychological Empowerment* to *Intention to Quit* will significantly improve the fit of the modified reduced model 3 (p<0.01). The standardised expected change associated with this path still indicates a positive path coefficient (β_{23}=0.177).

Table 5.58

Modification indices for Beta-matrix for the modified reduced structural model 3

	Commitment	Intention to Quit	Psychological Empowerment	Job Satisfaction
Commitment	-	-	0.278	-
Intention to Quit	-	-	**8.366**	-
Psychological Empowerment	0.021	4.671	-	0.041
Satisfaction	0.184	0.278	-	-

Psychological Empowerment is a motivational construct that is manifested in four cognitions, namely *Meaning*, *Competence*, *Self-determination* and *Impact* (Spreitzer, 1995). The nature of the cognitions originally lead to the hypothesis that *Psychological Empowerment* should be negatively related to *Intention to Quit* albeit indirectly through *Commitment* and *Job Satisfaction*. Support was obtained for the latter mediated path in the modified reduced model 3 depicted in Figure 5.4.

It could be that the different dimensions comprising *Psychological Empowerment* affect *Intention to Quit* differ both in terms of the direction and the nature of the effect. The nature of one of the cognitions could hold the key as to why allowing for a positive direct relationship between *Psychological Empowerment* and *Intention to Quit* would improve the fit of the structural model. *Competence*, which relates to self-efficacy, is an individual's belief in his/her capacity to perform activities with the required skill (Gist, 1987 in Spreitzer, 1995). Experiencing a strong sense of *Competence* would imply that the employee evaluates his/her ability to perform a specific set of tasks relatively favourable in relation to other individuals. If sufficient opportunities are perceived to exist elsewhere that would offer a valued improvement in working conditions and/or rewards, such an employee could experience a heightened *Intention to Quit*. *Impact* might operate in a similar manner. *Meaning* and *Self-determination*, on the other hand might affect *Intention to Quit* negatively and only indirectly through *Commitment* and *Job Satisfaction*.

This argument is, however, sufficiently radical to warrant a prudent approach by not further modifying the model. Rather than modifying the modified reduced structural model 3 even further the argument outlined earlier should be tested directly. This would require revising the structural model depicted in Figure 5.4 by splitting the *Psychological Empowerment* latent variable into its four constituent dimensions as four separate latent variables. The resultant model should then be tested on a new data set.

5.8.6 Cross-Validation of the Modified Reduced Structural Model 3

The modified reduced structural model 3 depicted in Figure 5.4 should be regarded as a tentative position on the manner in which *Perceived Development Opportunities*, *Perceived Job Characteristics*, *Psychological Empowerment*, *Sense of Mission*, *Commitment* and *Job Satisfaction* affect *Intention to Quit*. The model was at least in part derived from formative cues obtained from the current sample. To regard the fact that the modified reduced model 3 fits well on the data that suggested the modifications cannot

be considered as sufficient evidence to justify the model. The modified reduced structural model 3 depicted in Figure 5.4 should be cross-validated on a new sample before any real faith can be placed in the findings.

CHAPTER 6
DISCUSSION OF RESEARCH RESULTS AND RECOMMENDATIONS FOR FUTURE RESEARCH

6.1 INTRODUCTION

The aim of this chapter is to discuss the interpretations and the general conclusions of the results presented in chapter 5. This will be done by reflecting on the original objective of the study, and linking the results and conclusions to this objective. The theories and research referred to will also be integrated and discussed.

6.2 BACKGROUND

The overall purpose of this study was to move the understanding of the psychological processes that contributes to nurse practitioners turnover intentions forward. As previous research has shown, albeit not specifically focussed on the retention of nurses, that an understanding of talent management and related HR strategies contribute to an understanding of how retention can be facilitated, it was decided to pursue an avenue of building on a previous talent management study conducted by Oehley (2007).

Oehley (2007) proposed a list of key talent management competencies and linked these managerial competencies to certain organisational outcomes, which mediated the impact of the talent management competencies on employee intention to quit. Oehley (2007) found support for many of her hypotheses. However, quite a few of the structural links between the talent management competencies and organisational outcomes were not supported, and she suggested certain modifications to the talent management model.

In understanding the psychological processes that contribute to turnover intentions, the objective of this study was to modify and elaborate on the partial talent management competency model proposed by Oehley (2007) by

elaborating on the network of latent variables through which the core competencies have to work to affect the intention to quit latent variable.

Firstly, Oehley (2007) recommended the utilization of a different measurement instrument for the measurement of job satisfaction. The Minnesota Satisfaction Questionnaire was therefore utilised to measure job satisfaction in this study. Oehley (2007) also recommended that the conceptualisation of organisational commitment should be expanded to not only refer to affective commitment, but that the other facets of Meyer and Allen's three component model (continuance and normative commitment) ought to be included in subsequent research on the model (as was done in this study).

Secondly, the variables *Perceived Development Opportunities, Perceived Job Characteristics, A Sense of Mission* and *Psychological Empowerment* were added to the proposed Talent Management competency model.

The addition of these latent variables were motivated by the argument that talent management competencies manifest themselves in specific behaviour and contribute to the construction of the work environment in which an employee functions in. The work environment created by management is psychologically interpreted by employees. It is fundamentally this psychological interpretation of the work environment, rather than the objective reality itself, that expresses itself in organisational and job attitudes like job satisfaction and organisation commitment. Oehley (2007) could therefore possibly have failed to find support for the causal paths she proposed between specific talent management competencies and job satisfaction, organisational commitment, and turnover intention because managerial action in and by itself will typically not result in satisfaction and commitment. The managerial actions need to produce material benefits. It is, however, not the objective reality that directly affects employee behaviour. The importance of perceptual reality suggests that the work environment line managers create through their talent management competencies, needs to be observed, found relevant or important, and internalised by employees, before satisfaction with their jobs and commitment to the organisation will be enhanced, and as an

end result, intention to leave the organisation is reduced. The causal leap in the Oehley model between line managers' competencies and the expected outcomes was therefore too big. The model needed to make provision for specific organisational outcomes brought about by specific talent management competencies, and for the mediating role of the psychological interpretation of these features of the work environment created through the talent management competencies.

6.3 SUMMARY OF FINDINGS

The data obtained from the questionnaires distributed amongst nursing personnel were analysed by the means of Structural Equation Modelling (SEM). The modified and elaborated talent management competency model could not be fitted in its totality. This was due to the fact that poor fit was found for the Talent Management Competencies measurement model. The operationalisation of the Talent management Competency latent variables therefore failed. In the absence of at least close measurement model fit there was no point in proceeding with tests of the hypothesised structural relations between the Talent Management Competency latent variables and the talent management Outcome latent variables. No specific explanation could be found for this. The item analyses and dimensionality analyses performed on the talent management questionnaire subscales produced reasonably satisfactory results.

Hence, the link between line managers' talent management behaviours and the specified psychological processes had to be abandoned. The model had to be adapted and an explanation for turnover intention was tested by analysing the relationships between the latent variables *Perceived Development Opportunities, Perceived Job Characteristics, A Sense of Mission, Psychological Empowerment, Job Satisfaction, Organisational Commitment* and *Intention to Quit* as illustrated in Figure 5.1.

6.3.1 Model Fit

To determine to what extent the indicator variables operationalise the latent variables, the measurement model fit of the Talent Management Competencies model as well as the Talent Management Outcomes model were analysed. A summary of the fit statistics is illustrated in Table 6.1. The null hypothesis of exact fit and close fit were both rejected for the Talent Management Competency model ($p<0.05$). The fitting of the structural model could therefore not continue. The null hypothesis of exact fit ($p>0.05$) was not rejected for the Talent Management Outcome measurement model. Tthe null hypothesis of close fit was therefore also not rejected ($p>0.05$), indicating that the indicator variables are a valid and reliable operationalisation of the latent variables. It can therefore be concluded that the measurement model reproduced the observed covariance matrix quite well, but not perfectly.

Table 6.1

Summary of exact-fit and close-fit statistics for the measurement models

MODEL	SATORRA-BENTLER SCALED CHI-SQUARE (exact fit)	RMSEA (close fit)
Talent Management Competency measurement model	413.842 (P = 0.0) exact fit H_o rejected	0.178 (P = 0.000) close fit H_o rejected
Talent Management Outcome measurement model	65.401 (P = 0.183) exact fit H_o not rejected	0.0351 (p = 0.750) exact fit H_o not rejected

With the poor fit of the Talent Management Outcome measurement model, the originally proposed model had to be reduced to enable the fitting of the Talent Management Outcome structural model. The reduced Talent Management Outcome structural model initially showed poor fit, but through the analysis of modification indices, a model was derived that eventually showed extremely good fit. A summary of fit statistics is illustrated in Table 6.2.

Table 6.2

Summary of exact-fit and close-fit statistics for the final structural model

MODEL	SATORRA-BENTLER SCALED CHI-SQUARE (exact fit)	RMSEA (close fit)
Talent Management Outcome structural model	76.641 (P = 0.197) exact fit H_o not rejected	0.0338 (p = 0.775) exact fit H_o not rejected

As illustrated in Table 6.2, the reduced Talent Management Outcome structural model null hypothesis of exact fit is not rejected. It can therefore be concluded that the final structural model is an extremely good fitting model.

Given the acceptable structural model fit, an examination of the $\mathbf{B}$ and Γ matrices was explored in order to investigate the significance of the theoretical linkages proposed by the reduced Talent Management Outcome model illustrated in Figure 5.1. Analysing these results would give an indication whether the hypotheses originally proposed, are in fact supported by the data. The theoretical linkages between the exogenous and endogenous latent variables of the reduced model were explored.

6.3.2 Gamma Matrix

No relationship was initially hypothesised between *Perceived Development Opportunities* and *Psychological Empowerment*. Through the analyses of modification indices, a direct path was however suggested. In the final modified reduced structural model support was found for the path between *Perceived Development Opportunities* and *Job Satisfaction*.

A study conducted amongst nursing personnel in a university setting, identified certain factors that contributes to work satisfaction, namely opportunities for developing one's own competence for the current job, perception of career opportunities in one's own profession, and yearly dialogue for performance appraisal with immediate superior (Gardulf et al., 2008). Similarly, a study conducted to determine the outcome of mentoring

programmes amongst nurses, found a significant positive relationship between career development opportunities and job satisfaction (Weng et al., 2010). It therefore seems that previous studies and theory suggest that employee's experience job satisfaction when development opportunities are available and accessible to them which provide some explanation for the significant relationship found in this study. Providing opportunities for nurses to continuously improve their competence and ensuring that these opportunities are perceived as accessible, present avenues that could be pursued to reduce the turnover intention of nurses.

Perceived Job Characteristics have been found to be significantly related to *Psychological Empowerment* as originally hypothesised. This indicates the importance of paying attention to how a nurse's job is structured, despite nursing being a highly regulated occupation. The impact of at least factors like task identity, task significance and feedback, despite heavy regulations, should receive attention in an organisation due to the impact it has on the psychological experience at work and the organisational outcomes this experience affects. Structures and processes could be put in place to ensure that these job characteristics are accommodated in how a job is profiled, without going against any regulation regarding, for example, a nurse's scope of practice. Another possibility to enhance the perceived job characteristics exists in the scheduling of shifts. The manner in which nurses are scheduled and utilised within a ward could be conducted in such a way that they remain with a certain patient during the patient's stay in the hospital. Nurses would thereby see the outcome of that patient's treatment, ensuring task identity.

The direct relationship between *A Sense of Mission* and *Psychological Empowerment* has not been corroborated. The final modified reduced structural model also did not suggest a mediated path from *A Sense of Mission* to *Psychological Empowerment.* This is quite surprising as literature clearly illustrates a positive relationship between these two variables as discussed in chapter 3, section 3.4.1. A possible explanation could lie in how the *A Sense of Mission* latent variable was operationalised. The literature refers to organisational information and how having access to the

organisation's vision (Conger & Kanungo, 1988), mission (Bordin et al., 2007) and goals, influences empowerment and self efficacy (Spreitzer, 1996). The *A Sense of Mission* latent variable items related more loosely to the employee's unit, i.e. I understand how my performance goals contribute to my unit's goals, I understand how my unit operates and how I can contribute to its effectiveness. In line with how the latent variable was operationalised, a second explanation could be that although in theory what the unit stands for should be aligned with what the mission and vision of the organisation is, it could be that what the unit stands for, and how employee's perceive the mission of their unit, is too far removed from what they perceive the bigger organisation stands for, and thus do not feel empowered.

A significant positive relationship has been found between *A Sense of Mission* and *Organisational Commitment*. In the study conducted amongst nurses regarding the outcome of mentoring programmes, Weng et al. (2010) found support for the importance of staff members having an understanding of how they fit, and can contribute, to the goals of their organisation. These authors elaborated on how mentoring programmes give mentees insight into the working of the hospital's systems and regulations, the "bigger picture" of an organisation's workings. Weng et al. (p. 5, 2010) stated that "…these career-related functions are vital for establishing a sense of organisational identity and organisational belonging. The organisational commitment of mentees is positively related to their sense of organisational identity and organisational belonging". The relationship between these two latent variables is further supported by Brickman et al. as cited in Liou (2008) who found that the highest level of commitment is seen in individuals who internalise the organisation's goals and values into their own cognitive patterns and habits. This confirms the importance of employees understanding of the organisation's goals and objectives, and very importantly, how they relate to these goals, to enable commitment behaviour.

6.3.3 Beta Matrix

The relationship between *Psychological Empowerment* and *Organisational Commitment* has not been corroborated. The link between these two latent variables is however well documented in literature (Janssen, 2004). Empowerment has been referred to as a weapon against the challenges, like commitment, faced by the nursing profession (Laschinger et al., Menon & Laschinger et al. as cited in Ahman & Oranye, 2010). There is good reason to believe that feeling psychologically empowered and believing one can make a difference in an organisation, can contribute to an employee feeling committed to that organisation (Locke & Schweiger in Spreitzer, 2006). Janssen (2004) illustrates this by linking the dimensions of psychological empowerment as conceptualised by Thomas and Velthouse (1990b) to organisational commitment, although the dimensions of psychological empowerment is seen as additive to the overall empowerment experience. Janssen (2004) states that

> Empowerment evokes organisational commitment because: (a) a meaningful job provides a suitable fit between the requirements and purposes of one's organisational work roles and one's personal value system; (b) a sense of competence gives workers the belief that they are able to perform their work roles with skill and success, stimulating them to exert considerable effort on behalf of the organisation; (c) self-determination gives workers control over their work and a voice in work-related decision processes, leading to enhanced involvement in the organisation, and (d) having impact facilitates workers' possibilities to participate in shaping the organisational system in which they are embedded (Janssen, 2004, p. 57-58).

Frone as cited in Janssen (2004) suggested an authority ranking model where superiors with higher authority ranking act as agents for the organisation and can set the values, goals and policies that employees of a lower authority ranking need to follow as mandated by the organisation. When there is conflict between the employees and their superiors, it can suggest negative attitudinal outcomes of the employee towards the organisation.

With this argument as a basis, Janssen (2004) conducted a study that found that the positive relationship between empowerment and organisational commitment is moderated by employees' experience of a high level of conflict with their superiors. This could provide a possible explanation why the positive relationship between *Psychological Empowerment* and *Organisational Commitment* in this study was not corroborated. Since nursing is highly hierarchical in terms of structure and reporting lines, there exists a possibility that employees are in conflict with the direction their supervisors are steering the organisation, and therefore, although they may feel empowered, the existence of conflict diminishes their commitment to the organisation.

The relationship between *Psychological Empowerment* and *Job Satisfaction* has been confirmed in this study. This again highlights the importance of fostering employee's perception of empowerment, by supporting their sense of competence, providing them with opportunities to feel that their decisions have an impact, to provide some independence as to how they perform their daily duties, and to ensure that there is alignment between their own value system and the work they do.

The relationship between *Job Satisfaction* and its influences on nurses *Intention to Quit* was statistically significant ($p<0.05$) in the final modified reduced structural model. This is in line with numerous studies confirming this relationship (Chen et al., 2011; Tett & Meyer, 1993; Böckermann & Ilmakunnas, 2009; Scott et al., 2006; Singh & Loncar, 2010).

The concept of *Job Satisfaction* and factors contributing to it, is quite complex (Shields & Ward, 2000), especially in the nursing industry. How *Job Satisfaction* influences turnover intentions is similarly complex. Many variables that influence this relationship has not been accounted for in this study, including factors like personal characteristics, i.e. age, rank, tenure, working hours, expectations of work, etc. The Minnesota Satisfaction Questionnaire also only makes provision for job satisfaction in general, which encompasses many factors like company policies, recognition, security, etc.

(Weiss et al., 1967). In a study conducted by Shields and Ward (2000), it was found for example that quitting intentions is more prevalent amongst nurses aged thirty and younger. Similarly, more highly educated nurses also displayed higher quitting intentions. This confirms the complexity of the relationship between *Job Satisfaction* and *Intention to Quit*, and relying on a general composite of *Job Satisfaction* to explain nurses' turnover intentions might not be the best approach to identify retention strategies.

An additional path between *Job Satisfaction* and *Organisational Commitment* was suggested through the analysis of modification indices. This is, however, not surprising as the relationship between these two latent variables is well documented in the literature (Aryee, Wyatt & Min; Bateman & Strasser & Recihers as cited in Liou, 2008). In a study specifically conducted amongst nurses it was found that amongst the variables perceived organisational support, level of education and transformational leadership, job satisfaction was the strongest predictor of organisational commitment (Alhussami, 2009). Similarly, in a study conducted by Eker, et al. (2008) amongst nurses, a significant positive relationship between job satisfaction and organisational commitment was found. This stresses the importance of organisations paying attention to nurses' levels of job satisfaction. This is particularly vital as in times of a scarcity of competent nurse practitioners, it is important that they are satisfied with their jobs, as this aids a commitment to their organisations with further positive outcomes for the individuals, as well as an organisation.

The relationship between *Organisational Commitment* and *Intention to Quit* was confirmed in this study as originally hypothesised. Employees who are highly committed usually have a strong desire to remain with their organisation (Mowday, Porter & Steers as cited in Wagner, 2007). Wagner (2007) indicated that *Organisational Commitment* has a statistically significant negative relationship with turnover behaviour. In a study conducted by Jamal (1981) amongst nurses and shift workers it was found that *Organisational Commitment* had a negative and statistically significant relationship with anticipated turnover. Another study conducted by Parasuraman as cited in Wagner (2007) amongst nurses, also reported a negative and statistically

significant relationship between *Organisational Commitment* and intent to leave. It was further indicated that *Organisational Commitment* and *Job Satisfaction* influenced intent to leave independently of each other. Lum, Kervin, Clar, Reid and Sirola (1998) also found *Organisational Commitment* to be the strongest and most direct impact on *Intention to Quit*, amongst job and pay satisfaction.

What is important to note is that this study did not include any individual characteristics as contributing factors to *Organisational Commitment*. It is therefore clear that although individual wants and needs do play a role in behaviour, the environment that organisations create for their employees should receive attention to foster an environment where employees has a lesser desire to leave their organisation and want to remain with their employer.

In this study limited support was found for the position that all three components of *Organisational Commitment* as conceptualised by Meyer and Allen (1991), namely desire-, obligation- and cost-based commitment, is important for an organisation to pay attention to, due to the impact it has on nurses' intent to leave the organisation. This claim is rooted in the fact that the *Organisational Commitment* latent variable was not operationalised in terms of all three subscales of Meyer and Allen's (1991) commitment scale. Including the three dimensions as separate latent variables in the structural model would, however, most probably have produced stronger, more convincing evidence. In an environment where internal equity in terms of salaries and benefits is key, an organisation does not necessarily have much control over cost-based commitment behaviour, where the price of leaving is too high for the employee and is therefore committed to stay with the organisation. *Commitment* should be seen as a continuum (Tumuly, Jernigan & Kohut as cited in Wagner, 2007), with desire-, obligation- and cost-based each individually contributing to this continuum.

Organisations can foster *Commitment* by firstly looking at selection practices. It is important that the values of the organisation resonate with an employee

working for that organisation, so that alignment between what is important for the employee and for the organisation can be fostered. Creating a "family-type" environment, fostering loyalty, and investing in employees, are examples of initiatives an organisation can implement to reduce turnover intentions.

6.4 SUGGESTIONS FOR FUTURE RESEARCH

It is suggested that the final modified reduced structural model should be cross-validated before the total model is tested on a larger sample. In such a study an adequate sample size would be crucial, considering the number of parameters to be estimated.

Secondly, a possible suggestion is that the *Psychological Empowerment* latent variable should be broken down into its component parts to assess how the parts impact turnover behaviour. The inability for the model to explain how this latent variable influences turnover intentions is disappointing, as the proposed hypotheses made theoretical sense. Breaking *Psychological Empowerment* down into its four components might alleviate this challenge.

Thirdly, to explain how the *Job Satisfaction* latent variable impacts turnover behaviour, it is suggested that this variable should be split up into specific components, or that personal characteristics like age, qualifications and rank ought to be made provision for in the model. This might help to clarify the intricacies associated with *Job Satisfaction* as staying with an organisation, and being satisfied, is dependent on many factors associated with an organisation, but also associated to the individual and personal circumstances. To formulate retention strategies, it might however not be possible to make provision for individual wants and needs, but taking factors into consideration like age, tenure and qualification, might help an organisation in formulating retention strategies like tenure bonuses, benefit packages, etc.

It is also suggested that *Perceived Performance* should be included in the model along with *Perceived Employment Opportunities* outside the organisation. In the final modified reduced structural model a path was suggested by the modification indices between *Psychological Empowerment* and *Intention to Quit*. The standardised expected change associated with the path, contrary to initial theoretical expectations, was indicated to be positive. At first glance this does not agree with theoretical expectations. The nature of the cognitions comprising *Psychological Empowerment* lead to the hypothesis that *Psychological Empowerment* should be negatively related to *Intention to Quit* albeit indirectly through *Commitment* and *Job Satisfaction.* It could, however, be that the different dimensions comprising *Psychological Empowerment* affect *Intention to Quit* differently both in terms of the direction and the nature of the effect. *Competence*, which relates to self-efficacy, is an individual's belief in his/her capacity to perform activities with the required skill (Gist, 1987 as cited in Spreitzer, 1995). Experiencing a strong sense of *Competence* would imply that the employee evaluates his/her ability to perform a specific set of tasks relatively favourable in relation to other individuals. If sufficient opportunities are perceived to exist elsewhere that would offer a valued improvement in working conditions and/or rewards, such an employee could experience a heightened *Intention to Quit*. *Impact* might operate in a similar manner. *Perceived Performance* should be positively related to *Competence.*

6.5 CONCLUDING REMARKS

Formulating a model to explain the psychological processes nurses go through and how it impacts their turnover behaviour was an interesting exercise. The inability of this study to explain how line manager behaviour influences turnover intentions was disappointing. Given the fact that the scarcity of nurses seems out of any one organisation or entities' control, it would have provided some relief if this study could have suggested strategies within an organisation, and a line managers' control, to reduce the impact of this extremely needed resource.

The excellent fit of the modified reduced Talent Management Outcome structural model is promising. It could therefore be concluded that the line of reasoning to determine how line managers can reduce the amount of nurses wanting to leave their organisation, should not be abandoned. Future research could focus on validating the Talent Management Outcome model, and attempt to clarify the relationship between the Talent Management Competency model and Talent Management Outcome model.

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APPENDIX A - STAFF RETENTION SURVEY FOR NURSING MANAGERS

Please indicate the Hospital you are from, and the Unit to which this questionnaire relates to work (I will not be able to use your response if this is not specified).

Hospital: _____

Unit: _____

Thank you very much for your participation!

For the following statements, please indicate the **FREQUENCY** that the behaviour listed below has been displayed by the person you are rating in the last six months. Indicate your response by placing a cross **(X)** in the relevant column. If you are unable to rate their behaviour, please mark the UNABLE TO RATE column, but please use this sparingly.

		Never – 1	Rarely – 2	Some-times – 3	Often – 4	Always – 5	Unable to rate - 6
A	**Displays a Talent Management mindset**						
	Reminds team members of the importance of retaining high caliber employees						
	Prioritises issues which concern the development of employees.						
	Reminds team members of the importance of recognizing exceptional performance.						
	Ensures that all team members have an understanding approach towards the personal and family needs of others.						
B	**Attracts and recruits talent**						
	Prioritises time to interview potential candidates when a vacancy arises.						
	Possesses a good overall knowledge of HR recruitment processes and policies.						
	Consistently appoints high calibre employees.						
	Devotes time and energy to attend to the filling of a vacancy.						
	Ensures that vacancies do not remain open for a long period of time.						

C	**Identifies and differentiates talented employees**						
	Is aware of the level at which team members are performing.						
	Makes use of assessment tools/skills tests available within the company.						
	Encourages talented employees to develop their careers						
	Addresses performance problems in a timely way – does not let poor performance continue.						
	Rates the performance level of employees candidly during the performance appraisal process.						
	Adjusts managerial decisions and actions to be appropriate for the performance levels of employees.						
D	**Develops others**						
	Possesses a genuine interest to foster the learning and development of people.						
	Makes an objective assessment of individuals' development needs.						
	Mentors staff one-on-one.						
	Gives honest feedback for developmental purposes.						
	Actively creates developmental opportunities for subordinates.						
	Meets with subordinates for formal career planning sessions.						

E	**Builds and maintains positive relationships**						
	Is sensitive to the needs, attitudes and perspectives of others and displays sincere interest.						
	Takes time and effort to maintain contact with team members.						
	Manages to resolve conflict efficiently and effectively.						
	Builds trust with team members.						
	Demonstrates sound ethical behaviour with colleagues.						
	Communicates openly with staff.						
F	**Provides meaningful and challenging work**						
	Discusses a clear vision for the future and connects team activities to this vision.						
	Ensures that team members are able to link their individual contributions to the strategic objectives of the division.						
	Actively creates opportunities for team members to participate in challenging assignments.						
	Delegates decision making where appropriate.						
	Equips team members with the necessary information and expected outcomes when delegating tasks.						

G	**Remunerates and rewards fairly**						
	Rewards employees for exemplary work in a variety of ways.						
	Provides verbal or written recognition for individual contribution where appropriate.						
	Allocates increases fairly, according to individual performance.						
	Celebrates exceptional performance of employees in our team.						
H	**Manages work-life balance**						
	Allows flexibility of time for others to attend to personal and family matters.						
	Ensures that employees have adequate resources to complete their work.						
	Protects employees from excess stress.						
	Assures that workload is full but not excessive.						
	Makes the effort to be aware of family and personal circumstances of team members that might impact on their work.						

APPENDIX B – STAFF RETENTION SURVEY FOR EMPLOYEES

Please indicate the Hospital and Unit in which you work (I will not be able to use your response if this is not specified).

Hospital: _____

Unit: _____

Thank you very much for your participation!

A SENSE OF MISSION

Please indicate to what extent the following statements describe your perception of your organization:

	Strongly disagree – 1	**Disagree – 2**	**Undecided – 3**	**Agree – 4**	**Strongly agree - 5**
I understand how my performance goals contribute to my unit's goals					
I understand how my unit operates and how I can contribute to its effectiveness					
I have access to information about my unit that is not shared with others outside the unit					
I understand what the purpose of this organization is					

PERCEIVED DEVELOPMENT OPPORTUNITIES

	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
I am of the perception that my line manager provides me with development opportunities					
Opportunities to enhance my competence is <u>available</u> within the organization					
Opportunities to enhance my competence is <u>accessible</u> within the organisation					
I am very familiar with the development opportunities available to me					

COMMITMENT

Listed below is a series of statements that represent feelings that individuals might have about the organization for which they work. With respect to your own feelings about the particular organization for which you are now working please indicate the degree of your agreement or disagreement with each statement by marking the appropriate box with an **X**

		Strongly disagree – 1	**Disagree – 2**	**Slightly Disagree – 3**	**Undecided – 4**	**Slightly agree – 5**	**Agree – 6**	**Strongly agree - 7**
1.	I would be very happy to spend the rest of my career with this organization.							
2.	I really feel as if this organisation's problems are my own.							
3.	I do not feel a strong sense of "belonging" to my organization.							
4.	I do not feel "emotionally attached" to this organization.							
5.	I do not feel like "part of the family" at my organization.							
6.	This organization has a great deal of personal meaning for me.							
7.	Right now, I'm staying with my organization because I have to and because I want to.							
8.	It would be very hard for me to leave my organization right now, even if I wanted to.							
9.	Too much of my life would be disrupted if I decided I wanted to leave my organization now.							
10.	I feel that I have too few options to consider leaving this organization.							
11.	If I had not already put so much of myself into this organization, I might consider working elsewhere.							
12.	One of the few negative consequences of leaving this organization would be the scarcity of available alternatives.							

13.	I do not feel any obligation to remain with my current employer.							
14.	Even if it were to my advantage, I do not feel it would be right to leave my organization now.							
15.	I would feel guilty if I left my organization now.							
16.	This organization deserves my loyalty.							
17.	I would not leave my organization right now because I have a sense of obligation to the people in it.							
18.	I owe a great deal to my organization.							

INTENTION TO QUIT

For the following statements, please indicate **HOW FREQUENTLY** you consider the following: Indicate your response by placing a cross **(X)** in the relevant column. Please respond to ***all*** of the statements.

	Never	Rarely	Some-times	Often	Always
Wanting to leave this organization.					
Searching for another position.					
Planning to leave this organization.					
Actually leaving this organization within the next year.					

PSYCHOLOGICAL EMPOWERMENT

Listed below are a number of statements that describe a person's view of themselves on the job. Please indicate the extent to which you agree or disagree with the statement about your views of yourself on the job.

		Strongly disagree	Disagree	Slightly Disagree	Undecided	Slightly agree	Agree	Strongly agree
1.	I am confident about my ability to do my job.							
2.	The work that I do is important to me.							
3.	I have significant autonomy in determining how I do my job.							
4.	My impact on what happens in my unit is large.							
5.	My job activities are personally meaningful to me.							
6.	I have a great deal of control over what happens in my unit.							
7.	I can decide on my own how to go about doing my own work.							
8.	I have considerable opportunity for independence and freedom in how I do my job.							
9.	I have mastered the skills necessary for my job.							
10.	The work I do is meaningful to me.							
11.	I have significant influence over what happens in my department.							
12.	I am self-assured about my capabilities to perform my work activities.							

JOB SATISFACTION

Ask yourself, how satisfied are you with the following aspects of your job, and mark the appropriate box with an **X**

		Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied
1.	Items of Minnesota Satisfaction Questionnaire withheld due to copyright agreement.					
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						
13.						
14.						
15.						
16.						
17.						

18.						
19.						
20						

JOB DIAGNOSTIC SURVEY

Section 1

Please describe your job as objectively as you can by answering the following questions:

1. How much autonomy is there in your job? That is, to what extent does your job permit you to decide on your own how to go about doing the work?

1	2	3	4	5	6	7
Very little; the job gives me almost no personal "say" about how and when the work is done.			Moderate autonomy; many things are standardized and not under my control, but I can make some decisions about the work.			Very much; the job gives me almost complete responsibility for deciding how and when the work is done.

2. To what extent does your job involve doing a "whole" and identifiable piece of work? That is, is the job a complete piece of work that has an obvious beginning and end? Or is it only a small part of the overall piece of work, which is finished by other people or machines?

1	2	3	4	5	6	7
My job is only a tiny part of the overall piece of work; the results of my activities cannot be seen in the final service.			My job is a moderate-sized "chunk" of the overall piece of work; my own contribution can be seen in the final outcome.			My job involves doing the whole piece of work, from start to finish' the results of my activities are easily seen in the final service.

3. How much variety is there in your job? That is, to what extent does the job require you to do many different things at work, using a variety of your skills and talents?

1	2	3	4	5	6	7
Very little; the job requires me to do the same routine things over and over again.			Moderate variety.			Very much; the job requires me to do many different things, using a number of different skills and talents.

4. In general, how significant or important is your job? That is, are the results of your work likely to significantly affect the lives or well-being of other people?

1	2	3	4	5	6	7
Not very significant; the outcomes of my work are not likely to have important effects on other people.			Moderately significant.			Highly significant; the outcomes of my work can affect other people in very important ways.

5. To what extent does doing the job itself provide you with information about your work performance? That is, does the actual work itself provide clues about how well you are doing – aside from any "feedback" co-workers or supervisors may provide?

1	2	3	4	5	6	7
Very little; the job itself is set up so that I could work forever without finding out how well I am doing.			Moderately; sometimes doing the job provides "feedback" to me; sometimes it does not.			Very much; the job is set up so that I get almost constant "feedback" as I work about how well I am doing.

Section 2

Listed below are a number of statements which could be used to describe a job. Please indicate whether each statement is **an *accurate* or an *inaccurate* description of your job.**

		Very inaccurate	Mostly inaccurate	Slightly inaccurate	Uncertain	Slightly accurate	Mostly accurate	Very accurate
1.	The job requires me to use a number of complex or high-level skills.							
2.	The job is arranged so that I can do an entire piece of work from beginning to end.							
3.	Just doing the work required by the job provides many chances for me to figure out how well I am doing.							
4.	The job allows me to use a number of complex or high-level skills.							
5.	This job is one where a lot of other people can be affected by how well the work gets done.							
6.	The job gives me a chance to use my personal initiative and judgement in carrying out the work.							
7.	The job provides me with the chance to completely finish the pieces of work that I begin.							
8.	After I finish the job, I know whether I performed well.							
9.	The job gives me considerable opportunity for independence and freedom in how I do the work.							
10.	The job itself is very significant and important in the broader scheme of things.							

APPENDIX C – ITEM PARCELS

```
COMPUTE SOM1=SoMQ2.
EXECUTE.

COMPUTE SOM2=MEAN(SoMQ1,SoMQ4).
EXECUTE.

COMPUTE DEVOP1=MEAN(DevOpQ3,DevOpQ1).
EXECUTE.

COMPUTE DEVOP2=MEAN(DevOpQ2,DevOpQ4).
EXECUTE.

COMPUTE COMM1=MEAN(ComQ1,ComQ6,ComQ8,ComQ14,ComQ16,ComQ18).
EXECUTE.

COMPUTE COMM2=MEAN(ComQ2,ComQ7,ComQ9,ComQ15,ComQ17).
EXECUTE.

COMPUTE ITQ1=MEAN(ITQQ3,ITQQ1).
EXECUTE.

COMPUTE ITQ2=MEAN(ITQQ4,ITQQ2).
EXECUTE.

COMPUTE PE1=MEAN(PEQ1,PEQ3,PEQ5,PEQ7, PEQ9,PEQ11).
EXECUTE.

COMPUTE PE2=MEAN(PEQ2,PEQ4,PEQ6,PEQ8,PEQ10,PEQ12).
EXECUTE.

COMPUTE JOBS1=MEAN(JSQ15,JSQ14,JSQ19,JSQ6,JSQ4,JSQ20).
EXECUTE.

COMPUTE JOBS2=MEAN(JSQ12,JSQ16,JSQ13,JSQ17,JSQ5,JSQ8).
EXECUTE.

COMPUTE JOBC1=MEAN(JDS2Q6,JDS2Q7,JDS2Q9,JDS2Q2,JDS2Q3).
EXECUTE.

COMPUTE JOBC2=MEAN(JDS2Q8,JDS2Q4,JDS2Q10,JDS2Q5,JDS2Q1).
EXECUTE.

COMPUTE MIND1=Mindset1.
EXECUTE.

COMPUTE MIND2=MEAN(Mindset2,Mindset3).
```

```
EXECUTE.

COMPUTE REC1=Recruit5.
EXECUTE.

COMPUTE REC2=MEAN(Recruit4,Recruit1).
EXECUTE.

COMPUTE DIFF1=MEAN(Dif1,Dif3,Dif5).
EXECUTE.

COMPUTE DIFF2=MEAN(Dif2,Dif4,Dif6).
EXECUTE.

COMPUTE DEVEL1=MEAN(Dev1,Dev3,Dev5).
EXECUTE.

COMPUTE DEVEL2=MEAN(Dev2,Dev4).
EXECUTE.

COMPUTE RELAT1=MEAN(Rel1,Rel3,Rel5).
EXECUTE.

COMPUTE RELAT2=MEAN(Rel2,Rel4,Rel6).
EXECUTE.

COMPUTE WMEAN1=MEAN(Mean1,Mean3,Mean5).
EXECUTE.

COMPUTE WMEAN2=MEAN(Mean2,Mean4).
EXECUTE.

COMPUTE REMU1=Rem2.
EXECUTE.

COMPUTE REMU2=MEAN(Rem1,Rem4).
EXECUTE.

COMPUTE WLB1=MEAN(Bal1,Bal4).
EXECUTE.

COMPUTE WLB2=MEAN(Bal3,Bal5).
EXECUTE.
```