DISPOSITIONAL FACTORS, EXPERIENCES OF TEAM MEMBERS AND EFFECTIVENESS IN SELF-MANAGING WORK TEAMS

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Thesis submitted in fulfilment of the requirements for the degree Philosophiae Doctor in Industrial Psychology at the Potchefstroomse Universiteit vir Christelike Hoër Onderwys

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Potchefstroom

2003

ACKNOWLEDGEMENTS

This has been a deeply ingrained journey of personal and professional growth.

A heartfelt thank you to a few of the people that played a part in this journey:

- Prof Ian Rothmann - for being the greatest supervisor and mentor.
- Prof Marie Wissing – for believing in me.
- Cecilia van der Walt – for the professional and outstanding way in which the language editing was conducted.
- Nickey Hanekom – for granting me the opportunity as well as all the support and encouragement on the way.
- My family and friends – for your love.
- NRF – for the grant allocated to me.

SUMMARY

Subject: Dispositional characteristics, quality of work life and effectiveness of members of self-managing work teams

Key words: Self-managing work teams; dispositions; sense of coherence; self-efficacy; locus of control; the big five personality dimensions; quality of work life; effectiveness.

Changes in South Africa's political and economic sphere demand the democratisation of the workplace, participation and empowerment of the work force. Flatter hierarchical structures, as a result of downsizing, enhance involvement but also demand that workers function in a more autonomous manner. The use of self-managing work teams has increased in response to these competitive challenges. Self-managing work teams are groups of employees who are fully responsible for a well-defined segment of finished work that delivers a product or a service to an internal or external customer. The functioning of self-managing work teams, in terms of the systems model, can be described as certain inputs that help the team to perform certain tasks and follow processes in order to achieve certain outputs. Inputs include the motivation, skills and personality factors of team members, while the tasks and processes refer to problem solving, conflict resolution, communication and decision making, planning, quality control, dividing of tasks, training and performance appraisal. These inputs and processes lead to outputs such as efficiency, productivity and quality of work life.

To date empirical studies regarding self-managing work teams in South Africa focused on the readiness of organisations for implementing these teams. Little research has been done on characteristics of successful self-managed work group members. Findings regarding members of self-managing work teams elsewhere in the world couldn't uncritically be applied to South Africa, because of widely different circumstances. Research on dispositional factors such as sense of coherence, self-efficacy, locus of control and the big five personality dimensions could therefore help

to identify predictors of effectiveness that can be validated in consecutive studies for selection purposes in a self-managing work team context in South Africa.

The objective of the research was therefore to determine the relationship between dispositional characteristics of members of a self-managing work team and the effectiveness and quality of work life of these members. A cross-sectional survey design was used. The sample included members of self-managing work teams (N = 102) from a large chemical organisation and a financial institution in South Africa. The Orientation to Life Questionnaire, a Self-efficacy Scale, the Locus of Control Questionnaire and Personality Characteristics Inventory were used to measure the dispositional variables. Quality of work life (measured as consisting of satisfaction, commitment to the organisation and commitment to the team) and self-rated team member effectiveness were used as dependent variables. Descriptive statistics, Pearson and Spearman correlations, canonical correlations and structural equation modelling were used to analyse the data and investigate the relationships between the various dispositional characteristics quality of work life and effectiveness of the team members.

The results showed practically significant positive relationships between sense of coherence, self-efficacy, autonomy, external locus of control and internal locus of control on the one hand, and quality of work life and effectiveness of the team members of self-managing work teams on the other hand. Of the big five personality dimensions only openness was associated with commitment to the team in terms of the quality of work life. Stability, extraversion and openness were associated with the self-rated effectiveness of the team members of self-managing work teams. The structural equation modelling showed that there is a positive path from the dispositional characteristics to the satisfaction, commitment and self-rated effectiveness of the team members. The dispositional characteristics will also enhance the members' experience of role clarity and mediate the effects of job-induced tension on the members' self-rated effectiveness. Satisfaction of the team members moderate the relationship between the dispositional characteristics and commitment, as well as mediate the effects of job-induced tension on the commitment of the team members.

Organisations implementing self-managing work teams can benefit from developing and enhancing these dispositional characteristics in their selected team members and could also validate these dispositional characteristics in terms of selection criteria for self-managing work team members.

OPSOMMING

Onderwerp: Disposisies, kwaliteit van werkslewe en effektiwiteit van lede van selfbestuurwerkspanne

Trefwoorde: Selfbestuurwerkspanne; disposisies; koherensiesin; selfeffektiwiteit; lokus van beheer; die groot vyf persoonlikheidsdimensies; kwaliteit van werkslewe; effektiwiteit.

Veranderinge in Suid-Afrika se politieke en ekonomiese sfeer vereis 'n demokratisering van die werksplek, deelname en bemagtiging van die werksmag. Platter hiërargiese strukture as gevolg van afskaling, verhoog die betrokkenheid, maar vereis ook dat werknemers meer outonoom moet funksioneer. Die gebruik van selfbestuurwerkspanne het toegeneem in reaksie op hierdie kompeterende uitdagings. Selfbestuurwerkspanne is 'n groep werknemers wat ten volle verantwoordelik is vir 'n duidelik gedefinieerde segment van 'n voltooide stuk werk wat 'n produk of diens aan 'n eksterne of interne kliënt verskaf. Die funksionering van 'n selfbestuurwerkspan kan, ooreenkomstig die sisteemmodel, beskryf word as sekere insette wat die span help om sekere take en prosesse uit te voer ten einde sekere uitkomste te bereik. Insette sluit in motivering, vaardighede en persoonlikheidsfaktore van die spanlede terwyl die take en prosesse verwys na probleemoplossing, konflikhantering, kommunikasie en besluitneming, beplanning, kwaliteitskontrole, die verdeling van take, opleiding en prestasiebeoordeling. Hierdie insette lei tot uitsette soos effektiwiteit, produktiwiteit en kwaliteit van werkslewe.

Empiriese studies oor selfbestuurwerkspanne in Suid-Afrika het tot dusver gefokus op die gereedheid van organisasies vir die implementering van hierdie spanne. Baie min navorsing is gedoen oor die eienskappe van suksesvolle selfbestuur-werkspanlede. Bevindinge aangaande selfbestuur-werkspanne elders in die wêreld kan nie kritiekloos in Suid-Afrika toegepas word nie, vanweë die omstandighede wat radikaal daarvan verskil. Navorsing aangaande disposisionele faktore soos koherensiesin, selfeffektiwiteit, lokus van beheer en die groot vyf persoonlikheids-dimensies kan daarom help voorspellers van effektiwiteit te identifiseer wat dan ook

vir die doeleindes van keuring in selfbestuurwerkspanne in Suid-Afrika gevalideer kan word.

Die doel van die navorsing was daarom om die verwantskap te bepaal tussen die disposisionele eienskappe van spanlede in 'n selfbestuurwerkspan en die effektiwiteit en kwaliteit van werkslewe van hierdie lede. 'n Kruisseksionele opname-ontwerp is gebruik. Die steekproef het bestaan uit spanlede van selfbestuurwerkspanne (N = 102) van 'n groot chemiese organisasie en finansiële instelling in Suid-Afrika. Die koherensiesinvraelys, 'n selfeffektiwiteitskaal, 'n lokus van beheer-vraelys en 'n persoonlikheidsinventaris is gebruik om die disposisionele faktore te meet. Kwaliteit van werkslewe (wat bestaan uit tevredenheid, verbondenheid tot die span en verbondenheid tot die organisasie) en selfbeoordeelde effektiwiteit van die spanlede is gebruik as afhanklike veranderlikes. Beskrywende statistiek, Pearson en Spearman korrelasies, kanoniese korrelasies en strukturele vergelykingsmodellering is gebruik om die data te analiseer en die verwantskap tussen die disposisionele faktore, kwaliteit van werkslewe en effektiwiteit van die spanlede te ondersoek.

Die resultate wys op prakties betekenisvolle positiewe verwantskappe tussen koherensiesin, selfeffektiwiteit, outonomie, interne sowel as eksterne lokus van beheer aan die een kant en die kwaliteit van werkslewe en effektiwiteit van die lede aan die ander kant. Van die groot vyf persoonlikheidsdimensies het slegs oopheid 'n verband getoon met verbondenheid tot die span rakende die kwaliteit van werkslewe van die lede. Stabiliteit, ekstroversie en oopheid toon 'n verwantskap met die selfbeoordeelde effektiwiteit van die spanlede. Strukturele vergelykings-modellering het getoon dat daar 'n positiewe pad bestaan vanaf die disposisionele eienskappe na die tevredenheid, verbondenheid en effektiwiteit van die spanlede. Die disposisionele eienskappe sal die lede se ervaring van rolduidelikheid verhoog, en medieer die effek van werkspanning op die effektiwiteit van die spanlede. Tevredenheid van die spanlede modereer die verband tussen die disposisionele eienskappe en verbondenheid van die spanlede en medieer die effek van werkspanning op die verbondenheid van die lede.

Organisasies wat selfbestuurwerkspanne implementeer kan daarby baat deur hierdie disposisionele eienskappe van die spanlede te ontwikkel en te verbeter. Hierdie organisasies kan verder die disposisionele eienskappe valideer vir keuringsdoeleindes van die spanlede van selfbestuurwerkspanne in Suid-Afrika.

CONTENTS

CHAPTER 2: SELF-MANAGING WORK TEAMS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION AND PROBLEM STATEMENT

This thesis investigates self-managing work teams and focuses specifically on the dispositional factors of team members, experiences of team members and their effective functioning in these self-managing work teams.

In Chapter 1 the research is motivated by means of a problem statement and by the clarification of the objectives of the research. The research model, the paradigm perspective of the research, as well as the research design and the research method are described. Chapter 1 concludes with a brief layout of the rest of the chapters.

1.1 PROBLEM STATEMENT

Currently South Africa is undergoing major changes in the political, social, technological and economic spheres. The environment in which organisations have to operate has become increasingly complex and uncertain, and they have to adapt to an ever-increasing rate of change (Green & Bisseker, 2002; Wiesner & Vermeulen, 1997). Not only do organisations need to adapt to these changes, but they also need to compete in a global market (Hitt, 2000). Most organisations become increasingly aware that in order to survive, grow and be effective, they need to improve the quality of their products and services, compete for foreign markets abroad and fend off foreign competitors' attempts to gain control at home (Tang & Crofford, 1996).

Changes in South Africa's political and economic sphere demand the democratisation of the workplace, participation and empowerment of the work force (De Waal, 1997). Flatter hierarchical structures, as a result of downsizing, enhance involvement but also demand that workers function in a more

autonomous way (Lawler, 1995). The use of self-managing work teams has increased in response to these competitive challenges (Cohen, Ledford & Spreitzer, 1996). Empirical research showed that the use of self-managing work teams contributes to various dimensions of performance effectiveness, such as productivity improvement (Wheatley & Szwejczewski, 1995), cost savings (Wall, Kemp, Jackson & Clegg, 1986), manager and self-ratings of performance effectiveness (Cohen & Ledford, 1994) and employee satisfaction (Cohen & Ledford, 1994).

Self-managing work teams are also referred to in the literature as self-directed teams, autonomous work groups, self-maintaining teams, self-leading teams, semi-autonomous work groups, self-regulating groups or self-governing units (Glaser, 1991). For consistency in this research, the term self-managing work team will be used. Self-managing work teams are groups of employees who are fully responsible for a well-defined segment of finished work that delivers a product or a service to an internal or external customer (Orsburn, Moran, Musselwhite & Zenger, 1990). Self-managing work teams make decisions about their own processes as well as complete entire tasks. They have the autonomy to make decisions that are traditionally the responsibilities of supervisors and managers. Members of self-managing work teams often have control over scheduling, hiring, problem-solving, training, coordinating with other groups, monitoring the quality of their product, and dealing directly with their customers (Alper, Tsjovold & Law, 1998).

The functioning of self-managing work teams, in terms of the systems model (Hackman, 1987), can be described as certain inputs that help the team to perform certain tasks and follow processes in order to achieve certain outputs. Inputs include the motivation, skills, and personality factors of team members, while the tasks and processes refer to problem solving, conflict resolution, communication and decision making, planning, quality control, allocation of tasks, training, and performance appraisal. These inputs and processes lead to outputs

such as efficiency, productivity and quality of work life. For the purpose of this research quality of work life is defined in terms of satisfaction, commitment and trust of the team members (Cohen, Ledford & Spreitzer, 1996).

Empirical studies regarding self-managing work teams in South Africa to date focused on the readiness of organisations for implementing these teams. Two studies found that employees are not ready for the implementation of self-managing work teams (Jordaan, 1994; Kotze, 1996). Jordaan (1994) found that the management of a non-profit utility company was not committed to participative decision-making processes that enhance self-management such as communication, leadership, needs, values and teamwork. Kotze (1996) tested the degree to which supervisors display certain behaviour and perform functions in terms of leadership, coaching, team development, facilitation, barrier busting and business analysis that are required of members of a self-managing team. Superiors and subordinates indicated that supervisors could not be regarded as ready for the implementation of self-managing work teams. De Waal (1997), however, using the same criteria as Kotze (1996), found that supervisors in the gold mining industry regard themselves, and are regarded by managers and workers, to be ready for implementing self-managing work teams. However, it should be remembered that the research of De Waal (1997) maintains subjective elements in terms of the self-evaluation of supervisors. It thus seems that there is a lack of sound scientific research results with regard to self-managing work teams in a South African environment.

Self-managing work teams require team members to learn multiple jobs or tasks, and to take on tasks that once were reserved for supervisors or managers (Felts, 1995). This change from supervisory to participatory structures means that workers in a self-managing work team will experience day-to-day work life in vastly different ways than workers in a traditional management system (Barker, 1993). Furthermore, Remdisch (1993, as quoted by De Jong, Remdisch, Stoker & Broesder, 1997) found that along with higher task requirements, stresses and

strains were on the increase as well. It has been argued that self-managing work teams are a form of "management by stress" that have long-term negative effects on worker safety and health (Parker & Slaughter, 1988). As the quantity of processes and tasks to be performed increase, the quantity and nature of input needs to change as well in order to cope with the increasing demands. It seems necessary to identify firstly the nature of these inputs, which include dispositional factors of team members, that help them to cope with the increasing demands, and secondly, how the members experience working in these demanding situations.

A disposition is defined by Reber (1995) as any hypothesized organisation of mental and physical aspects of a person that is expressed as a stable, consistent tendency to exhibit particular patterns of behaviour in a broad range of circumstances. House, Shane and Herold (1996) describe dispositions as personality characteristics, needs, attitudes, preferences and motives that result in a tendency to react in a predetermined fashion to certain situations. According to Davis-Blake and Pfeffer (1989) the essence of the dispositional approach is that individuals possess stable traits that have a significant influence on their affective and behavioural reactions to organisational settings. Research indicates that dispositional factors affect work-related effectiveness criteria in organisations (Staw, Bell & Clausen, 1986; Staw & Ross, 1985). Brief, Butcher and Roberson (1995) showed that, when subjected to the same task attributes, individuals' dispositional tendencies affect how they interpret the favourability of these attributes.

Judge, Locke and Durham (1997) explain the effect of dispositional factors in organisations in terms of core evaluations. Core evaluations refer to fundamental, subconscious conclusions individuals reach about themselves, other people, and the world (Judge, Locke, Durham & Kluger, 1998). Judge et al. (1997) proposed that people who consider themselves to be no good or fundamentally incompetent (core self-evaluations) will react quite differently, for example, to

increased job responsibilities, such as found in self-managing work teams, than will those who consider themselves to be good and competent. Judge et al. (1998) also found that core evaluations affect the actual perception of individuals of work attributes such as autonomy and task significance. It therefore seems necessary to investigate the influence of dispositional factors on the experience and effectiveness of members of a self-managing work team where increased responsibility and work attributes such as autonomy and task significance forms an integral part of the work.

From the literature it seems evident that dispositions could include any innate traits or characteristics of individuals that will influence their evaluations of themselves, their environment and their capabilities, and consequently, their behaviour. Judge et al. (1998) regard self-esteem, self-efficacy, locus of control and neuroticism as core evaluations.

Recently there was a shift in psychological research from the pathogenic paradigm to a paradigm of health, psychological strength and well-being called the fortigenic paradigm (Wissing, 2000). Sense of coherence, self-efficacy and locus of control are regarded as constructs of this new paradigm (Strümpfer, 1990). In this research, dispositional factors will be described in terms of certain personality characteristics, as found in the Big Five and also in terms of psychological strengths such as sense of coherence, self-efficacy and locus of control as found within the fortigenic (the origin of strengths) paradigm (Strümpfer, 1995). All these dispositional factors influence the evaluation and behaviour of employees in an organisation, and research indicates a relationship between several of these factors. Judge et al. (1998) found that the locus of control measure was highly correlated with self-efficacy and that the neuroticism measure was the converse of positive self-evaluations. Judge, Thoresen and Pucik (1996) analysed results obtained from five different studies and found that self-esteem, self-efficacy, locus of control and positive affectivity loaded on a

common factor. Pretorius and Rothmann (2001) also found a positive correlation between sense of coherence, self-efficacy and locus of control.

Sense of coherence is described by Antonovsky (1987) as a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that one's internal and external environments are predictable and that there is a high probability that things will work out as well as can reasonably be expected. Empirical research has shown that sense of coherence is related to an individual's job satisfaction. Rothmann (2000) did a meta-analysis and found a practical significant correlation of 0.50 between sense of coherence and job satisfaction in a study population that included 624 employees of 7 different organisations in South Africa. Other research that confirms these findings is Pretorius and Rothmann (2001), Coetzee and Rothmann (1999) and Strümpfer (1995). The relationship of sense of coherence with similar outcomes such as job satisfaction could be studied in the context of self-managing work teams.

Self-efficacy refers to individuals' belief that they can successfully perform the behaviour required for a specific task (Gist, 1987). Bandura (1977) conceptualised self-efficacy as a situation-specific or task-specific belief. However, Sherrer and Maddux (1982) argue that an individual's past experiences with success and failure in a variety of situations should result in a general set of expectations that the individual carries into new situations, and these generalised expectancies should influence the individual's expectations of mastery in new situations. For the purposes of this research a measurement of situation-specific self-efficacy is used in order to focus on the specific situation of self-managing work teams. Empirical research has consistently found that self-efficacy has a significant impact on performance on a variety of tasks as well as on motivation, emotional reactions and persistence on a task (Gist & Mitchell, 1992). Thoms, Moore and Scott (1996) found that self-efficacy mediate the relationship between personality and performance in self-managing work teams. They implied that

people high in self-efficacy will tend to be resilient and will most likely adapt to self-managing work groups, but they recommend that this hypothesis should be tested empirically (Thoms, Moore & Scott, 1996).

Locus of control (LOC) describes the extent to which individuals believe that their behaviour has a direct impact on the events that follow (Garson & Stanwyck, 1997). Rotter (1966) described individuals who believe that they can control what happens to them as having an internal locus of control (internals). Those who tend to think about that what happens to them as a function of luck, fate or powerful others have an external locus of control (externals). Rothmann and Agathagelou (2000) in a study of senior police personnel found a negative correlation between external locus of control and job satisfaction but found no positive correlation between internal locus of control and job satisfaction. Pretorius and Rothmann (2001) found a positive relationship between internal locus of control and job satisfaction in a financial institution while Naudé and Rothmann (2000) found a significant negative correlation between external locus of control and job satisfaction in a study with agriculture representatives. Numerous studies have shown that internals perform better than externals in job situations that require initiative, responsibility, autonomy, and problem solving (Abdel-Halim, 1980; Rizzo, House & Lirtzman, 1970). All these aspects are applicable in self-managing work teams. However, Garson and Stanwyck (1997) found that the production performance of internals with incentives did not exceed either that of externals with incentives or that of internals without incentives in self-managing work teams, as they hypothesized. As this finding is inconsistent with the research of Abdel-Halim (1980) and Rizzo, House and Lirtzman (1970), as mentioned above, they recommend that future research should focus on qualitative feedback from both externals and internals regarding their satisfaction in self-managing groups (Garson & Stanwyck, 1997).

Driskell, Hogan and Salas (1988) review research results relating personality with group effectiveness and conclude that little consensus exists about how

personality should be defined and measured. This lack of consensus leads to mixed results. Recently a five-factor model (the big five) was developed to organise a multitude of personality traits (McCrae, 1989). This model is a robust taxonomy of personality that provides a comprehensive framework from which personality and its relationship to outcomes in the workplace, such as individual and team effectiveness, can be studied (Barrick, Stewart, Neubert & Mount, 1998). The five factors are Extroversion, Emotional stability, Agreeableness, Conscientiousness, and Openness to experience. The NEO-Personality Inventory (NEO-PIR) (Costa & McCrae, 1985) and the Personal Characteristics Inventory (PCI) (Mount & Barrick, 2002) are two of the well-known instruments that were developed to measure the five factors.

Empirical research has also shown that the Big Five personality dimensions are related to individual and team performance in self-managed work groups (Thoms, Moore & Scott, 1996). It appears that people who are emotionally stable (which is the opposite of neuroticism), people who are assertive, sociable, and energetic (which are facets of extroversion) and people who are dependable, responsible and achievement oriented (which are facets of conscientiousness) perform better in self-managing work teams (Thoms et al., 1996). These are important findings with relation to the implementation of self-managing work teams. Wheatley and Szwejczewski (1995) reported an experience of Kimberly-Clark where, with three plants working on the same site, the one reporting the best results from deploying self-managing work teams was the one that set out to do so from scratch, recruiting through personality tests only those individuals who it thought most suited to a team-working environment. The impact of individual differences and personality therefore is an important factor in studying self-managing work teams because it could lead to certain outcome variables such as effectiveness of team members, and it could also influence team processes and functioning of the team as a unit.

As mentioned earlier, workers in a self-managing team will experience day-to-day work life in a vastly different manner. Team members will feel vulnerable because self-managing work teams lack the familiar clarity of a hierarchical structure (Arnold, 1996). Inputs such as the dispositional constructs (as discussed above) may influence not only the outputs of team members in these teams but also the experiences of individuals who function within these teams. These constructs could lead to a feeling of control in uncertain circumstances. It could lead to positive experiences within these teams because individuals will have resources to help them cope with a diverse and strenuous environment. Instead of just focusing on the relationship between certain inputs and outputs (such as quality of work life and effectiveness) in self-managing work teams, it is also necessary to focus on the experience of individuals within this context in a qualitative way. No research could be found that reported the experiences of team members in a self-managing work team in a South African context.

Thoms, Moore and Scott (1996) stated that little research has been done on characteristics of successful self-managed work group members. They studied the relationship between self-efficacy for participating in self-managed work groups and the big five personality dimensions. Based on their findings they suggest that organisations should consider personality when deciding whether or not to implement self-managed work groups, or who should be selected to work in this type of structure. Garson and Stanwyck (1997) echoes the fact that little research addresses the identification, selection, and training of employees who will be successful participants in self-managing work groups. Research on dispositional factors (such as the research done in this thesis) could help to identify predictors of effectiveness that can be validated in consecutive studies for selection purposes in a self-managing work team context in South Africa. It also is apparent that further research on how individual differences influence an employee's experiences in self-managing work teams and its effects on effectiveness and quality of work life could shed light on the use of organisational socialisation mechanisms. Socialisation mechanisms such as recruitment,

selection, induction, training and development, reward, and performance management could help individuals adapt to a participative management environment.

This research will also be in accordance with recommendations made for future research in the field of teamwork. Sundstrom, McIntyre, Halfhill and Richards (2000) gave a selective review of empirical studies of work group effectiveness conducted in work settings and published in the last twenty years. They argue that future research needs to study work group composition in terms of cognitive ability and such personality traits as conscientiousness and agreeableness.

In conclusion, no empirical research results were found regarding the influence of dispositional factors on the experiences and outcomes of self-managing work team members in South Africa. Findings regarding members of self-managing work teams elsewhere in the world couldn't be applied to South Africa uncritically, because of widely different circumstances. This research will contribute to industrial psychological knowledge in the sense that it will validate findings (of studies elsewhere in the world) on the effect of dispositional factors in self-managing work teams and its relationship to organisational effectiveness criteria in the South African environment. This research could contribute further to industrial psychology in the sense that fortigenic aspects and their influence could be studied within a team environment. This will also contribute to establishing a sound scientific basis for the new domain or subdiscipline in psychology called psychofortology (the science of psychological strengths) (Wissing & Van Eeden, 1997).

The following research questions arise on the basis of the above-mentioned description of the research problem:

- What is meant by self-managing work teams, and which factors may affect the effectiveness and experiences of members of these teams?

- What role do dispositional factors (including sense of coherence, self-efficacy, locus of control and personality dimensions) play in the experiences and outputs of team members in self-managing work teams?
- What is the relationship between sense of coherence, self-efficacy, locus of control and the five-factor personality dimensions as dispositional factors?
- What is the personality profile of a member of a self-managing work team, and how does that relate to effectiveness and quality of work life criteria?
- Can dispositional factors be used as predictors of quality of work life and effectiveness of members in self-managing work teams?

1.2 RESEARCH OBJECTIVES

The objectives of the research include a general objective and specific objectives.

1.2.1 General Objective

The general objective of the research is to determine whether there is a relationship between dispositional variables of the team members of a self-managing work team one the one hand and the quality of work life and effectiveness of these members on the other hand and to determine whether dispositional variables can predict variables of quality of work life and effectiveness of members in self-managing work teams.

1.2.2 Specific Objectives

- To conceptualize self-managing work teams and the factors that may affect the effectiveness and experiences of members of these teams from the literature.
- To conceptualize the role that dispositional factors (including sense of coherence, self-efficacy, locus of control and personality dimensions) play in

the experiences and outputs of team members of self-managing work teams from the literature.

- To conceptualize and determine the relationship between sense of coherence, self-efficacy, locus of control and the five-factor personality dimensions.
- To conceptualize and determine the personality profile of a member of a self-managing work team and to determine how this relates to effectiveness and quality of work life criteria in this context.
- To determine whether dispositional factors can predict quality of work life and effectiveness of members in self-managing work teams.

1.3 HYPOTHESIS

It is postulated that there is a significant relationship between dispositional variables, quality of work life and effectiveness of members in a self-managing work team, and that dispositional variables can be used as predictors of quality of work life and effectiveness of members in a self-managing work team.

1.4 THE RESEARCH MODEL

Social sciences research can be described as a collaborative human activity in which social reality is studied objectively with the aim of gaining a valid understanding of it (Mouton & Marais, 1996).

The following dimensions of research can be distinguished from this definition:

- The sociological dimension. Research can be seen as a joint or collaborative activity and conducted within a clearly defined scientific community. This research forms part of a broader network of research on wellness and psychofortology and therefore this research will be conducted within a clearly defined scientific community.

- The ontological dimension. Research is directed at an aspect of social reality, to which we can refer as the research domain. In this case the research domain covers the dispositions, experiences and outputs of individual team members of self-managing work teams in a work environment.
- The teleological dimension. Research is intentional and goal-directed and its main aim is to understand a certain phenomenon. The main aim of this research is to understand how certain dispositions influence the experiences and outcomes of team members of self-managing work teams.
- The epistemological dimension. Research should also provide a valid and reliable understanding of the phenomenon. To ensure that the findings in this research is as close to reality as possible, reliable and valid measuring instruments are used and the prescribed procedures for taking them down and marking them are followed. Unstructured interviews are conducted within the defined paradigms of this research. The whole procedure is described to ensure that the research can be repeated.
- The methodological dimension. Research may be regarded as objective, systematic and controllable. In this research a cross-sectional survey design will be used and qualitative interviews will be conducted to explore and extend results found in the quantitative phase.

Mouton and Marais (1996) proposed an integrated model of social science research in order to systematize the dimensions of research within the framework of the research process. This model (refer to Figure 1) indicates that a variety of perspectives on research exists and also shows the importance of the interaction between the researcher and the research domain. The model distinguishes between three subsystems that interact with each other and with the research domain as defined in a specific discipline. These subsystems are the intellectual climate of the discipline, the market of intellectual resources of this discipline, and the research process itself. These three aspects will be discussed as the paradigm perspective of the research is outlined.

1.5 THE PARADIGM PERSPECTIVE OF THE RESEARCH

The paradigm perspective of the research and how the researcher applies this perspective may have an influence on the findings of the research domain (Mouton & Marais, 1996). Therefore it is necessary to outline and define the paradigm perspective of this research project to explain the choices of the researcher in terms of theory and methodology. The paradigm perspective of the research is described by discussing the intellectual climate and the market of intellectual resources.

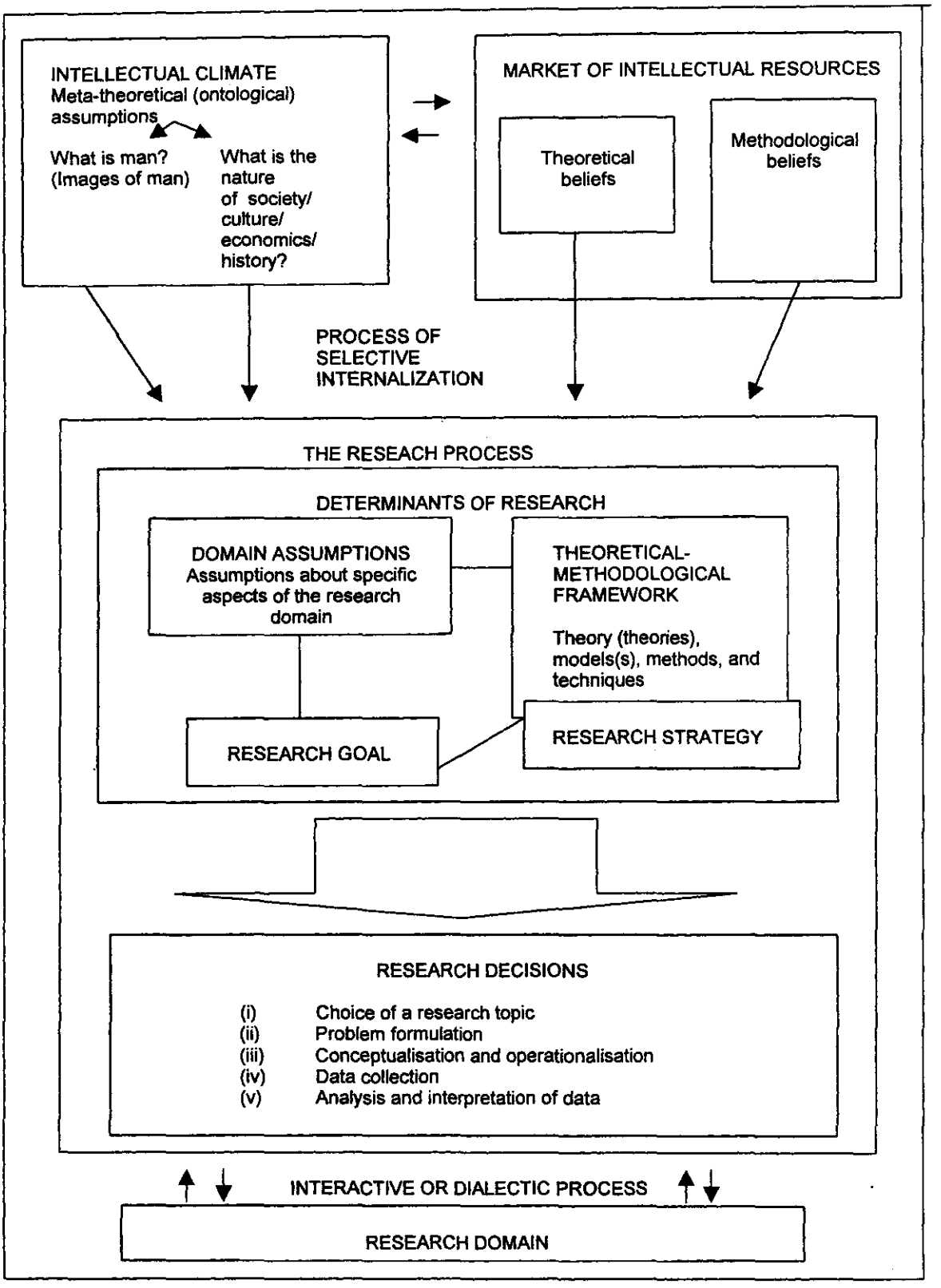

Figure 1. The research model (Mouton & Marais, 1996)

1.5.1 The intellectual climate

The intellectual climate refers to the variety of meta-theoretical assumptions, values or convictions which are accepted and held by those practising within a discipline at a certain stage (Mouton & Marais, 1996). These meta-theoretical assumptions are not directly related to the theoretical goals of the research but rather define the specific research perspective. In order to determine the intellectual climate of the research, the disciplinary perspective and meta-theoretical assumptions of the research are subsequently discussed.

1.5.2 The disciplinary perspective

This research falls within the discipline of Industrial Psychology in the behavioural sciences. Industrial psychology can be defined as the application of psychological theory and methods to industrial and organisational problems dealing with a person's self, others, jobs, machines and operations, as well as the improvement of the selection of personnel and work procedures, all in the interest of establishing a productive and happy climate in a variety of shops, agencies, and organisations, as well as enhancing profit (Corsini, 1999).

The discipline of industrial psychology is divided into a number of subdisciplines. The focus of this research will be on psychometrics, organisational psychology and personnel psychology as subdisciplines of industrial psychology.

a. Psychometrics

Psychometrics can be defined as the subdiscipline that focuses on all aspects of psychological measurement, including the development and standardization of psychometric tests and the application of mathematical and statistical procedures in psychology (Plug, Louw, Gouws & Meyer, 1997). In this research a

questionnaire on the characteristics of self-managing work teams was developed and the reliability and validity of all the measuring instruments used, are determined. Several statistical procedures are used to analyze the data obtained in the empirical study.

b. Organisational psychology

Organisational psychology can be defined as the study of organisations, the elements and systems of which they consist and factors that influence their effective functioning, in other words the interaction between the individual and the organisation (Plug et al., 1997). Teams and groups are systems and elements of organisations that facilitate the interaction between the individual and the organisation. This research will focus on the experience of members in self-managing work teams and factors that might have an influence on their effective functioning that will in turn influence the effective functioning of the organisation as a whole.

From many indications in personology, empirical studies, models and theories it is clear that a new domain in psychology is being developed (Wissing, 2000). Psychofortology (the science of psychological strengths) is the term used for the domain of psychology in which psychological well-being is being studied (Wissing & Van Eeden, 1997). Psychofortology focuses on the nature, manifestations, patterns, origins and dynamics of psychological well-being and the enhancement of strengths on individual, group and community levels (Wissing, 2000). Dispositions researched in this study such as sense of coherence, self-efficacy and locus of control are constructs that are associated with psychological well-being and these constructs can facilitate the interaction between the individual and the organisation as studied in the sub-discipline of organisational psychology. This research will help to provide this newly developing domain with a sound scientific basis and to be recognized as a credible domain of research in organisational psychology and also industrial psychology as a discipline.

c. Personnel psychology

Personnel psychology is the part of industrial psychology that deals with the psychological characteristics of individual workers in relation to their tasks and in relation to other workers (Plug et al., 1997). Personnel psychology is thus seen as an applied discipline that focuses on individual differences in behaviour and job performance and on methods of measuring and predicting such performance (Cascio, 1991). In personnel psychology attempts are made to fit a person to a job or job environment (Louw & Edwards, 1995). It is argued that the successful integration of the individual and the job will lead to higher levels of performance and satisfaction. This research will focus on differences in dispositional characteristics of team members that could help to integrate the member in the self-managing work team environment and that could also aid in predicting performance and satisfaction levels in this kind of environment.

1.5.3 Meta-theoretical assumptions

Basically there are seven paradigms that guide this research. With regard to the literature review the salutogenic/fortigenic paradigm, cognitive-behavioural paradigm, classical organisational perspective, human relations perspective, systems perspective and the contingency perspective form the basis. The functionalistic and positivistic paradigms are applicable with regard to the empirical study.

a. Literature review

The dispositions and experiences of team members as well as the functioning of self-managing work teams can be explained in terms of various paradigms.

Antonovsky (1987; 1993) sought to "unravel the mystery of health" and to learn how people manage stress and stay well. He proposed the study of health instead of disease and used the term *salutogenesis* (origins of health). Salutogenesis is the study of how a person is able to thrive in spite of myriads of pathogenics in the environment, based on sociopsychological factors such as having a sense of coherence (Corsini, 1999). Dispositions such as self-efficacy and locus of control also form part of the salutogenic paradigm (Strümpfer, 1990). Strümpfer (1995) suggested that we rather refer to fortigenesis or the origins of strength to indicate that this is a much more encompassing problem than that of factors that influence physical health, as Antonovsky (1993) identified. The *fortigenic paradigm* therefore is a more embracing and holistic paradigm than salutogenesis. The fortigenic paradigm is applicable to this research because the team member who is effective and enjoys a high quality of work life and experiences the environment as positive, despite the various stressors associated with working in a self-managing work team, are investigated and not merely the poor-performing or unsatisfied member of the team.

The *cognitive-behavioural paradigm* is about understanding individuals in depth through exploration of thought processes as well as inferences from behaviour (Corsini, 1999). This is in contrast with approaches of the past of either studying the mind through introspection (cognitive paradigm) or studying behaviour while setting the mind aside (behavioural paradigm) (Corsini, 1999). Meichenbaum (1977) laid the foundation for the cognitive-behaviour therapy by explaining the relationship between clients' thoughts, feelings, behaviours and resultant consequences. In the past, environmental factors were held to be almost solely responsible for human behaviour, but it is now argued that intrapersonal factors have become the focus of change. Cognitive-behaviour emphasizes the role of perceptions and interpretations of events as determinants of effective behaviour (Corsini, 1999). Rosenbaum (1990) states that it is not the exposure to uncontrollable events that causes people to become helpless, but the way in which they cope with these events. Dispositional factors researched in this thesis

also emphasize the role of perceptions and interpretations of events as determinants of behaviour. Therefore this research will be conducted within the boundaries of the cognitive-behavioural paradigm.

The functioning of self-managing work teams can be described in terms of the following theoretical assumption.

Self-managing work teams can best be viewed from a *systems perspective* (Tubbs, 1994). The systems perspective states that any functioning system (a team or an organisation) is characterized by input, transactions of processes that take place, output, and feedback. Changes in one part of the system influence the rest of the system (Plug et al., 1997). In this research the functioning of self-managing work teams are also studied in terms of a systems perspective. The dispositional factors of the members are the input, and the effectiveness and quality of work life of team members are seen as the output. It is argued that self-managing work teams provide a tool for achieving the best match between the technical and social systems of an organisation (Pasmore, Francis, Haldeman & Shani, 1982).

b. Empirical study

The *functionalistic paradigm* views behaviour in terms of active adaptation to the environment. This paradigm emphasizes the causes and consequences of human behaviour, the need for objective testing of theories, and the application of practical problems and the improvement of human life (Van Niekerk, 1996). In terms of functionalism the broad, significant units of psychological phenomenon should be studied in terms of their functional relationship (in other words their significance for the survival of the individual) (Plug et al., 1997). This paradigm is applicable in this study seeing that objective and scientific methods and techniques are used to ensure the objective testing of a theory.

The basic assumption of the *positivistic paradigm* is that knowledge can only be obtained through the study of observable phenomena (Plug et al., 1997). In psychology, positivism has influenced behaviourism and given rise to operationalism. Theoretical constructs should thus be operationally defined (Corsini & Auerbach, 1996). In psychology, objective, empirical and operational methods used in research are associated with the positivistic paradigm (Plug et al., 1997). The positivistic paradigm is applicable to this research because the constructs used in this research (such as sense of coherence) are operationally defined and measured with objective and standardized scales and questionnaires.

1.5.4 The market of intellectual resources

The market of intellectual resources refers to the collection of beliefs that has a direct bearing on the status of scientific statements as knowledge-claims (Mouton & Marais, 1996). The two major types are theoretical beliefs and methodological beliefs.

1.5.4.1 Theoretical beliefs

Theoretical beliefs can be described as beliefs of which testable statements about social phenomena are made (Mouton & Marais, 1996). Theoretical beliefs can be divided into conceptual definitions, models and theories.

a. Conceptual definitions

The following conceptual definitions are applicable in this research:

Self-managing work teams can be defined as a highly trained intact group of employees who are responsible for a whole work process or well-defined segment of work that delivers a product or service to an internal or external

customer. Team members work together to improve operations, handle day-to-day problems, and plan and control their work to a varying degree. They are responsible for getting their work done but also for managing themselves (Orsburn, Moran, Musselwhite & Zenger, 1990; Wellins, Byham & Wilson, 1991).

A *disposition* can be described as a tendency to behave in a similar manner at different times and places or as the total attitude of a person at any one time (Corsini, 1999). Dispositions could include any innate traits or characteristics of individuals that will influence their evaluations of themselves, their environment and their capabilities. In this research sense of coherence, self-efficacy and locus of control will be regarded as dispositional factors of team members that influence their evaluation of themselves, their experiences on the team and their evaluation of their capabilities in the team.

The word *salutogenesis* is taken from the Latin word 'salus' that means health and the Greek work 'genesis' that means origins, and therefore salutogenesis can be described as the origin of health (Antonovsky, 1979). Salutogenesis focuses on why people stay healthy instead of why people become ill, as in the case of the dominant pathogenic orientation. Salutogenic studies are designed to test hypotheses that explain successful (healthy) outcomes. These studies should give attention to the deviant case, the substantial number of people who do well, even though they are in the high stressor category, like the number of people who function well and stay healthy working in a self-managing team. These studies should accept the possibility that stressors may have a salutory or advantageous effect on the individual (Antonovsky & Sagy, 1986).

Fortigenesis is formed by the Latin word 'fortis' which means strong and the Greek word 'genesis' that means origins. Fortigenesis can thus be explained as the origin of strengths (Strümpfer, 1995). Fortigenesis does not deny the need to search for the origins of health (salutogenesis) but proposes that we are dealing with a much more encompassing problem than merely factors that influence

physical health and that the search should also include psychological strengths of individuals (Strümpfer, 1995).

Antonovsky (1987) defines *sense of coherence* as a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that the stimuli in one's environment are structured, predictable and explicable, that the resources are available to one to meet the demands posed by these stimuli and that these demands are challenges worthwhile spending energy on. It is a global orientation of confidence that life is meaningful, and of being capable of meeting worthwhile challenges (Corsini, 1999).

Self-efficacy can be described as people's judgements of their capabilities to organise and execute courses of action required to attain certain types of performance (Bandura, 1986). It can also be explained as a comprehensive sense of the person's own capability, effectiveness, strength, or power to attain desired results (Corsini, 1999). Self-efficacy therefore is a person's conviction that he can successfully execute the behaviour required to produce a desired outcome in a particular situation.

Rotter (1966) explained *locus of control* as the perception of a person of the relationship between his own behaviour and the results of reward or punishment. Locus of control is seen to be a generalized expectancy to perceive reinforcement either as contingent upon one's own behaviours (internal control) or as the result of forces beyond one's control and due to chance, fate or powerful others (external control). It therefore is a point of view that a person holds or maintains about self-independence and control by others (Corsini, 1999).

Quality of work life is seen as mainly employee satisfaction (Cohen et al., 1997). However, quality of work life is for the purposes of this study defined as the

satisfaction, commitment and trust of the team members. In terms of satisfaction, aspects of job satisfaction, growth needs satisfaction, social needs satisfaction and group satisfaction.

Several criteria for defining team member effectiveness have been proposed. Yeatts and Hyten (1998) list the individual's technical skills, such as performing their job tasks accurately and efficiently, administrative skills such as paperwork or area of responsibilities on the team, essential interpersonal skills such as cooperation and communication, decision-making and problem-solving skills as areas that can be evaluated. For the purposes of this study, effectiveness is measured as both evaluating the members' effectiveness according to specific tasks completed, as well as in terms of the members' interpersonal interaction with other team members, the degree to which the team members help to coordinate the activities of the team, facilitate decision making and problem solving and also the degree to which the members' attitudes and commitment facilitate overall team performance.

b. Theories and models

A theory can be defined as a body of interrelated principles and hypotheses that explain or predict a group of phenomena and have been largely verified by facts or data (Corsini, 1999). The following theories are regarded as relevant for self-managing work teams:

The sociotechnical systems theory emphasizes the interrelationship of the social and technical systems within an organisation (Trist & Bamforth, 1951). Advocates of this perspective explain that the most effective organisations are those in which the social and technological systems are integrated and supportive of one another. Self-managing work teams provide the best match between the technical and social systems (Trist & Bamforth, 1951).

The work design theory (Hackman & Oldham, 1976; 1980) implicates that by enriching a job through redesign (providing skill variety, allowing the employee to undertake a entire piece of work, emphasizing the importance of the work, and providing autonomy and feedback), the employees would experience increased feelings of responsibility toward the job and would experience the work as meaningful. They believe that these in turn would affect the employees' motivation, satisfaction, and performance. Self-managing work teams represent the individual with many job characteristics as described by the job enrichment theory and therefore it is believed that self-managing work teams would increase the satisfaction and effectiveness of the individual.

The Self-leadership theory (Manz & Sims, 1986; 1987) explains that self-leadership is the influence people exert over themselves to achieve the self-direction and self-motivation needed to behave in desirable ways (Manz, 1991). Self-leadership involves behaviour such as self-observation, self-goalsetting, self-evaluation and self-reinforcement that helps members of self-managing work teams to achieve success (Manz, 1991).

Theories of participative management (Lawler, 1986) implicate that employees can be trusted to make important decisions about their work and that they can develop the knowledge needed to make these decisions. They believe the results of employee participation in decision-making are greater organisational effectiveness and a direct positive effect on the employee's social and psychological states (Yeatts & Hyten, 1998).

A model is a representation that mirrors, duplicates, imitates or in some way illustrates a pattern of relationships observed in data (Reber, 1995). The following models are applicable to this research in explaining the performance of self-managing work teams.

The models applicable to this research describe the performance of self-managing work teams in terms of the systems perspective with certain inputs, processes and outputs. These models are: Gladstein's model of subjectively rated effectiveness (Gladstein, 1984); the Pearce-Ravlin model (Pearce & Ravlin, 1987); Hackman's model of self-managing work team performance (Hackman, 1987, 1988); and the predictive model of self-managing work team effectiveness (Cohen, Ledford, & Spreitzer, 1996).

The following theories are regarded as relevant in terms of the dispositional constructs.

The social cognitive theory is an approach in which behaviour is assumed to be developed and regulated by external stimuli such as the influence of other individuals, by external reinforcement such as rewards or blame and most importantly by the effects of cognitive processes, such as thinking and judgement, on the individual's behaviour and the environment that influences him or her (Bandura, 1977). Self-efficacy refers to the effects of cognitive processes such as self-appraisal or judgements on an individual's behaviour. The Social cognitive theory is the basic theory on which self-efficacy is based.

The social learning theory (Rotter, 1954) believes that behaviour can be explained as a result of the interaction between personality and environmental factors, and the focus is specifically on the interaction between external reinforcement and cognitive factors. It is concerned with the role of reinforcement and gratification in determining behaviour. The dispositional construct locus of control was developed as a consequence of the social learning theory. The social learning theory is also applicable to the concept of self-managing work teams because it refers to self-regulatory processes or self-management skills (Manz & Sims, 1986) that are used by members of self-managing work teams.

The attribution theory (Heider, 1958) states that individuals would like to determine the cause of behaviour in order to make sense of the world around them. What are important in the attributions of individuals are not the actual cause of behaviour (internal or external forces) but the perception of these causes. Locus of control is linked to the attribution theory because the individual's perception of control over outcomes can either be internal or external.

The following model is regarded as relevant for the dispositional constructs.

The dispositional model (Staw & Ross, 1985; Gerhart, 1987) argues that individual characteristics or traits can be used to determine work outcomes such as job satisfaction. In this research the dispositions of locus of control, self-efficacy, sense of coherence and the big five will be used to determine or predict outcomes such as satisfaction, commitment and trust within self-managing work teams.

1.5.4.2 Methodological beliefs

Methodological beliefs are statements about the nature and structure of science and scientific research (Mouton & Marais, 1996). These beliefs include philosophical research traditions and the most important methodological models.

The empirical study is based on the functionalistic and positivistic tradition. The functionalistic paradigm emphasizes the causes and consequences of human behaviour, the need for objective testing of theories, and the application of practical problems and the improvement of human life (Van Niekerk, 1996). The basic assumption of the positivistic paradigm is that knowledge can only be obtained through the study of observable phenomena (Plug et al., 1997) and that theoretical constructs should be operationally defined (Corsini & Auerbach, 1996). These traditions are applicable because objective, scientific and standardized techniques are used.

1.6 RESEARCH METHOD

The research method consists of a literature survey and an empirical study.

1.6.1 Literature Study

In the literature study the focus will be on conceptualizing the concepts of self-managing work teams, sense of coherence, locus of control, self-efficacy, the Big Five personality dimensions, quality of work life and effective performance within self-managing work teams. The possible relationship between these constructs will be conceptualized from the literature review.

1.6.2 Empirical Research

The empirical research is discussed in terms of the research design, sample, measuring instruments, the research procedure, and statistical analyses that are conducted.

1.6.2.1 Research Design

The research design is quantitative by nature. Firstly, a cross-sectional survey design (Bethlehem, 1999) is used to determine the personality dimensions, effective performance and quality of work life of members in a self-managing team. Each individual in the sample is evaluated on several variables at the same time, and the relationships between the variables are determined. It is a study of connections that occur without any planned intervention between the variables. The cross-sectional survey design lends itself to the examination of stable, long-term states or conditions and allows the researcher to make inferences from a sample to a population. Some practical problems that may occur when using this design are measurement errors (the respondent does not understand the

question in the survey), processing errors (errors made during data processing e.g. data entry) and the third-variable problem (where a high correlation between two variables may be explained by a third variable with which both are highly correlated). One of the most profound practical problems of this design is the fact that causation between variables cannot be established. A pilot study is conducted to identify the most important measurement errors. Control techniques are used to limit processing errors. Statistical techniques such as multiple regression and structural equation modelling are used to compensate for the third-variable problem.

Certain moderating variables, such as the age of participants, can have an effect on the results and therefore a biographical questionnaire is included to control variables such as age, gender, length of service and educational background.

1.6.2.2 Sample

The study population (N = 102) includes an availability sample of members of self-managing work teams from a large chemical organisation as well as a large financial institution in South Africa.

1.6.2.3 Measuring Instruments

A questionnaire (see Appendix A) was developed by the researcher, based on the literature review of the characteristics of a self-managing work team. This questionnaire functions as a checklist to ensure that the teams that are included in the research complied with the theoretical definition of a self-managing work team. This questionnaire is in accordance with the measures used by Gulowsen (1972), Wall, Kemp, Jackson and Clegg (1986), Wellins, Byham and Wilson (1991), Metlay, Kaplan and Rogers (1994), as well as Cohen (1994) for the same reason.

The **Orientation to Life Questionnaire (OLQ)** (Antonovsky, 1987) is used to measure sense of coherence. The questionnaire consists of 29 items. Antonovsky (1993) revised the psychometric and validity data of the scale. The test-retest reliability proves to be 0.54 (after two years). The scale disposes of a high content validity and construct validity. Anotonovsky (1993) concludes that the SOC is a reliable measuring instrument of sense of coherence. Strümpfer and Wissing (1998) confirm the reliability and validity in various South African studies. In accordance with these findings, Coetzee and Rothmann (1999), Naudé and Rothmann (2000) and Pretorius and Rothmann (2001) found alpha coefficients of 0.89, 0.88 and 0.93 respectively for the Orientation to Life Questionnaire.

In order to measure **Self-efficacy** for participating in self-managing work teams, the **Eight-item Self-efficacy Scale** developed by Thoms, Moore and Scott (1996) is used. The specific items were designed by the researchers in conjunction with organisation executives responsible for the implementation of self-managing work teams. They reflect specific tasks that will be the responsibility of team members upon implementation (Thoms, Moore & Scott, 1996). It will be affirmed in the specific organisations that all the identified tasks are also applicable to the self-managing work teams in this study. The scale had an internal consistency reliability of 0.91. Participants rate the likelihood that they could perform each of these tasks if they worked on a self-managed work team. The items are rated from no chance at all (1) to completely certain (5) (Thoms, Moore & Scott, 1996).

The **Locus of Control Questionnaire (LCQ)** (Schepers, 1995) is used to measure locus of control in this study. The LCQ consists of three scales, namely External control, Internal control and Autonomy. External control measures the extent to which individuals attribute their performance to forces beyond their control such as luck, fate, circumstances or influential people. Internal control measures the extent to which individuals attribute their performance to causes

within their control such as abilities, behaviour, or personal characteristics. Autonomy measures whether individuals believe in their abilities, act independently with self-confidence, decide and take actions to solve problems. Schepers (1995) reported an alpha coefficient of 0,80 and higher for the three subscales and the reliability has since been confirmed by findings of Rothmann and Agathagelou (2000) and Pretorius and Rothmann (2001) that revealed alpha coefficients of 0.72 and 0.90 respectively.

The **Personal Characteristics Inventory (PCI)** (Mount & Barrick, 2002) is used to measure five major dimensions or domains of personality. The Five Factor Model of Personality is a factor analytically derived trait-theory of personality that includes the following five domains: Stability (S), Extraversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C). The PCI is an operationalisation of this model. The Cronbach coefficient alphas of the personality dimensions vary from 0.83 (Openness) to 0.87 (Conscientiousness), and those of the personality facets from 0.70 (Need for recognition and Creative thinking) to 0.80 (Sociability). Test-retest reliabilities for three samples of subjects over a four-month interval, nine-month interval and six-month interval averaged 0.83, 0.77 and 0.80 respectively. The results show that the stability of the PCI over time is quite high. The construct validity of the PCI was shown by correlating it with other Big Five personality inventories such as the NEO-Personality Inventory (NEO-PI) (Costa & McCrae, 1985) the Bipolar Adjective Checklist (Norman, 1963) and the Hogan Personality Inventory (HPI) (Hogan & Hogan, 1992). Results from these studies show substantial convergence between similar Big Five dimensions of personality and much lower correlations between dissimilar constructs. The PCI was also compared with the Wonderlic Personnel Test (WPT), a known measure of cognitive ability. Except for Openness, none of the other scales of the PCI were related to the WPT. The lack of relationship shows that the PCI is not a measure of an individual's cognitive ability and that the PCI is likely to add predictive power (above measures of cognitive ability) in determining an individual's success on the job. The PCI was also shown to be a valid predictor of

a wide spectrum of performance measures such as performance ratings, sales volume, voluntary and involuntary turnover.

Quality of work life is measured by including measures of trust, commitment and satisfaction as used by Cohen, Ledford and Spreitzer (1996). **Job satisfaction** (two items), **growth need satisfaction** (four items), and **social needs satisfaction** (three items) are based on the Michigan Organisational Assessment Questionnaire (Cammann, Fichman, Jenkins & Klesh, 1983). **Group satisfaction** (three items) was drawn from Hackman's (1982) Group Effectiveness Questionnaire. The measure of **trust** (two items) was developed by Cohen, Ledford and Spreitzer (1996). They obtained alpha coefficients ranging from 0.81 (social needs satisfaction) to 0.91 (group satisfaction) (Cohen, Ledford & Spreitzer, 1996). Commitment to the organisation and commitment to the team are measured by the **Organizational Commitment Questionnaire** (OCQ) (Mowday, Steers and Porter, 1979). In measuring commitment to the team, the short form of the OCQ is modified to refer to the team rather than to the organisation. This technique was suggested by Reichers (1985) and has been successfully used in organisational research (Bishop & Scott, 2000; Scott & Townsend, 1994; Vandenburg & Scarpello, 1991). Bishop and Scott (2000) obtained an alpha coefficient of 0.89 with this questionnaire.

Negative outcomes of functioning in a self-managing work team are measured by the subscale **Role characteristics** of the **Michigan Organizational Assessment Questionnaire** (Camman, Fichman, Jenkins & Klesh, 1983). This subscale tests the members' experience of role-conflict (two items, alpha 0.58), role clarity (three items, alpha 0.53) and role overload (three items, alpha 0.65). Furthermore, the subscale of **Job-induced Tension** of the **Anxiety-Stress Questionnaire** (House & Rizzo, 1972) is included to measure the amount of work stress that the members experience. A Kuder-Richardson internal reliability coefficient of 0.83 was reported for this subscale (Cook, Hepworth, Wall & Warr, 1981).

The **Team member effectiveness** questionnaire was developed to measure the **effectiveness of team members** in a self-managing work team. Items of this questionnaire were developed in accordance with the performance appraisal methods suggested by Orsburn, Moran, Musselwhite, and Zenger (1990), and the performance measures used by the specific organisation in which the research is to be conducted. **Effectiveness of the team as a unit** is measured by using the 18-item questionnaire developed by Alper, Tjosvold and Law (1998) for measuring the effectiveness of self-managing work teams. They developed the items to be an indication of the manager's rating of team performance. The items were adapted for the purposes of this study (with permission from Alper, Tjosvold & Law, 1998) to be an indication of team members' rating of their team's performance. Two items of the original questionnaire were left out because they are more applicable to production workers than knowledge workers as used in this study. These items deal with the manner in which team members care for and use machinery and tools. Alper, Tjosvold and Law (1998) reported an alpha coefficient of 0.94 for the eighteen items.

1.6.2.4 Research Procedure

The research procedure can be divided into the following steps:

- **Step 1:** A literature study is conducted to conceptualize self-managing work teams and dispositions that might affect the functioning of members of these teams from the literature.
- **Step 2:** The sample and measuring battery are assembled.
- **Step 3:** The research group is introduced to the researcher, informed of the purpose, method, and procedure of the study, and their consent for participation is obtained.
- **Step 4:** The measuring battery is taken down individually or in groups.
- **Step 5:** The data are analyzed and feedback is given to the respondents. The results are kept confidential as far as possible.

- **Step 6:** All the data are integrated and conclusions and recommendations with regard to the organisation, self-managing work teams in South Africa and future research are made.

1.6.2.5 Statistical Analysis

The statistical analyses are done by using the SAS-program (SAS Institute, 2000). Descriptive statistics (namely the mean, standard deviation, minimum and maximum values, skewness and kurtosis) are used to organise, summarize and describe the data (Howell, 1999). The Cronbach alpha-coefficients of the measuring instruments are determined to indicate the internal consistency of the measures (Huysamen, 1994) as well as inter-item correlations (Clark & Watson, 1995). Factor analysis is used to investigate the construct validity of the measurements. Product moment correlations and canonical correlations are used to indicate the relationship between the variables (Malec, 1993).

Structural equation modelling (SEM) methods as implemented by AMOS (Arbuckle, 1999) are used to check for confounding variables in the relationship and to determine the contribution of each variable to the outcomes in self-managing work teams, using the maximum likelihood method. Hypothesised relationships are tested empirically for goodness of fit with the sample data. The χ^2 statistic and several other goodness-of-fit indices summarise the degree of correspondence between the implied and observed covariance matrices. Jöreskog and Sörbom (1993) suggest that the χ^2 value may be considered more appropriately as a badness-of-fit rather than as a goodness-of-fit measure in the sense that a small χ^2 value is indicative of good fit. However, because the χ^2 statistic equals $(N - 1)F_{min}$, this value tends to be substantial when the model does not hold and the sample size is large (Byrne, 2001). A large χ^2 relative to the degrees of freedom indicates a need to modify the model to fit the data better. Researchers have addressed the χ^2 limitations by developing goodness-of-fit indexes that take a more pragmatic approach to the evaluation process.

These criteria, commonly referred to as "subjective" or "practical" indexes of fit, are typically used as adjuncts to the χ^2 statistic.

The Goodness of Fit Index (GFI) indicates the relative amount of the variances/co-variances in the sample predicted by the estimates of the population. A value of 0.90 or above indicates a good model fit. In addition, the Adjusted Goodness-of-Fit Index (AGFI) is given. The AGFI is a measure of the relative amount of variance accounted for by the model, corrected for the degrees of freedom in the model relative to the number of variables (Hu & Bentler, 1995). The parsimony goodness-of-fit index (PGFI) addresses the issue of parsimony in SEM (Mulaik et al., 1989). The PGFI takes into account the complexity (i.e., number of estimated parameters) of the hypothesised model in the assessment of overall model fit and provides a more realistic evaluation of the hypothesised model. Mulaik et al. (1989) suggested that indices in the 0.90's accompanied by PGFIs in the 0.50's are not unexpected, however, values > 0.80 are considered to be more appropriate (Byrne, 2001).

The Normed Fit Index (NFI) is used to assess global model fit. The NFI represents the point at which the model being evaluated falls on a scale running from a null model to perfect fit. Marsh, Balla and Hau (1996) suggest that this index is relatively insensitive to sample sizes. The Comparative Fit Index (CFI) represents the class of incremental fit indices in that it is derived from the comparison of a restricted model (i.e., one in which structure is imposed on the data) with that of an independence (or null) model (i.e., one in which all correlations among variables are zero) in the determination of goodness-of-fit. The Tucker-Lewis Index (TLI; Tucker & Lewis, 1973) is a relative measure of covariation explained by the model that is specifically developed to assess factor models. For these fit indices (NFI, CFI and TLI), it is more or less generally accepted that a value of less than 0,90 indicates that the fit of the model can be improved (Hoyle, 1995).

To overcome the problem of sample size, Browne and Cudeck (1993) suggested using the Root Mean Square Error of Approximation (RMSEA) and the 90% confidence interval of the RMSEA. The RMSEA estimates the overall amount of error; it is a function of the fitting function value relative to the degrees of freedom. The RMSEA point estimate should be 0.05 or less and the upper limit of the confidence interval should not exceed 0.08. Hu and Bentler (1999) suggested a value of 0.06 to be indicative of good fit between the hypothesised model and the observed data. MacCallum, Browne, and Sugawara, (1996) recently elaborated on these cut-off points and noted that RMSEA values ranging from 0.08 to 0.10 indicate mediocre fit, and those greater than 0.10 indicate poor fit.

1.7 CHAPTER LAYOUT

Chapter 2 focuses on defining self-managing work teams, reviewing positive outcomes of implementing these teams, as well as discussing models of self-managing work team effectiveness and the self-managing work team member. Chapter 3 looks at the role of dispositional factors in self-managing work teams and the possible relationships between these dispositional factors, and outcomes in self-managing work teams will be conceptualized from the literature. Chapter 4 explains the empirical study and include a description of the research design, sample, measuring instruments, the research procedure and statistical analysis. Chapter 5 presents the results of the empirical study and Chapter 6 provides conclusions and recommendations for the organisation, theory building and future research based on the results of this study.

1.8. CHAPTER SUMMARY

In this chapter the problem statement and research objectives for this study were clarified. The paradigm perspective of the research was explained in terms of the research model of Mouton and Marais (1996). The research design and the

methods used in this study were outlined briefly. A brief layout of the rest of the chapters was given.

In Chapter 2 self-managing work teams are conceptualized from the literature. The main characteristics as well as reasons for implementing these teams will be discussed. A few systems models that explain the effectiveness of self-managing work teams will be reviewed.

CHAPTER 2

SELF-MANAGING WORK TEAMS

The origin of self-managing work teams is discussed in this chapter. The concept, self-managing work team, is defined from the literature and specific characteristics of these types of work teams are described. Reasons for implementing these teams are discussed. Several systems models describing the effectiveness of self-managing work teams are also analyzed. In conclusion, a model of self-managing work team member effectiveness is presented.

2.1 THE ORIGIN OF SELF-MANAGING WORK TEAMS

Self-managing work teams originated in Britain and Sweden during the 1950s (Orsburn, Moran, Musselwhite & Zenger, 1990). Their origin has generally been attributed to two sources: the Tavistock studies of post World War II England (Trist & Bamforth, 1951) and the Swedish socio-technical movement (Cummings, 1978). The Tavistock Institute of Human Relations in London started the development of the socio-technical systems theory through a series of group experiments that were conducted in the British coal-mining industry (Pearce & Ravlin, 1987). Two researchers, Trist and Bamforth (1951), studied the social and psychological conditions of coal miners after the newly introduced longwall method of coal mining showed devastating effects. The results of these studies contributed to the formulation of the socio-technical systems theory (Glaser, 1991).

According to the socio-technical systems theory organisational productivity is comprised of a technological (tools, techniques, procedures and devices) and a social (the people and relationship between them) system and any work design must recognize both these systems. Work design must account for the task requirements of the technology and people's social and psychological needs

(Cummings, 1978). This theory examines the technical and social systems simultaneously with the end goal of joint optimization of the two – high task productivity and fulfilment for employees (Hackman & Oldham, 1980). Self-managing work teams incorporate and exemplify the socio-technical systems theory (Glaser, 1991).

The underlying theory of self-managing work teams also stems from the job design literature. The job design theory (Hackman & Oldham, 1980) suggests that jobs can be described and subsequently improved on the basis of five job dimensions, namely skill variety, task identity, task significance, autonomy and feedback. The design of self-managing work teams addresses almost all these factors (Manz & Newstrom, 1990). Wellins, Byham and Wilson (1991) state that self-managing work teams rest on four premises:

- The employees are closest to the work and therefore know best how to perform and improve the work.
- Most employees want to feel they 'own' their work and that they are making meaningful contributions to the effectiveness of their organisations.
- Teams can provide possibilities for empowerment and enablement not always available to individual employees that function in 'stand-alone' jobs.
- The team is given an entire job or task to do.

The principles of job design theory are displayed in the premises listed above. Task identity and task significance are applied when employees feel that they own their work and make meaningful contributions toward the effectiveness of the organisation and when they are empowered. Furthermore the principle of skill variety is applied where a team is responsible for completing an entire job or task.

This is a brief description of the origin and underlying theories of self-managing work teams. The specific nature of self-managing work teams, as described in the literature, is subsequently outlined.

2.2 THE NATURE OF SELF-MANAGING WORK TEAMS

In describing the nature of self-managing work teams the researcher will look at the definition and specific characteristics of self-managing work teams and also try and distinguish self-managing work teams from other similar interventions.

2.2.1 Definition of self-managing work teams

In order to clarify and conceptualize the concept of self-managing work teams it is necessary to describe and define the concept from the literature. Definitions by various authors on the subject are listed, critically evaluated and integrated in the following section.

Allender (1993) describes a self-directed work team as a group of employees who are responsible for an entire product, process or service.

Self-managing work teams are also described as typically consisting of groups of 4 to 12 individuals who share responsibility for completing relatively entire tasks (Cohen, Ledford & Spreitzer, 1996).

Cummings and Griggs (1977) defined self-managing work teams as groups of interdependent individuals that can self-regulate their behaviour on relatively entire tasks.

Fisher (1993) defines a self-directed team as a group of employees who have day-to-day responsibility for managing themselves and the work they do with a minimum of direct supervision. He goes on to explain that members of self-

directed teams typically handle job assignments, plan and schedule work, make production and/or service related decisions and take action on problems. Fisher and Fisher (1998) also refer to self-managing work teams as a very advanced form of structured worker empowerment.

Manz and Newstrom (1990) argue that no single definition of self-managing work teams prevails, but the central defining characteristic of a self-managing work team is an organisation's serious effort to place a high degree of both decision-making power and opportunities for self-control within a work group.

Metlay, Kaplan and Rogers (1994) state that a self-managing work team is a distinctive type of work group that is empowered to make decisions that are traditionally performed by a group leader or manager.

Orsburn, Moran, Musselwhite and Zenger (1990) define a self-managing work team as a highly trained group of employees, from 6 to 18 on average, fully responsible for turning out a well-defined segment of completed work.

Ray and Bronstein (1995) define a self-directed work team as a group of interdependent, highly trained employees who are responsible for managing themselves and the work they do. The team sets its own goals, in cooperation with management, and the team plans how to achieve those goals and how the work is to be accomplished.

Sexton (1994) states that a self-managing work team is an independent and democratic form of work organisation that gives a group of employees the responsibility of regulating, organising and controlling their jobs, as well as the conditions immediately surrounding them.

Veldsman (1995) defines a self-managing work team as a permanent group of 6 to 18 relatively highly skilled organisational members who take wide ranging and

joint responsibility for a whole process/product through the performance of a wide variety of tasks within clearly defined boundaries.

Wellins, Byham and Wilson (1991) are of the opinion that self-managing work teams are small groups of people empowered to manage themselves and the work they do on a day-to-day basis.

A self-managed work team is a group of employees who are responsible for managing and performing technical tasks that result in a product or service being delivered to an internal or external customer (Yeatts & Hyten, 1998).

From the above definitions it is seen that the dimension of self-regulation, self-management or a minimum of direct supervision is frequently mentioned when the concept of self-managing teams is defined (Cummings & Griggs, 1977; Fisher, 1993; Manz & Newstrom, 1990; Ray & Bronstein, 1995; Sexton, 1994; Wellins, Byham & Wilson, 1991). Together with the dimension of self-management, the dimension of empowerment is frequently mentioned (Fisher & Fisher, 1998; Manz & Newstrom, 1990; Metlay, Kaplan & Rogers, 1994; Wellins, Byham & Wilson, 1991). Other aspects mentioned in definitions of self-managing work teams that are related to empowerment are that the team is an independent, democratic form of work organisation (Sexton, 1994) but that the team still operates within clearly defined boundaries (Veldsman, 1995) to deliver a product or service to an internal or external customer (Yeatts & Hyten, 1998). The *degree of authority* therefore is a distinctive characteristic when self-managing work teams are defined.

The definitions of Allender (1993), Cohen, Ledford and Spreitzer (1996), Cumming and Griggs (1977), Orsburn, Moran, Musslewhite and Zenger (1990) and Veldsman (1990) all refer to the dimension of a relatively entire task, product or service being performed by self-managing work teams. This dimension

distinguishes self-managing work teams in terms of the *task assignment* completed by the team.

Orsburn, Moran, Musslewhite and Zenger (1990), Ray and Bronstein (1995) and Veldsman (1995) all mention the fact that the *team members of self-managing work teams should be highly trained or highly skilled.* This is necessary because the team performs a wide variety of tasks (Veldsman, 1995) and the members are interdependent (Cummings & Griggs, 1977; Ray & Bronstein, 1995).

A few of the definitions also mention the *number of team members* who should be present to qualify as a self-managing work team. It seems that the minimum number of employees is 4 (Cohen, Ledford & Spreitzer, 1996) and the maximum number is 18 team members (Orsburn, Moran, Musslewhite & Zenger, 1990; Veldsman, 1995).

The definition of Yeatts and Hyten (1998) states that self-managing work teams perform technical tasks, but Fisher and Fisher (1998) argue that self-managing work teams can also be used to perform knowledge work. Knowledge work is defined as an activity that frequently produces new knowledge. The core task of knowledge work is thinking, its outcome is information, it is non-linear by nature (the activities performed are not necessarily sequential) and it requires mental skills to perform successfully (Fisher & Fisher, 1998).

Given the definitions of various authors and dimensions of the definitions identified above, a self-managing work team can thus be defined as an intact group of, usually between 4 and 18, highly skilled and trained employees, who function independently with a minimum of direct supervision but still within clearly defined boundaries, and who are responsible for the regulation, organisation and control of their jobs in order to deliver a well-defined segment of completed technical or knowledge work, a product or a service to an internal or external client.

In order to elaborate on the definition provided above and extend the description of the nature of self-managing work teams, the specific characteristics of self-managing work teams will be outlined.

2.2.2 Characteristics of self-managing work teams

It seems evident from the definition of self-managing work teams, as discussed above, that these teams have certain key components or identifiable characteristics. These distinguishing characteristics can be described in terms of aspects such as task assignment, the decision making authority and supervision of the team, skill requirements of the members and compensation and feedback procedures (Moorhead, Neck & West, 1998). Each of these aspects is briefly analyzed.

2.2.2.1 Task assignment

The team usually performs an entire or completely identifiable piece of work (Cummings, 1978; Manz & Sims, 1993). Polley and Ribbens (1998) argue that in order to be responsible and receive adequate feedback the team needs to work on a task that could be evaluated as an entity. The self-managing work team is given responsibility for enough of a product or service so that there is a clear input and clear output for which the team could be held accountable (Lawler, 1986). Examples of clearly defined tasks are assembling a vehicle or some discrete part of it, building a computer, handling insurance claims or monitoring a continuous chemical process (Glaser, 1991). It seems evident from these examples that the tasks performed by a self-managing work team also are interdependent. Task interdependence can be described as the extent to which employees perceive that their tasks depend on interaction with other members and on others' tasks being completed (Campion, Medsker & Higgs, 1993). Work settings where employees are not linked by task interdependence, such as

telephone operators, will not be examples of self-managing work teams (Polley & Ribbens, 1998).

2.2.2.2 Decision making authority and supervision of the team

Team members of self-managing work teams have more decision making responsibility and discretion over decisions traditionally made by management (Moorhead et al., 1998).

The concept self-managing work team can be misleading. Some believe it connotes an absence of management personnel. Self-managing work teams implicate a change in the role of management, not an elimination of supervisors and managers (Fisher, 1993; Fisher & Fisher, 1998; Glaser, 1991). Supervisors of self-managing teams are external team facilitators as opposed to top-down primary decision makers (Manz & Sims, 1993). The supervisor functions at a distance to allow the team to self-regulate its performance (Orsburn et al., 1990). In addition to external facilitators the team often has one or more internal team leaders who assist the team in organising itself and coordinating job assignments (Moorhead et al., 1998).

Sims and Manz (1994) state that self-managing work teams usually are located somewhere along an evolutionary continuum from external dependence to total self-managing autonomy. Hackman (1986) argues that four different functions must be fulfilled when work is done in an organisation, namely the actual execution of the work, the monitoring and managing of the work process, the design of the performing unit and setting direction for the organisational unit. According to Hackman (1986) self-managing organisations can be defined in terms of how authority for these four functions is distributed. Figure 2 illustrates four types of performing units as identified on the basis of the criteria set by Hackman (1986). The teams used in this study compare to the self-managing

unit in the authority matrix, namely teams that monitor and manage work processes and execute the task.

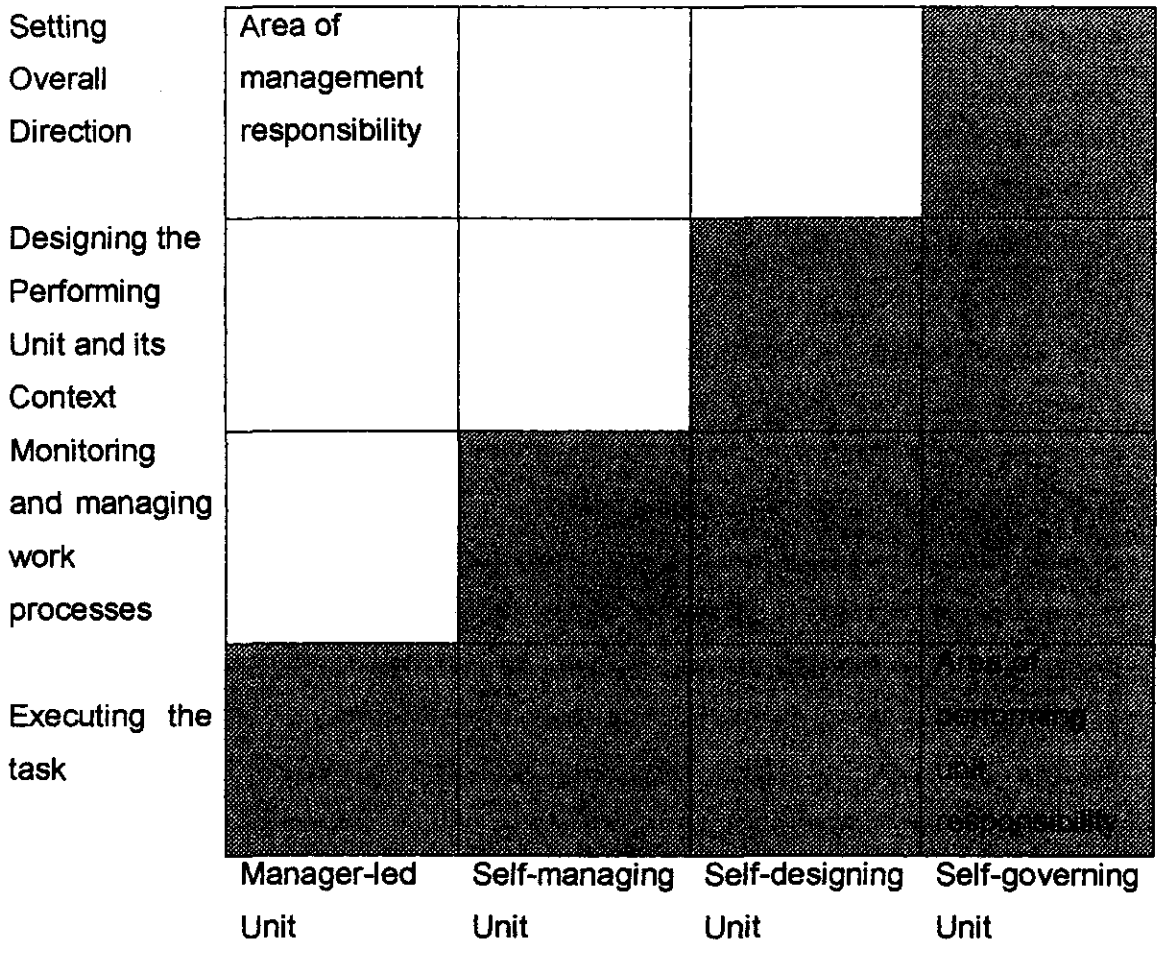

Figure 2. The authority matrix: Four characteristic types of performing units (Adapted from Hackman, 1986)

Several other authors also elaborated on the external management to self-leadership continuum. Manz (1990) distinguishes between self-management and self-leadership. Self-management focuses on the question of how to accomplish a task and self-leadership is described as a broader view of self-influence that also includes what should be done and why. Self-leading teams influence the more strategic issues of what the team does and why, in addition to how they do the work. Manz (1990) states that another distinguishing feature of self-leading

teams is that a worker's motivation to perform is increasingly founded on the intrinsic rewards that are built into the task as opposed to externally administered rewards.

Lawler (1986) distinguishes between levels of involvement strategies that differ with regard to the extent to which the lowest level of the organisation is provided with the following: information about organisational performance; rewards based on organisational performance; knowledge that helps employees understand and be able to contribute to organisational performance; and power to make decisions that affect organisational performance and direction. Quality circles are an example of parallel suggestion involvement (see 2.2.3), while job enrichment and self-managing work teams are examples of job involvement (Manz, 1990). The high involvement approach requires employees to be involved in decisions which deal with investment, strategy and other key areas for the organisation, and clearly moves beyond the employee's work activities exclusively and therefore also moves beyond the parallel suggestion and job involvement approaches. Walton (1985) distinguishes between the control approach where organisations tend to emphasize things such as rules and procedures, hierarchy, limited fixed jobs, little information or authority distribution to lower organisation levels and minimum standards. The commitment approach emphasizes shared goals and values, flat organisation forms with mutual influence systems, flexible job definitions and dynamic 'stretch' standards (Manz, 1990). Table 1 provides a short summary of these perspectives.

Table 1

Perspectives of Authors on the External Management to Self-leadership Continuum (Adapted from Manz, 1990)

Authors	**External management**	**Self-management**	**Self-leadership**
Manz (1990)	Externally managed teams	Self-managed teams	Self-leading teams
Lawler (1986)	Parallel suggestion involvement	Job involvement	High involvement organisation
Walton (1985)	Control organisation	Transitional organisation participation	Commitment organisation empowerment

The teams used in this research fall in the self-management category as described in Table 1. This implies that the team member will fulfil certain tasks, roles and responsibilities in accordance with this arrangement. These tasks, roles and responsibilities are discussed next.

2.2.2.3 The tasks, roles and responsibilities of a member of a self-managing work team

Self-managing work teams give the members of the team a high degree of autonomy and control over their immediate behaviour and members are free to make decisions without recourse to managers or supervisors on a wide range of issues formerly handled by management layers above the team (Wheatley & Szwejczewski, 1995). Instead of being told what to do by a supervisor, self-managing work team members must gather and synthesize information, act on it, and take collective responsibility for those actions (Barker, 1993). Team members have broad job roles and are able to perform many functions related to the team's service or product (Alper, Tjosvold & Law, 1998).

Bishop and Scott (2000) state that member roles associated with managing their work include developing more interdependent relationships with co-workers, sharing functionally interrelated tasks, regulating member behaviour to

accomplish team goals and being collectively responsible for goal attainment. Orsburn et al. (1990) comment that role requirements of self-directed work team members are more comprehensive in terms of responsibility and decision-making authority than those of workers in traditional work settings. The members plan, set priorities, organize, coordinate with others, measure and take corrective action – all once considered the exclusive responsibility of supervisors and managers.

According to Yeatts and Hyten (1998), Alper, Tjosvold and Law (1998), Thoms, Moore and Scott (1996), and Sims and Manz (1994) some of the tasks that may be performed by members of a self-managing work team are to:

- set clear, challenging, measurable team goals and priorities;
- assign fellow team members to those tasks for which they are best suited;
- select a fellow team member;
- select a team leader;
- conduct, attend and participate in regular team meetings;
- evaluate the performance of a fellow team member;
- discipline fellow team members;
- resolve conflicts with a fellow team member;
- communicate with fellow team members;
- make sure the needed materials and resources are available;
- select appropriate work procedures;
- set production standards and perform quality control inspections;
- develop work and break schedules;
- coordinate with other teams;
- obtain feedback from customers, suppliers and management;
- resolve interpersonal problems and problems with regard to the work;
- make decisions with the group; and

In addition to these roles, the roles of the team member can also be described in terms of a manager (planning, organizing, scheduling and evaluating tasks), and a coordinator (coordinate with other teams and other parts of the organization).

It is evident from the literature that team members take collective responsibility for completing tasks and accomplishing the goals (Bishop & Scott, 2000; Yeatts & Hyten, 1998). It is also evident that the role requirements, responsibilities and tasks to be accomplished are much more comprehensive and complex than those of traditional work settings (Orsburn et al., 1990). In order to fulfil these multiple roles and to effectively accomplish the above tasks, members of a self-managing work team are required to possess certain skills. These skills are discussed next.

2.2.2.4 Skills needed by a member of a self-managing work team

Skills can be defined as the proficiencies needed to perform a task (Muchinsky, Kriek & Schreuder, 2002). A wide variety of skills are needed so that the members of a self-managing work team are able to contribute to and support the culture and management style of the organization and to grow and develop as a member of the team (Becker-Reems, 1994). Skills that are relevant in any teamwork setting are reviewed, but it is also explained how these skills are specifically relevant for self-managing work team settings. Firstly, interpersonal skills and communication skills will be discussed based on Campion and Steven's (1994) review. Subsequently the additional skills of self-management, technical skills, business knowledge and skills, coping and learning skills will be briefly outlined.

Stevens and Campion (1994) reviewed the literature on groups in order to determine all the knowledge, skills and ability requirements (KSA) for teamwork. They reviewed literature on the socio-technical systems theory, teams in organizational behaviour literature, writings on the topic in industrial engineering

and groups in general in social psychology. The result was that they identified two major categories of knowledge, skills and abilities that are needed for teamwork, namely interpersonal knowledge, skills and abilities and self-management knowledge, skills and abilities. These two categories will be explained briefly.

- Interpersonal skills

Interpersonal skills are the skills required for dealing with other people. Interpersonal skills focus directly on improving human interactions. Stevens and Campion (1994) summarized interpersonal skills to include conflict resolution skills, collaborative problem solving skills and communication skills. These can be outlined as follows:

Conflict resolution skills

The team member should be able to:

- recognize and encourage desirable team conflict. In addition to this, the team member should also possess the knowledge, skills and abilities to recognize and discourage undesirable team conflict;
- recognize the type and source of conflict confronting the team and to implement appropriate conflict resolution strategies; and
- employ an integrative (win-win) negotiation strategy rather than the win-lose strategy.

Collaborative problem solving skills

The team member should be able to:

- identify situations requiring participative group problem solving and to utilize the proper degree and type of participation; and
- recognize obstacles to collaborative group problem solving and implement appropriate corrective actions.

Communication skills

The team member should be able to:

- understand communication networks and to utilize decentralized networks to enhance communication where possible;
- communicate openly and supportively, in other words to send messages which are behaviour- or event oriented, congruent, validating, conjunctive and owned;
- listen non-evaluatively and to appropriately use active listening techniques;
- maximize consonance between verbal and nonverbal messages and to recognize and interpret the nonverbal messages of others; and
- engage in ritual greetings and small talk and recognize the importance of this (Stevens & Campion, 1994).

In summary, a member of any team should be able to resolve conflict and should have specific communication skills in order to facilitate the interpersonal interaction in the team. Members must be able to identify the problems and opportunities presented to the team, evaluate the options and then make the necessary decisions about how to proceed (Felts, 1995). Training in problem solving skills that are relevant to a self-managing work team context typically includes learning techniques for identifying the problem, investigating possible causes, proposing alternative solutions and selecting the best one (Yeatts & Hyten, 1998).

Orsburn, Moran, Musselwhite and Zenger (1990) describe that interpersonal skills enable the individual to listen, to give constructive performance feedback, to make a point in a team meeting, to solve a problem, to counsel a peer, to conduct a team meeting, to resolve conflict and to collaborate with others.

Members of a self-managing work team must be able to work effectively with others (Catino, 1992). Glaser (1991) argues that the most essential interpersonal skill needed in any teamwork situation is the willingness and ability to cooperate

with all team members and the team facilitator. Glaser (1991) defines cooperation in a self-managing situation as being sensitive to the needs of others in the team and to be willing to place the team's collective needs above your own. Orsburn et al. (1990) state that team members must be sensitive and responsive to the needs of co-workers but also to the needs of customers. Fisher and Fisher (1998) explain that when a team member deals with customers and suppliers, and works across divisions, functional and corporate lines, good communication, collaboration, decision-making, problem solving, and conflict-management skills become a necessity.

Felts (1995) lists the following as needed interpersonal skills in self-managing work teams: risk taking, providing helpful criticism, being objective, listening actively, giving support and recognizing the interests and achievement of others. Spendolini (1993) also describes group interaction skills as effective listening, providing feedback and providing support to team members. Felts (1995) argues that team members must have a social maturity that is substantially different from traditional firms because they are responsible for both the discipline and career development of the people in their team.

- Self-management skills

The other major category of knowledge, skill and ability requirements for teamwork that Stevens and Campion (1994) identified from the literature is described as self-management skills. Their description of self-management skills can be set out in behavioural terms as follows:

Goal setting and performance management skills

The team member should be able to:

- help establish specific, challenging and accepted team goals; and
- monitor, evaluate and provide feedback on both overall team performance and individual team member performance.

Planning and task coordination skills

The team members should be able to:

- coordinate and synchronize activities, information and task interdependencies between team members; and
- help establish task and role expectations of individual team members and to ensure proper balancing of the workload in the team (Stevens & Campion, 1994).

It seems from Stevens and Campion's conceptualization of self-management skills that this refers to basic managerial skills and tasks that should be performed. As already mentioned earlier (see 2.2.2.3), in self-managing situations, such as working in a self-managing work team, many of the functions traditionally reserved for managers become the responsibility of subordinates. This includes monitoring performance, taking corrective action and seeking necessary guidance or resources (Manz & Sims, 1984; 1989; Orsburn *et al.*, 1990). Thus team members should possess the skills to perform some essential managerial activities. The specific management skills needed vary according to the managerial activities or responsibilities handed over to the team. Apart from goal setting, performance management, planning and task coordination, as described by Steven and Campion (1994), managerial activities handed over in a self-managing work team context can also include budgeting, ordering and purchasing supplies, record-keeping, safety assessment, hiring and disciplining of team members and running of team meetings (Yeatts & Hyten, 1998). Most non-management employees have not had the need or opportunity to learn and apply some of the skills that are necessary for taking on these activities until joining a self-managing work team.

Apart from interpersonal skills and basic managerial skills as outlined above, Fisher and Fisher (1998) state that training and skill development in self-

managing work teams should also include technical skills and business knowledge and skills.

- Technical skills

Technical skills are the skills one needs to do a particular line of work. The necessary technical skills will depend entirely on the finished product or service the team will turn out (Orsburn et al., 1998). However, members should possess the technical skills and abilities to complete all the assigned tasks of the team (Glaser, 1991). This way team members are able to fill in for each other when a member of the team is absent, they are able to help each other during times when important work has to be completed on a deadline, to assign work to match the needs and strengths of their fellow members and to have more empathy for each other's problems because they understand what everyone is doing (Yeatts & Hyten, 1998).

- Business knowledge and skills

Fisher and Fisher (1998) state that team members must have a good understanding of all aspects of the business they are functioning in. They need a broad perspective of the business and how their piece of the puzzle fits into the larger picture. They argue that the team must be able to answer the following questions:

- What is our market niche and why?
- Who are our key competitors and how do we compare with them?
- How do our customers, when compared with our competitors, view us?
- Who are our key customers?
- What business challenges are these customers facing?
- How can we best help them to meet those challenges?
- What is our budget and how is it managed?

- Where are our biggest costs and what is our team strategy for managing those costs?

Various other authors (Catino, 1992; Glaser, 1991; Orsburn et al., 1998) identified a variety of other skills that are also relevant to the member of a teamwork setting and specifically to a self-managing work team. This pertains to learning skills that are briefly discussed below.

- Learning skills

In a self-managing work team situation members are expected to know and be able to perform all of the jobs for which the team is responsible. Team members are expected to understand and be able to manage their interpersonal relationships, group operating systems and administrative tasks. It is evident that the quantity of what must be learned in the working situation increases dramatically in a self-managing work team (Glaser, 1991). According to Van der Zwaan and Molleman (1998) team members can and must learn while working and they should subsequently apply the newly acquired insights.

Glaser (1991) comments that the ideal learner believes that one is never too old to learn, feels exhilarated by change, thrives in ambiguous situations and is fascinated to learn more about himself or herself. It can be argued that members of a self-managing work team should also display the attitude of an ideal learner in order to function effectively. Team members can no longer rely on managers and the human resource department for their learning activities and therefore are required to become self-directed learners (Glaser, 1991). A self-directed learner takes the initiative to diagnose his/her learning needs, selects appropriate sources of help, is willing and able to accept alternative points of view, sets appropriate learning goals, has the motivation to persist even though external rewards are not forthcoming, is flexible in exploring new ways of learning and is able to evaluate the effectiveness of his/her learning efforts (Glaser, 1991).

In conclusion, team members of a self-managing work team will need skills that will help them comply with the requirements of working in a team such as interpersonal skills and communication skills. The members will also need skills that will help them to perform the tasks, duties and responsibilities such as the technical and self-management skills and then specifically in the context of a self-managing work team. Coping skills, business knowledge and skills as well as learning skills will enable the team member to be effective in this context.

2.2.2.5 Compensation and performance feedback

Yeatts and Hyten (1998) argue that traditional performance appraisals focus on appraising individuals and tend to view individuals apart from the team in which they are working. This focus implicitly assumes that it is individual skills and effort that make up the keys to job success. But successful performance in self-managing work teams are highly interdependent on a variety of factors and dimensions. Yeatts and Hyten (1998) therefore regard traditional performance appraisals as inappropriate for self-managing work teams. Various authors (Alper et al., 1998; Cummings, 1978; Polley & Van Dyne, 1994; Wall et al., 1986) are of the opinion that self-managing work teams should receive feedback and rewards based solely on the group's performance as opposed to individual team member performance. A more balanced view is that of Moorhead, Neck and West (1998), Metlay, Kaplan and Rogers (1994) and Orsburn et al. (1990) that states that the compensation system in self-managing work teams is typically a combination of individual skill-based pay and group-based gain-sharing plans. This way, individuals are rewarded for behaviours that promote flexibility of the team by mastering a range of skills required to reach team performance goals (Orsburn et al., 1990). On the group level organisations use gain sharing plans to reward the team that contribute to their productivity and profitability (Moorhead et al., 1998).

2.2.3 Distinguishing self-managing work teams from other similar concepts

Self-managing work teams must also be distinguished from other group-based structural interventions, general work redesign and other more fluid forms of organising such as the virtual organisation (Polley & Van Dyne, 1994). This distinction will help identify and specify the boundaries of self-managing work teams and avoid confusion with other methods of organising.

Pearce and Ravlin (1987) noted that self-managing teams can be distinguished from task forces and committees seeing that the last mentioned are identified by a temporary or short-term nature of activity, while self-managing work teams are ongoing by nature. Self-managing work teams can also be distinguished from quality circles seeing that the emphasis in quality circles is on general goals such as increased efficiency, innovation or cost savings compared to emphasis in self-managing work teams on specific task performance.

Glaser (1990) distinguished between quality circles and self-managing teamwork. Both these concepts represent attempts to increase employee involvement in work, but self-managing work teams create fundamental changes in the way daily work is organised and the relationship of the team members to the team leader also is vastly different. Glaser (1990) describes self-managing work teams as a logical extension of quality circles.

Wiesner and Vermeulen (1997) provide a meaningful distinction between the traditional work group design, quality circles and self-regulating work groups. This distinction is summarized in Table 2. Looking at the differences between these various forms of organising, the boundaries of self-managing work teams can be identified and specified, seeing that they are similar to those of the self-regulating work groups.

Table 2

A Comparison between the Traditional Work Group Design and Flexible Work Group Designs (Adapted from Wiesner & Vermeulen, 1997)

Traditional work group	**Quality circles**	**Self-regulating work groups**
Specialization of work tasks.	Employees are allowed to determine own work speed.	Provide task variety to prevent negative effects such as boredom.
Tasks are simple and minimal.	Employees are allowed to determine the methods that are best for a particular task.	The work is enriched for maximum employee potential utilization.
Unnecessary methods are eliminated and routine is established.	Employees' primary responsibility is the quality of the work.	Feedback regarding their achievements is provided if employees have acquired new skills.
Idle time and waiting time is eliminated.	Employees are encouraged to become experts in their work area.	Work-identity and self-regulation of time is made possible.
Work is primarily planned and controlled by management.	Employees are encouraged to become involved in their own work, identifying problems and how to solve them.	Employees practise self-control about important aspects of the work.
Routine work without possibilities of self-actualisation.	Employees are offered the opportunity for more challenging tasks.	Employees have the opportunity to plan, develop and control new skills.

From the table the contradiction in terms of task variety, self-control or autonomy and empowerment of the team member in a traditional work group and self-regulating work group can be seen. It can also be seen that self-regulating work groups are a logical extension of quality circles as also described by Glaser (1990).

Veldsman (1995) identifies core distinguishing dimensions of self-managing work teams to be involvement, empowerment, enabling, evolution and leadership, when compared to traditional teams. Involvement is described as the freedom awarded to organisational members to take independent action. Empowerment

refers to the scope of the team's task. Enabling is the repertoire of competencies and behaviours individual team members must have and manifest with respect to the team task. The location of leadership shifts from external leadership (a formally designated person outside the team) to within-team leadership as the level of involvement increases. He explains that in the ongoing redefinition of the core task team and the relocation of leadership tasks, the team matures to take on increasing levels of responsibility. Within traditional teams little involvement, empowerment, enabling and evolution occur and leadership remains externally located relative to the team.

In conclusion, self-managing work teams consist of between 4 and 18 highly-trained, multi-skilled members, who are jointly responsible for an entire service or product, perform management or supervisory duties such as planning, organising, controlling and setting goals, are responsible for managing their own resources and sometimes participate in human resource practices such as training, selection, compensation and performance feedback. Supervisors act as facilitators, and compensation is administered in an individual skill-based pay and team gain-sharing system. In order to ensure that the teams used in this research comply with the theoretical definition and characteristics of self-managing work teams as discussed above, a questionnaire (see Appendix A) was developed by the researcher, based on the literature review. This questionnaire is in accordance with the measures used by Gulowsen (1972), Wall, Kemp, Jackson and Clegg (1986), Wellins, Byham and Wilson (1991), Metlay, Kaplan and Rogers (1994) as well as Cohen (1994) for the same reason.

Self-managing work teams are fast becoming the corporate catchword of the 1990's; not because corporations are becoming kinder and gentler towards employees, but because they want to survive in a globally competitive environment (Elmuti & Kathawala, 1997). Managers are eager to obtain the alleged benefits that this management arrangement brings to the corporation

(Allender, 1993). Some of these alleged benefits and main reasons why self-managing work teams are implemented will subsequently be discussed.

2.3 REASONS FOR IMPLEMENTING SELF-MANAGING WORK TEAMS

Companies implement self-managing work teams to improve their business performance (Cohen, 1994). Several spin-offs or benefits of self-managing work teams enhance the effectiveness of organisations. Some of these spin-offs are:

2.3.1 Increased organisational productivity

Most companies moving to teams report 20 to 40 percent gains in productivity after 18 months (Orsburn et al., 1990). Pasmore, Francis, Haldeman and Shani (1982) reviewed empirical studies of the seventies with regard to socio-technical systems. They report that 89 percent of the organisations using self-managing work teams reported increased productivity. Stokes and Stewart (1991) argue that increased productivity is one of eight sound business reasons for organisations to adopt the self-management approach.

2.3.2 A streamlined organisation

Self-managing work teams lead to a reduction in the workforce and fewer layers of managerial bureaucracy (Stokes & Stewart, 1991). It facilitates a change to a flatter organisational structure. Wellins, Byham and Wilson (1991) claim that self-managing work teams lead to fewer, simpler job classifications. Teams are designed to facilitate job sharing and cross-training. Orsburn, Moran, Musselwhite and Zenger (1990) indicate that work teams release their managers to perform duties now exercised by managers at the level above, who in turn release their managers. In this way, executives at the top gain additional, highly profitable time for strategic planning while operational functions are now managed by people who understand these best.

2.3.3 Increased flexibility

Self-managing work teams have the skills, information and motivation to adapt to change, therefore the organisation as a whole can respond promptly to changing conditions (Orsburn et al., 1990). Wellins, Byham and Wilson (1991) claim that self-managing work teams respond more promptly to technological change. Zuidema and Kleiner (1994) state that self-managing work teams have the ability to cut through the hierarchical decision-making structures and respond promptly to environmental changes. Teams can communicate better, tackle more opportunities, find better solutions and implement actions more promptly. Team members generally are better able to respond to varying conditions than traditionally organised work forces (Wellins et al., 1991).

2.3.4 Increased quality

Self-managing work teams help drive a quality improvement effort into every fibre of the organisation (Orsburn et al., 1990). Sexton (1994) reports that the Volvo Kalmar facility reduced defects by 90 percent in 1987, Federal Express cut service errors by 13 percent and Cornings speciality cellular ceramics plant decreased defect rates from 1 800 parts per million to 9 parts per million. A review by Pasmore, Francis, Haldeman and Shani (1982) indicated that 100 percent of the socio-technical interventions that used self-managing work team designs claimed quality improvements.

2.3.5 Customer satisfaction

The energy and flexibility of self-managing work teams promote customer satisfaction through quick response and improved quality (Orsburn et al., 1990). Stokes and Stewart (1991) indicate that self-managing work teams enhance customer satisfaction seeing that they operate closer to the customer which helps

them to become aware of the needs of customers. Wilson, George, Wellins and Byham (1994) report that, after implementing self-managing work teams, a company's customer service telephone response time decreased from seven and a half minutes to 13 seconds.

2.3.6 Outcomes for the team member of a self-managing work team

Apart from the positive outcomes for the organization, implementing self-managing work teams also have some outcomes for the individual. Although the literature prefers to dwell on the positive outcomes of implementing self-managing work teams, there are also some negative outcomes for the team members of a self-managing work team that cannot be overlooked. The discussion that follows highlights some of the positive as well as negative outcomes of working in a self-managing work team environment for the individual as a team member specifically.

2.3.6.1 Positive outcomes

The positive outcomes for members in a self-managing work team can be outlined in terms of the quality of work life of team members.

Wiesner and Vermeulen (1997) point out that jobs in high flexibility organizations (like organizations implementing self-managing work teams) have the potential to be more meaningful, provide greater workplace freedom for the employees, be more creative and have a broader base of activities. In confirmation of this, self-managing work teams have been found to produce more innovation and creativity because the team members can see the whole work process (Yeatts & Hyten, 1998).

As mentioned earlier, Trist and Bamforth (1951) believed that self-managing work teams provide the best match between the technical and social systems of the

organization (see 2.1). Team members are able to regularly share technical information and feedback on job-related matters and information sharing occurs with management at all hierarchical levels of the organization (Yeatts & Hyten, 1998). This satisfies the important technical need for transferring information up as well as down the hierarchical chain of authority and satisfies the social need for knowing and understanding those at varying hierarchical levels (Yeatts & Hyten, 1998).

Manz and Sims (1982) indicate that team members are likely to experience a high level of interaction and support from other members in order to make decisions and perform required tasks that the team is confronted with. This could lead to a high level of cohesiveness. Bishop and Scott (2000) found that task interdependence in self-managing work teams lead to higher levels of commitment to the team as well as to the organization. They argue that when workers perceive high task interdependence, they become more aware of the importance of their own contribution to both the organization and their immediate work team and that this heightened awareness enhances their ego involvement and increases their positive affect toward the team and organization. Wageman (1997) also confirms an increase in employee's commitment to the organization.

Glaser (1991) indicates that being involved in solving important work problems can be an exhilarating experience and that the sense of increased control and accomplishment can provide an added dimension to an employee's job satisfaction. Cohen and Ledford (1994) also found that employees experience higher levels of job, social, group and growth satisfaction in self-managing work teams. Glaser (1991) shows that the opportunity to learn new concepts and skills becomes available in self-managing work teams and learning to plan, to solve problems and to manage a group of peers can lead to members becoming more valuable to the organization and to themselves. The member's personal knowledge and skill increases, which may eventually lead to more responsibility, more pay and further career development within the organization (Glaser, 1991).

Hanson (1998) reports that working in a self-managing work team can lead to the gradual emergence of a more balanced personality structure of which the competence instils a greater sense of ability and worth.

Manz and Newstrom (1990) are of the opinion that implementing self-managing work teams can lead to reduced levels of conflict in the organization. They studied self-managing work teams in a paper mill and a pervasive sense of trust in and respect for the mill's top management was conveyed. During the interviews the employees also reported that their own quality of work life was enhanced and they conveyed feelings of pride in the mill and their work, and it seemed that they were willing to pay the price for success (Manz & Newstrom, 1990). Tjosvold and Tjosvold (1994) indicate that the self-determination of working without supervision is intrinsically motivating and satisfying and results in more ownership and pride in one's work.

In studying psychological and physiological stress reactions of assembly workers, Melin, Lundberg, Söderlund and Granqvist (1999) found that catecholamine levels revealed that the subjects were able to unwind more rapidly after work in the flexible organization.

It seems that the overall quality of work life of individuals would be enhanced when working in a self-managing work team. The members would experience their work to be more meaningful and they would also experience an increased amount of support and feelings of cohesiveness. Furthermore they would be more satisfied with their jobs and growth opportunities. Their needs for social interaction as well as information sharing on a technical front would be met, and their personal knowledge and skills would increase, resulting in enhanced feelings of ability and worth. The members would also display a higher level of trust in management and commitment to the organization. For the purposes of this study, however, quality of work life is conceptualized to include job

satisfaction, commitment and trust. This choice of the particular outcomes that will constitute quality of work life was influenced by the socio-technical theory, quality of work life movement and the empirical work on quality of work life and self-managing work team effectiveness as done by Cohen (1994).

2.3.6.2 Negative outcomes

Contradictory to the statement of Tjosvold and Tjosvold (1994) that self-managing work teams can strengthen mental health, Wall, Kemp, Jackson and Clegg (1986) found that self-managing work teams had no impact on mental health and reported that managers experienced more stress in operating this system than its traditional counterpart of a normal supervisory-led teamwork system. They studied a large unionized British company that produced confectionery at several sites for the home market and export. In their research Wall et al. (1986) report a statement made by a manager: "The mental, physical, and emotional pressure on the factory management with this type of organization should not be underestimated and, dare I suggest, is significantly greater than for our equivalents in other factories".

Similarly, Manz and Newstrom (1990), in their study of a paper mill, reported employees saying: "working in the system is great, but it can be very fragile". The employee continues to explain that "one moment a team can be really clicking, with things going really well, and the next moment things can be in turmoil, with people hollering at one another and a lot of hard feelings produced".

Parker and Slaughter (1988) have argued that self-management is stressful and that it has negative effects on worker health and safety. Manz and Newstrom (1990) further comment that employees receive a lot of flexibility, responsibility and variety in their work but are simultaneously faced with a heavy load of training and numerous time-consuming meetings. They advise that employees will experience pressure and stress from the demands of the work system.

Glaser (1991) also argues that the change to a self-managing work team can be taxing in that it produces a heavy learning load to members who now have to learn all the jobs of the team, as well as to learn to manage the administrative and interpersonal relationships of the group. Manz and Sims (1993) report that self-managing work team members are highly susceptible to pressures from various external demands from management and other teams, especially in the developing stages of the team. Moorhead, Neck and West (1998) argue that member stress within self-managing work teams enhances groupthink potential within the team.

Melin et al. (1999) found that workers in a flexible organization (described as having small autonomous groups having greater opportunities to influence the pace and content of their work) reported higher tension and that they were more irritated during the work shift than their colleagues at the traditional assembly line. They argue that the flexible type of organization puts more social pressure on the individuals within the team with a greater need for social skills and efficient coping strategies.

Van der Zwaan and Molleman (1998) state that the member's loss of specialization in self-managing work teams may result in increased workplace alienation, loss of career orientation and reduced prestige. Individual work becomes less visible and traceable, and therefore less distinctive. Such de-specialization inhibits people from participating in group efforts as people then lose the sense of their own indispensability (Van der Zwaan & Molleman, 1998).

Bishop and Scott (2000) indicate that a work team environment is characterized by a greater number of communication senders and is therefore more likely to be characterized by role conflicts. This makes even more sense in the case of self-managing work teams because they are already exposed to more comprehensive role-requirements as discussed earlier (see 3.1).

Contradictory to the belief that self-managing work teams provide more freedom and self-control, Barker (1993) found that concertive control increased within these teams and constrained the organization's members more powerfully. To support this statement he quoted an employee explaining that he felt more closely watched now than when he worked under the company's old bureaucratic system.

In conclusion, the team members are likely to experience more pressure, tension and stress in a self-managing work team and to be confronted with a heavy load of training and time-consuming meetings. The member might experience role-conflict, alienation and an increase in concertive control from team members. For the purposes of this research the negative outcomes associated with working in a self-managing work team will be operationalised as a measurement of the amount of work stress, role conflict, role overload and role clarity that the team member experiences.

2.3.7 Other benefits for the organisation

Other benefits associated with the implementation of self-managing work teams are reduced costs (Elmuti & Kathawala, 1997; Sirken, 1993; Stokes & Stewart, 1991), a better response to new worker values such as autonomy, responsibility and empowerment and the ability to attract and retain the best people (Wellins et al., 1991), increased market share and decreased absenteeism (Elmuti & Kathawala, 1997), increased cohesiveness (Trist & Bamforth, 1951), reduced levels of conflict (Manz & Newstrom, 1990), strengthened mental health (Tjosvold & Tjosvold, 1994), facilitation of lifelong learning and making the learning organisation become a greater reality (Glaser, 1991).

Implementation of self-managing work teams is, however, not a guarantee for reaping the rewards mentioned above (Fisher, 2000). The ability of self-managing work teams to accomplish higher performance at less cost is

dependent on a variety of factors such as the team's design, characteristics of employees, management support (Fisher, 2000) and employee training (Yeatts & Hyten, 1998). When these factors have not been planned and implemented to support the self-managing work team, studies report little or no performance improvement and little or no cost advantages (Tjosvold, 1986). Several models have been developed to explain how these factors mentioned above as well as other factors influence the effectiveness of self-managing work teams. A discussion of some of these models follows.

2.4 MODELS OF SELF-MANAGING WORK TEAM EFFECTIVENESS

The systems theory regards the organisation as a system with many interdependent parts that are linked by the social dynamics of human beings working together just as the human body is a system with organs, muscles and bones linked together by the consciousness (Holt, 1990). The systems theory explains that any functioning system, whether it is a team or an organisation, is characterized by certain input variables, transactions of processes that take place, output variables and feedback. This theory further argues that a change in one part of the system results in changes in other parts of the system (Plug et al., 1997). Ilgen (1999) states that small group research has traditionally been described in terms of the systems theory.

According to Tubbs (1994) self-managing work teams can best be viewed from a systems perspective. Several models were developed to explain the various input, output and process factors in self-managing work teams. It is argued that there is a variety of factors important to self-managing work teams that do not apply to all work teams (Yeatts & Hyten, 1998). Therefore a predictive model of self-managing work team effectiveness differs from a generic group effectiveness model (Cohen, Ledford & Spreitzer, 1996). Gladstein (1984), Pearce and Ravlin (1987), Hackman (1988) and Cohen (1994) developed models to explain the effective functioning of self-managing work teams specifically. These models are

subsequently described. Although other models explaining the effective functioning of self-managing work teams exist (Druskat, 1996), only the models mentioned above will be discussed because they are frequently mentioned in the literature on self-managing work teams (Yeatts & Hyten, 1998) and are specifically relevant to this research.

2.4.1 Gladstein's model of subjectively rated effectiveness

Gladstein (1984) provided one of the first empirical examinations of self-managing work team performance. Gladstein (1984) tested a theoretical model and found that factors in the model were good predictors of self-reported effectiveness but poor predictors of actual performance as measured by sales revenue. As a result she presented a theoretical model explaining subjectively rated performance. This model is shown in Figure 3.

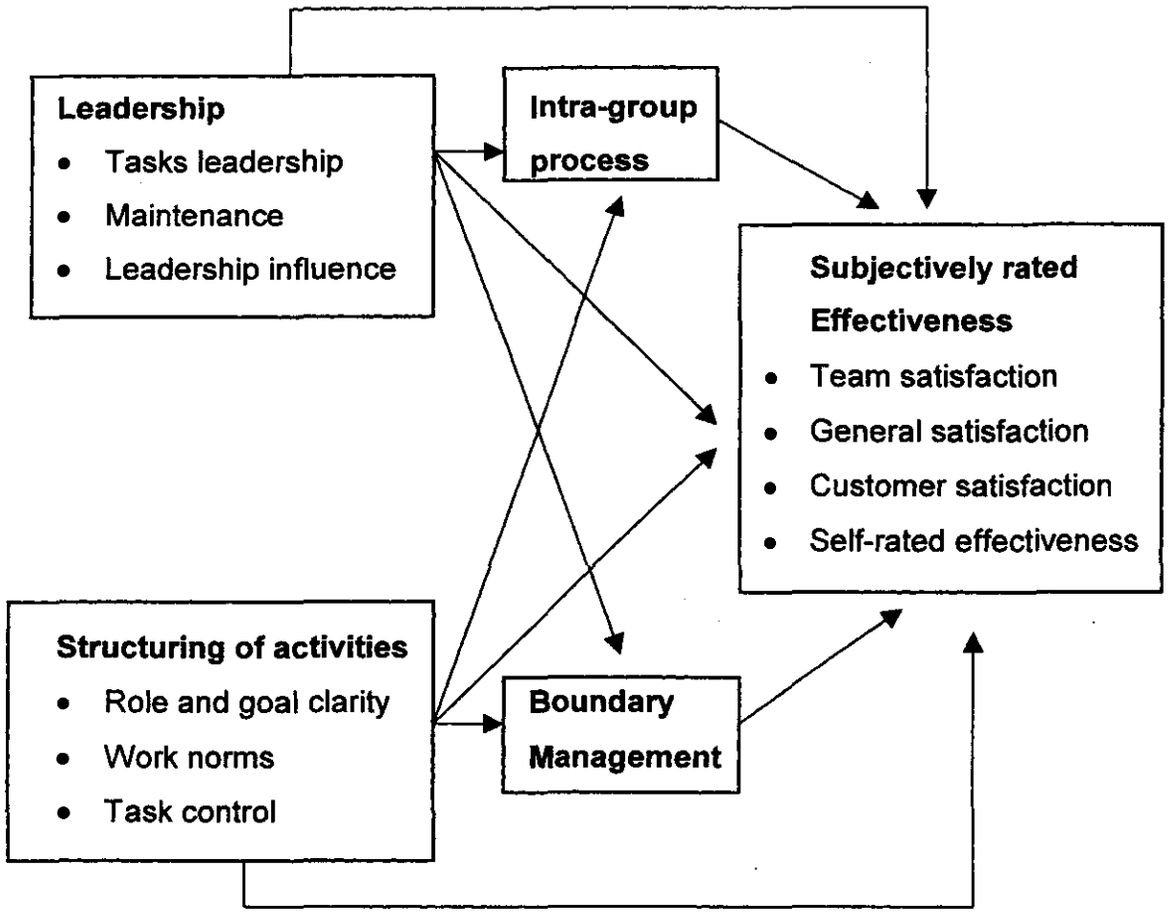

Figure 3. Gladstein's model of factors affecting subjectively rated effectiveness (Adapted from Yeatts & Hyten, 1998)

According to this model input factors that are important for self-managing work team effectiveness are leadership activities (measured in terms of the distribution of rewards and encouragement of high performance) and structuring of activities, which include role and goal clarity, norms for doing the work and control over the team's task (Gladstein, 1984). Process factors regarded as being important are intra-group processes including open communication, supportiveness and discussion of appropriate strategies and boundary management that were defined as the degree of misunderstanding with individuals and groups outside the team (Gladstein, 1984). It was found that team members who perceived their

team to be working well with people outside the team, as well as to be working well together, who perceived that their members had a clear understanding of their goals and roles and had sufficient control over their tasks and who perceived that rewards were fairly distributed, perceived their team to be performing at a high level (Gladstein, 1984).

The single most important finding of this model is that team members have a preconceived notion of the input and process factors that are most important to high performance and if the team has these characteristics, the team member would rate team performance as high, regardless of the actual performance of the team. This can also be seen as a limitation of the model in that it can predict self-rated effectiveness but not the actual performance of a team as measured by objective measures such as sales revenue. This model is relevant to this research because self-ratings of the effectiveness of the team, as well as of the team members, are also used in this study.

2.4.2 The Pearce-Ravlin model

Pearce and Ravlin (1987) reviewed past research examining factors affecting self-managing work team performance, as well as research on more general work teams. They developed a model containing four groups of factors. They proposed that there are certain preconditions in terms of the task (the task must allow for the exercise of autonomy and must be meaningful to team members), the organisation (management must be supportive of the self-managing team concepts and the expectations for the teams must be well defined and reasonable) and the team member (the member should regard autonomy and increased responsibility as desirable) that should be present in order to implement self-managing work teams successfully. These preconditions will directly affect the design of the team. The design factors (this includes open communication, minimal status difference, flexible coordination, a heterogeneous composition, autonomy over the task assignments and rewards at both the group

and individual level) have an influence on the activation and process criteria of the team (Pearce & Ravlin, 1987). Activating refers to ongoing functions that will encourage employee behaviour that is necessary for high self-managing work team performance such as praising team members, providing training to improve team skills, incentives to encourage teamwork and coaches that stimulate open communication and job rotation. The process criteria (variety of inputs from team members, coordination and commitment) directly affect the evaluation criteria representing team performance. The preconditions, design and activation factors have an indirect effect on performance via the process factors. This model is displayed in Figure 4.

This model contributes to the theoretical knowledge regarding self-managing work team effectiveness in that it also addresses preconditions, design and activation factors that are necessary or important to take into consideration before the team is implemented. The model strongly focuses on support functions and values that should be in place to increase successful implementation of a self-managing work team. Some of the other models (Cohen, 1994; Gladstein, 1994) explaining self-managing work team effectiveness only refer to aspects that are important after the teams have already been implemented and are fully functioning. The individual team member is mentioned throughout the model of Pearce and Ravlin (1987). As a precondition the individual must regard autonomy and responsibility associated with self-managing work teams as desirable. As part of the design conditions, rewards should also be distributed on an individual level. In terms of the process criteria, team members should be committed to the team and should be self-motivated to accomplish the team goals. Lastly, the team members must be satisfied in order to mirror an effective self-managing work team. The model is therefore relevant to this study because this research will also focus on the team member.

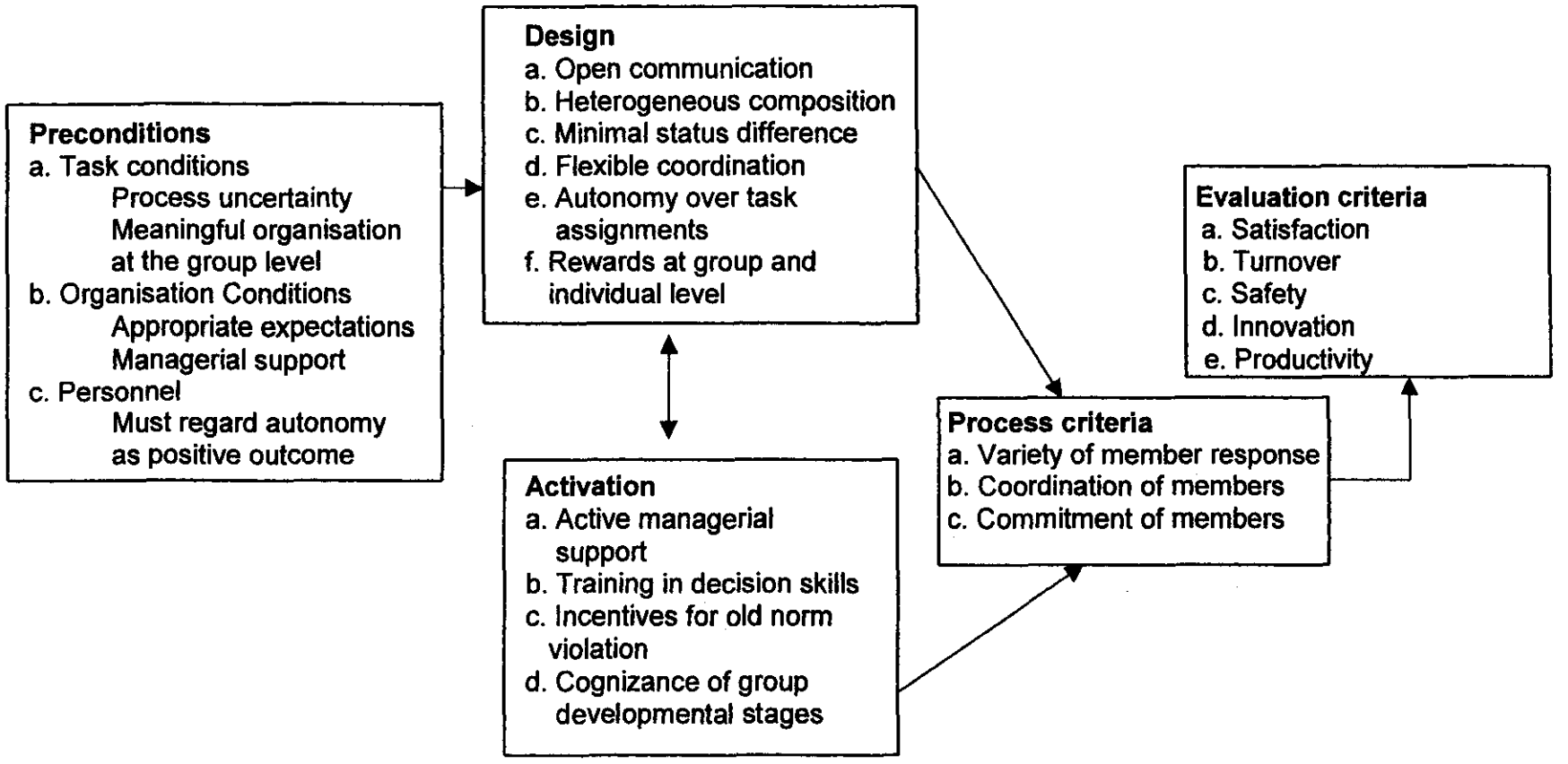

Figure 4 The Pearce-Ravlin model of self-regulating work group performance (Adapted from Yeatts & Hyten, 1998)

2.4.3 Hackman's model of self-managing work team performance

According to Yeatts and Hyten (1998), Hackman (1987) presented one of the most thorough theoretical models to explain self-managing work team performance. Factors in the organisational context and group design, are seen as input variables. The level of effort, amount of knowledge and skill applied and appropriateness of task performance strategies are process criteria affected by the input variables. This leads to effectiveness criteria measured as the acceptability of the task output to those who receive it, capability of members to work together in the future and the degree to which members' needs are more satisfied than frustrated (Hackman, 1987). The model includes two sets of moderating factors, namely work technology and group synergy. Type of work is seen as a moderating factor that determines the importance of the process criteria for team performance (Yeatts & Hyten, 1998). Hackman (1987) viewed group synergy as the result of a team's culture that finds everyone committed, proud to be part of the team and willing to work hard to make it one of the best teams. This model is displayed in Figure 5.

The model of Hackman (1988) is unique in terms of two aspects. Firstly, Hackman's model differs substantially with regard to the factors treated as process criteria. Most other theoretical models focus primarily on interpersonal factors such as communication and coordination as process criteria. Hackman treats these factors as characteristics of the team's composition (input factors) and includes aspects of interaction that relate directly to doing the work as process criteria. Secondly, the outcome or effectiveness criteria also include a focus on the sustainability of the team's existence or capability of the team members to work together in the future. In other words it looks further than just the current output of the team. Hackman's model refers to the individual team members in stating that they should be committed to enhance the group synergy and that the team is seen as effective if the members' needs are more satisfied than frustrated by the group.

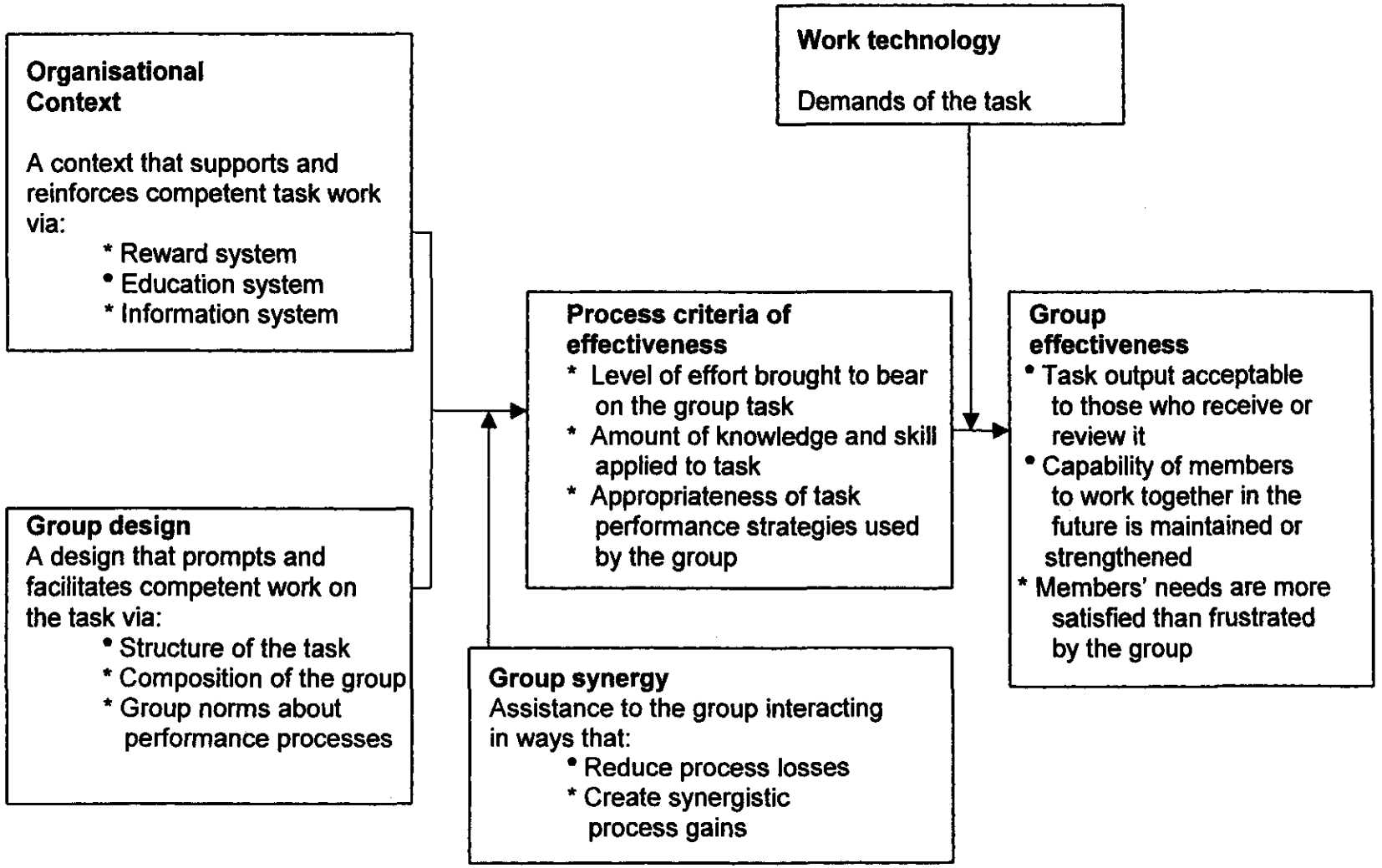

Figure 5 Hackman's model of self-managing work team effectiveness (Adapted from Yeatts & Hyten, 1998)

2.4.4 Cohen's model for effective self-managing work teams

Cohen (1994) has drawn on a variety of existing organisational theories and research to develop a theoretical model for explaining self-managing work team performance. This model deviates from the more traditional input-process-output models seeing that it treats process as an input and this results in an input-output model (Yeatts & Hyten, 1998). Cohen's model displays four sets of input factors, namely task design, group characteristics, supervisory behaviours and the organisational context (Cohen, 1994). According to the model these inputs lead to three sets of outputs that are described as effectiveness. Effectiveness is measured as team performance (costs, productivity and quality), member attitudes (job, team, social and growth satisfaction, trust in management and organisational commitment) and withdrawal behaviours (absenteeism and turnover) (Cohen, 1994). Performance and attitude criteria are commonly used in researching work team effectiveness but Cohen (1994) notes that withdrawal behaviours are much less common. This model is displayed in Figure 6.

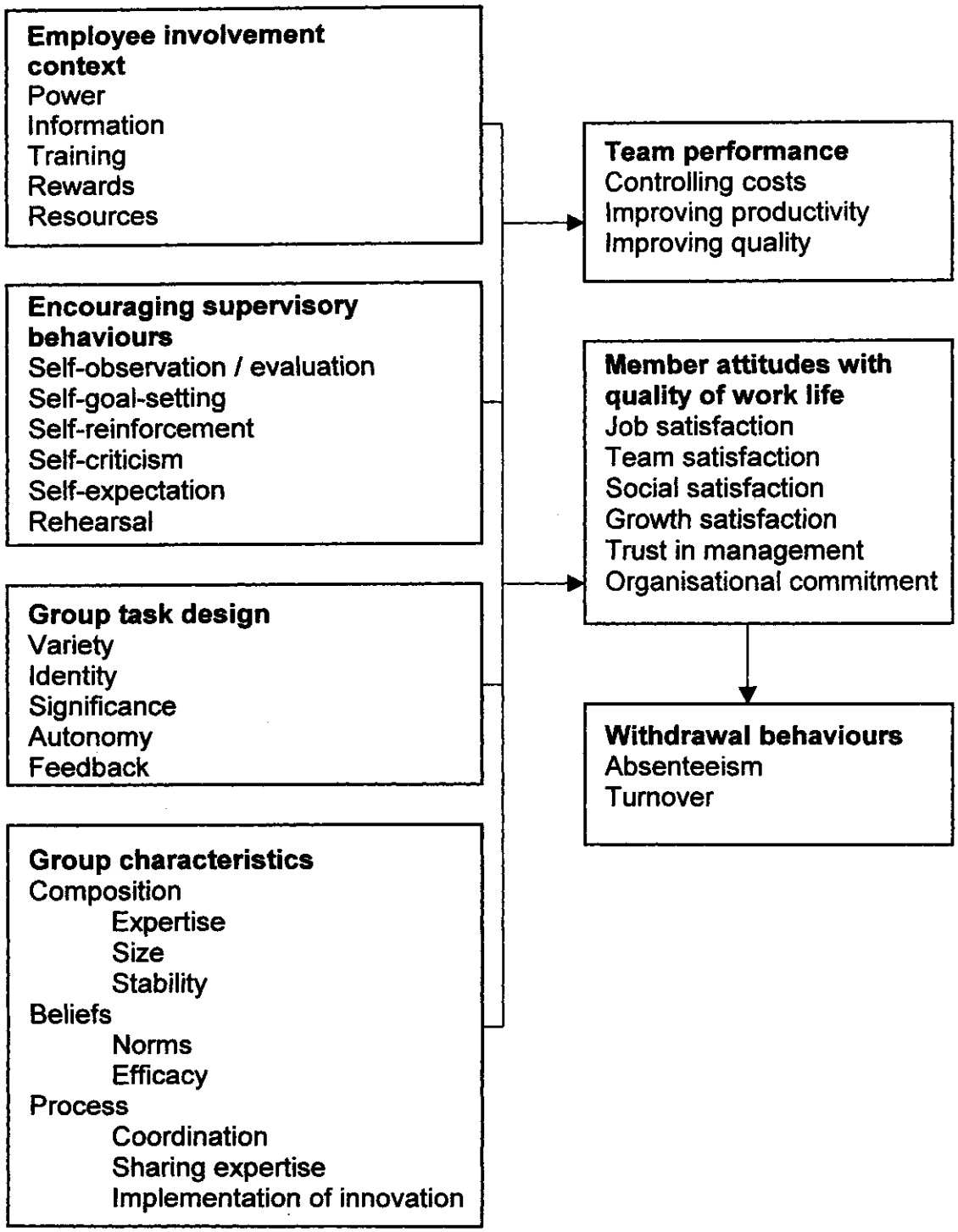

Figure 6 Cohen's full model of self-managing team effectiveness (Adapted from Yeatts & Hyten, 1998)

Cohen's model (1994) can be distinguished from other models explaining self-managing work team effectiveness in the sense that it also focuses on the degree of the turnover the team experiences. The stability of the team is regarded as an important input factor in this model. The model of Cohen also

elaborates on the organisational context (power, information, training, resources and rewards should be provided and available) in which a self-managing work team will be effective. This can be seen as similar to factors such as managerial support, autonomy over task performance, rewards at both the group and individual level and training and incentives that Pearce and Ravlin (1987) also regard as important in terms of their preconditions, design and activation criteria in their model of effectiveness. The model of Cohen focuses on the team member when it states that the member should possess the appropriate technical, interpersonal and self-management skills as input factors and also the attitude and quality of work life of the members as an output factor.

2.4.5 Evaluation of the models

An element that is lacking in these models explaining self-managing work team effectiveness is team member effectiveness as output criterion. All the models described above include satisfaction and measures of quality of work life of team members as output criteria, but none of these include a measure of team member effectiveness. One could ask why individual measures are necessary when the design of self-managing work teams advises performance measures and feedback of the team as a whole (Alper, Tjosvold & Law, 1998; Cummings, 1978; Polley & Van Dyne, 1994; Wall, Kemp, Jackson & Clegg, 1986). Neuman and Wright (1999) argue that individual level relationships need to be assessed because most personnel decisions are made for individuals, and these decisions are often based on measures of individual differences. Yeatts and Hyten (1998) comment that the appraisal of team member performance (as opposed to or in combination with team performance) may be necessary when the team members do not provide regular informal feedback to each other; when teams are immature or there is a high turnover; and when the nature of the work changes dramatically. Orsburn et al. (1990) also argue that the performance appraisal system in self-managing work teams can be used as a developmental tool. The appraisal can help members to achieve expected performance standards, identify and overcome weaknesses, solve problems and improve

performance. It can also identify strengths, recognize outstanding performance, acknowledge superior skills or contributions and identify new directions to follow and training needs of the team members. Therefore it seems necessary to study the effectiveness of the team member of a self-managing work team.

2.5 EFFECTIVENESS OF THE TEAM MEMBER OF A SELF-MANAGING WORK TEAM

Yeatts and Hyten (1998) make the statement that employees, within self-managing work teams perform at a higher level and at less cost than employees within more traditional work environments. Flanagan (1994) showed that self-managed team participation led to improvements in employee productivity, efficiency, quality and a steady stream of innovations at an IBM plan in Lexington.

Several criteria for defining team member effectiveness have been proposed. Yeatts and Hyten (1998) list the individual's technical skills, such as performing their job tasks accurately and efficiently, administrative skills such as paperwork or area of responsibilities on the team, essential interpersonal skills such as cooperation and communication, decision-making and problem-solving skills as areas that can be evaluated.

Neuman and Wright (1999) used a measure that combined dimensions identified in previous research of Hackman (1987) and Stevens and Campion (1994) as relevant to team performance in a traditional work team environment. These dimensions are also applicable in a self-managing work team. The dimensions were divided into task performance, which includes the member's contribution to overall team performance, problem solving, work procedures and planning and interpersonal skills, which included conflict resolution and team communication.

Parker (1998) explained effective teamwork in terms of four competency roles:

- Information-facilitator. This role represents the sharing of information about the team process, progress, external influences as well as events that may shape the team's ability to complete its tasks and accomplish its goals. It also involves the soliciting of information and expertise from others and a willingness to learn from the opinions and experiences of others.
- Process-developer. This is the demonstrated capability to participate in and support team decisions. It also includes the encouragement of open communication, expression of diverse opinions and the facilitation of effective resolution of conflicts among team members.
- Team-communicator. This role includes positive expressions about and to other team members and showing respect for one's team-mates. It involves protecting and promoting the work of the team to key stakeholders outside the team.
- Climate-builder. Behaviours associated with this role are such things as promoting a friendly atmosphere, positive team events and other morale building activities. It includes acknowledging the performance of team-mates and encouraging and empowering others to do what is necessary to help the team succeed.

Orsburn et al. (1990) describe typical performance standards for a team member of a self-managing work team in review of technical, administrative and interpersonal skills to include criteria such as:

- understanding a number of jobs performed by the team;
- performing tasks correctly and on time;
- completing paperwork or procedures accurately;
- meeting production schedules;
- using time efficiently;
- helping out where additional effort is needed;
- leading or participating constructively in team meetings;
- contributing to team problem solving and production efforts;
- cooperating readily with team members;

- showing commitment to the idea of self-directed work teams; and
- maintaining good relationships with team-mates, managers, and other teams or support services.

The perspectives of the different authors mentioned above can be summarized in six areas of performance. A few behavioural indicators of performance in each of these areas were also identified. The areas and behavioural indicators are summarized in Table 3.

Table 3

Performance Areas and Behavioural Indicators of Effectiveness

AREA OF PERFORMANCE	BEHAVIOURS DISPLAYED
Technical tasks	• The team member performs the tasks accurately and efficiently. • The team member understands and is able to perform a number of jobs assigned to the team.
Administration tasks	• The team member completes the paperwork accurately and efficiently.
Interpersonal aspects	• The team member cooperates readily with team members. • The member resolves conflicts between team members. • The member provides an open and supportive communication climate. • The member listens well to others. • The member makes his own ideas known. • The member keeps others informed regarding actions and events that may influence the team. • The member treats all with respect. • The member leads or participates constructively in team meetings. • The member gives credit for ideas of his fellow team members. • The member maintains good relationships with team-mates, managers and other teams.
Work procedures	• The member effectively determines task expectations of team members and balances workloads. • The member contributes to the team's ability to co-ordinate activities between team members.
Decision-making and problem-solving aspects	• The member contributes to team problem solving by helping the team to identify and recognize obstacles in situations requiring group problem solving. • The member actively supports and, where it is appropriate, works to implement the team's decisions.
Contribution to overall team performance	• The member contributes to the team's ability to accomplish established work goals (by being committed to quality or being concerned about cost). • The member uses time efficiently (comes to work on time, meets time schedules). • The member helps out where additional effort is needed. • The member shows commitment to the idea of self-managing work teams. • The member follows safety rules.

From the table it can be seen that, apart from only evaluating the members' effectiveness according to specific tasks completed, the members can also be evaluated in terms of their interpersonal interaction with other team members,

the degree to which the team members help to coordinate the activities of the team, facilitate decision making and problem solving and also the degree to which the members' attitudes and commitment facilitate overall team performance.

As mentioned earlier, there seems to be a lack of consideration of the effectiveness of the team members of self-managing work teams and subsequently also the measurement thereof in the literature as well as empirical work done in this particular context. The criteria and behaviour set out in Table 3 were therefore then also used to operationalise the measurement of team member effectiveness in this specific study. The questionnaire that was developed based on these criteria and behaviour is discussed in more detail in Chapter 4 and included in Appendix B.

INTEGRATION

Apparently much research is being done on how to enhance the effectiveness of self-managing work teams. Fisher (2000) warned that the implementation of self-managing work teams can easily fail unless certain factors and conditions are present. The models described above represent various approaches and theories on these factors and conditions that should be present. These models include the team member as an important factor in explaining self-managing work team effectiveness. After the description of each model the role of the team member in the specific model was briefly highlighted. From these highlights it can be seen that the team members are mentioned as part of the input factors in terms of the kind of attitude (the model of Pearce and Ravlin, 1987 indicates that the team members should regard autonomy and responsibility as favourable characteristics of their tasks) and skills (interpersonal, technical and self-management skills as indicated by Cohen, 1994) that they should possess. These models do not specifically mention dispositions or personality characteristics team members should display.

As indicated previously (see 2.3), Yeatts and Hyten (1998) are of the opinion that the characteristics of the employees themselves is an important factor in

enabling the self-managing work team to accomplish higher performance at less cost. Kichuk and Wiesner (1998), in accordance with this statement, argue that one of the simplest ways of maximizing the probability of team success is to focus on team membership. Team members' dispositions and personality characteristics play an important role in the selection process and their subsequent effective functioning in the team. Kichuk and Wiesner (1998) state that personality, which has been shown to contribute to the prediction of individual performance, may also predict team performance. Neuman and Wright (1999) state that although empirical evidence for the effectiveness of work teams has begun to accumulate, research evaluating the effectiveness of selection strategies used to form these work teams has been lacking. By gathering empirical evidence with regard to the influence of certain dispositions and personality constructs, a contribution can be made to studies on selection methods used to select effective team players. Therefore it seems necessary to include the dispositions and personality characteristics of team members as an input factor in explaining self-managing work team effectiveness.

It was mentioned in Chapter 1 (see 1.1) that workers in a self-managing work team could experience day-to-day work life in a vastly different manner. Team members might feel vulnerable because these teams lack the familiar clarity of a hierarchical structure (Arnold, 1996). Inputs such as dispositional constructs and personality characteristics may influence not only the outputs of team members in these teams but also the experiences of individuals functioning within these teams. These constructs could lead to a feeling of control in uncertain circumstances. It could lead to positive experiences within these teams because individuals will have resources to help them cope with a diverse and strenuous environment.

In conclusion, this research will focus on factors lacking in the models described above, namely certain dispositions and personality characteristics of team members and how these characteristics influence the experience and effectiveness of team members in self-managing work teams. The specific

dispositional and personality characteristics that team members can be expected to possess are conceptualized from the literature in Chapter 3.

2.6 CHAPTER SUMMARY

The purpose of this chapter was to conceptualize self-managing work teams. The origin of self-managing work teams was described, as well as specific characteristics of these teams, in order to distinguish the teams from other participative management interventions and traditional work groups. The major advantages of implementing self-managing work teams were discussed. Several models, developed to explain the effectiveness of self-managing work teams, and team members were described.

With this chapter the first specific objective was achieved, namely to conceptualize self-managing work teams. Chapter 3 will conceptualize the role that dispositional factors (including sense of coherence, self-efficacy, locus of control and personality dimensions) play in the experiences and outputs of team members of self-managing work teams from the literature.

CHAPTER 3

THE DISPOSITIONS OF SELF-MANAGING WORK TEAM MEMBERS

The functioning of self-managing work teams can be described in terms of the systems model (Hackman, 1987), and then specifically as pertaining to certain inputs that help the team to perform certain tasks and follow processes in order to achieve certain outputs. Inputs in a self-managing work team can include the motivation, skills and personality factors of team members, while the tasks and processes refer to problem solving, conflict resolution, communication and decision making, planning, quality control, dividing of tasks, training and performance appraisal. These inputs and processes lead to outputs such as efficiency, productivity and quality of work life. This chapter specifically addresses the inputs in a self-managing work team as it is described by the dispositional characteristics of self-managing work team members. The specific dispositional factors that are discussed are the big five personality dimensions, sense of coherence, self-efficacy and locus of control. An introduction is provided as to what a disposition entails and the paradigm in which these specific dispositional characteristics were developed. Subsequently the specific factors are conceptualised. The relationship between dispositional factors, as well as research that has been conducted regarding these factors that are relevant to this specific study will also be discussed briefly.

3.1 DEFINITION OF A DISPOSITION

A disposition is defined by Reber (1995) as any hypothesized organisation of mental and physical aspects of a person that is expressed as a stable, consistent tendency to exhibit particular patterns of behaviour in a broad range of circumstances. House, Shane and Herold (1996) describe dispositions as personality characteristics, needs, attitudes, preferences and motives that result in a tendency to react to certain situations in a predetermined fashion. According to Davis-Blake and Pfeffer (1989) the essence of the dispositional approach is that individuals possess stable traits

that have a significant influence on their affective and behavioural reactions to organizational settings. It seems evident from the literature that dispositions could include any innate traits or characteristics of individuals that will influence their evaluations of themselves, their environment and their capabilities, and consequently, their behaviour.

Research indicates that dispositional factors affect work-related effectiveness criteria in organisations (Staw, Bell & Clausen, 1986; Staw & Ross, 1985). Brief, Butcher and Roberson (1995) showed that, when subjected to the same task attributes, individuals' dispositional tendencies affect how they interpret the favourability of these attributes.

Judge, Locke and Durham (1997) explain the effect of dispositional factors in organisations in terms of core evaluations. Core evaluations refer to fundamental, subconscious conclusions individuals reach about themselves, other people and the world (Judge, Locke, Durham & Kluger, 1998). Judge, Locke and Durham (1997) proposed that people who consider themselves to be no good or fundamentally incompetent (core self-evaluations) will react quite differently, for example, to increased job responsibilities such as found in self-managing work teams, than will those who consider themselves to be good and competent. Judge et al. (1998) also found that core evaluations affect the actual perception of individuals of work attributes such as autonomy and task significance. Judge et al. (1998) regard self-esteem, self-efficacy, locus of control and neuroticism as core evaluations.

In this research dispositional factors are described in terms of psychological strengths such as sense of coherence, locus of control and self-efficacy as found within the fortigenic (the origin of strengths) paradigm and personality characteristics as described by the five-factor model of personality. All these dispositional factors influence the evaluation and behaviour of employees in an organisation. A brief description of the fortigenic paradigm in which sense of coherence, self-efficacy and locus of control are used and described as coping resources, is given next.

3.2 THE FORTIGENIC PARADIGM

The concept of wellness in psychology is certainly not a new idea. Several researchers, authors and scientists have worked on partially overlapping ideas for the past 60 – 70 years. Strümpfer (2000) mentions a few examples:

- Adler (1927) who talked about striving for superiority and the creative self.
- Rogers who, in 1947, developed concepts such as the fully functioning personality and actualising tendencies.
- Maslow (1954) talked about growth needs and self-actualisation.
- Frankl who, in 1964, talked about the will to meaning, self-transcendence and logotherapy.

All these ideas and concepts seem to fit in a health or wellness paradigm. But the pathogenic paradigm (focusing on why people fall ill) has traditionally been the dominant paradigm. The dominant paradigm influences and even dictates in some cases the kind of research problems investigated, the variables chosen and the way in which the results are interpreted. Antonovsky and Bernstein (1986) list a few examples of studies where the pathogenic paradigm dictated the way in which results were interpreted:

- In a study on concentration camp survivors in the 1970's it did not occur to the researchers to obtain data that might help explain why some survivors were well adapted.

- We are all familiar with the type A behaviour pattern and its relation to coronary heart disease. Do we know anything about type B's other than that they are non-type A?

- In 1982 a study of schizophrenia in Israel compared kibbutz and city children of schizophrenic mothers, there was no mention, however, of those who, despite growing up with a schizophrenic mother, did not merit a DSM IV (or in those days still a DSM III)-diagnosis.

In 1967 Aaron Antonovsky (Antonovsky, 1974), a sociologist in Israel, experienced what he described as "probably the most stressful life event I have ever faced", namely the Six Day War. Afterwards, having been a participant observer as well as a researcher, he looked at the disaster literature and was amazed to find that there seems to be no evidence that the crises had either an immediate or delayed impact on health. He came to the conclusion that there must be something, in experiencing disaster, that may hold in check the development of pathological responses (Antonovsky, 1974). He also became involved in the study of concentration camp survivors and became aware of the fact that a not inconsiderable number of concentration camp survivors were well adapted. This triggered him to investigate what he called the general resistance resources that help to make sense of countless stressors. A general resistance resource can be any physical, biochemical, artefactual, cognitive, emotional, value adding, interpersonal-relational and macro-socio-cultural attribute of individuals, primary groups, subcultures or society that help one to effectively cope with or ignore a wide variety of stressors (Antonovsky, 1979). This led to an attempt to explain how people stay well, notwithstanding high stressor loads, and Antonovsky (1979) then developed the salutogenic model and the core construct of this model, namely sense of coherence. Salutogenesis means the origin of health. The salutogenic orientation rests upon three radical proposals, namely:

- that people are not either diseased or healthy, but they fall somewhere on a health ease/disease continuum and that studies should be designed to test hypotheses explaining successful, healthy outcomes;
- the salutogenic model states that stressors are not necessarily inherently bad and they may have salutary consequences or even be health enhancing to the individual if managed well; and
- the salutogenic orientation states that one should look at the deviant case (for instance, who are the smokers who do not get lung cancer?).

During the sixties, seventies and eighties several constructs were developed that can be classified within the salutogenic orientation. A few examples are locus of control (Rotter, 1966); self-efficacy (Bandura, 1977); potency (Ben-

Sira, 1985); hardiness (Kobasa, 1979); stamina (Thomas, 1981; Colerick, 1985); and learned resourcefulness (Rosenbaum, 1988).

In 1986 Antonovsky (Antonovsky, 1986) declared salutogenesis a new paradigm. In 1995 Strümpfer (1995) elaborated on his previous statement and argued that salutogenesis entails more than just the origin of health, but that it also encompasses the origin of strength or fortigenesis as he then named it. In 1997 Wissing and Van Eeden suggested that the new sub-discipline of Psychology in which psychological well-being is being studied, should be called psychofortology, or in other words, the science of psychological strengths (Wissing & Van Eeden, 1997). In January 2000 an entire edition of the American Psychologist was published on "Happiness, Excellence and Optimal Functioning". Seligman and others coined the term positive psychology and in the introduction to this edition, Seligman and Csikszentmihalyi (2000) stated the following:

"The next century will see a science and profession that will come to understand and build the factors that allow individuals, communities and societies to flourish" (Seligman & Csikszentmihalyi, 2000).

The articles in this edition focused on aspects such as optimism, happiness, self-determination and creativity.

Strümpfer (2000) declares that assumptions of the emerging paradigm of positive psychology is (almost the same as the assumptions of salutogenesis and fortigenesis) that stressors, adversity and other inordinate demands are inherent to the human condition, that there are also sources of strength through which this condition can be endured and even transcended and that social and emotional trials can for many stimulate continual growth and strengthening. The specific constructs that form part of the fortigenic paradigm and that are included in this research are sense of coherence, self-efficacy and locus of control. These constructs are subsequently conceptualised.

3.3 SENSE OF COHERENCE

As mentioned above, Antonovsky (1979) identified generalised resistance resources that help individuals to manage tension in any situation of demand. Generalised resistance resources help individuals in making sense of the countless amount of stressors that they experience every day. It is through repeated experiencing of this sense-making that individuals develop a strong sense of coherence over time (Strümpfer, 1990). In the following sections sense of coherence is defined, the development of sense of coherence is briefly mentioned and the implications of a strong sense of coherence are discussed. The relationship between sense of coherence, effectiveness and quality of work life are briefly discussed. Lastly the role of sense of coherence in self-managing work teams is analysed.

3.3.1 Definition of sense of coherence

Sense of coherence forms the central construct of Antonovsky's salutogenic model (Antonovsky & Sagy, 1986). Antonovsky (1987) defined sense of coherence as follows:

"The sense of coherence is a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that stimuli deriving from one's internal and external environments in the course of living are structured, predictable and explicable; that the resources are available to one to meet the demands posed by these stimuli; and that these demands are challenges worthy of investment and engagement".

The definition includes three dimensions that represent the concept of sense of coherence, namely comprehensibility, manageability and meaningfulness.

Comprehensibility refers to the extent to which individuals perceive stimuli from inside and outside themselves as clear, ordered, structured and consistent information, and to the expectation that these stimuli will in future be orderable, explicable and even predictable. The perception must make

sense cognitively. In other words the experience of structured and ordered environments makes it possible to anticipate and find structure in future events.

Manageability refers to the perception that individuals' life experiences are bearable, can be coped with, or even better still, are challenges that can be met. The "available resources" in the definition relates to the fact that it can be under the individual's own control or under control of legitimate others who have the power to resolve matters in the individual's interest such as a spouse, relatives, friends, formal authorities, trade unions, God, a political party, a physician or leaders. This part of the definition therefore means that individuals base manageability on their experiences of control over the environment and they trust that the challenges posed by everyday life can be met.

Meaningfulness refers to the extent to which individuals feel that events make sense to them emotionally, rather than just on a cognitive level. It refers to the sense of importance and value inherent in events and the feeling that it is worthwhile spending energy on. Meaningfulness is therefore the motivational element of sense of coherence (Antonovsky, 1987).

There is a close relationship between these three dimensions but successful coping is dependent on sense of coherence as a whole and cannot be based on any one or two of these dimension alone (Antonovsky, 1987).

Sense of coherence is not a trait or state but a dispositional orientation. It includes components of memory, perception, information processing and affects and integrates these into behavioural appraisal patterns. The basis of these behaviours is the repeated experiences of sense-making using one's generalised resistance resources. Sense of coherence therefore comprises of an individual's life experiences.

3.3.2 Development of a sense of coherence

If individuals perceive their life experiences as constant, structured and balanced they will view their world as coherent and predictable, and sense of coherence cannot therefore be separated from individuals' life experiences. Antonovsky (1987) therefore believes that personal and developmental factors such as individuals' history, context, their culture and socialising influence the development of a sense of coherence. Constant experiences provide the basis for the comprehensibility dimension, a good load balance contributes to the manageability dimension and participation in the process of determining the outcome of a situation contributes to the development of the meaningfulness dimension.

According to Antonovsky and Sagy (1986) individuals' sense of coherence develops tentatively during childhood and becomes more definite during adolescence. Although sense of coherence is modified throughout the individual's life, the first year of employment is a crucial transition period. Individuals develop a generalised way of looking at the world at about the age of thirty, after which their sense of coherence remains rather stable and allow only for minor or small changes to occur. Sense of coherence is therefore seen as a relatively stable dispositional orientation.

But individuals with a strong sense of coherence do not view the entire world as meaningful, comprehensible and manageable. Individuals set boundaries outside which they will feel affected and still maintain a high sense of coherence. Four areas must be included within the boundaries of an individual to still be able to maintain a high sense of coherence (Antonovsky, 1987):

- The person's own feelings.
- His or her immediate interpersonal relationships.
- His or her major sphere of activity of work.
- Existential issues of death, inevitable failures, shortcomings, conflict and isolation.

An individual's boundaries must be flexible to include new areas or to exclude other areas that are less comprehensible or manageable.

3.3.3 Implications of a strong sense of coherence

Sense of coherence can be seen as a dispositional orientation that helps individuals to cope more effectively with stressors in their environment. A strong sense of coherence enables individuals to make sense of stressful life experiences. They are more likely to understand the nature and dimensions of acute or chronic stressors and will consequently define or redefine a stressor in order not to surrender to it. In making sense of stressors, individuals learn through their own life experiences to cope more effectively with stressors and will therefore also get involved in activities that would promote health and they would neglect endangering situations.

People with a strong sense of coherence would also perceive stressors as manageable and would therefore select resources to their disposal or those under the power of significant others to deal with a stressor and not revert to measures such as helplessness. They assume responsibility for choosing their own destiny amidst stressful life experiences.

A strong sense of coherence leads to allocating energy to stressors and seeing it as challenges on which it is worthwhile to spend energy on. A weak sense of coherence would entail that stressors are perceived as negative and unwanted, and the individuals thereby immobilise themselves and do nothing to change a stressful situation at hand.

People with a strong sense of coherence have access to a wide variety of generalised resistance resources, which will enable them to understand situations, choose the resources or a combination of resources and to structure experiences in a meaningful way in order to predict events in the future. The stressors would therefore be perceived as manageable and worth getting involved in.

The results of a strong sense of coherence can also be seen in the way individuals carry out a specific task. The more complex and biased the task at hand, the more helpful a strong sense of coherence would be in helping individuals to be motivated to accept the challenge, create some form of structure and to search for appropriate resources that would be helpful in completing the task. A strong sense of coherence will also help individuals to trust that the outcome of the task would be relatively successful. The task must, however, fall within the personal boundaries of the individual in order for the sense of coherence to influence the outcome (Antonovsky, 1987). Antonovsky (1987) also claimed that individuals with a strong sense of coherence would be more aware of their own feelings and would have less difficulty describing them and also feel less threatened by it.

According to Antonovsky (1987) sense of coherence not only positively influences well-being but also affects how people experience and understand their work environment and job factors. Support for this has also been found in other studies (Kalimo & Vuori, 1991; Vuori, 1994). Strümpfer (1990) then also elaborates on the effect that sense of coherence would have on the experience of work. A strong sense of coherence will lead to individuals:

- making cognitive sense of the workplace in perceiving the stimuli in the working environment as clear, ordered, structured, consistent and predictable information;
- perceiving work as experiences that can be coped with, that are bearable and that are seen as challenges that can be met with personal resources or resources under the control of legitimate others; and
- meeting work demands as challenges that are welcome, worthy of engaging in and investing energy in by making emotional and motivational sense of it.

But Strümpfer (1990) pointed out that a sense of coherence is of no use if it is not accompanied by the appropriate ability, training and development, skills and conducive organisational environment. Strümpfer (1990) therefore also believed that these factors mentioned above must lead to productive

performances, recognition, reward and promotion. In turn, the sense of coherence of an employee will strengthen more if the experiences at work are incorporated as work-related generalized resistance resources. The work environment would then become more comprehensible, manageable and meaningful to employees with a strong sense of coherence who would incorporate successful coping into their experiences of the working environment. Kalimo, Pahkin and Mutanen (2002) confirmed this in their research and found that a strong sense of coherence seems to protect workers from strain and thus maintain well-being. Feldt (1997) also found that individuals with a strong sense of coherence seemed to be better protected from the adverse effects of certain work characteristics like pressure of time. They also found that some work characteristics have a salutary effect on well-being when accompanied by a strong sense of coherence and, on the contrary, pathogenic effects when accompanied by a weak sense of coherence. These results therefore provide some support for the moderating role of sense of coherence on the relationship between perceived work characteristics and well-being.

3.3.4 Relationship between sense of coherence and effectiveness and quality of work life

Empirical research has shown that sense of coherence is related to an individual's job satisfaction. Rothmann (2000) did a meta-analysis and found a practically significant correlation of 0.50 between sense of coherence and job satisfaction in a study population that included 624 employees of 7 different organisations in South Africa. Other research that confirms these findings is Pretorius and Rothmann (2001), Coetzee and Rothmann (1999) and Strümpfer (1995). The relationship of sense of coherence with similar outcomes could then also be studied in the context of self-managing work teams. Sense of coherence has also been described as one of the most prominent constructs within the wellness paradigm. Wissing and Van Eeden (1997) came to the conclusion that sense of coherence best describes general psychological well-being. We can therefore come to the conclusion that general well-being of an individual will also entail a high sense of

coherence. With regard to quality of work life, Siu (2002) found a positive relationship between organizational commitment and well-being. Therefore it is a possibility that there will also be a link between sense of coherence and organizational commitment. But this is a hypothesis that will be tested in this research.

3.3.5 Sense of coherence in a self-managing work team

No research could be found that related sense of coherence to team member performance or quality of work life in a self-managing work team. However, based on the above conceptualization of sense of coherence, it is expected that team members in a self-managing work team with a strong sense of coherence will experience the information in the environment of a self-managing work team as more understandable. It has already been shown in Chapter 2 (see the discussion of learning skills under 2.2.2.4) that the team members will be bombarded with a heavy learning load and that they may experience information overload. A strong sense of coherence can, however, enable the team members to make sense of all these pieces of information. Furthermore the team members will also see the extra responsibility and tasks that form part of the role of a team member of a self-managing work team as challenges that are manageable. They are therefore not likely to feel totally overwhelmed by the extra tasks or roles allocated to them. As already indicated earlier, a strong sense of coherence will help the individual to be motivated to accept the challenge of a complex task in order to create some form of structure and to search for appropriate resources that would be helpful in completing a complex task.

Staw and Barsade (1993) found that students, participating in teams, who were high on well-being (and therefore also possibly high on sense of coherence based on the relationship between sense of coherence and general well-being as discussed above) were superior decision makers, showed better interpersonal behaviours and received higher overall performance ratings. As already discussed in Chapter 2 (see 2.2.2.2 and 2.2.2.4), decision-making and interpersonal behaviours are two prominent

tasks of a team member of a self-managing work team. Therefore it could be expected that sense of coherence would be related to effectiveness in a self-managing work team. This expectation is empirically tested in this research.

This concludes the discussion of sense of coherence. The second dispositional factor, namely self-efficacy, is described next.

3.4 SELF-EFFICACY

The concept of self-efficacy relates to judgments people make concerning their ability to act in a specific situation or task. In the following sections self-efficacy is defined, the development of self-efficacy is briefly mentioned and the implications of a strong self-efficacy are subsequently discussed, also with regard to effectiveness, quality of work life and working in a self-managing work team.

3.4.1 Definition of self-efficacy

Perceived self-efficacy is defined as someone's evaluation or judgment of their capabilities to organize and execute courses of action that is required to attain certain designated types of performances (Bandura 2002).

Self-efficacy is also defined as people's beliefs in exercising control over their own functioning and over their own environmental circumstances to produce at a self-designated level of performance (Benner & Hill, 1999).

Bandura already explained in 1977 that self-efficacy, which constitutes the magnitude of people's beliefs in their capabilities to produce the desired effects by their own actions are the most important determinants of the behaviours people choose to engage in and how much they persevere in their efforts in the face of obstacles and challenges (Bandura, 1977).

In simple terms, self-efficacy is the belief that one can accomplish what one wants to accomplish. Although it seems like a simple truth, self-efficacy should

also be conceptualized and clarified further by distinguishing it from other related concepts.

First of all self-efficacy should be distinguished from an outcome expectancy (Bandura, 1977). An outcome expectancy is defined as a person's perception that a given behaviour will lead to certain outcomes. An efficacy expectation is the conviction that one can successfully execute behaviour required to produce this specific outcome. Therefore perceived self-efficacy is a judgment of one's capability to accomplish a certain level of performance whereas an outcome expectation is a judgment of the likely consequence such behaviour will produce (Bandura, 2002). Efficacy and outcome judgments are differentiated because individuals can believe that a particular course of action will produce certain outcomes, but they do not act on that outcome belief because they question whether they can actually execute the necessary activities that will result in this outcome.

Maddux (2002) further makes the distinction that self-efficacy is not the perceived skill itself but rather what one believes that one can do with one's skills under certain conditions. Self-efficacy is also not simply predictions about behaviour concerned with what one believes one will do or an intention of behaviour, but rather what one believes one can do. Therefore self-efficacy beliefs are beliefs about what one is capable of doing (Maddux, 2002).

Self-efficacy should also be distinguished from self-esteem. Self-esteem is what one believes about oneself, it is the sense of personal worth associated with the self-concept. Although self-esteem and self-efficacy are conceptually distinguished, they may influence each other directly (Benner & Hill, 1999).

Maddux (2002) also clearly explains that self-efficacy is not a drive, motive or need for control. Even though one may have a strong need for control in a particular situation, one can still hold weak beliefs about one's efficacy in that situation.

Self-efficacy and locus of control are often treated as analogous in the literature. However, beliefs about whether one can produce certain actions (perceived self-efficacy) cannot be considered to be the same as beliefs about whether actions affect outcomes (locus of control) (Bandura, 1997). People who regard outcomes as personally determined (those who have an internal locus of control), but lack the requisite skills, would experience low self-efficacy and view activities with a sense of futility (Bandura, 1977).

Self-efficacy is also not seen as a personality trait but as a belief about the ability to coordinate skills and abilities to attain desired goals in particular domains and circumstances (Maddux, 2002). Self-efficacy is therefore not a genetically endowed trait. How one's self-efficacy develops, is discussed next.

3.4.2 Development of self-efficacy

Self-efficacy develops over time and through experience (Maddux, 2002). However, the development of self-efficacy can best be understood within a broader theoretical framework. Understanding self-efficacy and the development thereof requires that it should be viewed in the context of the social cognitive theory. The social cognitive theory has its roots in the traditional learning theory. The social cognitive theory is distinctive in its emphasis on the social origins of behaviour and the importance of cognition in human functioning, namely motivation, emotion and action. According to this theory people are capable of actively directing their own lives and learning complex patterns of behaviour in the absence of rewards. The four basic premises of this theory can be summarized as follows:

- People have powerful cognitive capabilities that allow for the development of internal models of experience, the development of innovative courses of action, the hypothetical testing of such courses of action through the prediction of outcomes and the communication of complicated ideas and experiences to other people. People can also engage in self-observation and analyse and evaluate their own

behaviour, thoughts and emotions. These self-reflective activities set the stage for self-regulation.

- Environmental events, inner personal factors such as cognitions, emotions and biological events and behaviours all influence each other respectively. People respond cognitively, affectively and behaviourally to different environmental events. People exercise cognition over their own behaviour, which then influences the environment, as well as their cognitive, affective and biological states.
- The concept of oneself and personality is socially embedded in the sense that it is perceptions of our own and others' patterns of social cognition, emotions and actions as they occur in patterns of situations. The self and personality are created in interactions with others and also changed through these interactions.
- People are capable of self-regulation. They choose goals and regulate their own behaviour in pursuit of these goals. At the heart of this self-regulation is one's ability to anticipate or develop expectancies to form beliefs about future events and states and beliefs about one's abilities and behaviour (Bandura, 1997).

In light of the social cognitive theory it is therefore suggested that two aspects influence the early development of self-efficacy. First it is influenced by the capacity to understand cause-and-effect relationships and the capacity for self-observation and self-reflection. One needs to recognize that one can produce actions that cause results (Bandura, 1997). Secondly, the development of self-efficacy is influenced by responsiveness of the environment, specifically the social environment that is normally constituted by the parents of a child at a very young age. Responsiveness also therefore specifically refers to the response to the child's attempt to manipulate and control his or her environment.

Apart from these two factors playing a role in a child's early development, one's self-efficacy beliefs continue to develop throughout one's life span as information is integrated from five primary sources. These five sources are:

- Performance or mastery experiences. Self-efficacy is determined by one's prior successes or mastery experiences (Bandura, 1986). These experiences have the strongest effect on self-efficacy expectations and can even be more powerful in terms of influencing one's self-efficacy beliefs if these successes required great effort and through which temporary setbacks along the way were experienced (Benner & Hill, 1999).

- Vicarious experiences. Self-efficacy beliefs are also influenced by our observations of the behaviour of others and the consequences of those behaviours. We use this information to form expectancies about our own behaviour and its consequences. Observing others performing threatening activities without adverse consequences can generate expectations in observers that they too will improve or succeed if they intensify and persist in their efforts (Bandura, 1977). Therefore our self-efficacy is influenced by the success of our social models, depending primarily on the extent to which we believe that we are similar to the models that we are observing (Bandura, 1997).

- Imaginal experiences. One's self-efficacy can furthermore be influenced by imagining oneself or others behaving effectively or ineffectively in hypothetical situations. This can also be imaginal interventions such as systematic desensitization and covert modelling. However, this imagining of doing something well is not likely to have as strong an influence on one's self-efficacy as the actual experience (Maddux, 2002).

- Verbal or social persuasion. Being told repeatedly by others of one's capabilities can also influence self-efficacy beliefs. In other words, our efficacy beliefs are influenced by what others say to us about what they believe we can or cannot do. Verbal persuasion is again a less potent source of enduring change in self-efficacy expectations than personal mastery experiences. The potency of verbal persuasion will depend greatly on the expertness, trustworthiness, assuredness and attractiveness of the

source of persuasion. The more believable the source of the information, the more likely it is for efficacy expectations to change (Bandura, 1977).

- Physiological and emotional states. Poor performance or perceived failure can be associated with aversive physiological arousal while success or perceived effectiveness can be associated with pleasant feeling states. These physiological and emotional states can influence self-efficacy seeing that when one becomes aware of unpleasant physiological arousal, one is more likely to doubt one's competence than if one's physiological state were pleasant or neutral (Bandura, 1986).

It is important to note, however, that the impact of the above mentioned information on efficacy expectations depend on how it is cognitively appraised by the individual. These appraisals of the individual are further influenced by a number of contextual factors including the social, situational and temporal circumstances under which these events occur (Bandura, 1977). As is evident from the discussion of the development of self-efficacy, these efficacy beliefs can vary on several dimensions that have important performance implications.

Efficacy beliefs differ on three dimensions, namely in terms of level, generality and strength. An individual's perceived self-efficacy may be limited to a simple task demand. If there are no obstacles to surmount, the activity is easy to perform and everyone has uniformly highly perceived self-efficacy for succeeding in the task. But these perceived self-efficacy beliefs could also extend to moderately difficult demands or include the most taxing performance demands within a particular domain of functioning (Bandura, 1997). Therefore, the range of perceived efficacy beliefs or capability for a given person is measured against levels of task demands that represent varying degrees of challenge to the person or difficulty expected to be overcome by the person in order to obtain successful performance.

Self-efficacy beliefs also differ in generality. People may judge themselves efficacious across a wide range of activities or only in certain domains of functioning (Bandura, 1997). In addition, self-efficacy expectancies vary in

strength. Weak expectations are easily extinguishable by disconfirming experiences, whereas individuals who possess strong expectations of their ability or mastery will persevere in their efforts despite disconfirming experiences (Bandura, 1977).

3.4.3 Implications of a strong self-efficacy

In order to fully understand the implications of a strong self-efficacy, it is important to understand that the influence of self-efficacy on human functioning is mediated by four basic psychological processes namely, cognition, motivation, affect and selection.

Benner and Hill (1999) explain that the process of cognition suggests that self-efficacious beliefs influence the way we think about ourselves. In this regard Bandura (1997) explains that efficacy beliefs affect thought patterns that can enhance or undermine one's performance. People's beliefs about their efficacy influence how they foresee situations and the types of anticipated scenarios and visualized futures they construct. Individuals who have a high sense of efficacy view situations as presenting realizable opportunities. They visualize success scenarios that provide positive guides for performance. Individuals who judge themselves as inefficacious see uncertain situations as risky and are inclined to visualize failure scenarios (Bandura, 1997).

Self-efficacy beliefs also influence motivational processes. The extent to which one expects positive outcomes will surely influence the degree to which the individual desires to engage in the activity, especially if the outcome is highly valued (Benner & Hill, 1999). This can be understood in the light of the attribution theory that states that people who credit their successes to personal capabilities and their failures to insufficient effort will undertake difficult tasks and persist in the face of failure. In this sense judgments of the causes of one's performance have motivational effects (Bandura, 1997). In addition to this the expectancy-value theory also sheds light on this in that the theory predicts that the higher the expectancy that certain behaviour can secure specific outcomes and the more highly those outcomes are valued, the

greater the motivation to perform the activity. Furthermore Bandura (1986) states that efficacy beliefs contribute to motivation in several ways. It is partly on the basis of beliefs of personal efficacy that people choose what challenges to undertake, how much effort to exert in the endeavour and how long to persevere in the face of difficulties.

High self-efficacy beliefs also influence affective processes. The individual who has confidence in his or her ability to produce a successful outcome is more likely to see the self in a positive light. This viewpoint can develop a greater sense of resilience in the face of adversity. The individual burdened with a weak self-efficacy may experience depression through unfulfilled aspirations, inefficient thought control or social inefficacy (Benner & Hill, 1999). Bandura (1997) explains that people possess the capacity to manage their own thought processes. To the extent that people can regulate what they think, they can influence how they feel and behave. Apart from cognitive control people can also exercise control over their affective states by other means such as self-relaxation, calming self-talk, engrossment in diversionary recreational activities and seeking solace in social supports. Beliefs that one can relieve unpleasant emotional states, whatever their source, makes them less aversive (Bandura, 1997).

Finally, self-efficacy beliefs can influence the types of experiences people select. Individuals with a high self-efficacy may choose those settings that require performances that test their capabilities but are still within the range of successful performance. Less self-efficacious individuals may choose tasks that are either obviously easy thus protecting the self-image from failure, but also not enhancing the sense of self-efficacy, or may choose tasks from which they expect to fail (Benner & Hill, 1999). Bandura (1977) explains that not only can perceived self-efficacy have a direct influence on the choices of activities and settings that the individual will engage in, but through expectations of the eventual success, it can also affect coping efforts once they are initiated. In this regard self-efficacy expectations determine how much effort people will exert and how long they will persist in the face of obstacles and aversive experiences.

But Bandura (1977) warns that expectation is not the sole determinant of behaviour. Expectation alone will not produce the desired performance if the needed capabilities are lacking. People with certainty of success might also not act because they have no incentives to do so. However, given appropriate skills and adequate incentives, efficacy expectations are a major determinant of people's choice of activities, of how much effort they will exert, and of how long they will persevere in their effort in dealing with stressful situations.

Self-efficacy then also plays a specific role throughout an employee's career and organisational functioning. The influence of self-efficacy in this regard is outlined by Bandura (1997) in detail and can be summarised under the following main areas:

- Beliefs of personal efficacy will play a key role in career development and pursuits. The higher the perceived efficacy to fulfil educational requirements and job functions, the wider the range of career options people seriously consider pursuing and the greater the interest they have in them.
- Perceived efficacy is also an influential factor in the job-search process itself. A job seekers' ability to conduct effective job searches and to convey to potential employers favourable impressions of their capabilities and promise will influence their success greatly. Training in job search skills therefore bolsters perceived efficacy to navigate oneself in the competitive job market.
- It has also been proven that perceived efficacy predicts successful reemployment following job loss after job layoffs during a recessionary period (Kanfer & Hulin, 1985, in Bandura, 1997).
- Singer (1991 in Bandura, 1997) found that beliefs of personal efficacy affect aspirations to leadership and specifically by perceived efficacy to fulfil the demands of leadership. In addition to this, there is also evidence that self-efficacy or belief systems can markedly affect, for better or for worse, the quality of managerial functioning (Bandura, 1997).

- Bandura (1997) also reports that effective decision making in organisations requires a high sense of managerial efficacy not only in analytical thinking but also in social persuasion, management of power conflicts and building coalitions.

3.4.4 Relationship of self-efficacy with effectiveness and quality of work life

Wood and Bandura (1989) suggested that self-efficacy predicts levels of stress, distress and depression, all of which would impact on an individual's satisfaction and withdrawal.

Saks (1994; 1995 in Bandura, 1997) conducted extensive research on newcomers' occupational development and functioning in a longitudinal field study of newly hired accountants in different accounting firms. He found that, compared to employees of low perceived efficacy, those who developed a high sense of efficacy not only coped better but were more satisfied with their jobs, had stronger commitment to their profession and organisations and had less intention to quit their profession or job, and fewer of them in fact left their firm.

Judge et al. (1998) found that self-efficacy indirectly influences job satisfaction in the sense that perceptions of work attributes, which influence job satisfaction, are affected. Judge and Bono (2001) then conducted a meta-analysis of 169 correlations and found a correlation of 0.45 for generalized self-efficacy and job satisfaction.

Empirical research has also consistently found that self-efficacy has a significant impact on performance on a variety of tasks as well as motivation, emotional reactions and persistence on a task (Gist & Mitchell, 1992). Sadri and Robertson (1993) confirmed the strong link between self-efficacy and performance by finding enhanced task performance to be a major consequence of strong self-efficacy perceptions.

3.4.5 Self-efficacy in a self-managing work team

As explained earlier, self-efficacy can be seen as a general construct or as pertaining to a specific situation. In this study we look at self-efficacy only specifically with regard to working in a self-managing work team (therefore focusing on task-specific self-efficacy).

Bandura (1997) explained that self-efficacy beliefs will influence people's mastering of the specialized technical skills of their chosen occupation as well as the generic interpersonal and self-regulatory competencies vital to the fulfilment of one's occupational role and successful management of one's career. This can include learning the nature and scope of one's occupational role, what is expected of one, how to manage one's workload, time pressures and other job-related stressors, how to work effectively with co-workers, communicate well, relate effectively to others and exercise leadership. Depending on its strength, a sense of personal efficacy in these skills aids or impedes career advancement quite apart from the technical skills one possesses. Therefore it can also be expected that self-efficacy beliefs with regard to working in a self-managing work team will directly influence the effectiveness of a team member participating in such a team.

In this regard Thoms, Moore and Scott (1996) then also found that self-efficacy mediates the relationship between personality and performance in self-managing work teams. They implied that people high in self-efficacy will tend to be resilient and will be most likely to adapt to self-managing work groups, but they recommend that this hypothesis should be tested empirically.

Bandura (1997) states that it is no easy task to maintain high work productivity and manage the many psychosocial aspects of work life successfully, especially in a self-managing team. He therefore concludes that effective teamwork requires not only versatile technical efficacy but also self-regulatory and interpersonal efficacy to forge the group into a motivated and productive workforce. The influence of these efficacy beliefs on the effectiveness of team

members in a self-managing work team are therefore empirically tested and further explored in this research.

This concludes the discussion of self-efficacy. The third dispositional factor, namely locus of control, is subsequently described.

3.5 LOCUS OF CONTROL

Locus of control refers to the place of a person's control of his life. It can be situated internally or externally. The construct is the work of Julian Rotter (1966). He developed the construct based on the social learning and attribution theories (Heider, 1958).

The social learning theory stresses the role of reinforcement, regard and gratification in determining behaviour. This theory claims that the reinforcement of behaviour leads to the increased expectation that this specific behaviour or specific event will again be followed by the same reinforcement (Rotter, 1954). When an individual observes that reinforcement follows on his behaviour, but not as a direct consequence of his behaviour, it is observed as the result of luck, fate or the influence of others and therefore experienced as unpredictable. If the behaviour is experienced in such a way, it is referred to as an external locus of control.

Rotter (1954) argued that behaviour of individuals in relation to specific reinforcements in a situation can be predicted based on two principles: (1) the value they attach to the reinforcement; and (2) the expectancies of individuals concerning their behaviour in the situation. There are two kinds of expectancies in the social learning theory, namely situation-specific and generalised expectancies. Situation-specific expectancies are determined to a large extent by the experience of the individual in a specific situation. Generalized expectancies are relatively stable resulting from generalising lifetime experiences in specific behaviour-outcome sequences (Rotter, 1975). Locus of control is one such generalised expectancy of control of reinforcement, be it internal or external.

The attribution theory refers to the way in which individuals use information from the environment to get to causal explanations for events. The theory is based on three basic assumptions: (1) individuals try to determine the cause of their own and others' behaviour; (2) individuals systematically allocate causal explanations to behaviour; and (3) the attributions that individuals make have consequences for their future behaviour or interactions (Heider, 1958).

According to Heider (1958) the attribution theory explains that individuals interpret behaviour as being due to aspects of the environment, whether rooted in the self or the situation. Although both internal and external forces combine to cause behaviour, it is not the actual causation that is important in behaviour, but the perception of these causes. Behaviour therefore results from the perception that it is related to internal or external attributes. The implication is that the real causation of behaviour could be totally different from the perception of the individual. It is in this sense that locus of control is related to the attribution theory, because locus of control is concerned with the perception of control being either internal or external (Rotter, 1966).

In the following section locus of control is defined and the development of an internal or external locus of control is briefly discussed. The consequences of an internal or external locus of control are then also discussed.

3.5.1 Definition of locus of control

Rotter (1966) defined locus of control as a generalized expectancy of perceived internal or external control of reinforcement. The generalised expectancy of internal control of reinforcement refers to the perception that events, being positive or negative, are the consequences of one's own behaviour and actions and thereby potentially under personal control. The generalised expectancy of external control of reinforcement, on the other hand, refers to the perception that positive or negative events are unrelated to one's own behaviour and actions and therefore beyond personal control.

Perceived control is therefore the belief that reinforcements are either resulting from your own actions and therefore under your personal control, or that reinforcements are controlled by forces outside the self and are therefore independent of your own actions. Those people who perceive their lives to be controlled by their own actions, skills and abilities are said to be internals. Conversely, those who perceive their lives to be controlled by external forces are said to be externals (Hodgkinson, 1992). Either one's own actions, behaviour, skills, knowledge and personality influences what happens or luck, fate, powerful others or chance influences what happens. One either believes that one can have control over one's environment and influence what happens, or one believes that one has no control over one's environment and one cannot influence what happens in any way. In other words those who believe they are masters of their fate are labelled as internal while those who believe that their lives are dependent on luck, chance or powerful others are classified as externals.

If one has an internal locus of control, a good or bad outcome to a certain action will strengthen or weaken one's behaviour patterns. But if one has an external locus of control then a good or a bad outcome to a certain action will not change one's behaviour.

Rotter (1966) clarified the construct of locus of control further by stating that it is a generalised expectancy that an individual utilises in a novel or ambiguous situation, which is assumed to be stable across different situations. However, an important aspect of locus of control is the fact that internal or external expectancies may vary according to the specific situation, task demand or nature of the other individuals concerned (Connor, 1995).

As is evident from the definition, locus of control can be described according to two dimensions, namely an internal locus of control and an external locus of control. If people have an internal locus of control, it signifies that they accept responsibility for their own behaviour and circumstances. They have a mature, responsible and realistic perception of life. They tackle demands that life

makes on them confidently without being unnecessarily or excessively dependent on others. They are active and look to themselves for direction. They are more alert to those aspects of the environment that provide useful information for their future behaviour. They seem to be eager to seek out cues and to manipulate the situation so as to be better able to achieve certain outcomes. They take steps to improve their environmental conditions. They are also better able to delay gratification and persist on a task because they know that it will matter in the end. Individuals with an external locus of control are passive and dependent on external factors such as supervisors or organisational policies or rules for direction. They are furthermore dependent on approval. They are more likely to end up feeling helpless or powerless. They do not acquire the kind of information that would better enable them to cope with the world in an effective way. There is a low expectancy that one's own effort will have an impact, therefore information acquisition is not seen as a productive enterprise (Els & Rothmann, 2001).

Schepers (1995), in opposition to the perception of Rotter (1966), argue that the construct of locus of control consists of three dimensions, namely internal control, external control and autonomy and that these dimensions are independent dimensions and not only endpoints on a single continuum. Autonomy describes individuals' ability to believe in their own abilities - whether they are able to act independently and with confidence and whether they are able to make decisions and take action steps that lead to the solution of problems (Schepers, 1995).

3.5.2 Development of locus of control

According to Phares (1976) the development of locus of control originates in the formative years of a child where a parent-child relationship and parenting techniques play an important role in forming the child's expectations in terms of reinforcement. Warm, protective, caring and positive parenting techniques tend to lead to internal locus of control development in children, while cold, rejecting, negative or overprotective parenting will probably lead to an external locus of control (Lefcourt, 1982). Factors in a child's social milieu have also

been related to the formation of an internal or external locus of control. It has been found that first-borns tend to have an internal locus of control, as opposed to children who are born later (Phares, 1976).

Apart from evidence that the formation of locus of control stems from the formative years, some research evidence has also shown that generalized control expectancies are inherited to a certain extent (Miller & Rose, 1982). According to Boone and De Brabander (1997) locus of control expectancies are partly constitutional and partly the product of accumulated life experiences and can therefore be seen as a fundamental personality trait.

Research has also found that individuals belonging to a minority or stigmatised group tend to be more external in their style and Phares (1976) ascribed this to two possible factors. Firstly, the direct teaching of parents, peers or older siblings who influence and serve to reinforce external control beliefs and the punishment of verbalised internal locus of control beliefs and secondly, the reality they face could reinforce beliefs of external locus of control due to the fact that the members of a minority ethnic or stigmatised group quickly realise that they are restricted in terms of jobs, promotions and housing. Connor (1995) also reported that internality is associated more with higher social class or socio-economic status. As one moves up in the socio-economic scale, there is a tendency to assume that one's own efforts are crucial, as opposed to the belief that one cannot control events. According to Connor (1995) locus of control is also inextricably linked to personality and culture in the sense that different types of societies maintain different expectations or values concerning the expression of internality or externality.

Locus of control therefore seems to have its roots in the formative years and is shaped by factors such as parenting, societal restraints and socio-economic status. Locus of control is not just the sum of life experiences but also, to some extent, hereditary. It therefore seems to be a relatively stable, fundamental personality characteristic that cannot be separated from the cultural setting in which the individual grows up.

The literature (Cilliers & Wissing, 1993; Rothmann & Sieberhagen, 1997) indicated that methods directed at facilitating self-actualisation are instrumental in stimulating an internal locus of control and autonomy. The development of self-insight through, for instance, individual counselling or a growth group experience, often leads to the identification of a gap in skills. Various forms of skills training are then also related to the stimulation of an internal locus of control. If skills in problem solving, conflict management, communication and assertive behaviour are learned, the individual experiences more autonomy and internal control in situations. Recent studies such as those of Olivier and Rothmann (1999) and Els and Rothmann (2001) have successfully proven that a training programme consisting of individual counselling sessions, a growth group experience and skills development contribute to a significant increase in the internal locus of control and autonomy.

3.5.3 Implications of an internal locus of control

Rotter (1966) explains the influence of a locus of control by stating that a generalised attitude, belief or expectancy regarding the nature of the causal relationship between one's own behaviour and its consequences might affect a variety of behavioural choices in a broad band of life situations. Such generalised expectancies in combination with specific expectancies act to determine choice behaviour along with the value of potential reinforcements. These generalized expectancies will result in characteristic differences in behaviour.

Individuals with an internal locus of control are happier, better adapted, less tense and enjoy more satisfaction in life. The reason is that they believe they can make a drastic difference in any situation and see themselves as the most important role players in such a situation. On the other hand, people with an external locus of control are passive, do not accept responsibility, always have excuses, feel helpless and discontented when difficult life situations crop up and continually complain about their circumstances. Their attitudes to life indicate that they are victims of circumstances and that life sweeps them

along relentlessly (Els, 2000; Schepers, 1995). According to Kren (1992) individuals with an internal locus of control believe that their behaviour influences the outcomes of events and therefore they will be more active in trying to influence the environment.

An individual with an internal locus of control will ascribe performance to causes within his own control (competence or behaviour), while an individual with an external locus of control will ascribe performance to causes outside of his own control such as luck or fate (Phares, 1976). Performance in the future is then consequently determined by the attributions that are allocated to the performance.

In a working environment individuals with an internal locus of control will probably feel that they can handle the situation because it is within their own personal control (Judge, Locke, Durham & Kluger, 1998). They will be less inclined than individuals with an external locus of control to deal with their frustrations by acting aggressively or disconnecting themselves from the situation. People with an internal locus of control will therefore be more satisfied with their work because they believe that they can control their work situation by means of their behaviour. Moerdyk (1986) showed that there is a relationship between an external locus of control on the one hand and passivity, slow decision making and unrealistic expectations from the working environment on the other hand. Rahim and Psenicka (1996) also found that people with an external locus of control are not able to handle the pressure, insecurities and challenges of a taxing work situation.

Mayer and Sutton (1996) found that individuals with an internal locus of control are more successful in personal relationships than individuals with an external locus of control. According to Spector (1982) people with an internal locus of control look to themselves for direction while those with an external locus of control are dependent on external factors such as supervisors or organisational policies and rules for direction.

Previous research has also shown that externally oriented Chief Executive Officers (CEOs) are less likely to belong to organizations that engage in long-term strategic planning or seek information about the business environment. Internally oriented CEOs by contrast are more likely to belong to firms that plan ahead (often for a period of several years hence), actively seek information about the business environment and have a tendency to lead rather than follow (Hodgkinson, 1992).

3.5.4 Relationship between locus of control, effectiveness and quality of work life

In a meta-analysis of participation in work-studies, Spector (1986) suggests that perceived control leads to greater satisfaction, commitment, involvement, motivation and performance, and lower physical and emotional distress, role stress and withdrawal. Numerous studies have shown that individuals with an internal locus of control perform better than those with an external locus of control in job situations that require initiative, responsibility, autonomy and problem solving (Abdel-Halim, 1980; Rizzo, House & Lirtzman, 1970).

Bono and Judge (2003) confirmed the relationship between the core-self-evaluations (of which locus of control is one), job satisfaction and job performance.

3.5.5 Locus of control in a self-managing work team

As can be seen from the discussion of the implications of having an internal locus of control, individuals with an internal locus of control are likely to be able to handle the situation of working in a self-managing work team because they will feel that it is under their personal control. Furthermore they are likely to accept the increased responsibility more readily than someone with an external locus of control. Team members with an internal locus of control will also be less dependent on guidance from supervisors, rules or organisational guidelines and will therefore be more comfortable in working in a self-

managing team environment where there is definitely less direction given than in a normal team environment.

In this regard Garson and Stanwyck (1997) conducted a study, using a simulation game of employees working in self-managed teams. It was found that participants with an internal locus of control were more satisfied with their supervisors than were externals.

Boone, Van Olffen and Van Witteloostuijn (1998) state that the skills associated with internality (task-orientedness, motivation, involvement and stress resistance) contribute more to effectiveness in uncertain and ambiguous situations like those prevalent in a self-managing work team. They also then confirmed that locus of control is a valid predictor of team performance.

These findings are then also empirically verified in this research.

This concludes the discussion of locus of control. The big five personality dimensions are discussed next.

3.6 THE BIG FIVE PERSONALITY DIMENSIONS

Personality traits are relatively enduring characteristics of individuals that are not easily changed by interventions such as behavioural training (Helmreich, 1984). Personality can be thought of as an individual's relatively consistent way of thinking, feeling and acting, which is the result of the individual's combined physical, mental, emotional and social characteristics and experiences (Macionis, 1997).

During several decades prior to the 1990's the use of personality testing in employee selection was generally disregarded and looked down on by personnel selection specialists. This was primarily due to pessimistic conclusions drawn by researchers such as Guion and Gottier (1965) and Schmitt, Gooding, Noe and Kirsch (1984) that stated that personality tests did

not demonstrate adequate predictive validity to qualify their use in personnel selection. Over the past several years, however, there has been an increased optimism regarding the utility of personality tests in personnel selection (Hurtz & Donovan, 2000). Researchers have suggested that the true predictive validity of personality was obscured in earlier research by the lack of a common personality framework for organizing the traits being used as predictors (Barrick & Mount, 1991), and recently there has been extensive work done in developing an overall classification system for personality traits that allows comparisons to be made across studies in a consistent manner (Kichuk & Wiesner, 1997).

The Big Five (Extraversion, Emotional Stability, Agreeableness, Conscientiousness and Openness to experience) classification system has gained increasing confidence in its robustness as a model of personality and is now widely accepted as a personality classification system (Kichuk & Wiesner, 1998). The five dimensions of the five-factor model are now described in more detail.

3.6.1 Conceptualising the big five personality dimensions

In 1991 Barrick and Mount conducted a study to investigate the relation of the Big Five personality dimensions with job performance criteria. This study served as the starting point for the development of the Personal Characteristics Inventory (PCI). The PCI is used in this study to measure the five personality dimensions. The five personality dimensions encompass almost all possible variations of a person's workplace personality. These five dimensions are described next.

3.6.1.1 Extraversion

It is widely agreed that the first dimension is Eysenck's (1990) Extraversion/Introversion. This dimension has a strong interpersonal component. Extraversion is defined as the ability or tendency to be sociable, gregarious, assertive, talkative, energetic, adventurous, ambitious and active

(Mount & Barrick, 2002). Typically, extraversion is thought to mainly consist of sociability. However, as can be seen from the above definition, extraversion is a broad construct that also includes other factors. Watson and Clark (1997) note that extraverts are more sociable but are also described as being more active and impulsive, less introspective and self-preoccupied than introverts. Extraverts tend to be socially oriented (outgoing and gregarious), but also are surgent (dominant and ambitious) and active (adventuresome and assertive). According to Barrick and Mount (1991) the opposite pole of extraversion is introversion, and individuals low in extraversion have been described as quiet, reserved, shy, silent and withdrawn. Extraversion is related to the experience of positive emotions, and extraverts are more likely to take on leadership roles and have a greater number of close friends (Clark & Watson, 1997).

The PCI measures extraversion as being composed of elements from the sociability, need for recognition and leadership orientation subscales (Mount & Barrick, 2002). Individuals scoring high on sociability are seen as very talkative, gregarious and enthusiastic. They enjoy large social gatherings and being around other people. They are fun loving and often the life of the party. Those scoring high on the need for recognition subscale like to be the centre of attention and to be entertaining. At times they like to show off and are open about themselves to others. They like to be recognised for their accomplishments. In accordance with the finding of Clark and Watson (1997) individuals who score high on leadership orientation like to become the leader of a group. They are seen as being very persuasive and seek leadership roles rather than follow others' directions. They have a clear sense of what they like and turn plans into action.

3.6.1.2 Agreeableness

Agreeableness is defined as the tendency to be courteous, helpful, trusting, good-natured, cooperative, tolerant and forgiving (Mount & Barrick, 2002). This dimension refers to a general belief that others are to be helped and that one will be helped in return (Costa & McCrae, 1992). Agreeable persons are likeable, cheerful and gentle (Judge, Higgins, Thoresen & Barrick, 1999).

Agreeableness can be described as the love and warmth dimension of personality. It has also been described as likeability (McCrae & Costa, 1985), friendliness (Guilford & Zimmerman, 1949), social conformity (Fiske, 1949), compliance versus hostile non-compliance (Digman & Takemoto-Chock, 1981) or love (Peabody & Goldberg, 1989). The opposite pole of agreeableness has been identified as antagonism. Consequently, individuals low in agreeableness tend to have a quarrelsome nature and have been described as being hostile, indifferent to others, self-centred, spiteful and jealous.

The PCI measures agreeableness consisting of the subscales of cooperation and consideration (Mount & Barrick, 2002). Individuals scoring high on the subscale of cooperation like to help others. They tend to see the best in others and respect them. They find it gratifying to provide assistance to others. Individuals scoring high on consideration are seen to be good-natured, cheerful and generous people who forgive others easily. They are concerned about others' welfare, are considerate of their feelings and anticipate their needs before acting.

3.6.1.3 Conscientiousness

Conscientiousness is defined as the ability or tendency to be hardworking, dependable, prudent and efficient. A conscientious individual is seen as someone who has achievement striving (Mount & Barrick, 2002). This dimension refers to the traits of purposefulness, determination and the ability to organise and plan tasks to their completion (Costa & McCrae, 1992). Conscientiousness reflects being careful, thorough, responsible and organised (Barrick & Mount, 1991). Conscientiousness is related to an individual's degree of self-control as well as the need for achievement, order and persistence (Costa, McCrae & Dye, 1991). Conscientious individuals are frequently described as purposeful, strong-willed, determined and punctual.

The PCI measures conscientiousness as composed of elements from the dependability, achievement striving and efficiency subscales (Mount &

Barrick, 2002). Individuals scoring high on dependability are seen as very thorough, reliable, responsible and dependable. They are likely to be punctual and follow through on commitments, tasks or projects they undertake. Individuals scoring high on achievement striving are characterized as hardworking and persistent with high aspiration levels. They do their best at being competent at any job they do and often do more than they planned. Individuals scoring high on efficiency tend to be neat and orderly. They demand quality and strive for perfection.

3.6.1.4 Stability

Stability is defined as the ability or tendency to handle stress, to maintain an even temperament and to have a high degree of composure and self-confidence across most situations (Mount & Barrick, 2002). This factor has been frequently cited as Emotional Stability, Emotionality or Neuroticism (McCrae & Costa, 1985). Neuroticism contrasts emotional stability and refers to the tendency of individuals to experience negative affects such as fear, anger, guilt, embarrassment, sadness and disgust (Costa & McCrae, 1992). Neuroticism generally refers to a lack of positive psychological adjustment and emotional stability. Persons scoring high on measures of neuroticism are frequently characterised as fearful, anxious and depressed.

The PCI measures stability as being composed of elements from the even-temperament and self-confidence subscales (Mount & Barrick, 2002). Those scoring high on the even-temperament subscale are calm and relaxed. They are secure and emotionally steady. They are often described as being in control of their emotions, people who tolerate stress well and are seen as being patient with others. Those scoring high on the self-confidence subscale are able to accept criticism, as they feel secure about themselves and free from stress. They are comfortable in social situations and cope well in novel or difficult situations (Mount & Barrick, 2002).

3.6.1.5 Openness

Openness is defined as the ability or tendency to be imaginative, cultured, curious, polished, original, broadminded, intelligent and artistically sensitive (Mount & Barrick, 2002). It has also been called Openness to Experience (McCrae & Costa, 1985). Openness is characterised by an intellectual and unconventional tendency. People high in openness are inclined to have differentiated emotions, aesthetic sensitivity, broad interests, a preference for variety, unconventional values and a deep awareness as well as a need to explore experiences for deeper meanings (Barrick & Mount, 1991). Individuals higher in openness have more positive attitudes towards learning, experiencing new things and perceiving new challenges as opportunities for growth. Individuals who have low scores on this dimension would prefer the familiar to the novel and be more inclined to conventional behaviour and conservative outlooks.

The PCI measures openness as being composed of elements from the abstract thinking and creative thinking subscales (Mount & Barrick, 2002). Those scoring high on abstract thinking are intellectually curious. They like to work with abstract ideas, difficult concepts and philosophical issues. They like problems that require a great deal of reasoning and look for the hidden meaning in things. Those scoring high on the creative thinking subscale are clear-minded, flexible and perceptive. They are not rule-oriented and can be daring and independent in their thoughts. Typically they are described as being clever and wise. They have vivid imaginations and are full of ideas. They also prefer unstructured, flexible environments in which to express their creativity (Mount & Barrick, 2002).

3.6.2 Relationship between the big five personality dimensions and effectiveness

The standardized Big Five classification system has encouraged researchers in the early 1990s to adopt this framework for selection research. And the Big Five terminology has allowed researchers to re-evaluate and compile previous

research studies that relate personality to individual performance with techniques such as meta-analysis (Kichuk & Wiesner, 1997; 1998). The results from three meta-analyses suggest that personality is a potentially valuable tool for predicting future job performance (Barrick & Mount, 1991; Hurtz & Donovan, 2000; Tett, Jackson & Rothstein, 1991). Subsequent meta-analyses by Mount and Barrick (1995) and Salgado (1997) have seemed to solidify this newfound status granted to personality in predicting job performance.

With regard to extraversion Piedmont and Weinstein (1994) found that high extraversion scores predict high performance. Barrick and Mount (1991) found that extraversion was a valid predictor for two occupations involving social interaction, namely that of managers and sales. In relation to this, extraversion has been shown to be a valid predictor of job performance, given that the occupation involves interpersonal skills (Mount, Barrick & Steward, 1998).

Agreeableness is generally expected to have a weak relationship with overall job performance. However, situations in which agreeableness appears to have a high predictive validity are jobs that involve considerable interpersonal interaction, particularly when the interaction involves helping, co-operating with and nurturing others (Barrick et al., 1998; Mount, Barrick & Steward, 1998). Barrick and Mount (1993) found that the validity of agreeableness to predict job performance was higher in high-autonomy jobs compared to low-autonomy jobs, but the correlation was negative.

It is likely that individuals measuring high on conscientiousness would handle stressful situations effectively and efficiently because they tend to use more active coping mechanisms. One of the most frequently cited articles confirming this hypothesis is the one of Barrick and Mount (1991). The conscientiousness dimension was found to be a consistently valid predictor for all occupational groups and for all criterion types. Barrick and Mount (1993) confirmed this relationship and found a correlation of $r=0.25$ between conscientiousness and job performance. Piedmont and Weinstein (1994) found that conscientiousness correlates with performance ratings over a

diverse number of occupational groups. Judge et al. (1999) also found in this regard that conscientiousness positively predicts intrinsic and extrinsic career success. Fallon, Avis, Kudisch, Gornet and Frost (2000) did a correlation analysis with 359 employees and found that conscientiousness predicted overall performance.

Judge et al. (1999) found that neuroticism negatively predicted extrinsic success and general mental ability positively predicted extrinsic career success. Most meta-analyses have suggested that emotional stability is positively correlated with job performance in virtually all jobs (Barrick & Mount, 1991; Salgado, 1997). Being anxious and hostile, personally insecure and depressed is unlikely to lead to high performance in any job. As a result it can be expected that emotional stability will be positively related to overall performance across jobs.

Openness to experience has been shown to predict training proficiency relatively well with regard to job performance (Barrick & Mount, 1991; Barrick & Mount, 1998). It can be hypothesized that individuals who are intellectual, curious and imaginative and who have broad interests are more likely to benefit from training associated with working in a self-managing work team.

3.6.3 Relationship between the big five personality dimensions and quality of work life

There seems to be inconsistent findings in the literature regarding the relationship between the big five personality dimensions and quality of work life variables.

Tokar and Subich (1997) surveyed the job satisfaction of 359 diversely employed adults to determine whether personality dimensions recognized in the five-factor model of personality contributed to the prediction of job satisfaction. They found that the block of personality dimensions did contribute significantly to the prediction of job satisfaction, with extraversion and low neuroticism as unique predictors.

However, Furnham, Petrides, Jackson and Cotter (2002) concluded from their study that personality does not have a strong or consistent influence either on what individuals perceive to be important in their work environment or on their levels of job satisfaction.

This relationship is consequently also investigated in this research.

3.6.4 The big five personality dimensions in a self-managing work team

Organisations are beginning to realize the importance of considering personality mixes when designing teams, specifically also self-managing work teams (Kichuk & Wiesner, 1997). The propensity of a person to behave in a certain manner, or to successfully interact with others, is a function of his or her personality (Hogan, 1991). Therefore, if the personality combinations of team members that contribute to, or inhibit team performance, can be determined, it can maximize the chances of product development success by simply administering a personality test prior to team formation (Kichuk & Wiesner, 1997).

Personality can be seen to have a three-fold role in team selection. Firstly, in individual selection, personality has the potential to add incremental validity to other measures such as ability in the prediction of job performance for each individual on the team. Secondly, personality might be helpful in identifying those people who are capable of working on a team and thirdly, personality may have a role in identifying the optimal combination of people to ensure a good working relationship among team members (Kichuk & Wiesner, 1998). Kichuk and Wiesner (1998) state that an exploration of the above three aspects could lead to the development of possible personality profiles for team members. They reviewed the research results on the big five personality and team performance and stated that the studies relating team member personality to team performance are sparse. Most of the studies that do exist measure very specific traits and relate them in isolation to team performance, and Kichuk and Wiesner (1998) came to the conclusion that there are no

specific conclusions relating personality as classified within the Big Five framework to team performance. Their hypotheses in this regard as well as some preliminary results from other studies that cited the Big Five will be mentioned briefly.

Kichuk and Wiesner (1998) hypothesize that conscientiousness, based on the majority of evidence, should be related to team performance. Neuman and Wright (1999) again confirmed that conscientiousness and agreeableness predicted peer ratings of team member performance beyond measures of job specific skills and general cognitive ability. Certain sub-factors of extraversion such as sociability and dominance have been shown to be related to team performance and they hypothesize that neuroticism should be negatively correlated with subsequent group performance. Barry and Stewart (1997) found that others perceived extraverts as having greater effect than introverts on determining group outcomes. The results of linking agreeableness with group performance are not consistent across studies and no literature was found by Kichuk and Wiesner (1998) that relates openness to experience to team performance.

Yeatts and Hyten (1998) reported that the task of coordination in a self-managing work team was affected by the personality of the team members. Some personalities seem to be more inclined to carefully coordinate all details of a task, whereas others prefer to leave room in the work process for adjustments as they go along. However, Yeatts and Hyten (1998) did not specify the different personality characteristics they associated with coordinating behaviours. They also reported that the team member's personality affected the frequency and type of communication in the team. It appeared that team members who were more extraverted and well liked were more likely to be involved in communications. They concluded that members who were highly people-orientated and more outgoing or extraverted appeared to be more conducive to a team or collaborative environment. Catino (1992) also advised that a member's preference for introversion or extraversion should be considered in the self-managing work team environment.

Several authors speculate about the importance of other personality traits (apart from extraversion) and their influence on teamwork. These traits include conscientiousness (Allender, 1993; Sundstrom et al., 2000; Thoms et al., 1996; Yeatts & Hyten, 1998), neuroticism (Barrick & Mount, 1991; Thoms et al., 1996; Yeatts & Hyten, 1998), agreeableness (Thoms et al., 1996; Yeatts & Hyten, 1998) and openness to experience (Barrick & Mount, 1991; Thoms et al., 1996; Yeatts & Hyten, 1998). Several of the studies investigating the influence of these traits have been conducted in traditional work group settings and some of the results are inconclusive (Yeatts & Hyten, 1998). It seems that additional research on the relationship between these personality traits and self-managing work team performance is needed to clarify the relationship and determine the degree of influence personality has. This relationship is therefore empirically tested in this research.

This concludes the discussion of the big five personality dimensions. Subsequently a few other dispositions not mentioned above, are briefly touched on.

3.7 OTHER DISPOSITIONS IMPORTANT FOR TEAM MEMBERS OF A SELF-MANAGING WORK TEAM

The conceptualization of a disposition by House, Shane and Herold (1996) also describes a disposition to include the attitudes and preferences of an individual that will govern his behaviour in a given situation. Therefore, apart from the dispositions of team members mentioned above, their attitude towards self-managing work teams, their values and preferences are also regarded to be crucial to the success of the self-managing work team (Yeatts & Hyten, 1998).

Manz and Sims (1993) believe that workers today have changed; they no longer want or need authority figures and have a high need for self-expression, personal growth and self-fulfilment. The need for growth can be described as a personal requirement or need for achievement and personal

development (Yeatts & Hyten, 1998). According to Felts (1995) employees demand participation, flexibility and autonomy. Employees with these kinds of values will be effective in self-managing work teams. Orsburn et al. (1990) affirm this by stating that members of a self-managing work team must be eager for personal and professional growth. Members must desire to be self-leading (Manz, 1990).

Yeatts and Hyten (1998) found that team members of a self-managing work team value more responsibility, interpersonal interaction and decision-making. They propose that members should also have a preference for challenge and creativity. Members should display a complete commitment to constant improvements of the product or service that the team provides as well as improvements of personal skills (Allender, 1993). Larson and LaFasto (1989) emphasize that members should have a strong desire to contribute to the team and its activities.

Team members in a self-managing work team should be open to new experiences and changes in the environment and should be able to handle ambiguity. They should value more responsibility, autonomy, personal and professional growth and interpersonal interaction. Team members with low autonomy needs could easily be swayed to adopt the majority's proposed solution to a problem and so enhance the groupthink phenomena in self-managing work teams (Moorhead, Neck & West, 1998).

According to Catino (1992) a team member's preference for a certain type of leadership style as well as the preference to work independently or in a group are crucial considerations for selecting members of a self-managing work team. They should display a preference for a situational style of leadership.

In the above discussion the various dispositions and personality dimensions important for a team member of a self-managing work team have been conceptualized. They have been linked with the outcomes of effectiveness and quality of work life expected in a self-managing work team. The next discussion, however brief, attempts to also link the various dispositions and

personality dimensions with each other. This is done in an attempt to theoretically integrate the dispositions and personality dimensions needed by a team member of a self-managing work team and to determine whether these dispositions are mutually exclusive in their role as input variables for a team member of a self-managing work team.

3.8 THE RELATIONSHIP BETWEEN SENSE OF COHERENCE, SELF-EFFICACY, LOCUS OF CONTROL AND THE BIG FIVE PERSONALITY DIMENSIONS

Antonovsky (1991) attempted to provide a theoretical integration between sense of coherence, self-efficacy and locus of control. He integrated these constructs based on several categories, the first being the acknowledgement of the individual being exposed to and living in an external environment. The construct of self-efficacy assumes that tasks are continually set by the environment; the construct locus of control assumes that events continually occur; and sense of coherence that stressors are omnipresent. Secondly, the constructs can be linked, based on the fact that the information received from the environment must have some degree of clarity and that the message must contain content, which allows a moderate degree of freedom and choice in order to contribute to the salutogenic strengths of the individual. Otherwise, the information from the environment can be experienced as noise and of being imposed by brute illegitimate force. Even if this is the case, the third category in which the constructs can be linked pertains to the fact that the information must be sorted out, translated, coded and integrated. The problem is not only what to do with noise and brutal information, but also how to order and give priorities to the massive complexities of even benevolent information that bombards us. To the extent that we succeed in doing so, our strengths are enhanced. Apart from one having the capacity to integrate the information, to make emotional and cognitive sense of its complexities, to bear with the noise and brutal messages and to formulate a plan of action, one then needs to have motivational, emotional, cognitive and instrumental, personal and social resources to carry out the plan and so guaranteeing a salutogenic-enhancing experience. The last way in which the constructs are linked is

based on the fact that feedback should be received from the environment regarding the appropriateness of the individual's behaviour. In summary, Antonovsky (1991) proposed that sense of coherence, self-efficacy and locus of control could be linked, based on the systems theory and its core idea of information processing. The individual is seen as (1) a system linked to or isolated from a suprasystem; (2) from which information or noise is received; (3) of which the messages are internally integrated or undeciphered; (4) that sends information or noise to the suprasystems; (5) which then in turn provides feedback to or ignores the messages.

Apart from this attempt by Antonovsky (1991) to integrate these constructs, other literature also exists that provides evidence of the link between the constructs, the first being the linking of self-efficacy and locus of control. Rotter (1966) explains that both constructs are cognitive and related to the aspect of control. Bandura (1977) also explains in this regard that self-efficacy and locus of control are theoretically linked when he describes self-efficacy as the belief of individuals in their own abilities to exercise control over events in their lives. Breed (1997) investigated the relationship between the constructs of the salutogenic paradigm in two cultural groups, namely whites and others at the University of South Africa. A statistical relationship of 0.37 between self-efficacy and locus of control has been reported for the white group, whereas the other group yielded a correlation of 0.41. Bono and Judge (2003) again confirm this relationship by explaining that locus of control is one's belief in one's ability to control one's environment. It therefore follows logically that individuals who judge themselves as capable of performing across many contexts (generalised self-efficacy) should see themselves as being in control of their environment. Judge, Erez, Bono and Thoresen (2002) completed a meta-analysis of the relationship between the traits, using studies from the ten psychology journals most likely to include trait pairs. Their analysis of 127 articles revealed an estimated population level correlation of 0.56 between locus of control and generalised self-efficacy.

However, Judge et al. (1998) pointed out that, although self-efficacy and locus of control are related, they differ according to the expectancy theory in the

sense that self-efficacy pertains to expectancy (behaviour control), whereas locus of control is more concerned with instrumentality (outcome control). Gist (1987) also indicated that locus of control is a generalised construct covering a variety of different situations, whereas self-efficacy (from a task specific perspective as used in this research) measures individuals' belief that they could perform a specific task at a specific level of expertise. Consequently a person can have a strong internal control in general, but low self-efficacy pertaining to specific tasks in specific areas.

With regard to self-efficacy in terms of specific tasks Thoms, Moore and Scott (1996) investigated the relationship between self-efficacy for participating in self-managed work groups and the big five personality dimensions. Results indicated that neuroticism (the opposite of emotional stability), extraversion, agreeableness and conscientiousness were significantly related to self-efficacy for participating in self-managed work groups. Lee and Klein (2002) performed a study on the mediating effects of self-efficacy on the relationship between conscientiousness and learning over time. Although support was not found for self-efficacy as a mediator of conscientiousness-learning relationship, they found that conscientiousness was significantly and positively related to early training self-efficacy. Apart from the relationship between task-specific self-efficacy and personality, Judge et al. (2003) also found an estimated population level correlation of 0.62 between generalised self-efficacy and emotional stability.

In turn, locus of control was also strongly correlated with emotional stability, conscientiousness and extraversion (Morrison, 1997). Judge et al. (2003) also found a correlation of 0.40 between locus of control and emotional stability.

In the case of the relationship between sense of coherence and locus of control Kalimo and Vuori (1990) stated that the sense of coherence concept involves some of the issues that can be found in the locus of control theory. Sense of coherence refers to an internalised sense of control, which also guides the orientation towards coming events. The sense of coherence

concept helps individuals to understand the various facets of control and its consequences through their experience with the environment. It is in this regard that the sense of coherence concept is similar to the concept of locus of control because both lead to anticipatory health-promoting orientations. Individuals develop these healthy orientations because a general, realistic and active sense of control results from the presence of these concepts. In the study of Breed (1997) correlations of 0.53 for the white group and 0.39 for the other group were established.

The difference between sense of coherence and locus of control can be found in the fact that sense of coherence also views resources under the control of others as valuable, whereas locus of control views it as an external orientation and a failure to take control of their own destiny.

Although self-efficacy is not primarily conceptualised in the salutogenic paradigm, Antonovsky (1987) is of the opinion that sense of coherence shows similarities with self-efficacy. Antonovsky (1987) stated that the similarities apply when self-efficacy is dependent on three conditions, namely the belief that a certain outcome is important (meaningfulness); that the execution of certain behaviour contributes to the outcome (comprehensibility); and that behaviour can be executed successfully (manageability). In her study Breed (1997) found a correlation of 0.53 between self-efficacy and sense of coherence for the white group. The other group revealed a correlation of 0.29 in her study.

With regard to the relationship between sense of coherence and personality dimensions Strümpfer, Gouws and Viviers (1998) found a significant positive relationship between sense of coherence and emotional stability. Ruiselová (2000) also confirmed a relationship between a strong sense of coherence and; lower neuroticism as well as higher conscientiousness for men and women. In this specific study women also showed a relationship between a strong sense of coherence and higher agreeableness.

In conclusion it seems that although sense of coherence, self-efficacy, locus of control and the big five personality dimensions are all related to some degree. There also seems to be enough differences between the various constructs to warrant their individual inclusion as an input variable for a self-managing work team member. There is also empirical evidence of each of these dispositions and personality dimensions (except for sense of coherence) having a specific influence on the working of team members of a self-managing work team. This empirical evidence therefore also is verified and explored further in this research.

INTEGRATION

As mentioned in the introduction to this chapter, the functioning of self-managing work teams can be described in terms of the systems model (Hackman, 1987), and then specifically as pertaining to certain inputs that help the team to perform certain tasks and follow processes in order to achieve certain outputs. The main input variables discussed in our conceptualisation in Chapter 2 and 3 are the various skills and dispositions that team members need in order to be able to function within a self-managing work team. Furthermore the outputs discussed are restricted to the effectiveness and quality of work life of the team members specifically. But it has also been shown that, apart from the positive outcomes for team members, there also are some negative outcomes associated with working in a self-managing work team. The input and output variables of team members in a self-managing work team are summarised in Table 4.

Table 4

Input and Output Variables of Individual Team Members

INPUT	OUTPUT
Skills a) Interpersonal skills • Conflict resolution • Collaborative problem-solving • Communication b) Self-management skills • Goal setting and performance management • Planning and task coordination c) Technical skills d) Business knowledge and skills e) Learning skills	**Effectiveness** a) Productivity, efficiency and quality in terms of: • Technical aspects • Administrative aspects • Interpersonal aspects • Problem-solving and decision-making • Determining work procedures • Contribution to overall team performance
Dispositions a) Extraversion b) Agreeableness c) Conscientiousness d) Stability e) Openness f) Sense of coherence g) Self-efficacy h) Locus of control i) Being self-motivated j) Achievement-orientated k) Flexible l) High need for self-expression, growth, participation, flexibility and autonomy m) Value interpersonal interaction, more responsibility and self-leading opportunities n) Exhilarated by change and thrives in ambiguity	**Quality of work life** a) Experience work as meaningful b) Technical and social needs are met c) Experience cohesiveness, job, growth and group satisfaction d) Personal knowledge and skills increase e) Display commitment to the organization, trust in management f) Experience ownership and pride in the work **Negative outcomes** a) Experience more stress, higher tension and mental, physical, emotional and social pressure b) Confronted with a heavy training load and time-consuming meetings c) Experience alienation, role-conflict and an increased degree of concertive control from team members

From the table it can be seen that the team member should possess a variety of additional skills not needed by a team member in a traditional teamwork environment, such as managerial skills, learning skills and self-management skills. The team member should possess personality characteristics such as extraversion, conscientiousness, agreeableness, stability and openness. Furthermore the individual should have an internal locus of control, a high

degree of self-efficacy and should regard autonomy as positive. When the team member values interpersonal interaction, flexibility and growth in a working environment, the member is likely to experience job, growth and group satisfaction as well as cohesiveness and support. The member is likely to display commitment to the organization and trust in management and achieve a high degree of productivity, efficiency and quality. Apart from all the positive outcomes, a team member of a self-managing work team can also experience higher levels of stress and role-conflict and be confronted with additional tasks and activities that can lead to role-overload. It can be expected that a team member in a self-managing work team who is functioning effectively will perform tasks effectively and within the time limits, will cooperate and communicate effectively with other team members and will contribute to the team's ability to reach set goals.

This study is, however, limited to a selection of these input and output variables as they are set out above. A model is designed that describes the specific input and output variables that are tested in this research. This model is displayed in Figure 7.

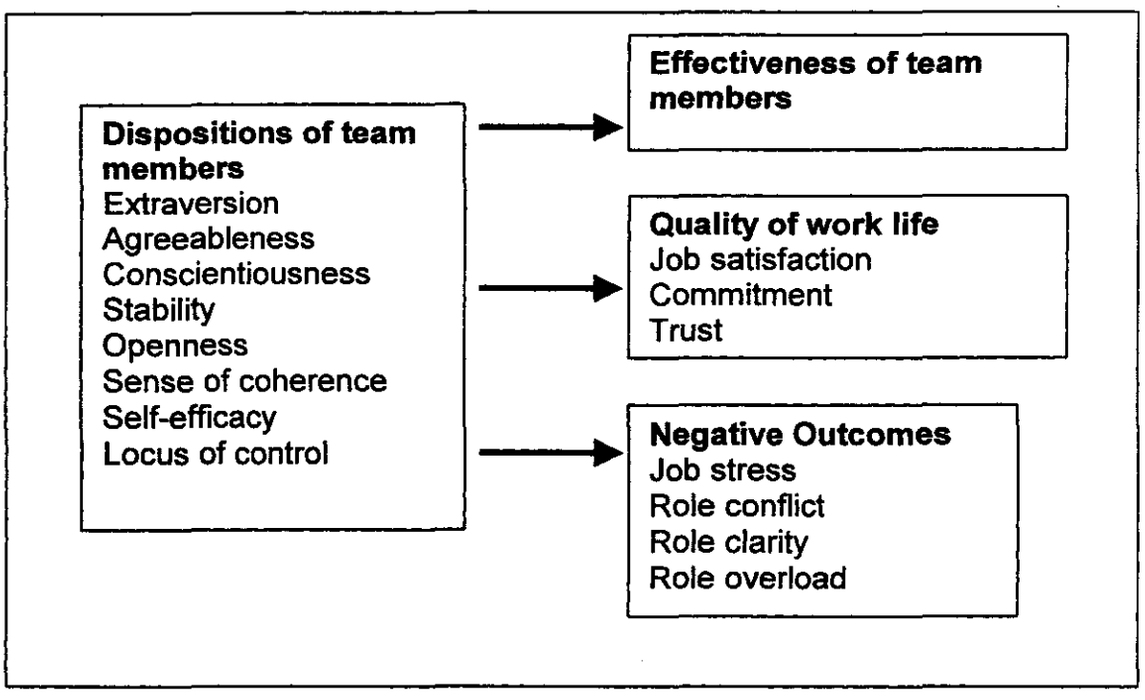

Figure 7 A model explaining the input and output variables of a member of a self-managing work team as tested in this specific study

From the figure it can be seen that this research investigates the relationship between the big five personality dimensions, the dispositions of sense of coherence, self-efficacy and locus of control with the effectiveness, quality of work life and specific negative outcomes expected to form part of the experience of a team member of a self-managing work team. In the conceptualisation of self-managing work teams in Chapter 2 it is indicated that evidence from the literature affirms that the implementation of a self-managing work team will benefit the organisation as well as the team member (see 2.3). One of the benefits predicted for the team members of self-managing work teams is higher levels of quality of work life. In addition to this our discussion of the dispositions and big five personality dimensions also indicated a relationship between these constructs and higher levels of quality of work life. It is therefore the expectation of the researcher that individuals having high levels of extraversion, agreeableness, conscientiousness, stability and openness as well as a strong sense of coherence, strong self-efficacy beliefs regarding their own capability of working in a self-managing work team and an

internal locus of control will experience even higher levels of quality of work life than those team members who do not have high levels of these particular personality dimensions or dispositions.

It has already been mentioned that workers in a self-managing work team will experience day-to-day work life in vastly different ways than workers in a traditional management system (Barker, 1993). Catino (1992) states that team members must be able to cope with the spectrum of tasks associated with owning a whole unit of work. Flynn, McCombs and Elloy (1990) state that members of a self-managing work team need coping skills for dealing with stress and role ambiguity. According to Melin, Lundberg, Söderlund and Granqvist (1999) individuals in self-managing work teams have a greater need for efficient coping strategies. Glaser (1991) argues that sources of stress for facilitators of self-managing work teams range from learning to manage a busier schedule to learning to implement self-managing work team concepts under a restrictive union contract. Therefore facilitators need to learn new coping strategies to be effective in these roles. Wellins, Byham and Wilson (1991) also comment that members should display a tolerance for stress and should be able to handle ambiguity. The dispositions of sense of coherence, self-efficacy and locus of control will enable the team members to accomplish exactly this. Therefore the researcher also expects that team members with higher levels of extraversion, agreeableness, conscientiousness, stability and openness as well as a strong sense of coherence, strong self-efficacy beliefs regarding their own capability of working in a self-managing work team and an internal locus of control will be more effective as team members than those who do not have high levels in terms of the personality dimensions and dispositions mentioned above.

Finally the researcher also expects that team members with higher levels of extraversion, agreeableness, conscientiousness, stability and openness as well as a strong sense of coherence, strong self-efficacy beliefs regarding their own capability of working in a self-managing work team and an internal locus of control will experience less of the negative outcomes normally expected when working in a self-managing work team.

All these expectations are tested empirically in this research.

3.9 CHAPTER SUMMARY

In this chapter the dispositions and personality dimensions needed for a team member of a self-managing work team have been conceptualised. It was also shown how these constructs relate to effectiveness and quality of work life as well as to working in a self-managing work team specifically. Finally the model tested empirically in this research was explained.

With this chapter the second, third and fourth specific objectives were reached. Namely to conceptualize the role that dispositional factors (including sense of coherence, self-efficacy, locus of control and personality dimensions) play in the experiences and outputs of team members of self-managing work teams from the literature; to conceptualize and determine the relationship between sense of coherence, self-efficacy, locus of control and the five-factor personality dimensions; and to conceptualize and determine the personality profile of a member of a self-managing work team and to determine how this relates to effectiveness and quality of work life criteria in this context. Chapter 4 will describe the empirical research conducted in this study.

CHAPTER 4

EMPIRICAL STUDY

The second phase of the research procedure is the empirical study, which is discussed in this chapter. The research design, study population and measuring instruments used in the study are described. The research procedure followed is discussed as well as the statistical analysis that is carried out. Finally the research hypotheses are stated in terms of the present study.

4.1 RESEARCH DESIGN

A quantitative design is used in this study to gather and analyse the data. The specific design used to determine the dispositions, effective performance and quality of work life of members in a self-managing work team is the cross-sectional survey design (Bethlehem, 1999). According to this design each individual in the sample is evaluated on several variables at the same time, and the relationships between the variables are determined. It is a study of connections that occur without any planned intervention between the variables. The cross-sectional survey design lends itself to the examination of stable, long-term states or conditions and allows the researcher to make inferences from a sample to a population.

Some practical problems that may occur when using this design are measurement errors (the respondent does not understand the question in the survey), processing errors (errors made during data processing e.g. data entry) and the third-variable problem (where a high correlation between two variables may be explained by a third variable with which both are highly correlated). One of the most profound practical problems of this design is the fact that causation between variables cannot be established. A pilot study was done to determine the most prominent measurement errors. Control techniques are used to limit processing errors and statistical techniques such

as multiple moderator regression analysis and structural equation modelling are used to compensate for the third-variable problem.

Certain variables, like the age of participants, can have an effect on the results and therefore a biographical questionnaire is included to control variables such as age, gender, length of service and educational background.

4.2 STUDY POPULATION AND SAMPLE

In this section the study population is discussed. Characteristics of the population, the sampling method and characteristics of the sample are described.

4.2.1 Characteristics of the study population

Currently very few organisations in South Africa are using self-managing work teams on a large scale. The researcher therefore experienced difficulty in obtaining a study population for the research. The study population that was identified and used for the study consisted of employees from a large chemical organisation as well as a large financial institution in South Africa. The study population were all members of self-managing work teams in their respective organisations.

4.2.2 Sampling

In this study an availability sampling strategy was used to compose the sample. As already mentioned above, the researcher experienced difficulty in identifying a large pool of employees that are currently working in the context of self-managing work teams and therefore it was decided to include all the team members in these two respective organisations that are currently operating within the context of self-managing work teams. In both these organisations self-managing work teams have already been functioning for at least a year prior to the onset of the research.

4.2.3 Characteristics of the sample

A total of 102 team members are included in the sample. The characteristics of the sample are given in Table 5.

Table 5
Characteristics of the Sample

		Number of respondents
Organisation	Chemical organisation	61
	Financial institution	41
Gender	Male	48
	Female	46
	Not indicated	8
Age	18-25	7
	26-35	26
	36-45	34
	46-55	20
	56-65	7
	Not indicated	8
Race	Black	11
	White	78
	Indian	3
	Coloured	2
	Not indicated	8
Qualification	Matric	32
	Diploma	35
	Degree	20
	Postgraduate degree	4
	Not indicated	11
Length of service	0-9 years	58
	10-19 years	21
	20-29 years	10
	30-39 years	5
	Not indicated	8

From the table it can be seen that not all respondents completed the biographical questionnaire. Where the respondents did not complete a certain section of the biographical questionnaire, these missing values are referred to in the table as the number of respondents that did not indicate a specific category for that section. The sample consists of 61 respondents from the chemical organisation and 41 respondents from the financial institution.

The biographical characteristics of the sample are also illustrated graphically in Figure 8 to Figure 12.

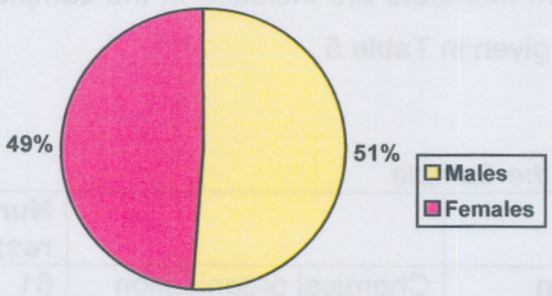

Figure 8 The gender distribution of the sample.

From Figure 8 it can be seen that the sample is approximately equally divided in terms of the gender representation. Nine respondents did not indicate their gender.

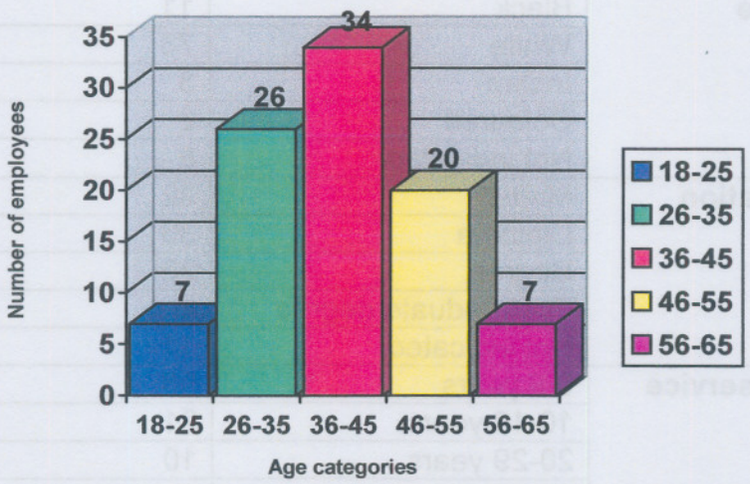

Figure 9 Age distribution of the sample.

From Figure 9 it can be seen that approximately 63% of the sample is between the ages of 26 and 45 and a further 21% are between the ages of 46 and 55.

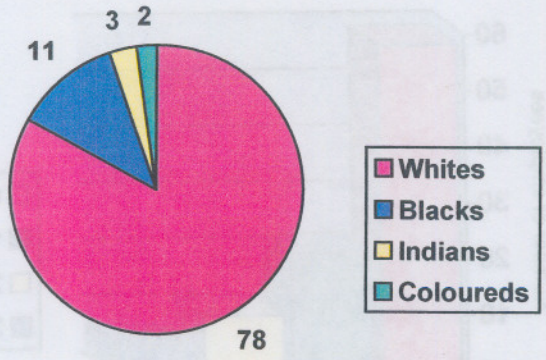

Figure 10 Race distribution of the sample.

From Figure 10 it can be seen that 83% of the sample are White, 11% are Black, and Indians and Coloureds made up approximately 3% and 2% respectively of the sample.

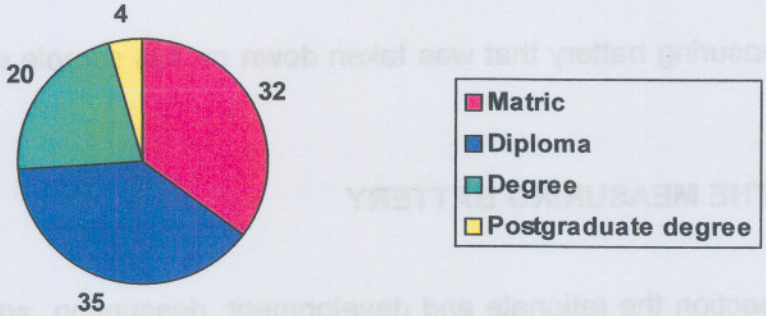

Figure 11 Qualifications of the sample.

From Figure 11 it can be seen that approximately 35% has a Matric certificate as highest qualification, 38% has a diploma and 22% has a degree as highest qualification.

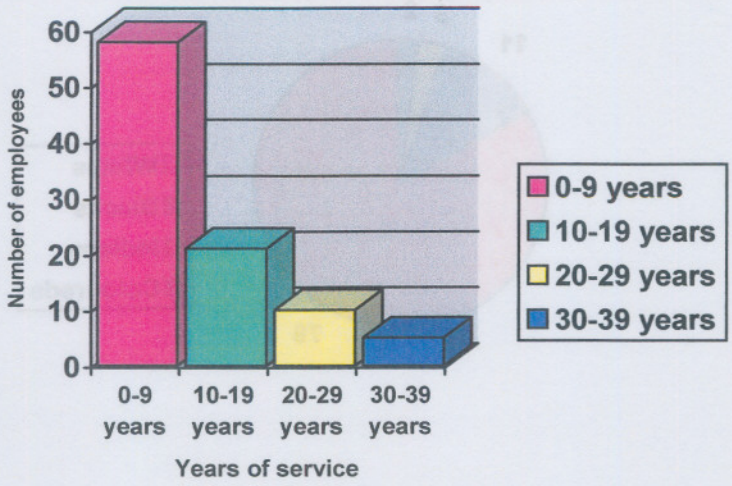

Figure 12 Years of service of the sample.

It can be concluded from Figure 12 that approximately 62% of the sample has less than 10 years of service and a further 22% has less that 20 years of service.

The measuring battery that was taken down on this sample will be discussed next.

4.1 THE MEASURING BATTERY

In this section the rationale and development, description, administration and scoring, interpretation and the reliability and validity of the measuring instruments are discussed. The total measuring battery took approximately three hours to complete.

4.3.1 MEASUREMENT OF THE CHARACTERISTICS OF THE TEAM

The Team Characteristics Questionnaire (TCQ) was developed and used to measure the degree to which the teams used in this study complied with the theoretical definition of a self-managing work team as it appears in the literature. The rationale and development, description, administration and

scoring, interpretation as well as the reliability and validity and the motivation for including the instrument will be discussed next.

a) Rationale and development

To date self-managing work teams have not been implemented on a wide scale in South African organisations. Various organisations implemented teams that are functioning on some of the assumptions and characteristics of self-managing work teams, but to varying degrees. The literature review of this research provides a specific conceptualisation of what a self-managing work team constitutes. It is therefore of pertinent importance that the operationalisation of these concepts is in accordance with the theoretical conceptualisation before definite hypotheses can be stated. Therefore the researcher thought it best to determine whether the teams included in this specific sample are functioning within the basic framework and characteristics of a self-managing work team as it is conceptualised in the literature and in this study specifically. A questionnaire was developed by the researcher, based on a review of the characteristics of a self-managing work team. This questionnaire is used as a checklist to ensure that the teams that are included in the research complied with the theoretical definition of a self-managing work team. This questionnaire is in line with the measures used by Gulowsen (1972), Wall, Kemp, Jackson and Clegg (1986), Wellins, Byham and Wilson (1991), Metlay, Kaplan and Rogers (1994) as well as Cohen (1994) for the same reason.

b) Description

The TCQ consists of 15 items that measure the degree to which specific characteristics that are normally associated with a self-managing work team are present in the team member's team. The items are rated from "Not at all characteristic of the team or how the team operates" (1); to "Completely characteristic of the team or how the team operates" (6). The last item of the questionnaire is an open item and asks of the respondent to indicate the number of team members that are part of the team.

c) Administration and scoring

The TCQ allows the respondents to read the instructions themselves. They then answer the 14 items by indicating the degree to which the statement complies with their team or with how the team operates. The last open-ended item requires them to indicate the number of team members. The questionnaire can be administered individually or in groups.

The TCQ is scored by adding the item scores of the first 14 items to arrive at a total score for the questionnaire. Item 15 is listed separately.

d) Interpretation

The total score of the TCQ gives an indication of the team members' view regarding the degree to which their specific team complies with the theoretical definition of self-managing work teams. The minimum score that could be obtained is 14 and the maximum score is 84.

e) Reliability

The reliability of the TCQ is determined for this specific sample group by calculating the inter-item correlation as well as the cronbach-alpha coefficient for the total questionnaire. The higher the alpha coefficient, the more reliable the test. There isn't a generally agreed cut-off for the alpha coefficient, but usually 0.70 and above is acceptable (Nunnally & Bernstein, 1994).

f) Motivation for choice

The TCQ was specifically developed according to the theoretical conceptualisation of self-managing work teams in this study. Its purpose therefore was specifically to confirm that the teams included in this study complied with the theoretical definition and characteristics of self-managing

work teams as set out in the theoretical review in Chapters 2 and 3 of this study.

4.3.2 MEASUREMENT OF THE DISPOSITIONS

The measurement of sense of coherence, self-efficacy, locus of control and the big five personality factors will be discussed next.

4.3.2.1 The Orientation to Life Questionnaire (OLQ)

The Orientation to Life Questionnaire (OLQ) was used to measure sense of coherence. The rationale and development, description, administration and scoring, interpretation as well as the reliability and validity and the motivation for including the instrument are discussed next.

a) Rationale and development

In 1979 Antonovsky developed the salutogenic model which explained why people who are confronted by a stressor, which results in a state of tension that must be dealt with, can produce pathological, neutral or salutary outcomes, depending on the adequacy of their tension management. The factors that determined this tension management was the key question that he investigated and he suggested that the sense of coherence concept could provide the answer to this question.

By 1987 Antonovsky was convinced that sense of coherence was a very major determinant of maintaining one's position on the health ease/disease continuum and of movement toward the healthy end. But by that time neither he nor others have as yet directly submitted this model to empirical testing. Although Antonovsky felt that the concept was tentatively satisfying by then, he did not feel ready to operationalize it without further clarification (Antonovsky, 1987). He initiated a series of in-depth, largely unstructured interviews with fifty-one respondents that complied with the following two characteristics: They experienced a major trauma; and were reported by

others to be coping amazingly well. From these interviews Antonovsky (1987) developed themes that described the experiences and perceptions of a group with a strong sense of coherence and of a group at the other end of the scale. This resulted in the identification of the three components of the sense of coherence, namely comprehensibility, manageability and meaningfulness.

Antonovsky (1987) also used these experiences and perceptions of the two groups to formulate phrases that he included in a questionnaire. The rationale of this questionnaire, named the Orientation to Life Questionnaire (OLQ), was that it would measure a respondent's global orientation of coping as represented by the concept sense of coherence and then specifically also the three key components of comprehensibility, manageability and meaningfulness.

b) Description

The OLQ consists of 29 items (Antonovsky, 1987). Choices are indicated on a seven-point Likert-scale. One and seven represents the extreme values on the scale, while a rating of four on the scale would indicate that the two statements would be equally applicable to the individual.

The OLQ is divided into three subscales, namely:

- Comprehensibility (11 items)

This scale measures the extent to which the world is viewed as ordered, predictable and as clearly observable. The items on this scale are 1, 3, 5, 10, 12, 15, 17, 19, 21, 24 and 26.

- Manageability (10 items)

This scale measures the extent to which people view experiences in their lives as manageable and consists of items 2, 6, 9, 13, 18, 20, 23, 25, 27 and 29.

- Meaningfulness (8 items)

This measures the extent to which life is viewed as meaningful and is reflected by items 4, 7, 8, 11, 14, 16, 22 and 28.

c) Administration and scoring

The OLQ allows the respondents to read the instructions themselves. They then answer the 29 items by indicating which point on the scale describes them best. The OLQ can be administered individually or in groups (Antonovsky, 1987).

The OLQ is scored by adding the item scores of each subscale separately to arrive at a score for each subscale. The total score for the OLQ is the sum of the three subscale scores. Thirteen of the items are inversely scored. They are items 1, 4, 5, 6, 7, 11, 13, 14, 16, 20, 23, 25 and 27 (Antonovsky, 1987).

d) Interpretation

The total score of the three subscales of the OLQ gives an indication and global view of the respondent's sense of coherence. The average score on the OLQ normally fluctuates between 120 and 150 (Antonovsky, 1987). The subscales could also be interpreted individually. A low score on one subscale indicates that the trait is present only to a lesser extent, whereas a higher score is indicative of the presence of the trait to a greater extent (Antonovsky, 1987).

e) Reliability and validity

Antonovsky (1987) reported internal consistency and reliability coefficients ranging between 0.84 and 0.93. Kalimo and Vuori (1990) found a reliability coefficient of 0.93 for adults (N=706) between the ages of 31 and 44 years. Antonovsky (1993) summarised the most recent reliability and validity results

in the various studies and indicated that the average alpha coefficient in 29 research studies ranged between 0.91 and 0.85. The consistent high internal reliability has been found in a variety of populations in different culture and language groups in the Western world. Studies on the test-retest reliability produced coefficients ranging between 0.41 and 0.97. Anotonovsky (1993) concludes that the OLQ is a reliable measuring instrument of sense of coherence.

In the South African context the reliability of the OLQ was confirmed by Strümpfer and Wissing (1998), and Coetzee and Rothmann (1999) found in a study on the job satisfaction of managers in the dairy industry, cronbach alpha coefficients of 0.89 for the total score of the OLQ. In accordance with these findings Naudé and Rothmann (2000) and Pretorius and Rothmann (2001) found alpha coefficients of 0.88 and 0.93 respectively for the OLQ.

According to Antonovsky (1987) positive evidence was found for the criterion, construct and predictive validity of the OLQ. It has been shown that there is an inverted relationship between OLQ and the Beck Depression Inventory (Frenz, Carey & Jorgensen, 1993) and that there is no meaningful relationship between OLQ and intelligence. This would entail that individuals' sense of coherence is not limited by their intelligence (Frenz, Carey & Jorgensen, 1993).

f) Motivation for choice

The OLQ best supports the operational view of the concept of sense of coherence and it has been shown to have satisfactory reliability and validity coefficients. Antonovsky (1987) stated that the questionnaire could be applied across cultural boundaries. Completed South African studies (Naudé & Rothmann, 2000; Pretorius & Rothmann, 2001) confirm that the questionnaire can also be used across cultural boundaries in a South African context. The sample used in this study includes respondents from different cultural backgrounds and the OLQ would therefore be relevant to use.

4.3.2.2 Self-efficacy Scale (SES)

The Eight-item Self-efficacy Scale (SES) (Thoms, Moore & Scott, 1996) was used to measure self-efficacy. The rationale and development, description, administration and scoring, interpretation as well as the reliability and validity and the motivation for including the instrument will be discussed next.

a) Rationale and development

Self-efficacy is a person's belief that he or she can successfully perform the behaviours required for a specific task (Gist, 1987). Empirical research has consistently shown that self-efficacy has a significant impact on performance. In 1996 Thoms, Moore and Scott investigated self-efficacy as a dependent variable in order to explore whether or not personality and attitude can affect a person's cognitions about performing in self-managed work groups. At that time no specific scale measuring self-efficacy for participating in self-managed work groups could be found. The authors developed the eight-item self-efficacy scale in conjunction with the organisation executives responsible for implementing self-managed work groups. The items for the scale reflected specific tasks that will be the responsibility of the group members in the organisation upon implementation of the self-managing work groups. The tasks were identified by the organisational executives and based on the research of Thoms, Moore and Scott (1996) on self-managing work teams as well as interviews with experts and other organisational leaders who had implemented self-managed teams.

b) Description

The scale consists of eight items, which reflect specific tasks that are normally the responsibility of team members in a self-managing work team. The items ask of the respondent to indicate the likelihood that they could perform these tasks. The items are rated from No Chance at all (1) to Completely certain (5).

c) Administration and scoring

The SES allows the respondents to read the instructions themselves. They then answer the eight items by indicating the likelihood of them being able to perform the specific task described in the item. The scale can be administered individually or in groups (Thoms, Moore & Scott, 1996).

The scale is scored by adding the item scores of each item to arrive at a total score for the scale.

d) Interpretation

The total score of the scale gives an indication of the respondent's self-efficacy for participating in self-managing work teams. The minimum score that could be obtained is 8 and the maximum score is 40.

e) Reliability and Validity

Thoms, Moore and Scott (1996) reported an internal consistency reliability of 0.91 with a sample of 121 respondents. No other studies could be found that used this specific scale. The internal consistency reliability of the scale will be determined for the specific sample used in this research before it will be included in the rest of the data-analysis process.

f) Motivation for choice

Self-efficacy can either be conceptualised as a situation-specific or task-specific belief (Bandura, 1977) or it can be seen as a general set of expectations that the individual carries into new situations (Sherrer & Maddux, 1982). For the purposes of this research the influence of a situation-specific self-efficacy was investigated and then also in the specific situation of self-managing work teams. The eight-item self-efficacy scale was specifically developed to measure this situation-specific self-efficacy in a self-managing work team and is therefore appropriate to use in this specific research.

4.3.2.3 Locus of Control Inventory (LCI)

The Locus of Control Inventory (LCI) (Schepers, 1995) was used to measure locus of control. The rationale and development, description, administration and scoring, interpretation as well as the reliability and validity and the motivation for including the instrument will be discussed next.

a) Rationale and development

Since Rotter (1966) introduced the concept of locus of control, several scales have been developed to measure the concept. One of these is the Rotter I-E Scale. According to Schepers (1995) this scale has shortcomings from a psychometric point of view, namely that the ipsative nature of the questionnaire does not allow for inter-individual differences and consequent comparisons. Based on these grounds, Shepers (1997) developed the new normative questionnaire fit for South African conditions, called the Locus of Control Inventory.

b) Description

The LCI consists of 88 items and choices are indicated on a seven point-scale. Choices at the ends of the scale indicate total agreement with the statement made in the item, whereas a score of 4 indicates that both statements are of equal importance to the respondent.

The LCI is divided into three subscales (Schepers, 1995):

- Internal locus of control (28 items)

This scale determines whether respondents ascribe performance to causes under their own control (because of ability, behaviour, personal characteristics).

- *External locus of control (26 items)*

This scale determines the extent to which respondents attribute performance to causes outside their control (because of luck, fate, circumstances or powerful others).

- Autonomy (34 items)

This scale determines whether respondents are able to believe in their own abilities, act independently and with confidence and to make decisions and take action steps that lead to the solution of the problem.

c) Administration and scoring

The Locus of Control Inventory allows the respondents to read the instructions themselves. They then answer the 88 items by indicating the degree to which the statement in each item influences their behaviour. According to Schepers (1995) the LCI determines to which extent the different factors and situations mentioned in the items influence the respondent's evaluation and decision-making. The choices range from 1 = does not agree at all to 7 = agrees completely. The scale can be administered individually or in groups.

In scoring the inventory, there are a few steps that should be taken:

The following items are negatively stated and should be reflected before scoring the inventory:
1, 11, 15, 21, 39, 71 and 73.

The score on Internal Control is determined by the sum of the values of the following items:
6, 7, 8, 10, 18, 19, 26, 27, 31, 32, 3, 37, 40, 42, 48, 49, 54, 55, 59, 60, 61, 63, 69, 75, 76, 85, 86 and 87.

The score on External Control is determined by the sum of the values of the following items:
4, 9, 12, 20, 34, 35, 36 38, 41, 43, 45, 47, 50, 51, 52, 53, 56, 57, 58, 65, 72, 77, 79, 80, 84 and 88.

The score on Autonomy is determined by adding the values of the following items:
1, 2, 3, 5, 11, 13, 14, 15, 16, 17, 21, 22, 23, 24, 25, 28, 29, 30, 39, 44, 46, 62, 64, 66, 67, 68, 70, 71, 73, 74, 78, 81, 82 and 83.

d) Interpretation

The interpretation of the three subscales should be done in an integrated fashion and not independently. Accordingly, individuals with high scores on Internal Control and Autonomy and low scores on External Control can be viewed as healthy, well-adapted people who could be expected to handle the demands of life well and to perform well. The opposite is true for individuals with low scores on Internal Control and Autonomy and high scores on External Control. These individuals could be prone to blame external factors and the environment for things that go wrong and for poor performance.

People with an Internal locus of control can be distinguished from people with an External locus of control on the basis of certain characteristics. These characteristics used by Schepers (1995) are shown in Table 6.

Table 6

The Distinction between People with an Internal Locus and People with an External Locus of Control

Internal Locus of Control	**External Locus of Control**
Emotionally stable	Emotionally sensitive
Mature, calm	Immature, unsure
Assertive	Feelings of inferiority
Independent	Dependent on approval
Unconventional	Conventional, choose familiarity
Adventurous	Too careful
Socially uninhibited	Timid, reserved
Unopposing	Very accommodating, influenceable
Responsible	Neglecting
Intelligent, good insight	Little self-knowledge
Self-confident	Insecure
Analytical	Less precise
Free-thinking	Narrow-minded, limited insight
Relaxing, at ease	Tense, agitated

Taken from: Schepers, J.M. (1995). *Die lokus van beheer-vraelys: Konstruksie en evaluering van 'n nuwe meetinstrument.* Johannesburg: RAU.

e) Reliability and validity

Positive evidence has been found in research regarding the reliability and validity of the LCI (Schepers, 1995).

Research by Schepers (1995) established the internal consistency of the scales of the LCI with Cronbach alpha coefficients of 0.82 for Internal control, 0.87 for External control and 0.88 for autonomy. These findings have since been confirmed by other South African studies such as that of Rothmann and Agathagelou (2000) that obtained coefficients of 0.77 (Internal control), 0.81 (External control) and 0.72 (autonomy); Naudé and Rothmann (2000) which showed coefficients of 0.81 (Internal control), 0.88 (External control) and 0.87

(autonomy); and Pretorius and Rothmann (2001) with coefficients of between 0.72 and 0.90. All these coefficients are more than the acceptable level of 0.70 as recommended by Nunnally and Bernstein (1994).

The construct validity of the LCI is supported by significant correlations with the Sixteen Personality Factor Questionnaire, Jung Personality Questionnaire, the Personal, Survey of Study Habits and Attitudes, Career Development Questionnaire and the Nineteen Field Interest Inventory. The criterion validity of the LCI has been proven by correlates with a composite criterion of job success of $r = 0.62$ (Schepers, 1995).

The intercorrelations between the subscales reflect that the Internal and External scales (with a correlation of –0.17) are not two opposites of the same continuum, but are independent constructs that must be viewed separately (Schepers, 1995). These findings have again been confirmed by Rothmann and Agathagelou (2000) with a correlation of 0.10. According to Schepers (1995) both these scales contribute to the measurement and understanding of locus of control.

f) Motivation for choice

The LCI was chosen because of its design that allows for the measurement of Autonomy, which is considered to be an important variable in the context of self-managing work teams. Furthermore the LCI is suitable for South African conditions.

4.3.2.4 Personal Characteristics Inventory (PCI)

The Personal Characteristics Inventory (PCI) (Mount & Barrick, 2002) was used to measure the five-factor model of personality. The rationale and development, description, administration and scoring, interpretation as well as the reliability and validity and the motivation for including the instrument will be discussed next.

a) Rationale and development

The PCI was developed by Murray R. Barrick and Michael K. Mount as part of a research programme which set out to investigate the validity of personality traits for predicting job performance. Both these authors have extensive research experience in assessing the impact of individual differences and personality on job performance. They set out to demonstrate that there are meaningful relationships between personality traits and performance outcomes at work and this study served as the starting point for the development of the PCI (Barrick & Mount, 1991).

b) Description

The PCI is a 150-item inventory that measures the five-factor model of personality. These five personality dimensions are also called the Big Five and have been shown to comprehensively measure the normal personality. The personality dimensions measured by the PCI encompass almost all possible variations of a person's workplace personality (Mount & Barrick, 2002).

The PCI is then divided into five primary scales and 12 related subscales (Mount & Barrick, 2002), as can be seen in Table 7.

Table 7

The Big Five Primary Scales and 12 Related Subscales

Primary Scales and Definitions	**Corresponding Subscales**
Agreeableness The tendency to be courteous, helpful, trusting, good-natured, cooperative, tolerant and forgiving.	Cooperation Consideration
Extraversion The tendency to be sociable, gregarious, talkative, assertive, adventurous, active energetic and ambitious.	Sociability Need for Recognition Leadership Orientation
Conscientiousness The tendency to be hardworking, dependable, efficient and achievement striving.	Dependability Achievement Striving Efficiency
Stability The tendency to handle stress, to maintain an even temperament and to have a high degree of composure and self-confidence across most situations	Even-Temperament Self-confidence
Openness The tendency to be imaginative, cultured, curious, polished, original, broadminded, intelligent and artistically sensitive.	Abstract Thinking Creative Thinking

Taken from Mount, M.K. & Barrick, M.R. (2002). *Personal Characteristics Inventory User's Manual.* Libertyville, IL: Wonderlic Inc.

c) Administration and scoring

The Personal Characteristics Inventory can be administered by paper and pencil or online. In this study the paper and pencil administration was used. This administration allows the respondents to read the instructions themselves

and then provide the necessary information on the answer sheet that is provided with the questionnaire booklet. There are no time limits for completing the questionnaire, but most respondents will finish in 25 to 30 minutes.

The scoring of the instrument is done by the Wonderlic Incorporation that is currently solely responsible for distributing the PCI.

d) Interpretation

There are four sections of the PCI report that can be interpreted. The first section is the summary report which provides an overall summary on the big five factors, the 12 scales and accuracy indices. The accuracy indices show how accurately the summary charts represent the respondent's standing on each of the scales and subscales in comparison with others. It provides information on the degree to which the testee may have exaggerated his or her positive qualities in order to achieve favourable test results, as to whether the respondent agreed or disagreed too often with the statements, which can raise concern about the validity of the report, and lastly, as to whether the respondent was careless in responding to the inventory and filled in responses without considering the questions being asked.

The next section provides a more in-depth interpretation of each of the big five dimensions and their corresponding subscales and how the individual is placed on each of these in comparison with others. The third section provides an individual's score on four success scales that employers consider to be important for an organisation's success regardless of the type of job, namely commitment to work, integrity, learning orientation and teamwork. The commitment to work scale will give an indication of how likely individuals are to remain on the job for a long time. The integrity score is predictive of the individual's organisational citizenship behaviour. The learning orientation scale assesses the extent to which the individual is willing to engage in learning activities regarding improving their job effectiveness.

Lastly the report will provide a single, overall index of the respondent's likely success in a particular occupation, namely that of manager, driver, sales, production worker or clerical employee (Mount & Barrick, 2002). This last score was not used for the purposes of this research.

e) Reliability and validity

According to Mount and Barrick (2002) coefficient alphas for the Big Five primary scales range from 0.82 for Agreeableness to 0.87 for Conscientiousness. The subscale alphas range from 0.70 for Need for Recognition and Creative thinking to 0.80 for Sociability. All these coefficients are on a par with the coefficient value of 0.70 or higher which is considered satisfactory (Nunnally & Bernstein, 1994). Test-retest reliabilities for three samples of subjects over a four-month interval, nine-month interval and six-month interval averaged 0.83, 0.77 and 0.80 respectively. The results show that the stability of the PCI over time is quite high (Mount & Barrick, 2002).

The construct validity of the PCI was shown by correlating it with other Big Five personality inventories such as the NEO-Personality Inventory (NEO-PI) (Costa & McCrae, 1985) the Bipolar Adjective Checklist (Norman, 1963) and the Hogan Personality Inventory (HPI) (Hogan & Hogan, 1992). Overall the results show high convergent validities and low discriminant validities for the PCI Primary Scales. The PCI was also compared with the Wonderlic Personnel Test (WPT), a known measure of cognitive ability. Except for Openness, none of the other scales of the PCI were related to the WPT. The lack of relationship shows that the PCI is not a measure of an individual's cognitive ability and that the PCI is likely to add predictive power (above measures of cognitive ability) in determining an individual's success on the job. The PCI was also shown to be a valid predictor of a wide spectrum of performance measures such as performance ratings, sales volume, voluntary and involuntary turnover.

f) Motivation for choice

The PCI is proven to be a valid and reliable measure of the five-factor model of personality. This inventory also provides scores on other variables such as the success scales that enhance the wealth of information that can be extracted from the inventory and used in the analysis of the data.

4.3.3 MEASUREMENT OF POSITIVE AND NEGATIVE OUTCOMES

Quality of work life is measured by including measures of trust, commitment and satisfaction. The negative outcomes are measured by including measures of role conflict, clarity and overload and job tension.

4.3.3.1 Quality of Work Life Scale (QWLS)

The combination of scales that was used to measure the quality of work life of the team members are discussed in terms of their rationale and development, description, administration and scoring, interpretation as well as the reliability and validity and the motivation for including the instruments.

a) Rationale and development

After an extensive literature review of different models and measures of outcomes in a self-managing work team context, it was decided that quality of work life is conceptualized to include job satisfaction, commitment and trust. This choice of the particular outcomes that will constitute quality of work life was influenced by the socio-technical theory which is one of the basic theories on which self-managing work teams are based, the quality of work life movement and the empirical work on quality of work life and self-managing work team effectiveness as done by Cohen (1994). The model of Cohen (1994) was also reviewed in Chapter 2 (see 2.4.4). The rationale for using the model of Cohen (1994) specifically is determined by the fact that this model includes measures on an individual level that focuses on the team member specifically and Cohen also used measures that are not defined for the

organisation specifically. Because the research in this study was done in two different organisations, it was necessary to use measures that weren't restricted to any organisation specifically but that could be used in any organisational context.

b) Description

As mentioned earlier, a combination of measures was used to measure the quality of work life of the team members. Satisfaction and trust were measured by scales and items as were used by Cohen, Ledford and Spreitzer (1996). The study of Cohen, Ledford and Spreitzer (1996) continued the work of Cohen (1994) in testing the model developed by Cohen to explain self-managing work team functioning. The measure of satisfaction included items that measure job satisfaction, growth needs satisfaction, group satisfaction and social needs satisfaction.

Job satisfaction (two items), **growth need satisfaction** (four items) and **social needs satisfaction** (three items) are based on the Michigan Organizational Assessment Questionnaire (Cammann, Fichman, Jenkins & Klesh, 1983). **Group satisfaction** (three items) was drawn from Hackman's (1982) Group Effectiveness Questionnaire.

The measure of **trust** (two items) was developed by Cohen, Ledford and Spreitzer (1996).

The items of satisfaction and trust ask of the respondents to indicate the degree to which they agree with the statement in the item or the degree to which they are satisfied with the aspect referred to in the item. The options differed from 1 = strongly disagree or strongly dissatisfied to 7 = strongly agree or strongly satisfied.

Commitment to the organization and commitment to the team are measured by the **Organizational Commitment Questionnaire** (OCQ) (Mowday, Steers & Porter, 1979). Cohen, Ledford and Spreitzer (1996) only measured

commitment to the organisation, but the researcher wished to distinguish between commitment to the organisation and commitment to the team specifically. In measuring commitment to the team, the short form of the OCQ is modified to refer to the team rather than to the organization. This technique was suggested by Reichers (1985) and has been successfully used in organizational research (Bishop & Scott, 2000; Scott & Townsend, 1994; Vandenburg & Scarpello, 1991).

The respondents needed to indicate their agreement with the statement in the item by choosing a value of between 1 = strongly disagree and 7 = strongly agree.

c) Administration and scoring

The QWLS allows the respondents to read the instructions themselves. The Battery can be administered individually or in groups.

The QWLS is scored by doing the following:

For trust, items 2 and 4 are added up.

For Job satisfaction, items 1 and 6 are added up; Group satisfaction is determined by adding the scores of items 3, 8 and 14; Growth satisfaction is obtained from the sum of items 7, 10, 12 and 13; Social satisfaction is calculated by adding the scores on items 5, 9 and 11. All the items are added up to provide a total satisfaction score.

For commitment to the organisation and commitment to the team, add the item scores of each item to arrive at a total score for the scale.

d) Interpretation

There are no specific guidelines for the interpretation of the scores achieved by respondents. The minimum and maximum values that can be obtained for

the various scales can be used as a general framework in the interpretation of scores. The minimum and maximum values of the various scales are the following:

Trust
Minimum value = 2
Maximum value = 14, where a higher score indicates higher levels of trust.

Job satisfaction
Minimum value = 2
Maximum value = 14, where a higher score indicates higher levels of job satisfaction.

Group satisfaction
Minimum value = 3
Maximum value = 21, where a higher score indicates that the team member experiences a higher degree of satisfaction about working in his specific team.

Growth satisfaction
Minimum value = 4
Maximum value = 28, where a higher score indicates that the team member experiences a higher degree of satisfaction with his opportunities for growth.

Social satisfaction
Minimum value = 3
Maximum value = 21, where a higher score indicates that the team member experiences a higher degree of satisfaction in terms of the social interaction at work.

Total satisfaction
Minimum value = 12
Maximum value = 84, where a higher score indicates that the team member experiences a higher degree of satisfaction overall.

Commitment to the organisation and commitment to the team
Minimum value = 9
Maximum value = 63, where a higher score is indicative of higher levels of commitment to the organisation and the team.

e) Reliability and Validity

Cohen, Ledford and Spreitzer (1996) obtained alpha coefficients for the satisfaction scales ranging from 0.81 (social needs satisfaction) to 0.91 (group satisfaction). Mowday, Steers and Porter (1979) obtained alpha coefficients for the commitment to the organisation questionnaire in eight different samples ranging from 0.82 to 0.93. Bishop and Scott (2000) obtained an alpha coefficient of 0.89 with the commitment to the team questionnaire. All these coefficients are above the accepted coefficient of 0.70 as suggested by Nunnally and Bernstein (1994).

f) Motivation for choice

Trust, commitment and satisfaction are the positive outcomes that the literature proclaims to be part of the experience of a team member of a self-managing work team. All the different measures included in the QWLS have been proven to be valid and reliable measures of trust, satisfaction and commitment. All these measures are also appropriate to use on the individual level of measurement and can be used in any organisational setting.

4.3.3.2 Measurement of the negative outcomes

The negative outcomes that can be associated with working in a self-managing work team are measured by including measures of role conflict, role clarity, role overload and job induced tension. A combination of scales was used to measure these different variables and their rationale and development, description, administration and scoring, interpretation as well as the reliability and validity and the motivation for including the instruments will be discussed next.

a) Rationale and development

As already mentioned in Chapter 3 (see 3.3.2) the literature prefers to dwell on the positive outcomes of implementing self-managing work teams, but there are, however, some negative outcomes that cannot be overlooked. After an extensive literature review it was concluded that the main negative effects of working in a self-managing work team would be an increased amount of stress that can be experienced as well as an impact on the role experience of the team member because of additional tasks and requirements that could be expected of a team member in a self-managing work team.

b) Description

Negative outcomes of functioning in a self-managing work team are measured by the subscale **Role characteristics** of the **Michigan Organizational Assessment Questionnaire** (Camman, Fichman, Jenkins & Klesh, 1983). This subscale will test the members' experiences of role-conflict (two items), role clarity (three items) and role overload (three items). Furthermore the subscale of **Job-induced Tension** of the **Anxiety-Stress Questionnaire** (House & Rizzo, 1972) will be included to measure the amount of work stress that the members experience.

c) Administration and scoring

The Negative Outcomes Scale (NOS) allows the respondents to read the instructions themselves. The NOS can be administered individually or in groups. The respondents needed to indicate their agreement with the statement in the item by choosing a value of between 1 = No, I strongly disagree and 6 = Yes, I strongly agree. Eight items measure the degree of role conflict, clarity and overload that are experienced, and eight items measure the degree of job induced tension that the team member experiences.

The scales are scored in the following manner:

For role conflict, items 1 and 4 are added up. Role clarity is determined by adding the scores of items 2, 5 and 7; Role overload is obtained from the sum of items 3, 6 and 8. Item 8 is negatively stated and should be reversed.

For the amount of job induced tension that the team member experiences: add the item scores of each of the eight items to arrive at a total score for the scale.

d) Interpretation

There are no specific guidelines for the interpretation of the scores achieved by respondents. The minimum and maximum values that can be obtained for the various scales can be used as a general framework in the interpretation of scores. The minimum and maximum values of the various scales are the following:

Role Conflict
Minimum value = 2
Maximum value = 12, where a higher score would indicate that the team member experiences higher degrees of role conflict.

Role Clarity
Minimum value = 3
Maximum value = 18, where a higher score would indicate that the team member experiences higher degrees of role clarity.

Role Overload
Minimum value = 3
Maximum value = 18, where a higher score would indicate that the team members experiences a higher degree of role overload.

Job induced tension
Minimum value = 7
Maximum value = 42, where a higher score would indicate that the team member experiences higher levels of stress.

e) Reliability and Validity

Camman, Fichman, Jenkins & Klesh (1983) obtained the following alpha coefficients for the sub-scale of **Role characteristics** of the **Michigan Organizational Assessment Questionnaire**: role-conflict (two items, alpha 0.58), role clarity (three items, alpha 0.53) and role overload (three items, alpha 0.65). Although these coefficients are below the recommended coefficient of 0.70 (Nunnally & Bernstein, 1994), it should be interpreted in the light of the small number of items included in each subscale.

A Kuder-Richardson internal reliability coefficient of 0.83 was reported for the **Job-induced Tension** subscale of the **Anxiety-Stress Questionnaire** (Cook, Hepworth, Wall & Warr, 1981).

f) Motivation for choice

All the different measures included in the NOS are appropriate to use on the individual level of measurement and can be used in any organisational context. The scales are also appropriate measurements of the negative outcomes that we expect to find as being part of the experience of a team member of a self-managing work team.

4.3.4 MEASUREMENT OF EFFECTIVENESS

The effectiveness of the team member and effectiveness of the team were measured by self-rating instruments completed by the team members. The rationale and development, description, administration and scoring, interpretation as well as the reliability and validity and the motivation for including the instruments will be discussed next.

4.3.4.1 Team Member Effectiveness Questionnaire (TMEQ)

A self-report questionnaire was developed to measure the effectiveness of the team member.

a) Rationale and development

As already mentioned in Chapters 2 and 3 (see 2.5.4 and 3.3.1.2), there seems to be a lack of emphasis on the performance and effectiveness of the team members specifically in the models of self-managing work team functioning that have been developed thus far. This study focuses specifically on the team member as individual and it was therefore necessary to measure the effectiveness of the team members specifically. In Chapter 3 (see 3.3.1.2) the dimensions and criteria that constitute the effectiveness of the individual in self-managing work team environments were set out. No general measurement could be found that specifically measured the effectiveness of the individual that is not bound to a specific organizational context. It was therefore decided to develop such a questionnaire. The conceptualisation from the literature of criteria that constitutes effectiveness of the individual was used as the basis for developing the TMEQ.

b) Description

An extensive literature review was done and criteria that can be used to measure the effectiveness of a team member of a self-managing work team were obtained. This literature review was used and then specifically the performance appraisal methods suggested by Orsburn, Moran, Musselwhite and Zenger (1990) were used for the development of the items of the self-report questionnaire. The performance measures used by the specific organisations in which the research was conducted, were also taken into consideration. Items related to the following criteria were included:

- The technical skills of the team member (Items 1 and 5)

- Cooperation (Items 13 and 14)
- Conflict resolution (Items 2 and 17)
- Communication (Items 6 and 10)
- Giving feedback (Items 18 and 21)
- Sharing information (Items 3 and 7)
- Decision-making (Items 11 and 15)
- Problem-solving (Items 4 and 19)
- Contribution to overall team performance (Items 9 and 12)
- Customer advocate (Items 16 and 20).

c) Administration and scoring

The questionnaire is a self-report measure and the team member needs to indicate his opinion regarding the statements presented in 21 items on a 5-point scale. The endpoints of the scale have various descriptive endpoints such as strongly disagree, very ineffectively, very seldom or not at all characteristic of my behaviour. The other endpoint has descriptions such as strongly agree, very effectively, very often or very characteristic of my behaviour. The questionnaire can be administered individually or in groups and the respondents are simply instructed to rate themselves on the statements.

In order to score the questionnaire all the ratings on all of the items should be added up in order to obtain a total score for the questionnaire.

d) Interpretation

The total score is an indication of each team member's perception of his or her own effectiveness as a team member of the team. The minimum score that can be obtained is 21 and the maximum score is 110.

e) Reliability and Validity

The reliability of the TMEQ is determined for this specific sample group by calculating the inter-item correlation as well as the cronbach-alpha coefficient for the total questionnaire.

f) Motivation for choice

The TMEQ was specifically developed according to the theoretical conceptualisation of team member effectiveness in self-managing work teams in this specific study. The questionnaire's purpose therefore specifically was to obtain a measure of the effectiveness of the team member.

4.3.4.2 Team Effectiveness Questionnaire (TEQ)

The Team Effectiveness Questionnaire (TEQ) was used to measure each team member's perception of his or her team's effectiveness.

a) Rationale and development

In 1998 Alper, Tjosvold and Law conducted a study to determine the influence of specific decision-making strategies on self-managing work team effectiveness. They experienced difficulty in obtaining objective work outcome measures despite the willingness of the company to provide them. Quantitative productivity data was not collected on the team level and quality data would be unreliable because some quality inspectors in the specific company did not report defects, some teams performed much more complex functions and comparisons of the defects that were reported could easily be misinterpreted. They therefore decided to use self-ratings and supervisory ratings as performance measures. They developed a questionnaire that can be used by the members and their supervisors to measure each team's effectiveness.

b) Description

The questionnaire has 18 items. It requires respondents to read through a statement about their team's performance and then to indicate the degree to which they agree or disagree with the statement on a 5-point scale. The items are concerned with productivity, quality and cost-savings because these are central reasons why self-managing work teams are initiated. Sample items from the questionnaire are "Team members in my team come up with ideas on how to reduce costs" or "team members in my team have successfully implemented plans to be more productive". Alper, Tjosvold and Law (1998) developed the items to be an indication of the managers' rating of team performance. The items were adapted for the purposes of this study (with permission from Alper, Tjosvold & Law, 1998) to be an indication of team members' rating of their team's performance. Two items of the original questionnaire were left out because they are more applicable to production workers than knowledge workers as used in this study. These items deal with the manner in which team members' care for and use machinery and tools.

c) Administration and scoring

The questionnaire is a self-report measure and the team members need to indicate their agreement with the statements presented regarding the other members of their and subsequently their team's performance. The endpoints of the scale range from 1 = strongly disagree to 5 = strongly agree. The questionnaire can be administered individually or in groups and the respondents are simply instructed to indicate the degree to which they agree with the statements.

In order to score the questionnaire, items 4 and 8 are negatively stated and should be reversed and then all the ratings on all of the items should be added up in order to obtain a total score for the questionnaire.

d) Interpretation

The total score is an indication of the team members' perception of their own team's effectiveness. The minimum score that can be obtained is 16 and the maximum score is 80.

e) Reliability and Validity

Alper, Tjosvold and Law (1998) reported an alpha coefficient of 0.94 for the 18 items. For the purposes of this specific study the questionnaire's reliability is determined by calculating the alpha coefficients as well as the inter-item correlations of the various items.

f) Motivation for choice

The TEQ was chosen as a measurement of the team's effectiveness because it was specifically developed according to the theoretical conceptualisation of self-managing work teams. Furthermore the questionnaire allows researchers to use the measure in more than one organisation without obtaining organisation-specific information that cannot necessarily be used in, or compared with another organisation.

The specific procedure that was followed is discussed next.

4.4 PROCEDURE

A literature study was conducted and self-managing work teams, dispositions and outcomes of team members in a self-managing work team were conceptualised. A measuring battery was compiled, based on the literature study, and a sample was identified. The sample was informed about the purpose of the study, the method and the procedure that would be followed and they were asked for their consent for participation. The measuring battery was administered and the data analysed. The sample was given feedback on their results and the data was integrated. Based on the results of the data

analyses, certain conclusions are made. Finally recommendations are made to the organisation as well as for future research.

4.5 STATISTICAL ANALYSIS

Statistical analysis has been carried out with the help of the SAS program (SAS Institute, 2000). Descriptive statistics are used to analyse the data. Means, standard deviations, skewness and kurtosis are used to describe the dataset and to compare results. The mean is the best-known measure of central tendency that tells what sets of measures are like on average. The standard deviation indicates the distances of the individual scores from the mean. The higher the standard deviation, the greater the distances, on average, from the mean (Steyn, Smit, Du Toit & Strasheim, 1995). Two components of normality are calculated, namely skewness and kurtosis. Skewness is a descriptive indication of symmetry, which gives and indication of the positive or negative skewness of a population.

The value reported for skewness equals zero if the distribution is normal. To determine whether or not the value of skewness for a variable differs significantly from zero, you compare it against the standard error for skewness. The standard error for skewness is calculated by taking the square root for 6 divided by your sample size (Tabachnick & Fidell, 2001).

$$Ss = \sqrt{{}^{6}/_{N}}$$

As a rough guide, a skewness value more than twice it's standard error is taken to indicate a departure from symmetry. In this research, the standard error for skewness is determined as 0.24. Therefore, a variable with a skewness value larger than 0.48 (twice the size of the standard error of skewness) would be regarded as skewed.

Kurtosis has to do with the peakedness of a distribution. A distribution is either too peaked (with short, thick tails) or too flat (with long, thin tails) (Tabachnick & Fidell, 2001).

The Cronbach alpha coefficients are computed to assess the internal consistency reliability of the measuring instruments that are used in the study. This index is indicative of the extent to which all the items in the measuring instruments are measuring the same characteristic (Huysamen, 1994). Inter-item correlation coefficients are used to determine whether the internal consistencies of the constructs are not too high, so that they affect the validity. Clark and Watson (1995) specified inter-item correlations between 0.15 and 0.50 as acceptable.

The Pearson product-moment and Spearman correlation coefficients are used in this study to determine the extent to which one variable is related to another variable. Spearman correlations were used in the case of variables that show skewness. The correlation coefficients are based on the assumption that in the case where two variables fluctuate simultaneously, a correlation or relationship exists between them (Kerlinger & Lee, 2000). If a relationship exists between the variables, it can be termed either a positive or a negative relationship. In the case where a decrease in the measurement of one variable leads to a decrease in the other variable, or where an increase in the measurement of one variable leads to an increase in the other variable, it can be termed a positive relationship. A negative relationship occurs when a decrease in the measurement of one variable leads to an increase in the other variable (Ferguson, 1981). The correlation coefficient varies between –1.00 and +1.00. The closer the absolute value of a correlation coefficient (r) to –1.00 or +1.00, the more accurate the prediction that one variable is related to another variable (Ferguson, 1981).

Because a non-probability sample was used in this research, effect sizes (rather than inferential statistics) are used to decide on the significance of the findings. According to Cohen (1988) the following cut-off points in terms of the correlation coefficient are recognised as practically significant (independent of the direction of the relationship):

- $r = 0.10$: small effect

- $r = 0.30$: medium effect
- $r = 0.50$: large effect

For the purposes of the present study, r-values larger than 0.30 (medium effect) are considered practically significant.

In order to further explain the relationships between the dispositional constructs and the positive and negative outcome variables of team members in self-managing work teams, canonical correlations are determined. Canonical correlation analysis is a statistical technique that is concerned with the relationship between two sets of variables. The measure of the strength of the relationship in canonical correlation analysis is expressed as a canonical correlation coefficient between the two sets of multiple independent variables and multiple dependent variables (Hair, Anderson, Tatham & Black, 1998). Canonical correlation is considered to be a descriptive technique rather than a hypothesis-testing procedure.

Structural equation modelling (SEM) methods as implemented by AMOS (Arbuckle, 1999) are used to used to check for confounding variables in the relationship and to determine the contribution of each variable to the outcomes in self-managing work teams using the maximum likelihood method. SEM is a statistical methodology that takes a confirmatory (i.e. hypothesis-testing) approach to the analysis of a structural theory bearing on some phenomenon (Byrne, 2001). Several aspects of SEM distinguish it from the older generation of multivariate procedures (Byrne, 2001):

- Firstly it takes a confirmatory rather than an explanatory approach to data analysis. By demanding that the pattern of inter-variable relations be specific a priori, SEM lends itself well to the analysis of data for inferential purposes.
- Secondly, although traditional multivariate procedures are either assessing or correcting for measurement error, SEM provides precise estimates of these error variance parameters.

- Thirdly, SEM procedures can incorporate both unobserved (latest) and observed variables.

Therefore hypothesised relationships are tested empirically for goodness of fit with the sample data. Goodness-of-fit tests determine if the model being tested should be accepted or rejected. It is imperative to examine several fit indices when evaluating a model and never to rely solely on a single index. Jaccard and Wan (1996, p. 87) recommend the use of at least three fit tests, while Kline (1998, p. 130) recommends at least four.

Among the fit indices produced by the AMOS programme is the Chi-square statistic χ^2, which is the test of absolute fit of the model. The χ^2 tests the hypothesis that an unconstrained model fits the covariance/correlation matrix as well as the given model. The χ^2 should not be significant if there is a good model fit, while a significant χ^2 indicates lack of satisfactory model fit.

Jöreskog and Sörbom (1993) suggest that the χ^2 value may be considered more appropriately as a badness-of-fit rather than as a goodness-of-fit measure in the sense that a small χ^2 value is indicative of good fit. The statistic and the degrees of freedom (the difference between the number of distinct parameters to be estimated) are usually used as tests of absolute fit. However, Kline (1998) and Neilands (2000) have cautioned that the χ^2 statistic is too sensitive to the size of the sample for it to be interpreted as a significant test. They have argued that the χ^2 statistic usually becomes significant even though the difference between observed and model implied covariance are slight. A large χ^2 relative to the degrees of freedom indicates a need to modify the mode to fit the data better.

Not all the indices of fit are commonly used, therefore those chosen for consideration in this study are the Goodness of Fit Index (GFI), the Adjusted Goodness of Fit Index (AGFI) the Parsimony Goodness of Fit Index (PGFI), the Normed Fit Index (NFI), the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI) and the Root Means Square Error of Approximation (RMSEA).

The GFI indicates the relative amount of the variances/co-variances in the sample predicted by the estimates of the population. The AGFI is a measure of the relative amount of variance accounted for by the model corrected for the degrees of freedom in the model relative to the number of variables. The values of these indices range from 0 (which indicates a poor fit) to 1 (indicating perfect fit) (Schumacker & Lomax, 1996; Sobolewski & Doran, 1996). The GFI is analogous to a squared correlation in so far as it indicates that the proportion of the observed covariance explained by the model-implied covariances, while the AGFI, which is calculated from the GFI, includes an adjustment for model complexity (Sobolewski & Doran, 1996; Kline, 1998). The GFI is a relative measure of how well the data fits the model (Sobolewski & Doran, 1996). Recommended values should be greater than 0.90.

PGFI addressed the issue of parsimony in SEM (Mulaik, James, Van Altine, Bennett, Lind & Stillwell, 1989). The PGFI is a variant of GFI and takes into account the complexity (i.e. number of estimated parameters) of the hypothesised model in the assessment of overall model fit and provides a more realistic evaluation of the hypothesised model. Mulaik et al. (1989) suggested that indices in the 0.90s accompanied by PGFI's in the 0.50s are not unexpected, although values > 0.80 are considered to be more appropriate (Byrne, 2001).

The NFI is used to assess global model fit and varies from 0 to 1, where 1 is a perfect fit. Marsh, Balla and Hau (1996) suggest that this index is relatively insensitive to sample size. The CFI is an incremental fit index which indicates the proportion of the improvement of the overall fit of the restricted model relative to the independence (null) model in the determination of goodness of fit (Kline, 1998; Neilands, 2000). It also varies from 0 to 1. CFI values close to 1 indicates a very good fit, and values above 0.90 an acceptable fit. The TLI (Tucker & Lewis, 1973) is a relative measure of co-variation explained by the model that is specifically developed to assess factor models. The TLI has values ranging form 0 to 1, indicating lack of fit to perfect fit respectively. Hu and Bentler (1999) and Neilands (2000) recommend a TLI value of 0.95 or

higher. However, Schumacker and Lomax (1996) contend that values close to 0.90 reflect a good model fit. For these fit indices, it is more or less generally accepted that a value less than 0.90 indicates that the fit of the model can be improved (Hoyle, 1995).

The RMSEA, with its lower and upper confidence interval boundaries, is another valuable fit index that is commonly reported. (The RMSEA estimates the overall amount of error; it is a function of the fitting function value relative to the degrees of freedom.) RMSEA is one of the fit indices less affected by sample size. By convention, there is a good model fit if RMSEA is less than or equal to 0.05. There is adequate fit if RMSEA is less than or equal to 0.08. More recently, Hu and Bentler (1999) and Neilands (2000) have suggested a value of 0.06 to be indicative of a good fit between the hypothesised model and the observed data.

MacCallum, Browne and Sugaurara (1996) elaborated on these cut-off points and noted that RMSEA values ranging from 0.08 to 0.10 indicate medium fit, and those greater than 0.10 indicate poor fit. RMSEA is a popular measure of it, partly because it does not require comparison with a null model and thus does not require the researcher to propose a plausible model in which there is complete independence of the latest variables as does, for instance, CFI.

Schumacker and Lomax (1996) and Kline (1998) have each argued that there is no straightforward answer to what constitutes good fit in SEM. Furthermore, Kline (1998) had argued that good fit might be easy to achieve. However, it must be accompanied by meaningful model-data correspondence. It is possible to find several favourable values of overall fit indices, but specific portions of the model might not be fitting the data well. Given the lack of consensus regarding the best measure of fit, the more criteria a model satisfies, the better its fit.

4.6 FORMULATION OF HYPOTHESES

In conjunction with the specific aims of the research, the following research hypotheses could be formulated. Since the null hypothesis is the direct inverse of the alternative hypothesis, only the alternative hypotheses are stated:

H1: Practically significant positive relationships exist between the dispositional characteristics of sense of coherence, self-efficacy, locus of control and the big five factors of personality of the team members of the self-managing work teams.

H2: Practically significant positive relationships exist between the dispositional characteristics and the quality of work life of the team members of self-managing work teams.

H3: Practically significant positive relationships exist between the dispositional characteristics and the effectiveness of the team members of self-managing work teams.

H4: Practically significant negative relationships exist between the dispositional characteristics and negative outcomes as experienced by the team members of self-managing work teams.

H5: The dispositional characteristics can predict the quality of work life, effectiveness and negative outcomes experienced by the team members in a self-managing work team.

4.7 CHAPTER SUMMARY

In this chapter the research design and characteristics of the sample used in this study were described. The measuring battery compiled and used, were discussed in detail and the research procedure was briefly explained. Furthermore the statistical analyses conducted in the study were outlined and the hypotheses were set out.

In Chapter 5 the results of the data analyses will be reported.

CHAPTER 5

RESULTS AND DISCUSSION

In this chapter the results of the empirical study are reported and discussed. Firstly, the descriptive statistics and the reliability coefficients of the measuring instruments are given. The mean (M), standard deviation (SD), skewness, kurtosis and alpha coefficients (α), and interitem correlations are reported. Also, the statistical and practical significance of the results are given where applicable.

The relationship between the dispositional factors on the one hand and their relationship with the outcomes of effectiveness and quality of work life of the team members of self-managing work teams on the other hand are reported.

5.1 DESCRIPTIVE STATISTICS AND RELIABILITY OF THE MEASURING INSTRUMENTS

The mean (M), standard deviation (SD), skewness and kurtosis were determined for the questionnaires and their subscales. Alpha coefficients (α), with the exception of the PCI, were calculated in each case to determine the internal consistency of the measuring instruments as well as the interitem correlation. These descriptive statistics, alpha coefficients and interitem correlations are reported in Table 8 for the measuring instruments of the dispositional variables, effectiveness and quality of work life of the team members of self-managing work teams as well as the negative outcomes associated with working in a self-managing work team. In agreement, the Wonderlic Corporation (developers and distributors of the PCI questionnaire) calculated the results for the PCI. It is therefore not possible to report on the alpha coefficient or interitem correlations of the PCI questionnaire.

Table 8

Descriptive Statistics, Alpha Coefficients and Interitem Correlation Coefficients of the Measuring Instruments

Measuring instrument	Mean	SD	Skewness	Kurtosis	Interitem r	α
Team characteristics	57.28	9.74	-0.17	-0.45	0.24	0.82
OLQ Total	141.44	21.19	-0.74	0.61	0.21	0.88
SES	31.28	3.71	-0.37	0.46	0.34	0.80
Autonomy	176.87	23.94	-1.14	3.02	0.27	0.91
External	92.92	22.82	0.40	1.02	0.30	0.91
Internal	162.10	19.74	-1.82	4.88	0.29	0.91
Trust	10.47	2.45	-1.42	3.14	0.44	0.61
Job satisfaction	11.33	2.35	-1.80	4.99	0.66	0.78
Group satisfaction	17.09	3.04	-1.84	4.93	0.52	0.73
Growth satisfaction	22.82	3.26	-2.09	10.60	0.51	0.80
Social satisfaction	17.20	2.28	-1.66	2.62	0.44	0.70
Total satisfaction	78.42	10.67	-1.77	8.35	0.41	0.90
Commitment to organisation	49.44	9.20	-1.13	5.07	0.60	0.92
Commitment to team	50.09	10.64	-1.32	3.51	0.70	0.95
Job-induced Tension	22.26	7.89	0.35	-0.00	0.40	0.84
Role Conflict	6.95	2.48	0.01	-0.77	0.40	0.57
Role Clarity	15.05	2.51	-1.42	2.34	0.54	0.77
Role Overload	7.86	2.74	-0.29	-0.30	0.65	0.79
Team member effectiveness	84.01	11.09	-0.68	3.26	0.38	0.93
Team effectiveness	64.34	8.43	-0.30	0.46	0.40	0.90

Table 8 shows that acceptable Cronbach alpha coefficients varying from 0.70 to 0.95 were obtained for all the scales (see Nunnally & Bernstein, 1994), with the exception of Role Conflict and Trust. Therefore, these two scales were omitted for the purposes of the remaining analyses. The mean interitem correlation of most of the scales is also acceptable ($0.15 \leq r \leq 0.50$, Clark & Watson, 1995). The mean interitem correlations of Group and Growth Satisfaction, Commitment to the organisation and team and Role Clarity are somewhat higher than the cut-off point.

The Team Characteristics Questionnaire was included to measure the degree to which the teams used in this study complied with the theoretical definition of a self-managing work team as it appears in the literature. The questionnaire consists of 14 items that require of the team members to rate their team in terms of the degree to which their team comply with a specific characteristic of a self-managing work team. Descriptive statistics for the various items of the Team Characteristics Questionnaire are reported in Table 9.

Table 9

Descriptive Statistics of the Team Characteristics Questionnaire

Item	Mean	SD	N	Minimum	Maximum
TC1	4.43	1.25	101	1.00	6.00
TC2	4.48	1.18	102	1.00	6.00
TC3	4.13	1.35	101	1.00	6.00
TC4	4.49	1.30	102	1.00	6.00
TC5	4.31	1.10	101	1.00	6.00
TC6	4.95	0.88	102	2.00	6.00
TC7	4.10	1.10	101	1.00	6.00
TC8	4.65	1.11	102	1.00	6.00
TC9	4.17	1.47	102	1.00	6.00
TC10	2.98	1.59	101	1.00	6.00
TC11	4.12	1.20	102	1.00	6.00
TC12	3.80	1.40	102	1.00	6.00
TC13	2.78	1.43	102	1.00	6.00
TC14	3.89	1.35	102	1.00	6.00

It can be seen from Tables 8 and 9 that the team members generally rated their teams above average in terms of their compliance with most of the characteristics of self-managing work teams. From Table 9 it can also be seen that the team members rated their teams lower on statements 10 and 13. These statements asked the team members to indicate to which degree members participate in the recruitment, hiring and training of new team members and to which degree the members rotate the managing responsibilities among themselves. Therefore, it seems that it is not completely characteristic of the self-managing work teams who participated in this study to use the team members in selection and training activities, and it is not completely characteristic of these teams to rotate the managing responsibilities among team members. Apart from these two characteristics, the results of the Team Characteristics Questionnaire confirmed that the teams used in this study comply with the theoretical definition of self-managing work teams, as set out in the literature (see 4.3.1).

The following conclusions in terms of the dispositional factors can be made, based on the results in Table 8.

- **Sense of coherence.** The total of the three subscales gives an indication of the sense of coherence of the population, with average scores ranging from 120 to 150. Wissing and Van Eeden (1997) found an average score of 136.52 with a standard deviation of 21.68, while Coetzee and Rothmann (1999) found an average score of 143.11 with a standard deviation of 21.42. The current study therefore, supports these findings by reporting an average score of 141.44 and a standard deviation of 21.19.

  From the table it can be seen that the scores on the OLQ are somewhat skew. As discussed in Chapter 4 (see 4.5) a variable with a skewness value of more than 0.48 in this specific study would be regarded as skewed (Tabachnick & Fidell, 2001).

According to Table 8, the alpha coefficient of the OLQ is 0.88. The finding is similar to the scores ranging from 0.82 and 0.95 reported by Antonovsky (1993), as well as a score of 0.89 as reported by Coetzee and Rothmann (1999). The interitem correlation of 0.21 is also within the acceptable range ($0.15 \leq r \leq 0.50$, Clark & Watson, 1995).

- **Self-efficacy.** The average score for self-efficacy is established at 31.82. With the maximum score of 40 on this questionnaire, it can be said that the team members have a relatively high level of self-efficacy. This means that the team members believe in their ability to work effectively in a self-managing work team.

  The scores on the self-efficacy scale appear to be relatively normally distributed.

  According to Table 8, the alpha coefficient of the SES is 0.80 and the interitem correlation is 0.34. Thoms, Moore and Scott (1996) reported an internal consistency reliability of 0.91 with a sample of 121 respondents. The SES can therefore be described as an internally consistent measuring instrument.

- **Locus of Control.** Autonomy is the highest average score on the Locus of Control Scale (176.87) followed by Internal Locus of Control Scale (162.10) and External Control (92.92). It can therefore be deducted that the population believe that they exert control over their actions, and they believe in their own abilities and act independently and with confidence.

  With regard to skewness and kurtosis, it seems that autonomy and internal locus of control are somewhat skew as the skewness value exceeds the cut-off of 0.48 as set out in Chapter 4 (see 4.5) (Tabachnick & Fidell, 2001).

According to Table 8 all the subscales on the LCI demonstrated an alpha coefficient of 0.91. The findings support the findings of Rothmann and Agathagelou (2000) which indicated the reliability coefficients of 0.81 (External Control), 0.77 (Internal Control), and 0.72 (Autonomy) for the Locus of Control Inventory. With interitem correlations of 0.27, 0.29 and 0.30 for the different subscales, the LCI can be seen as internally consistent as a measuring instrument for locus of control in this study.

In terms of the quality of work life of the team members, the following conclusions can be made, based on the results in Table 8.

- **Trust.** From the results in Table 8 it can be seen that the subscale of trust demonstrated a Cronbach alpha coefficient of 0.61. This is below the acceptable level of 0.70 as proposed by Nunnally and Bernstein, (1994). The trust subscale consists of two items only, and this can be seen as a possible reason for the low reliability that was obtained for this scale. Therefore this scale was omitted for the purposes of the remaining analyses.

- **Satisfaction.** From the results in Table 8 it can be seen that the team members involved in this study reported high levels of satisfaction in terms of their jobs, the group they are currently working in, the opportunities for growth that exist as well as the social interaction that they currently are experiencing. This results in the fact that a relatively high level of total satisfaction was computed. This is in accordance with the research conducted by several authors, which also demonstrated that team members in a self-managing work team are likely to experience high levels of job satisfaction (Glaser, 1991; Trist & Bamforth, 1951; Yeatts & Hyten, 1998). Cohen and Ledford (1994) found that team members in self-managing work teams experience higher levels of job, social, group and growth satisfaction, as measured in this study (see 2.3.6.1).

In terms of skewness and kurtosis, all of the subscales and the total satisfaction were negatively skewed, seeing that the skewness value for each of these variables exceeds the value of 0.48. This is in accordance with the overall high levels of satisfaction that were reported by the team members as explained above.

The subscales and total satisfaction demonstrated Cronbach alpha coefficients ranging between 0.70 (Social Satisfaction) and 0.90 (Total Satisfaction). The interitem correlations are also within accepted range, with the exception of job satisfaction with an interitem correlation of 0.66, Group satisfaction with an interitem correlation of 0.52 and Growth satisfaction with an interitem correlation of 0.51 that are somewhat higher than the cut- off point. In general, the satisfaction subscale can be seen as a liable measure of satisfaction of the team members in this study.

- **Commitment.** From the results in Table 8 it can be seen that the team members involved in this study reported high levels of commitment to their relative teams (50.09) as well as to the organisation as a whole (49.44). This is in accordance with the research done by others that also showed that team members in self-managing work teams are likely to display higher levels of commitment to their team and the organisation (Bishop & Scott, 2000; Wageman, 1997).

In terms of skewness and kurtosis, both commitment to the team and commitment to the organisation are negatively skewed. This is in accordance with the high levels of commitment reported by most of the team members as explained above.

Although the Cronbach alpha coefficients for the two subscales are above the acceptable level (0.92 and 0.95), both the subscales are somewhat higher than the cut-off point in terms of their interitem correlations (0.60 and 0.70). The scales can nevertheless be seen as a reliable measure of

the commitment of the team members to the organisation and their respective teams.

In terms of the negative outcomes for the team members, the following conclusions can be made, based on the results in Table 8.

- **Negative outcomes.** From the results in Table 8 it can be seen that the team members reported average to relatively high levels of job-induced tension, indicating that they experience a relative amount of work stress in their current positions. This partly confirms research by others that indicated that team members in a self-managing work team are likely to experience higher levels of stress as a result of working in these teams (Glaser, 1991; Manz & Newstrom, 1990; Melin et al., 1999). Self-managing work teams require team members to learn multiple jobs or tasks, and to take on tasks that once were reserved for supervisors or managers (Felts, 1995). This change from supervisory to participatory structures means that workers in a self-managing work team will experience day-to-day work life in vastly different ways than workers in a traditional management system (Barker, 1993). These changes can lead to increased levels of stress, as well as experiences of role-ambiguity, role-overload and role-conflict. However, the team members in this study reported high levels of role clarity and low levels of role overload in their current roles as team members of self-managing work teams. This is contradictory to expectations formulated from the literature (see 2.3.6.2).

  From the results it can be seen that these subscales are relatively normally distributed with the exception of Role Clarity, which is somewhat negatively skewed.

  All the Cronbach alpha coefficients ranging from 0.77 for Role Clarity and 0.84 for Job-induced Tension are above the acceptable level, with the exception of Role Conflict with a coefficient of 0.57. This subscale was therefore excluded from the remaining analyses. The interitem correlations

of Role Clarity and Role Overload are somewhat higher than the cut-off point. All the subscales can nevertheless be seen as reliable measuring instruments of the negative outcomes associated with working in a self-managing work team.

In terms of the self-reported effectiveness of the team members and teams the following conclusions can be made, based on the results in Table 8.

- **Effectiveness.** From the results in Table 8 it can be seen that the team members rated themselves and their teams as working very effectively.

  The scores on the Team Member Effectiveness Questionnaire are somewhat negatively skewed, while the scores on the Team Effectiveness Questionnaire appear to be normally distributed.

  Both the Cronbach alpha coefficients and interitem correlations of both questionnaires are within acceptable levels and therefore these questionnaires can be seen as reliable measures of the self-reported effectiveness of the team members as well as their respective teams.

Alpha coefficients and interitem correlations for the personality dimensions as measured by the PCI are not available but the descriptive statistics in terms of the means (M), standard deviation (SD), skewness and kurtosis are shown in Table 10.

Table 10

Descriptive Statistics of the PCI

	Mean	SD	Skewness	Kurtosis
Agreeableness	53.62	27.86	0.22	-0.89
Conscientiousness	59.30	29.45	0.00	-1.11
Stability	51.52	30.39	0.09	-1.11
Extraversion	62.16	30.48	-0.57	-0.81
Openness	59.45	29.24	-0.31	-0.98

Unfortunately no other descriptive statistics are available as a comparison for the results found in this study. However, from Table 10 it can be seen that the scores on the five scales are relatively normally distributed, with the exception of Extraversion, which exceeds the cut-off of 0.48, as set out in Chapter 4 (see 4.5).

Subsequently the results regarding the relationships between the various constructs are reported.

5.2 RELATIONSHIP BETWEEN THE DISPOSITIONAL FACTORS AND PERSONALITY DIMENSIONS

The correlation coefficients between the OLQ, SES, LCI, and the Big Five Personality dimensions are reported in Table 11 and Table 12.

Table 11

Correlation Coefficients between the OLQ, SES and LCI

	OLQ	SES	Autonomy	External
Internal	0.44*	0.40*	0.75**	-0.30*
OLQ	-	0.48*	0.67**	-0.44*
SES	-	-	0.63**	-0.42*
Autonomy	-	-	-	-0.42*

* Practically significant correlation (medium effect): $d \geq 0.30$

• Practically significant correlation (large effect): $d \geq 0.50$

From Table 11 it can be seen that there are significant relationships between all of the dispositional factors. External locus of control relates negatively to all the other dispositional factors, while it seems that autonomy has the strongest relationship with internal locus of control, self-efficacy and sense of coherence. These relationships previously have already been reported by researchers such as Antonovsky (1991), Bono and Judge (2003), Breed (1997), and Wissing and Van Eeden (1997). Therefore it seems that if individuals understand stimuli from their environment, believe that they can manage it and view it as meaningful to expend energy upon (sense of coherence), believe that they are capable of performing the tasks in a self-managing work team (self-efficacy), believe that they can control their behavioural outcomes (internal locus of control), they are likely to act independently, and with confidence and they would make decisions and take action steps that lead to problem solving (autonomy).

Table 12

Correlation Coefficients between the OLQ, SES, LCI, and the Big Five Personality Dimensions

	Agreeable-ness	Conscien-tiousness	Stability	Extraversion	Openness to experience
OLQ	0.26	0.10	0.50**	0.44*	0.39*
SES	0.07	0.20	0.36*	0.42*	0.48*
Autonomy	0.07	0.14	0.41*	0.54**	0.56**
Internal	0.18	0.09	0.23	0.32*	0.35*
External	-0.19	-0.05	-0.52**	-0.37*	-0.50**

* Practically significant correlation (medium effect): $d \geq 0.30$
* Practically significant correlation (large effect): $d \geq 0.50$

From Table 12 it can be seen that Stability has a significant relationship with all the dispositional factors with the exception of internal locus of control.

Furthermore, Extraversion and Openness to experience also have significant relationships with all of the dispositional factors. These results partly support the results of studies of Judge et al. (2003); Morrison (1997); Ruiselova (2000); Strümpfer, Gouws and Viviers (1998); and Thoms, Moore and Scott (1996) who all found significant relationships between Stability, sense of coherence, self-efficacy and locus of control. They also found a relationship between Extraversion, self-efficacy and locus of control. And lastly, they found a relationship between conscientiousness and sense of coherence, self-efficacy and locus of control. However, the results in this study did not confirm the relationship between conscientiousness and the dispositional factors found by the above-mentioned researchers. The results of this study also demonstrate a significant relationship between Openness to experience, Sense of coherence, Self-efficacy and Locus of control. Therefore it seems that team members who understand stimuli from their environment, feel that it is manageable and meaningful to address the challenges facing them, believe in their own capabilities to perform the tasks in a self-managing work team, believe that they can influence their environment through their own behaviour, and team members who act independently and confidently are also likely to be able to handle stress, maintain an even temperament, to be sociable, talkative, active and assertive and also to be imaginative, curious and creative.

In order to further explain the relationship between the dispositional factors and the personality dimensions of the team members of a self-managing work team, canonical correlations were determined. These canonical correlations between the different personality dimensions and dispositional factors are reported in Table 13.

Table 13

Results of the Canonical Analysis: Personality Dimensions and the Dispositional Variables

	First Canonical Variate		Second Canonical Variate	
	Correlation	Coefficient	Correlation	Coefficient
Personality Dimensions Set				
Agreeableness	0.19	-0.02	0.83	0.78
Conscientiousness	0.20	0.07	-0.09	0.09
Stability	0.80	0.42	0.41	0.54
Extraversion	0.79	0.31	-0.17	-0.28
Openness	0.88	0.46	-0.22	-0.42
Percentage Variance	0.42		0.19	
Redundancy	0.22		0.03	
Dispositional Variable Set				
Sense of Coherence	0.73	0.12	0.45	1.09
Self-Efficacy	0.71	0.16	-0.12	-0.06
Autonomy	0.84	0.68	-0.22	-1.59
External Locus of Control	-0.78	-0.47	-0.30	-0.26
Internal Locus of Control	0.49	-0.27	0.10	0.77
Percentage Variance	0.52		0.07	
Redundancy	0.27		0.01	
Canonical Correlation	0.69		0.34	

The first canonical correlation was 0.69 (47.61% overlapping variance). The other four canonical correlations were 0.34, 0.22, 0.19 and 0.12. With all five canonical correlations included, F (25, 335.84) = 4.34, p<0.0001. Subsequent F-tests were not statistically significant (p<0.0001). The first pair of canonical variates, therefore, accounted for the significant relationships between the two sets of variables.

Data on the first pairs of canonical variates appear in Table 13. Shown in the table, are correlations between the variables and canonical variates, standardised canonical variate coefficients, within-set variance accounted for by the canonical variates (percentage variance), redundancies and canonical

correlations. Total percentage variance and total redundancy indicate that the first pair of canonical variates was strongly related.

With a cut-off correlation of 0.30 the variables in the personality dimension set that were correlated with the first canonical variate were Stability, Extraversion and Openness to experience. Among the dispositional variable set Sense of Coherence, Self-efficacy, Autonomy, External Locus of Control (low score) and Internal Locus of Control correlated with the first canonical variate. The first pair of canonical variates indicates that stability (0.80), extraversion (0.79) and openness to experience (0.88) are associated with sense of coherence (0.73), self-efficacy (0.72), autonomy (0.84), low external locus of control (-0.78) and internal locus of control (0.49).

5.3 RELATIONSHIP BETWEEN THE DISPOSITIONAL FACTORS, PERSONALITY DIMENSIONS AND THE QUALITY OF WORKLIFE OF THE TEAM MEMBERS

The correlation coefficients between the OLQ, SES, LCI, the big five personality dimensions, satisfaction and commitment of team members are reported in Table 14.

Table 14

Correlation Coefficients between the OLQ, SES, LCI, Big Five Personality Dimensions, Satisfaction and Commitment

	Job Satisfaction	Group Satisfaction	Growth Satisfaction	Social satisfaction	Satisfaction Total	Commitment Organisation	Commitment Team
OLQ	0.39*	0.53**	0.47*	0.41*	0.52**	0.47*	0.38*
SES	0.30*	0.39*	0.41*	0.29	0.41*	0.39*	0.48*
Autonomy	0.38*	0.29	0.49*	0.36*	0.45*	0.49*	0.41*
[illegible]	0.33*	0.19	0.43*	0.33*	0.39*	0.42*	0.36*
[illegible]	-0.22	-0.19	-0.37*	-0.23	-0.33*	-0.23	-0.30*
[illegible]	0.16	0.27	0.10	0.03	0.17	0.15	0.22
[illegible]	0.18	0.07	0.25	0.19	0.20	0.10	0.09
[illegible]	0.29	0.24	0.29	0.14	0.28	0.18	0.26
[illegible]	0.19	0.20	0.25	0.28	0.24	0.24	0.32
[illegible]	0.27	0.24	0.26	0.26	0.29	0.29	0.36*

* Practically significant correlation (medium effect): $d \geq 0.30$

** Practically significant correlation (large effect): $d \geq 0.50$

Table 14 shows that sense of coherence are positively related to Job satisfaction, Group satisfaction, Growth satisfaction, Social satisfaction and Total satisfaction, as well as Commitment to the organisation and the team. Self-efficacy is also positively related to all these variables with the exception of Social satisfaction. Autonomy is positively related to Job satisfaction, Growth satisfaction, Social satisfaction and Total satisfaction as well as Commitment to the organisation and the team. Internal locus of control is also positively related to all the quality of work life variables, with the exception of Growth satisfaction. External locus of control is significantly (negatively) related to all the quality of work life variables with the exception of Job satisfaction, Group satisfaction, Social satisfaction, and Commitment to the organisation. This is in accordance with the results from the literature, as set out in Chapter 3 (see 3.3.4, 3.4.4, 3.5.4).

However, the personality dimensions show no relationship to any of the quality of work life variables with the exception of Openness to experience that is related to commitment to the team. It seems from the results that team members who are intellectual, curious and imaginative and who have broad interests are more likely to be more committed to the team they are working in.

These findings on the relationship between personality and quality of work life are in accordance with the findings of Furnham, Petrides, Jackson and Cotter (2002), who also found no relationship between personality and job satisfaction. But this is contradictory to the findings of Tokar and Subich (1997), which indicated that personality relates to employees' job satisfaction (see 3.6.4).

In order to further explain the relationship between the dispositional factors, personality dimensions and the quality of work life of team members of a self-managing work team, canonical correlations were determined. These canonical correlations between the different dispositional factors and quality of work life are reported in Table 15.

Table 15

Results of the Canonical Analysis: Dispositional Variables and Quality of Work Life

	First Canonical Variate		Second Canonical Variate	
	Correlation	Coefficient	Correlation	Coefficient
Dispositional Variable Set				
Sense of Coherence	0.96	0.91	-0.09	-0.95
Self-Efficacy	0.66	0.32	0.39	0.08
Autonomy	0.69	-0.22	0.58	0.67
External Locus of Control	-0.41	0.09	-0.49	-0.48
Internal Locus of Control	0.53	0.19	0.66	0.40
Percentage Variance	O.46		0.24	
Redundancy	0.18		0.07	
Quality of Work Life Set				
Job Satisfaction	0.66	-0.18	0.25	0.06
Group Satisfaction	0.89	0.71	-0.23	-1.28
Growth Satisfaction	0.79	0.31	0.48	0.60
Social Satisfaction	0.67	0.17	0.23	-0.04
Commitment to Organisation	0.80	0.43	0.36	-0.06
Commitment to Team	0.71	-0.32	0.44	0.99
Percentage Variance	0.58		0.12	
Redundancy	0.23		0.04	
Canonical Correlation	0.63		0.54	

The first canonical correlation was 0.63 (39.91% overlapping variance). The other four canonical correlations were 0.54, 0.31, 0.18 and 0.06. With all five canonical correlations included, F (30, 366) = 3.45, p<0.0001 and with the first canonical correlation removed, F (20, 306.08) = 2.42, p<0.0008. Subsequent F-tests were not statistically significant (p<0.0001). The first pair of canonical variates, therefore, accounted for the significant relationships between the two sets of variables.

Data on the first pairs of canonical variates appear in Table 15. Shown in the table are correlations between the variables and canonical variates,

standardised canonical variate coefficients, within-set variance accounted for by the canonical variates (percentage variance), redundancies and canonical correlations. Total percentage variance and total redundancy indicate that the first pair of canonical variates was strongly related.

With a cut-off correlation of 0.30 the variables in the dispositional variable set that were correlated with the first canonical variate were Sense of Coherence, Self-efficacy, Autonomy, External Locus of Control (low score) and Internal Locus of Control. Among the quality of work life set, Trust, Job Satisfaction, Group Satisfaction, Growth Satisfaction, Social Satisfaction, Commitment to Organisation and Commitment to Team correlated with the first canonical variate. The first pair of canonical variates indicates that sense of coherence (0.96) self-efficacy (0.66), autonomy (0.69), low external locus of control (-0.41) and internal locus of control (0.53) are associated with job satisfaction (0.66), group satisfaction (0.89), growth satisfaction (0.79), social satisfaction (0.67), commitment to the organisation (0.80) and commitment to the team (0.71).

5.4 RELATIONSHIP BETWEEN THE DISPOSITIONAL FACTORS, PERSONALITY DIMENSIONS, NEGATIVE OUTCOMES EXPERIENCED BY TEAM MEMBERS AND EFFECTIVENESS OF THE TEAM AS WELL AS THAT OF TEAM MEMBERS

The correlation coefficients for OLQ, SES, LCI, the big five personality dimensions, tension, role clarity, role overload, self-rated team member effectiveness and self-rated team effectiveness are reported in Table 16.

Table 16

Correlation Coefficients between the OLQ, SES, LCI, Big Five Personality Dimensions, Tension, Role Clarity, Role Overload, Self-rated Team Member Effectiveness and Self-rated Team Effectiveness

	Tension	Role Clarity	Role Overload	Team member Effectiveness	Team Effectiveness
OLQ	-0.33*	0.48*	-0.18	0.46*	0.28
SES	-0.17	0.42*	-0.14	0.43*	0.10
Autonomy	-0.22	0.55**	-0.14	0.53**	0.20
Internal	-0.17	0.38*	-0.17	0.36*	0.29
External	0.25	-0.24	0.19	-0.40*	-0.20
[illegible]	-0.18	0.02	-0.09	0.29	0.34*
[illegible]	-0.05	0.18	-0.13	0.15	-0.04
Stability	-0.42*	0.23	-0.21	0.38*	0.26
Extraversion	-0.18	0.30*	-0.22	0.53**	0.07
Openness to experience	-0.23	0.29	-0.23	0.39*	0.05

* Practically significant correlation (medium effect): $d \geq 0.30$
** Practically significant correlation (large effect): $d \geq 0.50$

Table 16 shows that sense of coherence is negatively related to tension and positively related to role clarity and self-rated team member effectiveness. Self-efficacy is positively related to role clarity and self-rated team member effectiveness. Autonomy is positively related to role clarity and self-rated team member effectiveness. External locus of control is negatively related to self-rated team member effectiveness. Internal locus of control is positively related to role clarity and self-rated team member effectiveness. Agreeableness is positively related to member's rating of their team's performance. Stability is negatively related to tension and positively related to self-rated team member

effectiveness. Extraversion is positively related to role clarity and self-rated team member effectiveness. Openness to experience is also related to self-rated team member effectiveness.

Therefore it seems that team members with higher levels of sense of coherence and higher levels of stability will experience lower levels of tension while working within a self-managing work team. It further seems that team members with higher levels of sense of coherence, self-efficacy, autonomy, an internal locus of control and who are extraverted will report higher levels of role clarity.

The results further show that all the dispositional factors and personality dimensions, with the exception of agreeableness and conscientiousness, are positively related to team member's rating of their own effectiveness as team members of a self-managing work team. These findings are contradictory to previous findings of Neuman and Wright (1999) that conscientiousness and agreeableness predicted peer ratings of team member performance beyond measures of job specific skills and general cognitive ability. It is also contradictory to the findings of several other studies of Barrick and Mount (1993), Fallon et al. (2000) and Piedmont and Weinstein (1994) which all indicated that conscientiousness predicted overall performance across various occupations and organisational settings. This is further contradictory to findings of Barrick and Mount (1993) that the validity of agreeableness to predict job performance was higher in high-autonomy jobs compared with low-autonomy jobs, but the correlation was negative. However the results in Table 16 show that agreeableness is positively related to team members' rating of their own team's performance.

The results of the canonical analysis of dispositional variables and negative outcomes of self-managing work teams are shown in Table 17.

Table 17

Results of the Canonical Analysis: Dispositional Variables and Negative Outcomes of Self-Managing Work Teams

	First Canonical Variate	
	Correlation	Coefficient
Dispositional Variable Set		
Sense of Coherence	0.87	0.43
Self-Efficacy	0.71	0.16
Autonomy	0.93	0.55
External Locus of Control	-0.48	-0.00
Internal Locus of Control	0.66	-0.01
Percentage Variance	0.56	
Redundancy	0.20	
Negative Outcomes Set		
Job-Induced Tension	-0.48	-0.28
Role Clarity	0.97	0.90
Role Overload	-0.30	0.15
Percentage Variance	0.42	
Redundancy	0.15	
Canonical Correlation	0.59	

The first canonical correlation was 0.60 (36% overlapping variance). The other two canonical correlations were 0.23 and 0.13. With all three canonical correlations included, F (15, 259.89) = 3.58, $p<0.0001$. Subsequent F-tests were not statistically significant ($p<0.0001$). The first pair of canonical variates, therefore, accounted for the significant relationships between the two sets of variables.

Data on the first pairs of canonical variates appear in Table 17. Shown in the table are correlations between the variables and canonical variates, standardised canonical variate coefficients, within-set variance accounted for by the canonical variates (percentage variance), redundancies and canonical correlations. Total percentage variance and total redundancy indicate that the first pair of canonical variates was strongly related.

With a cut-off correlation of 0.30 the variables in the dispositional variable set that were correlated with the first canonical variate were Sense of Coherence, Self-efficacy, Autonomy, External Locus of Control (low score) and Internal Locus of Control. Among the negative outcomes set, Job-induced Tension, Role Clarity and Role Overload correlated with the first canonical variate. The first pair of canonical variates indicates that sense of coherence (0.87), self-efficacy (0.71), autonomy (0.93), low external locus of control (-0.48) and internal locus of control (0.66) are associated with low job-induced tension (-0.48), role clarity (0.97) and low role overload (-0.30).

The results of the canonical analysis of personality dimensions and the negative outcomes of self-managing work teams are shown in Table 18.

Table 18
Results of the Canonical Analysis: Personality Dimensions and Negative Outcomes of Self-managing Work Teams

	First Canonical Variate		Second Canonical Variate	
	Correlation	Coefficient	Correlation	Coefficient
Personality Dimensions Set				
Agreeableness	0.31	0.09	-0.31	-0.19
Conscientiousness	0.28	0.24	0.54	0.38
Stability	0.93	0.77	-0.31	-0.74
Extraversion	0.62	0.14	0.56	0.64
Openness to experience	0.68	0.14	0.41	0.36
Percentage Variance	0.38		0.19	
Redundancy	0.08		0.02	
Negative Outcomes Set				
Job-Induced Tension	-0.88	-0.73	0.39	1.01
Role Clarity	0.66	0.48	0.56	0.67
Role Overload	-0.58	-0.07	-0.28	-0.78
Percentage Variance	0.52		0.18	
Redundancy	0.11		0.02	
Canonical Correlation	0.41		0.30	

The first canonical correlation was 0.41 (16.81% overlapping variance). The other two canonical correlations were 0.30 and -0.10. With all three canonical correlations included, F (15, 254.37) = 2.45, p<0.0024. Subsequent F-tests were not statistically significant (p<0.05). The first pair of canonical variates, therefore, accounted for the significant relationships between the two sets of variables.

Data on the first pairs of canonical variates appear in Table 18. Shown in the table are correlations between the variables and canonical variates, standardised canonical variate coefficients, within-set variance accounted for by the canonical variates (percentage variance), redundancies and canonical correlations. Total percentage variance and total redundancy indicate that the first pair of canonical variates was strongly related.

With a cut-off correlation of 0.30 the variables in the personality dimensions set that were correlated with the first canonical variate were Agreeableness, Stability, Extraversion and Openness to experience. Among the negative outcomes set, Job-induced Tension, Role Clarity, and Role Overload correlated with the first canonical variate. The first pair of canonical variates indicate that agreeableness (0.31), stability (0.93), extraversion (0.62), and openness to experience (0.68) are associated with job-induced tension (-0.88), role clarity (0.66) and role overload (-0.58).

The results of the canonical analysis of dispositional variables and team member effectiveness are shown in Table 19.

Table 19

Results of the Canonical Analysis: Dispositional Variables and Team Member Effectiveness

	First Canonical Variate		Second Canonical Variate	
	Correlation	Coefficient	Correlation	Coefficient
Dispositional Variable Set				
Sense of Coherence	0.80	0.25	0.32	-0.73
Self-Efficacy	0.76	-0.03	-0.25	-0.37
Autonomy	0.92	1.01	-0.03	-1.29
External Locus of Control	-0.66	-0.05	-0.17	-0.17
Internal Locus of Control	0.62	-0.30	0.49	1.23
Percentage Variance	0.58			
Redundancy	0.22			
Team Member Effectiveness Set				
Self-Rating	0.99	0.99	-0.01	-0.40
Team Rating	0.37	0.01	0.93	1.07
Percentage Variance	0.57			0.57
Redundancy	0.22			0.21
Canonical Correlation	0.61		0.32	

The first canonical correlation was 0.61 (40% overlapping variance). The other canonical correlation was 0.32. With both canonical correlations included, F (10, 188) = 6.39, $p<0.0001$, and with the first canonical correlation removed, F (4, 95) = 2.78, $p<0.0310$. The first two pairs of canonical variates, therefore, accounted for the significant relationships between the two sets of variables.

Data on the pairs of canonical variates appear in Table 19. Shown in the table are correlations between the variables and canonical variates, standardised canonical variate coefficients, within-set variance accounted for by the canonical variates (percentage variance), redundancies and canonical correlations. Total percentage variance and total redundancy indicate that the first pair of canonical variates was strongly related.

With a cut-off correlation of 0.30 the variables in the dispositional variable set that were correlated with the first canonical variate were Sense of Coherence, Self-efficacy, Autonomy, External Locus of Control (low score) and Internal Locus of control. Among the team member effectiveness set, Self-ratings and Team Rating correlated with the first canonical variate. The first pair of canonical variates indicates that sense of coherence (0.80), self-efficacy (0.76), autonomy (0.92), low external locus of control (-0.66) and internal locus of control (0.62) are associated with self-ratings of effectiveness (0.99) and team members' ratings of the team's effectiveness (0.37).

With a cut-off correlation of 0.30 the variables in the dispositional variable set that were correlated with the second canonical variate were Sense of Coherence and Internal Locus of control. Among the team member effectiveness set, Team Rating correlated with the second canonical variate. The second pair of canonical variates indicates that sense of coherence (0.32) and internal locus of control (0.49) are associated with team members' ratings of the team's effectiveness (0.93).

The results of the canonical analysis of the personality dimensions and team member effectiveness are shown in Table 20.

Table 20

Results of the Canonical Analysis: Personality Dimensions and Team Member Effectiveness

	First Canonical Variate		Second Canonical Variate	
	Correlation	Coefficient	Correlation	Coefficient
Personality Dimensions Set				
Agreeableness	0.41	0.25	0.77	0.70
Conscientiousness	0.32	0.22	-0.29	-0.13
Stability	0.66	0.22	0.39	0.55
Extraversion	0.90	0.64	-0.28	-0.38
Openness to experience	0.72	0.14	-0.26	-0.37
Percentage Variance	0.41		0.19	
Redundancy	0.15		0.02	
Team Member Effectiveness Set				
Self-Rating	0.99	1.02	0.06	-0.33
Team Rating	0.31	-0.06	0.95	1.07
Percentage Variance	0.55		0.45	
Redundancy	0.19		0.05	
Canonical Correlation	0.58		0.32	

The first canonical correlation was 0.58 (33.64% overlapping variance). The other canonical correlation was 0.32. With both canonical correlations included, F (10, 184) = 6.28, $p<0.0001$, and with the first canonical correlation removed, F (4, 93) = 3.34, $p<0.0133$. The two pairs of canonical variates, therefore, accounted for the significant relationships between the two sets of variables.

Data on the pairs of canonical variates appear in Table 20. Shown in the table are correlations between the variables and canonical variates, standardised canonical variate coefficients, within-set variance accounted for by the canonical variates (percentage variance), redundancies and canonical

correlations. Total percentage variance and total redundancy indicate that the first pair of canonical variates was strongly related.

With a cut-off correlation of 0.30 the variables in the personality dimension set that were correlated with the first canonical variate were Agreeableness, Conscientiousness, Stability, Extraversion and Openness to experience. Among the team member effectiveness set, Self-ratings and Team Rating correlated with the first canonical variate. The first pair of canonical variates indicates that agreeableness (0.41), conscientiousness (0.32), stability (0.66), extraversion (0.90) and openness to experience (0.72) are associated with self-ratings of effectiveness (0.99) and team members' ratings of the team's effectiveness (0.31).

5.5 MODELS THAT EXPLAIN THE RELATIONSHIP BETWEEN THE DISPOSITIONS AND OUTCOMES IN SELF-MANAGING WORK TEAMS

Structural equation modelling (SEM) methods, as implemented by AMOS (Arbuckle, 1999), were used to determine the contribution of each variable to the outcomes in self-managing work teams, using the maximum likelihood method. Before a model is constructed, the construct validity of the concepts included in the model is to be confirmed.

5.5.1 Construct validity of the concepts used in the model

In preparation of the testing of a SEM model, the construct validity of the various instruments was tested. Data analyses for the test of the factorial validity of the various instruments in this study proceeded as follows: First, a quick overview of model fit was done by looking at the overall χ^2 value, together with its degrees of freedom and probability value. Global assessments of model fit were based on several goodness-of-fit statistics (GFI, AGFI, PGFI, NFI, TLI, CFI and RMSEA); secondly, given findings of an ill-fitting initially hypothesised model, analyses proceeded in an exploratory mode. Possible misspecifications as suggested by the so-called modification

indices were looked for, and eventually a revised, re-specified model was fitted to the data. The results of these analyses are summarised in Table 21.

Table 21

Factorial Validity of the Measuring Instruments of Commitment, Satisfaction, Job-induced Tension, and Team Member Effectiveness as Adjusted with SEM Fit Statistics

Measuring instrument	**Adjustments made to the measuring instrument**	**Alpha coefficient after the adjustment**
Commitment questionnaire*	Item 1 from the questionnaire measuring commitment to the team was removed. Item 3 from the questionnaire measuring commitment to the organisation was removed.	0.94
Satisfaction questionnaire	Item 4 and 6 were removed.	0.87
Job-induced Tension questionnaire	Item 7 was removed.	0.84
Team member effectiveness questionnaire	Items 7, 10, 12, 20 and 21 were removed.	0.92
Role Clarity	Apart from including an error correlation into the model, no other adjustments were made.	0.76

* In this case the questionnaires measuring commitment to the organisation and measuring commitment to the team were combined to form the construct of commitment.

From Table 21 it can be seen that the removal of several items from the various measuring instruments resulted in acceptable alpha coefficient values. With this analysis the construct validity of the abovementioned concepts was confirmed. These concepts can therefore be seen as fit to be used in our model to explain the relationship between the dispositions and outcomes in self-managing work teams. Role Conflict, Role Clarity and Role Overload as

concepts were omitted from our model, because the construct validity of the instrument measuring these concepts did not reveal acceptable alpha values.

5.5.2 The relationship between the dispositions, commitment, satisfaction and self-rated performance of the team members

The proposed model including the hypothesized relationships between the dispositions, commitment, satisfaction and self-rated performance of the team members are displayed in Figure 13.

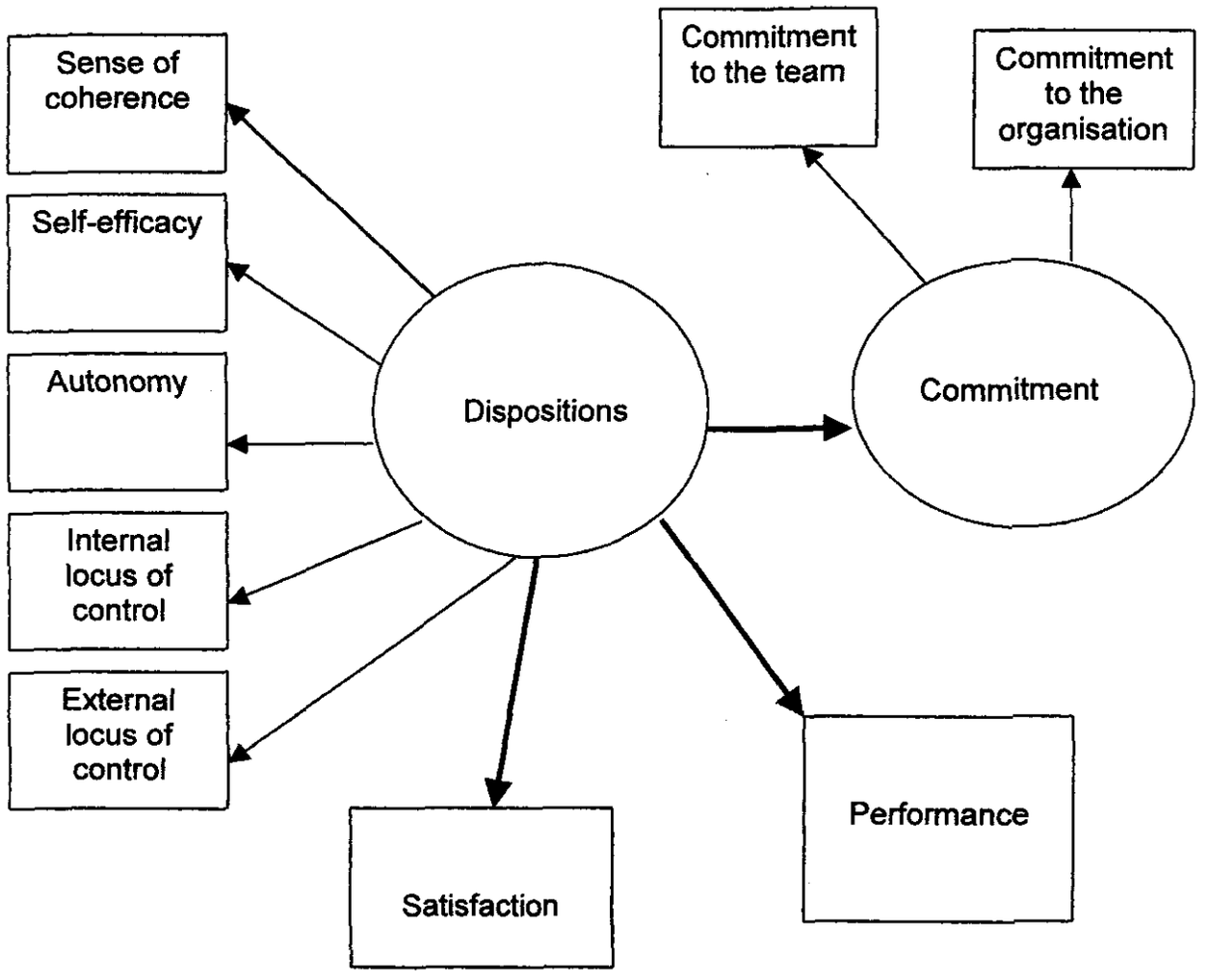

Figure 13 Proposed model of the hypothesized relationships between the dispositions, commitment, satisfaction and self-rated performance of the team members

From Figure 13 it can be seen, that based on the literature (see 3.3.5, 3.4.5, 3.5.5), it is hypothesized that significant positive relationships exist between the dispositions, commitment, satisfaction and effectiveness of the team members of self-managing work teams.

The proposed model was tested with SEM analysis. The results are displayed in Table 22.

Table 22

Goodness-of-fit Statistics for the First Hypothesised Model

Model	χ^2	χ^2/df	GFI	AGFI	PGFI	NFI	TLI	CFI	RMSEA
Model 1	61.60	2.46	0.88	0.78	0.49	0.89	0.90	0.93	0.12
Model 2	25.93	1.18	0.95	0.90	0.46	0.95	0.99	0.99	0.04

Results indicated that the model did fit adequately to the data according to all the indicators, χ^2 (25) = 61.60, GFI = 0.88, RMSEA = 0.12, CFI = 0.93, IFI = 0.93, and TLI = 0.90. The RMSEA indicator, however, shows that the fit can be improved even more. Inspection of the modification indices revealed that the fit between the model and the data could further be improved if covariation was allowed between the measurement errors of the dispositions, commitment and satisfaction dimensions. It is important to note that items with identical rating scales often have measurement errors that are correlated (Byrne, 1989). This means that the fit of the proposed model can be improved if the measurement errors among the items of the various scales are considered. Apart from the covariation, the modification indices revealed that the fit between the model and the data could further be improved if the relationship between the satisfaction and commitment of the team members were allowed. The revised model – including the covariation and additional relationship - shows a good fit, χ^2 (22) = 25.93, GFI = 0.95, RMSEA = 0.04, CFI = 0.99, IFI = 0.99, and TLI = 0.99. The final model is given in Figure 14.

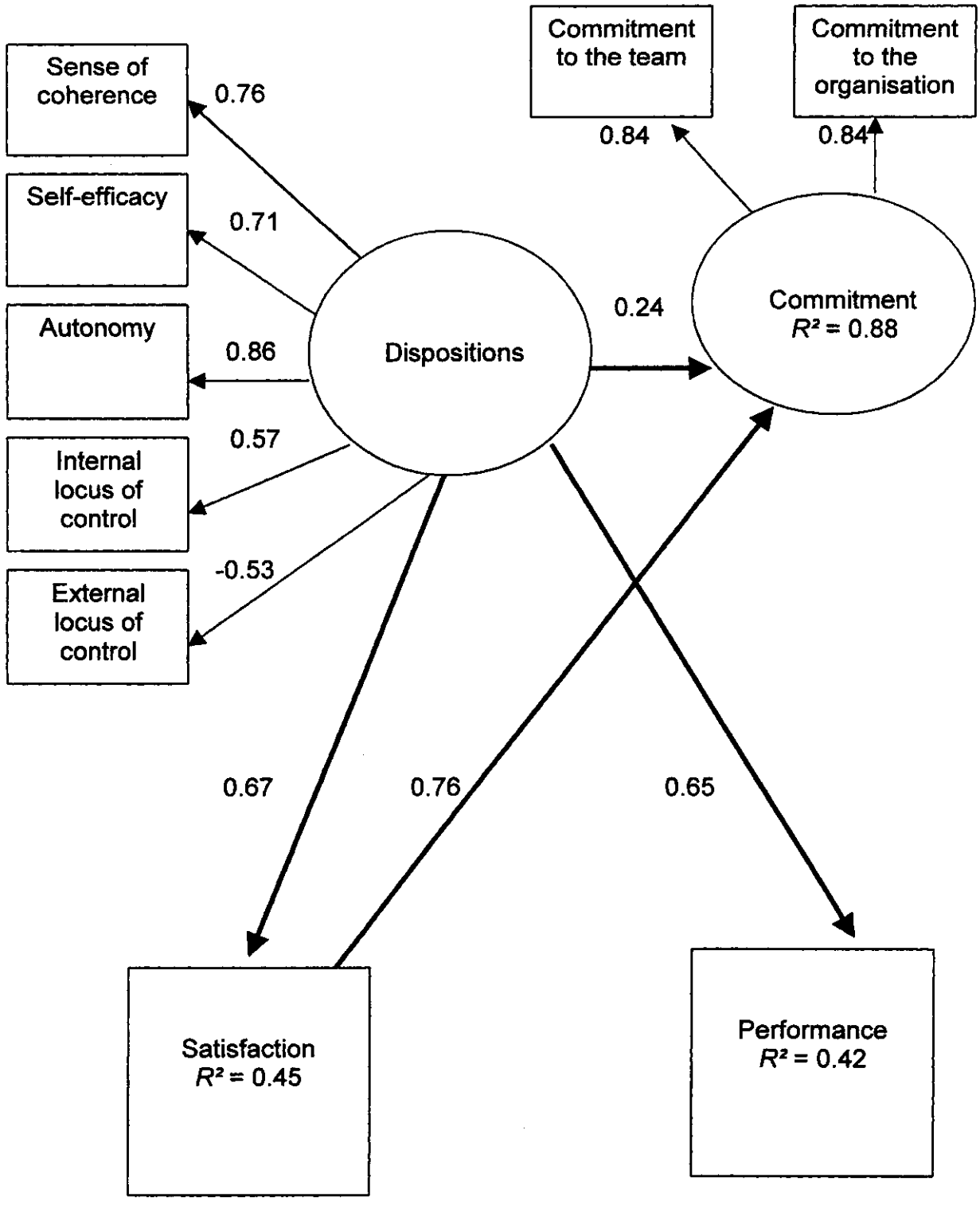

Figure 14 Relationship between the dispositions, commitment, satisfaction and self-rated performance of the team members

The structural model (in Figure 14) showed that there is a significant positive path from the dispositions (that include sense of coherence, self-efficacy, autonomy, internal locus of control and external locus of control), to commitment (that includes commitment to the team as well as commitment to the organisation) and a significant positive path to the satisfaction and self-rated performance of the team members. This means that team members with a strong sense of coherence, a high degree of self-efficacy, autonomy, a high internal and low external locus of control, will be more committed to their team and the organisation, be more satisfied and will also rate themselves to be performing better as a team member of a self-managing work team.

Furthermore it can be seen from Figure 14 that, apart from the significant path from the dispositions to satisfaction and commitment, there is also a significant path from satisfaction to commitment. Therefore, it can be deduced that the effect of the dispositions on commitment is moderated by satisfaction. This means that commitment to the team and organisation results, because of the dispositions as well as high levels of satisfaction. Team members with a strong sense of coherence, a high degree of self-efficacy, autonomy, a high internal and low external locus of control, are likely to be committed, but are likely to be even more committed if they are satisfied as well. Therefore, it seems that the commitment of these team members cannot be considered without also taking their level of satisfaction into account.

Research regarding the relationship between job satisfaction and commitment is inconclusive at this stage. Mathieu (1991) and Lance (1991) conducted cross-sectional studies and found that satisfaction and commitment exert effects on each other, but the effect of satisfaction on commitment was greater than the effect of commitment on satisfaction. However, Vandenburg and Lance (1992) also collected longitudinal data and their findings provided the strongest support for a commitment-causes-satisfaction model. According to Meyer (1997), the relation between job satisfaction and commitment might be quite complex and he expressed his doubts as to whether it will ever be possible to determine which of these, if either, is causally prior. In this regard it

seems that the results of this study make a case for the effect of satisfaction on commitment. The effect is, however, not directly but rather a moderating effect and should not be reviewed without taking a third variable, in this case the dispositions, into account. The level of commitment is likely to be enhanced by the level of satisfaction, taken that the dispositions of the team members are equal.

5.5.3 The relationship between the dispositions, job-induced tension, role clarity, satisfaction, commitment and self-rated performance of the team members.

Based on the literature (see 3.3.3, 3.4.3, 3.5.3), it was proposed that there is a significant negative relationship between the dispositions and job-induced tension, and a positive relationship between the dispositions and role clarity as experienced by the team members of self-managing work teams. The proposed model including the hypothesised relationships between the dispositions, job-induced tension, role clarity, commitment, satisfaction and self-rated performance of the team members was tested with SEM analysis. The results are displayed in Table 23.

Table 23

Goodness-of-fit Statistics for the Second Hypothesised Model

Model	χ^2	χ^2/df	GFI	AGFI	PGFI	NFI	TLI	CFI	RMSEA
Model 1	73.45	1.84	0.89	0.81	0.54	0.88	0.92	0.94	0.09
Model 2	44.76	1.18	0.93	0.88	0.54	0.93	0.98	0.99	0.04

Results indicated that the model did fit adequately to the data according to all the indicators, χ^2 (40) = 73.45, GFI = 0.89, RMSEA = 0.09, CFI = 0.94, IFI = 0.94, and TLI = 0.92. Inspection of the modification indices revealed that the fit between the model and the data could further be improved if co-variation was allowed between the measurement errors of the dispositions, commitment and satisfaction dimensions. It is important to note that items with identical rating scales often have measurement errors that are correlated (Byrne, 1989). This means that the fit of the proposed model can be improved

if the measurement errors among the items of the various scales are considered. The revised model – including the covariation - shows a good fit, χ^2 (38) = 44.76, GFI = 0.93, RMSEA = 0.04, CFI = 0.99, IFI = 0.99, and TLI = 0.98. The final model is given in Figure 15.

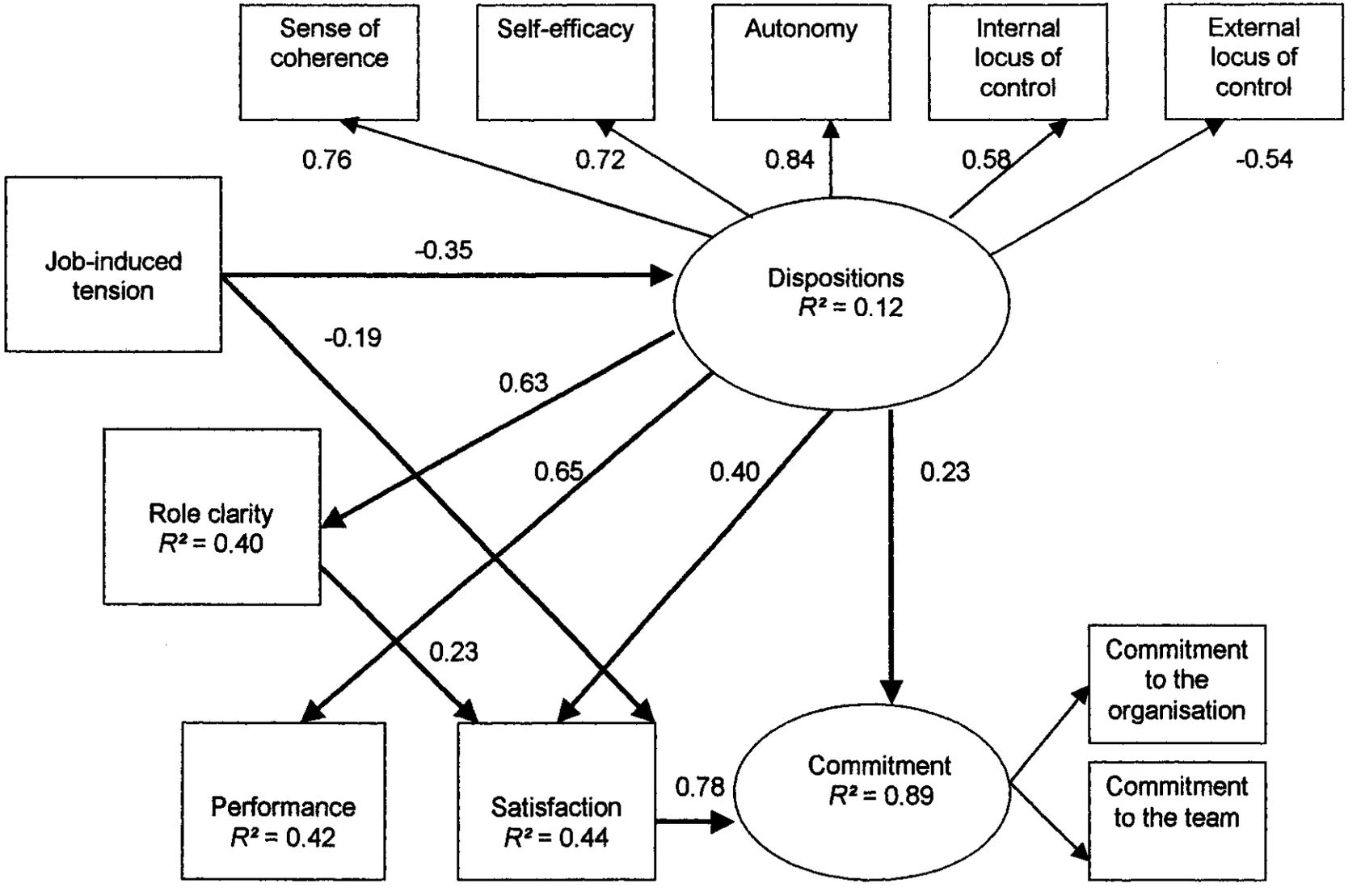

Figure 15 Relationship between the dispositions, job-induced tension, role clarity, commitment, satisfaction and self-rated performance of the team members

The results from the structural model in Figure 15 confirm the positive relationship between the dispositions, satisfaction, commitment (that includes commitment to the team as well as commitment to the organisation), and self-rated performance of the team members, as already discussed in the previous model (Figure 14). The moderating effect of satisfaction between the dispositions and commitment has also once again been confirmed.

The structural model also showed that there is, as expected, a negative path from job-induced tension to the dispositions (that include sense of coherence, self-efficacy, autonomy, internal locus of control and external locus of control), as well as satisfaction. This means that as the team members' job tension increases, their levels of satisfaction is likely to decrease and they are likely to have a weaker sense of coherence, a lower degree of self-efficacy, lower autonomy, lower internal locus of control and a higher external locus of control. However, because there is a significant path from job-induced tension to the dispositions and satisfaction, as well as a significant path from the dispositions to satisfaction, it can be deduced that the dispositions moderate the relationship between job-induced tension and satisfaction. This means that even if the team members experience high levels of job-induced tension, they can still experience a high degree of satisfaction as well, depending on their dispositions. This is in accordance with the literature that indicates that these dispositions will enable team members to cope more effectively with the stressors while working in a self-managing work team (see 3.3.3, 3.4.3, 3.5.3).

In addition to this, the path from job-induced tension to satisfaction was significant and the path from satisfaction to commitment was significant. This suggests that satisfaction mediates the effect of job-induced tension on the commitment of the team members. In other words, differences in job-induced tension may cause differences in the satisfaction of the members, which in turn, may affect the commitment of the team members. This means that team members who experience high levels of job-induced tension will only show low levels of commitment if they experience low levels of satisfaction as well. As mentioned earlier, this confirms the findings of previous research (Lance, 1991; Mathieu, 1991) regarding the effect of job satisfaction on commitment. It

seems that the influence of satisfaction on commitment will vary in relation to the other variables involved.

Furthermore there is a significant path from job-induced tension to the dispositions and a significant path from the dispositions to the self-rated performance of the team members. This suggests that the dispositions mediate the effects of job-induced tension on the self-rated performance of the team members. This means that team members who experience high levels of job-induced tension, will only rate themselves to be performing lower, if they also have a weak sense of coherence, low level of self-efficacy, a low internal locus of control, low autonomy and a high external locus of control. Accordingly, it seems that a strong sense of coherence, high level of self-efficacy, a high internal locus of control, high autonomy and low external locus of control regulate the effects of job-induced tension on self-rated performance of the team members. As mentioned before, these dispositional characteristics enable the team members to cope more effectively with the effect of job-induced tension and it seems that this will, as a result, enable the team member to still perform effectively, despite the stressors experienced.

The results further indicate a positive relationship between the dispositions and role clarity. This means that team members with a strong sense of coherence, a high degree of self-efficacy, autonomy, a high internal locus of control and a low external locus of control are likely to experience more role clarity. Furthermore it seems that there is a positive path from role clarity to satisfaction and that role clarity moderates the influence of the dispositions on satisfaction. This means that team members with a strong sense of coherence, a high degree of self-efficacy, autonomy, a high internal locus of control and a low external locus of control are likely to experience high levels of satisfaction, but this level of satisfaction is likely to be influenced by their experience of role clarity as well. Therefore, it seems that the team members' satisfaction cannot be considered, unless their experience of role clarity also is taken into account.

5.6 DISCUSSION

The results showed that the big five personality dimensions of extraversion and openness to experience are related to all the dispositional variables. Stability is also related to all the dispositional variables with the exception of internal locus of control. This finding is partly contradictory to the findings of Judge et al. (2003) who found a correlation of 0.40 between locus of control and emotional stability. However, it seems that team members who are more outgoing, more creatively inclined and emotionally more stable will also be able to understand and deal with stimuli in their environment better, they are likely to act independently and believe that they can influence their environment. They are likely to believe in their own capabilities to perform the tasks involved in a self-managing work team environment. This again partly confirms the findings of Thoms, Moore and Scott (1996) who also found a relationship between task-specific self-efficacy for participating in self-managing work teams and personality.

The results further showed that sense of coherence are positively related to all the quality of work life variables. This confirms the findings of the studies of Rothmann (2000), Pretorius and Rothmann (2001), Coetzee and Rothmann (1999) and Strümpfer (1995) who have all shown that there is a significant positive relationship between sense of coherence and satisfaction. Self-efficacy is related to all the quality of work life variables with the exception of social satisfaction. This is in accordance with the findings of the study of Saks (1994, 1995 in Bandura, 1997) who found that employees with high self-efficacy coped better, were more satisfied with their jobs, had stronger commitment to their profession and had less intention to quit. It seems that team members with a high sense of coherence and self-efficacy will experience higher levels of satisfaction in terms of their jobs, working in the team, opportunities to grow and working with others. They will also display higher levels of commitment to the team and commitment to the organisation.

Team members with a high autonomy will display the same outcomes in terms of the quality of work life variables but it seems that they will not necessarily

experience satisfaction in terms of working in the team. Team members with an internal locus of control will experience total satisfaction, satisfaction with opportunities to grow and working with others and they are likely to display higher levels of commitment to the team and the organisation. This confirms the findings of Bono and Judge (2003) who also found a relationship between locus of control and job satisfaction.

External locus of control is negatively related to all the quality of work life variables with the exception of job satisfaction, social satisfaction, group satisfaction and commitment to the organisation. It seems that team members with an external locus of control will display less satisfaction with opportunities to grow, total satisfaction and commitment to the team. It has been shown that there is a relationship between external locus of control on the one hand and unrealistic expectations of the working environment on the other hand (Moerdyk, 1986). Team members with an external locus of control are also likely to feel helpless to influence their working environment and instead continually complain about their circumstances (see 3.5.3). As a result it can be expected that these team members will also be less satisfied with their working environment.

Contradictory to expectations, the personality dimensions showed no relationship at all to the quality of work life variables with the exception of openness to experience, which appears to be related to commitment of the team member to the team the member is working in.

It also seems that team members with a strong sense of coherence and high levels of stability will experience low levels of tension. This is in accordance with the literature that indicates that sense of coherence helps individuals to cope more effectively with stressors in their environment. Team members with a strong sense of coherence are likely to see stressors as understandable, manageable and worth the effort to spend energy on (see 3.3.3) and as a result of this, be able to cope more effectively. Stability is defined as the ability to handle stress and to maintain an even temperament, and it is consequently

expected that higher levels of stability will be associated with lower levels of job-induced tension (see 3.6.1.4).

Team members with a strong sense of coherence, higher self-efficacy, autonomy, and internal locus of control and who are more extraverted will experience more role clarity. It seems that, despite the fact that team members of a self-managing work team are expected to cope with the spectrum of tasks associated with owning a whole unit of work as well as additional roles (see 2.2.2.3), team members who view their working environment as understandable, ordered and structured, view themselves as capable of performing the required tasks, who act independently, feel that they have control over their environment and who are more outgoing and sociable are likely to see their roles as more clear and understandable. This is in accordance with the literature that indicates that the dispositions will enable the team members to handle ambiguity (see 3.3.5, 3.4.5 and 3.5.5). Team members who are more extraverted are also more likely to discuss their roles with fellow team members or other relevant parties. As a result, these discussions could help to clarify aspects related to the role of the team member and then also lead to the experience of higher levels of role clarity.

Team members with a strong sense of coherence, higher self-efficacy, autonomy, and internal locus of control and who are emotionally more stable, extraverted and open to experience will rate themselves to be more effective as team members of a self-managing work team. The dispositions will enable team members to make cognitive sense of the working environment (sense of coherence), to act independently (autonomy) and take responsibility for their own outcomes in the team (internal locus of control). They will also have confidence in their own ability to complete the tasks at hand (self-efficacy), be able to handle stress and have a high degree of composure (stability), be sociable, assertive and active (extraversion) and be more broadminded, intellectually curious and have more positive attitudes towards learning (openness). It seems that team members who display these dispositions are likely to view themselves as performing effectively as a team member in a self-managing work team.

According to the literature, individuals with an external locus of control will ascribe performance to causes beyond their control such as luck or fate and are also likely to feel that they cannot handle the pressure, insecurities and challenges of a taxing work situation. In accordance with this, team members with an external locus of control rated themselves to be less effective as team members of a self-managing work team in this study.

Team members with an internal locus of control will also rate their team to be performing more effective as a self-managing work team. The personality dimensions, however, had no relationship to how the members rated their team's performance. It seems that team members who ascribe performance to causes within their control are also likely to rate their team's effectiveness higher, but that other personality dimensions would not necessarily influence a team member's view of the team's effectiveness.

The results of the canonical analysis confirmed that sense of coherence, self-efficacy, autonomy, external locus of control and internal locus of control were associated with quality of work life, and specifically job satisfaction, group satisfaction, growth satisfaction, social satisfaction, commitment to the organisation and to the team. Furthermore it seems that sense of coherence, self-efficacy, autonomy, low external locus of control and an internal locus of control are associated with role clarity, low job-induced tension and low role overload. It seems that all the personality dimensions with the exception of conscientiousness, are also associated with role clarity, low job-induced tension and low role overload. Sense of coherence, self-efficacy, autonomy, a low external locus of control and high internal locus of control are also associated with the team members' ratings of their own effectiveness and ratings of the team's effectiveness. All the personality dimensions are related to members' rating of their own effectiveness as team members of self-managing work teams.

The results of the structural equation modelling confirmed that the fortigenic dispositions impact on the experience of role clarity, satisfaction, commitment

and self-rated performance of the team members. However, it seems that the influence of the dispositions on the team members' commitment is likely to be moderated by their levels of satisfaction, and the influence of the dispositions on satisfaction would again be moderated by the team members' experience of role clarity.

The results of the structural equation modelling also confirmed a negative relationship between job tension, the dispositions and levels of satisfaction of the team members. Furthermore, it seems that the dispositions of the team members are likely to moderate the influence of job tension on their levels of satisfaction. Therefore, it seems that the dispositions reduce the effects of job-induced tension on the satisfaction of the team members. In addition to this, the levels of satisfaction of the team members mediate the influence of job-induced tension on commitment of the team members. In other words, job-induced tension will impact on the team member's satisfaction, and depending on this impact on the level of satisfaction, the team member's commitment will be influenced. Job-induced tension will only result in lower levels of commitment if the team members are experiencing low levels of satisfaction as well. In this study satisfaction affects commitment to a greater or lesser extent, depending on the other variables involved (satisfaction will be moderating or mediating the effect of a third variable on commitment, depending on the third variable involved).

Furthermore the model shows that dispositions mediate the relationship between job-induced tension and self-rated performance of the team members. This means that job-induced tension will only influence the team members' view of their own effectiveness if they also have a poor sense of coherence, low levels of self-efficacy, low internal locus of control, low levels of autonomy and high levels of external locus of control.

Therefore it seems that the commitment of the team members should be viewed in relation to their satisfaction, their satisfaction should be viewed in relation to their experience of role clarity and role clarity will be influenced by

the dispositions of the team members. The dispositions are also likely to diminish the influence of job-induced tension on the satisfaction levels of the team members and are likely to directly determine the effect of the levels of job-induced tension on the team members' view of their own effectiveness. Job-induced tension will only result in lower levels of commitment if the team member is dissatisfied and will only result in lower levels of effectiveness if the team member has a weak sense of coherence, a low level of self-efficacy, a low internal locus of control, a low level of autonomy and a high external locus of control.

In conclusion it seems that these fortigenic dispositions, as well as the big five personality dimensions of emotional stability, extraversion and openness to experience should be regarded as important for self-managing work team members as they will buffer the team members against the impact of job-induced tension and lead to the experience of higher levels of quality of work life, higher role clarity and lower role overload. Team members with a strong sense of coherence, high self-efficacy, internal locus of control, high autonomy and external locus of control will also rate themselves to be performing more effectively as team members of a self-managing work team.

5.7 CHAPTER SUMMARY

In this chapter the results of the empirical study were reported and discussed. Firstly, the descriptive statistics and reliability coefficients of the consecutive measuring instruments were discussed. Thereafter the relationships between the dispositional variables, personality dimensions, quality of work life and effectiveness of the team members of the self-managing work teams were reported.

In Chapter 6 the conclusions will be made on the basis of the literature findings and the empirical investigation. Recommendations for the organisation and for future research will also be made.

CHAPTER 6

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

In this chapter conclusions are made concerning the literature findings and the results of the empirical study. Furthermore, the limitations of the present study are discussed and recommendations are presented for the organisations and future research.

6.1 CONCLUSIONS

Conclusions are made in the following sections in respect of the specific literature objectives and the empirical findings obtained in the present study.

6.1.1 Conclusions in terms of the specific literature objectives of the study

The following conclusions can be made in respect of the concepts of self-managing work teams, dispositional characteristics, the quality of work life and the effectiveness of self-managing work team members.

In the 1950s **self-managing work teams** originated as a result of the Tavistock studies and the socio-technical movement. The roots of self-managing work teams lie in the socio-technical systems theory and job design theory. A self-managing work team can be defined as an intact group of, usually between 4 and 18, highly skilled and trained employees who function independently with a minimum of direct supervision but still within clearly defined boundaries. Some of the benefits associated with implementing self-managing work teams are increased organisational productivity, a streamlined organisation, increased flexibility of the organisation as they respond to change, increased quality of the output as well as increased customer satisfaction.

Self-managing work team members are responsible for the regulation, organisation and control of their jobs in order to deliver a well-defined segment of completed technical or knowledge work, a product or a service to an internal or external client. Therefore self-managing work team members have more decision-making responsibility and discretion over decisions traditionally made by management. The members plan, set priorities, organize, coordinate with others, measure and take corrective action – all once considered the exclusive responsibility of supervisors and managers. The team members take collective responsibility for completing the tasks and accomplishing the goals of the team.

The role requirements, responsibilities and tasks to be accomplished are much more comprehensive and complex than those of traditional work settings. In order to fulfil these multiple roles and to effectively accomplish the tasks allocated to the team, the members of a self-managing work team are required to possess certain skills. They will need skills that will help them comply with the requirements of working in a team such as interpersonal and communication skills. They will need skills that will help them to perform the tasks, duties and responsibilities such as technical and self-management skills. Coping skills, business knowledge and skills as well as learning skills will furthermore enable the team members to be effective in the context of a self-managing work team.

Although it is argued that working in a self-managing work team will lead to an increase in the quality of work life of the team members, it is also evident that working in a self-managing work team environment can lead to increased pressure, tension, and possibly experiences of role overload and role conflict.

Several models, based on the system's theory, were developed to explain the various input, output and process factors in self-managing work teams. However, an element that is lacking in these models explaining self-managing work team effectiveness is team member effectiveness as output criterion. Furthermore, although these models mention the team member as part of the input factors in terms of their kind of attitude and skills they possess, these

models do not specifically mention dispositions or personality characteristics that the team members should display. This study then set out to specifically investigate the role of dispositional characteristics of the team members and how it affects their effectiveness.

A disposition is defined as any hypothesized organisation of mental and physical aspects of an individual that is expressed as a stable, consistent tendency to exhibit particular patterns of behaviour in a broad range of circumstances. Therefore dispositional characteristics can be described as the characteristics inherent to individuals, which assist them in their interaction with their work-environment and situations that might arise as a consequence thereof. The dispositional characteristics investigated in this research are sense of coherence, self-efficacy, locus of control and the big five characteristics. The constructs of sense of coherence, self-efficacy and locus of control are from the fortigenic paradigm (Strümpfer, 1995), which studies the origin of psychological strengths.

Sense of coherence is conceptualised in the literature as a dispositional characteristic that helps employees to make sense of information that they are bombarded with, to select appropriate resources under their own or significant other's disposal to deal with stressful experiences, and to direct energy towards stressors that are viewed as challenges. Consequently it can be inferred that individuals with a strong sense of coherence regard information from the environment as comprehensible, manageable and meaningful. A strong sense of coherence can therefore help team members in a self-managing work team to face stressful situations and to handle complex tasks because demands from the environment are understood and believed to be under their personal or significant other's control, and they are likely to regard the tasks of the team as challenging enough to expend energy upon.

Self-efficacy is conceptualised as the belief of individuals in their ability to arise with the necessary resources and motivation to handle challenges and tasks effectively. Self-efficacy therefore refers to the belief of individuals that they can arise with and use the relevant behavioural, cognitive and

motivational resources to deal with the task at hand. Self-efficacy can be seen as a general construct or as pertaining to a specific situation. In this study self-efficacy is investigated only specifically with regard to working in a self-managing work team, therefore focusing on task-specific self-efficacy. It was expected that self-efficacy beliefs with regard to working in a self-managing work team are likely to directly influence the effectiveness of the team members participating in such a team.

Locus of control is conceptualised in the literature as a relatively stable, fundamental dispositional variable that refers to the extent to which individuals feel that they exert control over (internal locus of control) or are controlled by (external locus of control) their environment. The ability of individuals to believe in their own ability, to act independently, to make decisions on their own and to implement action steps to solve problems also play a crucial role in locus of control. Locus of control is concerned not just with control over own behaviour, but also with the expectancy to exert control over behavioural outcomes. In a working environment employees with an internal locus of control are likely to feel that they can handle the situation because it is within their personal control. Subsequently it is also expected that team members with an internal locus of control are likely to be less dependent on guidance from supervisors, rules or organisational guidelines and are therefore likely to be more comfortable working in a self-managing work team environment.

Apart from the fortigenic dispositional variables, the influence of the big five personality dimensions is also investigated in this study.

The **big five classification system** (consisting of the personality dimensions of extraversion, emotional stability, agreeableness, conscientiousness and openness) has gained increasing confidence in its robustness as a model of personality and is now widely accepted as a personality classification system. Extraversion is defined as the ability or tendency to be sociable, assertive, talkative, energetic, adventurous, ambitious and active. Agreeableness is defined as the tendency to be courteous, helpful, trusting, good-natured, cooperative, tolerant and forgiving. Conscientiousness is defined as the ability

or tendency to be hardworking,. dependable, efficient, thorough, responsible and organised. Stability is defined as the ability or tendency to handle stress, to maintain an even temperament and to have a high degree of composure and self-confidence across most situations. Openness is defined as the ability or tendency to be imaginative, cultured, curious, polished, original, broadminded, intelligent and artistically sensitive. These five personality dimensions encompass almost all possible variations of a person's workplace personality.

Based on the literature findings, it seems that sense of coherence, self-efficacy, locus of control and the big five personality dimensions are all related to some degree. But there also seems to be enough differences between the various constructs to warrant their individual inclusion as an input variable for a self-managing work team member. From the literature it also seems that the dispositional variables of sense of coherence, self-efficacy, locus of control and the big five personality dimensions are crucial in contributing to the belief of the team members that they have access to the necessary resources to exert control over their behaviour or the outcomes thereof. These will furthermore assist the team members in handling complex and demanding situations in their daily working lives and to promote general psychological well-being to such a degree that the team members will experience lower degrees of negative outcomes such as job tension, role overload or role conflict while working in a self-managing work team. It was therefore also expected that the presence of the different psychological strengths and big five personality dimensions would lead to higher levels of effectiveness and quality of work life of the team members, where quality of work life is defined in terms of the team member's commitment, satisfaction and trust.

6.1.2 Conclusions in terms of the specific empirical objectives of the study

The findings of the empirical study can be summarized as follows:

The team members in the self-managing work teams who participated in this study, experience a relatively strong sense of coherence and display high levels of self-efficacy, autonomy and internal locus of control. Their scores on the big five personality dimensions are relatively normally distributed, with the exception of extraversion, which is somewhat positively skewed. This is an indication that the team members on average scored relatively low on extraversion.

In accordance with the expectation, practically significant correlations of medium and large effect have been found between all the fortigenic dispositional variables, namely sense of coherence, self-efficacy and locus of control. This finding suggests that the fortigenic dispositional variables may form part of the same construct, namely psychological strengths. The big five personality dimensions of extraversion and openness were practically significantly related to all the fortigenic dispositional variables. Stability was significantly related to all the fortigenic dispositional variables with the exception of internal locus of control. The canonical correlations between a set of the fortigenic dispositional characteristics and a set of the personality dimensions confirmed these relationships and showed that stability, extraversion and openness to experience are associated with sense of coherence self-efficacy, autonomy, low external locus of control and internal locus of control. It therefore seems that the personality dimensions of extraversion, openness and stability are also related to an individual's psychological well-being, as being defined by the fortigenic dispositional variables.

In terms of their quality of work life, the team members experience high levels of satisfaction, commitment to their respective teams as well as commitment to the organisation. This is in accordance with literature findings which indicate that working in a self-managing work team is likely to lead to increased levels of quality of work life. In the measurement of the negative outcomes expected while working in a self-managing work team environment, the team members experience high levels of role clarity and low role overload. This is contradictory to literature findings that indicate that working in a self-

managing work team is likely to lead to the experience of role ambiguity as well as experiences of role overload and role conflict. A possible explanation for these findings can be that the team members in this study displayed a strong sense of coherence, high levels of self-efficacy, autonomy and internal locus of control and low levels of external locus of control. These dispositions are likely to enhance their experience of role clarity and enable them to cope better with strenuous situations, explaining the lower levels of experienced role overload. But, despite these dispositions, the team members nevertheless displayed average to relatively high levels of job-induced tension.

The team members rated themselves as working effectively as a team member of a self-managing work team and also rated their respective teams as functioning effectively as self-managing work teams.

Similar to the expectation that positive relationships exist between the dispositional characteristics and the quality of work life of the team members, practically significant relationships of medium and large effect were found between all the fortigenic dispositional variables on the one hand, and satisfaction of the team members, commitment to the team and commitment to the organisation on the other hand. However, these relationships could not be confirmed for the big five personality dimensions. In this regard only openness displayed a practically significant correlation of medium effect with the members' commitment to their team. The relationship between the fortigenic dispositional variables and quality of work life was further explored and the results of the canonical correlation showed that a set of fortigenic dispositional variables consisting of sense of coherence, self-efficacy, autonomy, low external locus of control and high internal locus of control are associated with a set of quality of work life variables consisting of job satisfaction, group satisfaction, growth satisfaction, social satisfaction, commitment to the organisation and commitment to the team.

The expectation that the dispositional characteristics would be positively related to the team members' rating of their own effectiveness was again

supported for the dispositional characteristics of sense of coherence, self-efficacy, locus of control, extraversion, openness and stability. Canonical correlations also confirmed that all the fortigenic dispositional characteristics are associated with effectiveness consisting of self-rated effectiveness of the member and self-rated team effectiveness. The big five personality dimensions of conscientiousness and agreeableness showed no relationship to the members' rating of their own effectiveness. This is contradictory to the literature, which indicates that conscientiousness was found to be a consistently valid predictor of job performance for all occupational groups and all criterion types. Similarly, agreeableness was also found to predict job performance in high-autonomy jobs, such as that of working in a self-managing work team environment. In the present study agreeableness was, however, the only dispositional characteristic that showed a practical significant relationship with how the team members rated their team's performance. One possible reason for these contradictory results can be that the previous research that investigated the relationship between the personality dimensions and performance was based on objective or supervisors' ratings of an employee's performance. In such a case an evaluator is likely to observe and evaluate characteristics such as being courteous, helpful, trusting, good-natured, cooperative, tolerant and forgiving (characteristics of agreeableness) as well as the tendency to be hardworking, dependable, efficient, thorough, responsible and organized (characteristics of conscientiousness) and regard these to be evident of good performance. The possibility does, however, exist that these specific characteristics are not regarded to be the most important when team members rated their own performance in this present study.

Pertaining to the expectation that there would be a practically significant negative relationship between the dispositional characteristics and negative outcomes as experienced by team members of self-managing work teams, it was found that only sense of coherence and stability have a practically significant negative relationship of medium effect with job-induced tension. It therefore seems that team members with higher levels of sense of coherence

and higher levels of stability will experience lower levels of job-induced tension while working within a self-managing work team.

Although it was expected that the team members are likely to experience some role ambiguity in their current roles as team members of a self-managing work team, it was found that the team members experienced relatively high levels of role clarity. In this regard it was further found that all the fortigenic dispositional variables (with the exception of external locus of control) as well as extraversion are significantly positively related to the team members' experience of role clarity. Therefore it seems that team members with higher levels of sense of coherence, self-efficacy, autonomy, and internal locus of control and who are extraverted are likely to also report higher levels of role clarity in a self-managing work team environment. The relationship between the dispositional variables and negative outcomes was further investigated and the results of the canonical correlation indicated that a set of the fortigenic variables, consisting of sense of coherence, self-efficacy, autonomy, low external locus of control and high internal locus of control are associated with a set of negative outcomes consisting of low job-induced tension, high role clarity and low role overload. Furthermore it was also shown that a set of personality dimensions consisting of agreeableness, stability, extraversion and openness to experience are associated with a set of negative outcomes consisting of low job-induced tension, high role clarity and low role overload.

Concerning the predictive value of the dispositional characteristics in relation to the outcomes of quality of work life and effectiveness of the team members, the findings in the present study showed that the dispositional characteristics of sense of coherence, self-efficacy and locus of control contribute significantly to the satisfaction, commitment and effectiveness of the team members. However, it was found that the influence of the dispositional characteristics on the team member's commitment is likely to be moderated by their level of satisfaction. In turn, the influence of the dispositional characteristics on satisfaction is likely to be moderated by the team member's experience of role clarity. The findings indicate that team members with a

strong sense of coherence, high degree of self-efficacy, internal locus of control and low degree of external locus of control are likely to experience higher degrees of role clarity, and this would, in turn, influence their level of satisfaction with working in a self-managing work team. Therefore it seems that the dispositional characteristics as well as the team members' experience of role clarity should be taken into account where their satisfaction and commitment are concerned. The dispositional characteristics will enable the team members to effectively deal with ambiguity, to experience their working environment as ordered and understandable and to identify and accept ownership of their responsibility in the team. This will result in the experience of higher levels of role clarity. If the team members experience higher levels of clarity in terms of their role within the team, they are also likely to experience lower levels of discomfort and as a result be more satisfied working in this team. When the team members experience high levels of satisfaction, they are less likely to consider leaving and consequently also experience higher levels of commitment.

Furthermore it was found that the influence of job-induced tension on the level of satisfaction of the team members is moderated by their dispositional characteristics. Therefore it seems that, if the team members have a strong sense of coherence, high self-efficacy, autonomy, internal locus of control and low level of external locus of control, job-induced tension is less likely to influence their level of satisfaction.

Dispositions mediate the relationship between job-induced tension on the one hand and the self-rated effectiveness of the team member on the other hand. If team members experience high levels of job-induced tension, but have a strong sense of coherence, high levels of self-efficacy, autonomy, internal locus of control and low levels of external locus of control, they are still likely to rate themselves as performing well as team members, despite the level of job-induced tension they experience. This may be as a result of the fact that the dispositions will specifically enable the team members to cope effectively

with the job-induced tension and will consequently diminish the effect of this tension on their performance as team members.

The satisfaction of the team members mediates the relationship between job-induced tension and commitment of the team members. If the team members experience high levels of job-induced tension, but are nevertheless satisfied, their experience of tension will not influence their level of commitment. It means that the commitment of the team members will only be influenced by their level of job-induced tension if they are dissatisfied as well.

In conclusion, sense of coherence, self-efficacy and locus of control are successful predictors of the team members' self-rated effectiveness, satisfaction, commitment to the organisation as well as commitment to their respective teams in a self-managing work team environment. These dispositions will further enhance the members' experience of role clarity and will reduce the impact of job-induced tension on their level of satisfaction. A high level of satisfaction of the team members will then also hinder job-induced tension from impacting on the commitment of the team members. Sense of coherence, self-efficacy and locus of control will also hinder job-induced tension from influencing the members' view of their own effectiveness as team members of a self-managing work team. Team members with these dispositions will be able to cope more effectively with job-induced tension and as a result, the degree of tension is not likely to influence their performance as a team member.

6.2 LIMITATIONS OF THE PRESENT STUDY

Currently very few organisations in South Africa are using self-managing work teams on a large scale. The researcher therefore experienced difficulty in obtaining a study population for the research. Because of this, one of the limitations of the present study is the fact that an availability sampling method has been used rather than a randomised group design method, which implies that the findings can not be generalised but pertain only to the population investigated in the study. Furthermore the study population consisted only of

employees from two organisations, namely a large chemical organisation and a large financial institution and the team members that participated can be described as knowledge workers. Therefore the findings from this study may not be representative of self-managing work team members in a different type of organisation or if team members are performing more productive types of tasks.

The use of only self-report data can be considered as another limitation of the present study. This might have the effect of artificially inflating relationships among the dispositional characteristics, the quality of work life and the effectiveness of the team members. It is possible that more objective indicators of quality of work life and effectiveness might yield different results, and therefore a combination of self-report measures and other indicators in addition to that, might have provided richer results.

6.3 RECOMMENDATIONS

Recommendations pertaining to the specific organisations used in this study, as well as recommendations for future research, are made in this section.

6.3.1 Recommendations for the organisation

An implication of this study is that the decision to implement self-managing work teams should include consideration of the individual characteristics, including sense of coherence, self-efficacy, locus of control, extraversion, stability and openness. It has been suggested by previous research that both employees and organisations may experience problems implementing self-managing work teams if individuals lack essential personality characteristics. This present study indicated that organisations that lack people high in certain dispositional characteristics might have difficulty successfully converting to this type of work structure. Therefore, before the organisations used in this study specifically implement self-managing work teams on a broader basis or in more departments in their organisation, it may prove useful to first consider the dispositional characteristics of the employees in the rest of the

organisation as well, in order to determine the potential of successfully implementing this type of work structure on a broader basis. However, it is not suggested that the dispositional characteristics of the individual team members are the only determinant of implementing successful self-managing work teams, but this study indicates that it is an additional variable that might prove to be extremely useful in planning and implementing such an intervention in an organisation.

The current study was not conducted in a selection context and more research is therefore necessary to validate the use of the dispositional characteristics in a selection context. Therefore, in addition to the above recommendation, the organisations can consider validating these dispositional characteristics for selection purposes in additional studies. In this regard, these dispositional characteristics can be used in combination with other selection measures currently used to select self-managing work team members in the organisation. This will enable the organisation to start accumulating validity data to support the use of these dispositional characteristics for selection purposes in future.

With regard to the team members already working in self-managing work teams, this study indicated that enhancing the fortigenic dispositional characteristics of the team members will be likely to result in an increase in their effectiveness, quality of work life as well as reduced levels of job-induced tension. It is recommended that team members of self-managing work teams should become aware of their own fortigenic dispositions. This could help them become aware of their own and others' coping resources that could be used in order to cope with the demands of working in a self-managing work team. The organisations will then also benefit if they design and implement interventions that will address the enhancement and development of these fortigenic dispositions in the induction and training of team members of their self-managing work teams.

The organisation could contribute to the development of the team members' sense of coherence by presenting information in a consistent, structured,

orderly way that is completely understood by the team members. Team members must be able to identify their place in the greater structure of the organisation in order to enhance the comprehensibility component of sense of coherence. By providing the necessary knowledge, skills, material, instruments, support and other resources, as well as ensuring that there is a balance between the execution of tasks, team members will feel that the work demands are under their personal or other's control. The fact that the team members are allowed a degree of independence and freedom of choice to execute the task at hand in their own way, as well as the fact that they are participating in decision-making as part of working in a self-managing work team, are likely to lead to a feeling of ownership and would also contribute to the meaningfulness component of sense of coherence.

Training is a widely used intervention in the implementation of self-managing work teams. As this research indicated, team members high in self-efficacy will tend to be resilient and will be the most likely individuals to adapt to self-managing work teams. Therefore the organisations could benefit from exploring ways of how team members' self-efficacy could be enhanced by the training presented before and after the implementation of a self-managing work team. Because of the fact that self-efficacious individuals tend to be self-confident as a result of an accumulation of successful experiences, the organisation could enhance the self-efficacy of the team members by providing the opportunity for relevant enactive mastery experiences before and during their participation in self-managing work teams (thereby enhancing self-efficacy by means of personal attainments). Other means of addressing the team members' self-efficacy would be to provide the opportunity for vicarious learning (learn by modelling), by means of verbal persuasion and by emotional or cognitive appeals aimed at convincing the team members that they can perform the tasks required at a specific level within a self-managing work team (psychological arousal).

In order to enhance the internal locus of control of the team members, a training programme can be presented that includes methods directed at facilitating self-actualisation such as a growth group experience, methods

directed at the development of self-insight such as individual therapy sessions and lastly training that addresses skills such as problem solving, conflict management, communication and assertive behaviour. The end result of such a program is that the team members are likely to experiences more autonomy and internal control in situations. The autonomy of team members can also be enhanced by means of accurate feedback regarding performance appraisals.

But apart from enhancing and developing the dispositional characteristics of the team members, it also seems important for the organisations to enhance the team member's experience of role clarity when participating in a self-managing work team. This will result in even higher levels of satisfaction, which in turn will influence the team member's commitment (as indicated by the findings in the present study). The organisations could therefore benefit from spending time on the clarification of the roles of the team members in their self-managing work teams. This can be addressed by team building interventions or even on a regular basis by discussing it at team meetings.

In conclusion, the organisations involved in this study can focus on developing the dispositional characteristics of the team members currently involved in self-managing work teams, as well as focus on assessing and developing the dispositional characteristics of future team members of self-managing work teams. In this regard, additional studies can also be conducted to validate the use of the dispositional characteristics as selection instruments. Lastly, additional time should be spent on the clarification of the roles of the team members.

6.3.2 Recommendations for future research

The following recommendations can be made for future research:

- The relationship between the dispositional characteristics, the quality of work life and effectiveness of team members in a self-managing work team should be investigated in a wide variety of organisational settings

and in larger, randomly drawn samples as well in order to confirm and generalise the findings of the present study.

- The relationship between the dispositional characteristics, the quality of work life and the effectiveness of the team members should be investigated by using supervisory or other objective ratings of effectiveness of the team members as well as other objective measures of quality of work life, in order to confirm the relationship found by this study.

- The relationship between the dispositional characteristics and the team's performance as a whole should be investigated by including objective measures of the team's performance, because the expected relationship was not obtained in the present study.

- The influence of the combination of these dispositional characteristics within a specific team on the team's effectiveness as a whole should be investigated.

- The dispositional characteristics should be validated in additional research specifically for selection purposes in the context of self-managing work teams.

- The moderating influence of role clarity on the relationship between the dispositional characteristics and level of satisfaction should be investigated in other settings as well.

- The moderating influence of satisfaction on the relationship between the dispositional characteristics and degree of commitment should be investigated in other settings as well.

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APPENDIX A: THE TEAM CHARACTERISTICS QUESTIONNAIRE

To which degree is the following statements characteristic of your team, team members or the way your team operates?

1. The team is jointly responsible for a whole work process, turning out a well-defined segment of finished work or delivery of an entire service or product to an internal or external customer.

Not at all characteristic of the team.	1	2	3	4	5	6	Completely characteristic of the team.

2. The team plans, organizes and controls their job assignments and decides who works on what, where and when.

Not at all characteristic of how the team operates.	1	2	3	4	5	6	Completely characteristic of how the team operates.

3. The team has the authority to acquire the resources it needs to be effective and deals directly with customers and suppliers.

Not at all characteristic of how the team operates.	1	2	3	4	5	6	Completely characteristic of how the team operates.

4. The team sets their own production or service goals that support the overall corporate goals.

Not at all characteristic of how the team operates.	1	2	3	4	5	6	Completely characteristic of how the team operates.

5. The team members can select the way in which they will perform their work or members have discretion over such decisions as methods of work.

Not at all characteristic of how the team operates.	1	2	3	4	5	6	Completely characteristic of how the team operates.

6. The team is responsible for their own quality control or controlling the standard of their work.

Not at all characteristic of how the team operates.	1	2	3	4	5	6	Completely characteristic of how the team operates.

7. The team has collective control over the pace of the work and the organization of breaks in the work schedule.

Not at all characteristic of how the team operates.	1	2	3	4	5	6	Completely characteristic of how the team operates.

8. Members of the team posses multiple skills and perform multiple tasks.

Not at all characteristic of the team members.	1	2	3	4	5	6	Completely characteristic of the team members.

9. The team receives performance feedback and compensation for the performance of the team as a whole.

Not at all characteristic of the team.	1	2	3	4	5	6	Completely characteristic of the team.

10. Members participate in the recruitment, hiring and training of new team members.

Not at all characteristic of how the team operates.	1	2	3	4	5	6	Completely characteristic of how the team operates.

11. Members evaluate one another's performance contribution, disciplines and give recognition to other members of the team.

Not at all characteristic of how the team operates.	1	2	3	4	5	6	Completely characteristic of how the team operates.

12. The team takes action to solve interpersonal problems between team members.

Not at all characteristic of how the team operates.	1	2	3	4	5	6	Completely characteristic of how the team operates.

13. The members rotate the managing responsibilities among themselves.

Not at all characteristic of how the team operates.	1	2	3	4	5	6	Completely characteristic of how the team operates.

14. Supervisors act as facilitators that allow the team to manage themselves.

Not at all characteristic of the supervisor.	1	2	3	4	5	6	Completely characteristic of the supervisor.

15. How many members are there in your team? _____