CONSTRUCT VALIDITY OF A MEASURE OF EMOTIONAL INTELLIGENCE: A WELLNESS PERSPECTIVE

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CONSTRUCT VALIDITY OF A MEASURE OF EMOTIONAL INTELLIGENCE: A WELLNESS PERSPECTIVE

by

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DECLARATION

I, the undersigned, hereby declare that this dissertation titled, “Construct validity of a measure of emotional intelligence: a wellness perspective”, is my own work, and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

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KEVIN STONE

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The objective of this study was to investigate the construct validity of the Emotional Intelligence Scale (EIS) from a wellness perspective. The conceptualisation and measurement of emotional intelligence has recently received much attention due to its applicability to various workplace variables.

The theoretical component of this study covers the definition and measurement of emotional intelligence, and integrates this with the concepts of salutogenesis and psychological well-being. The empirical study investigates the relationship between emotional intelligence and three wellness-related constructs. Measures of these constructs were administered to a non-random sample of 118 employees at a South African software development organisation.

Statistical analysis confirmed the relationship between emotional intelligence and sense of coherence, locus of control and three of the five emotion-focused coping strategies measured.

KEY TERMS

Emotional intelligence, Emotional Intelligence Scale, wellness, salutogenesis, sense of coherence, locus of control, coping

CHAPTER 1
SCIENTIFIC BACKGROUND TO THE RESEARCH

This dissertation focuses on the construct validity of a measure of emotional intelligence from a wellness perspective (incorporating the salutogenic constructs of locus of control, sense of coherence and coping).

This chapter commences with an outline of the background and problem statement of the research. Next, the aims of the research are formulated, followed by an overview of the paradigm perspective, research design and methodology of the study. The chapter layout is given and the chapter summary concludes this chapter.

1.1 BACKGROUND TO THE RESEARCH

The acknowledgement that emotions play a critical role in organizational life in general (Fineman, 1993; Higgs & Dulewicz, 1999), and business success in particular (Homberg & Riddersdale, 2000; Kouzes & Posner, 2000), has played a pivotal role in the significant growth of interest in Emotional Intelligence during the last decade (Goleman, 1996, 1998; Mayer & Salovey, 1995). This concept is stated to be applicable to many workplace variables including performance, job satisfaction, leadership, absenteeism, organizational commitment, selection, career development, training and teamwork (Caruso & Wolfe, 2001; Cooper & Sawaf, 1997; Gates, 1995; Johnson & Indvik, 1999; Megerian & Sosik, 1996; Moriarty & Buckley, 2003; Sosik & Megerian, 1999).

One of the earliest of many definitions of emotional intelligence, and arguably one that has formed the basis of most subsequent attempts at defining and measuring the construct, is that of Salovey and Mayer (1990) described by Mayer, DiPaolo and Salovey (1990, p. 773) as “a type of emotional information processing that includes accurate appraisal of emotions in oneself and others, appropriate expression of emotion, and adaptive regulation of emotion in such a way as to enhance living”.

As contributions to the study of emotional intelligence have increased, the debate about what methods could validly and reliably measure the construct has also proliferated (Ciarrochi, Chan, Caputi & Roberts, 2001; Dulewicz, Higgs & Slaski, 2003; Matthews, Zeidner & Roberts, 2002). The result has been the development of an extensive range of emotional intelligence instruments during the last decade (Mayer, 2001; Schutte & Malouff, 1999) for application in clinical, counselling and industrial contexts. One such instrument, the Emotional Intelligence Scale (EIS) (Schutte et al., 1998) was designed to assess Emotional intelligence as conceptualised by Salovey and Mayer's (1990) model of the construct. While encouraging evidence exists for the reliability and validity of this instrument in a clinical context, for example in measuring emotional intelligence as related to clinical disorders such as alexithymia (the lack of emotional expressivity or affect) and depression (Schutte & Malouff, 1999), few studies have been done to explore the utility of this instrument in an industrial context. In addition, limited empirical research on emotional intelligence has reflected the fact that the construct is included in the realm of positive psychology (Snyder & Lopez, 2002).

Bar-On's (1997, p. 14) definition of emotional intelligence strongly alludes to the conceptual link between emotional intelligence and effective psychological functioning and well-being, by describing the construct as "an array of non-cognitive capabilities, competencies, and skills that influence one's ability to succeed in coping with environmental demands and pressures". Since the application of emotional intelligence in the occupational context is primarily concerned with an individual's ability to cope with environmental demands and pressures (Martinez, 1997), it is paradoxical that the majority of previous attempts at investigating the construct validity of emotional intelligence measures have primarily emphasized the construct's relationship with the intrapersonal dimensions of personality (Dawda & Hart, 2000; Dulewicz & Higgs, 2000; Higgs, 2001).

The conceptual focus of emotional intelligence on intra- and interpersonal relations (Bar-On, 1997; Dulewicz et al., 2003) and the increasing emotional demands placed on employees in team-based organizations (Johnson & Indvik, 1999; Prati, Douglas, Ferris, Ammeter & Buckley, 2003; Welch, 2003) implies the potential utility of studying the

construct from a perspective focusing on the determinants of individual well-being. Also, conceptualizations of emotional intelligence by Salovey and Mayer (1990) and Bar-On (1997) reflect recognition of factors within the individual that may enable more effective psychological functioning.

Given that interpersonal relations in the organization could be influenced by salutogenic functioning (Coetzee & Cilliers, 2001), the paradigm perspective of salutogenesis (the origins of health, otherwise known as the study of the strength individuals exhibit to manage the tension and stress in their lives and not to succumb to illness) may be a useful framework within which to study the validity of the EIS. Moreover, within the domain of salutogenesis, constructs such as emotional intelligence may well be applied to point out new directions for capacity building in the prevention and enhancement of individual psychological well-being (Wissing & Van Eeden, 1997a).

A number of constructs related to individual well-being from a salutogenic perspective (Strümpfer, 1990) display a definite conceptual link with emotional intelligence. For example:

- Whether an individual can effectively perceive and identify emotional experience (comprehensibility), has the resources to meet the demands of such emotional experience, and whether they recognize that emotional experiences are worthwhile spending energy on (meaningfulness), reflects the conceptual link between emotional intelligence and the generalized resistance resource described in the theory of Sense of Coherence (SOC) (Antonovsky, 1979, 1987).
- The extent to which individuals perceive they are in control of what happens to them, otherwise known as locus of control (Rotter, 1966), has clear conceptual links to emotional intelligence. This is because individuals with internal loci of control are likely to develop more constructive workplace relationships (Erwee & Pottas, 1982; Foley & Clifton, 1990) and may feel that they have better control over how they understand, identify and express their own emotions, as well as over how they react to the emotional experiences of others.

- The definition of coping as “cognitive and behavioural efforts to manage (reduce, minimize or tolerate) the internal and external demands of the person-environment transaction that is appraised as taxing or exceeding the person’s resources” (Folkman, Lazarus, Gruen & DeLongis, 1986, p. 572) may indicate that individuals with higher emotional intelligence would cope better with the internal and external emotional demands characteristic of contemporary organizational life.

A few studies have investigated the relationship between emotional intelligence and indicators of psychological well-being such as morale, quality of working life and stress (Dulewicz et al., 2003; Slaski & Cartwright, 2002), including a study on the relationship between scores on the EIS and optimism (Schutte et al., 1998). Each of these confirmed the conceptual link between emotional intelligence and psychological strength. However, these studies were conducted in a predominantly clinical context, and did generally not make a sufficient contribution towards providing evidence of the EIS’s construct validity from a salutogenic or wellness perspective. Ciarrochi et al. (2001) generalize this lack of substantial evidence of the EIS’s validity to the overall state of emotional intelligence assessment when they note that, despite some encouraging evidence to date, much more research is necessary to fully establish the validity of emotional intelligence measures.

1.2 PROBLEM STATEMENT

Schutte and Malouff (1998) insist that reliable and valid measures of emotional intelligence are essential to make theoretical advances in the nature and development of emotional intelligence. They are required to predict the future functioning of individuals and identify those likely to experience problems because of deficits in emotional skills, and to evaluate the effectiveness of interventions designed to increase emotional intelligence.

For the organization hoping to harness the potential benefits of emotional intelligence such as increased quality of work life, heightened profitability, effective teams,

successful leadership (Johnson & Indvik, 1999; Welch, 2003) and, particularly, enhanced psychological well-being of individuals, a lack of scientifically validated measures of the construct is problematic. When considering the potential contribution of emotional intelligence to the scientific and applied fields of Industrial Psychology, as well as its possible value in leveraging the enhancement of employee well-being, it becomes evident that research into the psychometric properties of emotional intelligence measurements is certainly worthwhile pursuing.

1.2.1 General research question

The general research question that requires further research is as follows:

Does the Emotional Intelligence Scale display construct validity when correlated with: Sense of Coherence, Locus of Control, and Coping?

1.2.2 Specific research questions

In terms of the literature study, the following specific research questions will be addressed in this research project:

- How can emotional intelligence be conceptualised and what are its key aspects?
- What are the key issues in the measurement of emotional intelligence?
- How was the EIS developed, and what are its psychometric properties?
- How can salutogenesis be conceptualised and what are its core constructs?
- How can psychological well-being be conceptualised and what are its key aspects?

- How can the concepts of emotional intelligence, salutogenesis and psychological well-being be integrated into a conceptual wellness framework?

In terms of the empirical study, the following specific research questions will be addressed in this research project:

- What is the relationship between emotional intelligence measured by the EIS, and sense of coherence?

- What is the relationship between emotional intelligence measured by the EIS, and locus of control?

- What is the relationship between emotional intelligence measured by the EIS, and emotion-focused coping?

- To what extent do levels of emotional intelligence, measured by the EIS, differ on the basis of individual and organizational variables (gender, age, position level and tenure)?

- What recommendations can be formulated for the practice of Industrial Psychology, and for further research based on the findings of this study?

1.3 AIMS OF THE RESEARCH

Given the specific problem to be investigated, the aims of this research project are listed below.

1.3.1 General aim

The general aim of this study is to determine the construct validity of the EIS by exploring its relationship with a number of constructs defined within the paradigm of salutogenesis, and therefore indicative of psychological well-being.

1.3.2 Specific aims

In terms of the literature study, the specific aims of this research are to

- conceptualise emotional intelligence and to determine its key aspects
- provide an overview of key issues in the measurement of emotional intelligence
- provide an overview of the development and psychometric properties of the EIS
- conceptualise salutogenesis and to describe the core salutogenic constructs
- provide an overview of psychological well-being and to describe its key concepts
- integrate the concepts of emotional intelligence, salutogenesis and psychological well-being in a wellness framework.

In terms of the empirical study, the specific aims of this research are to

- investigate the relationship between emotional intelligence and sense of coherence
- investigate the relationship between emotional intelligence and locus of control
- investigate the relationship between emotional intelligence and emotion-focused coping
- investigate whether levels of emotional intelligence differ on the basis of individual and organizational variables (gender, job level, age and tenure)

- formulate recommendations for the practice of Industrial Psychology, and for further research based on the findings of this research.

1.4 PARADIGM PERSPECTIVE

With reference to the paradigm perspective of the research, the relevant paradigms, metatheoretical concepts and the methodological convictions will be discussed next.

This research will be conducted within the field of Industrial Psychology defined as the scientific study of the relationship between man and the world at work, or the study of the adjustment people make to the places they go, the people they meet, and the things they do in the process of making a living (Guion, 1965). Based upon its focus on the construct validity of a psychological instrument, this research falls within the Industrial Psychological sub-field of psychometrics, defined as the branch of Psychology dealing with measurable factors (Anastasi & Urbina, 1997). The literature study will focus on the variables of emotional intelligence, sense of coherence, locus of control and coping. The empirical study will focus on psychometrics and statistical analysis of the data.

According to Kuhn (1970), a paradigm is a model for conducting normal research and can be defined as a set of rules and regulations that clarify boundaries for the researcher regarding what should be researched and how the research should be conducted. Paradigms also determine parameters for success in terms of what would be regarded as valid research solutions. Because the social sciences are not as exact a science as the natural sciences, paradigmatic predictions are made within the notion of probability or levels of acceptance, usually determined through statistical analysis.

1.4.1 The relevant paradigms

1.4.1.1 The systems perspective

The overall approach of this research will be from a systems perspective. The systems perspective indicates that the individual is seen as a sub-system within a hierarchy of larger systems and that the individual, in turn, is made up of several sub-systems (Cascio, 1998).

1.4.1.2 Salutogenesis

The other paradigm perspective applicable to this study is that of salutogenesis, or the origins of health (Antonovsky, 1979; Coetzee & Cilliers, 2001). This paradigm is focused on the strength individuals exhibit in order to manage the tension and stress in their lives and not to succumb to illness (De Wet, 1998). The focus of Industrial and Organizational Psychology is essentially positive in nature, and though it often addresses situations characterized by dysfunction, it likely has more of a salutogenic than a pathogenic orientation (Baloyi, 2000).

Since emotional intelligence is concerned with how individuals cope with unavoidable internal and external emotional stimuli (Martinez, 1997), and given the inclusion of the construct in the field of positive psychology (Snyder & Lopez, 2002), the salutogenic paradigm was chosen, to investigate the relationship of emotional intelligence with constructs that explain the sustained psychological well-being of individuals in the workplace. A detailed discussion of the paradigm of salutogenesis, and its constructs, is presented in Chapter 3.

1.4.1.3 The functionalist paradigm

The functionalist paradigm provides the dominant framework for sociological research in the organizational context. It represents a perspective that approaches its subject

matter from an objectivist point of view, and is pragmatically concerned with understanding society in a way that generates useful empirical knowledge. The empirical study is presented from the functionalist paradigm (Babbie, 1995), based upon the following assumptions:

- The mind should be viewed as a system of processes or functions rather than a set of structural components.
- Mental activity helps the individual to adapt to the environment.
- The focus is on human conscious experience, for example methods people use to adapt to their environments, satisfy their needs and increase their inborn abilities.

1.4.2 Applicable metatheoretical concepts

According to Mouton and Marais (1993), it is generally accepted in the philosophy of science today that no scientific finding can be conclusively proven on the basis of empirical research data. In different stages of the scientific research process, and for different reasons, the researcher is compelled to make assumptions justifying specific theories and methodological strategies that are not tested in the specific study. One important category of such assumptions is the metatheoretical assumptions underlying the theories, models and paradigms that form the definitive context of the study. The argumentative nature of scientific communication demands that this often tacit dimension of scientific practice should be made explicit. On a meta-theoretical level, the concepts of measurement, psychological well-being and coping are relevant. They are conceptualised as follows:

Measurement refers to a system governed by rules for assigning numbers to objects in such a way as to represent quantities of attributes (Gregory, 2003).

Psychological well-being's conceptualisation has descended from the Aristotelian theme of *eudaimonia*, that suggests that the highest of all good achievable by human action is happiness derived from lifelong conduct aimed at self-development (Waterman,

1993). Therefore, many aspects of psychological well-being are personified in a multi-dimensional model by Ryff (1989) that indicates six dimensions (self-acceptance, autonomy, environmental mastery, purpose in life, positive relations with others and personal growth) corresponding to the challenges that individuals encounter as they strive to function fully and realize their unique talents (Keyes & Ryff, 1999; Ryff, 1989; Ryff & Keyes, 1995).

Coping refers to the cognitive, affective and behavioural aspects which are intended to alter one's appraisal of a stressor, and manage or reduce the feeling of discomfort associated with the stressor (Baloyi, 2000). Stated differently, coping is the process of managing external and/or internal demands that tax or exceed the resources of the person (Lazarus, 1966).

The literature is presented from a salutogenic paradigm (Strümpfer, 1990; Wissing & Van Eeden, 1997b), based upon the following assumptions.

- The dichotomy of people being either diseased or healthy is dispelled. The focus is on the health/disease continuum, in which people fall somewhere between the two theoretical poles (Antonovsky, 1979).
- The dynamics of individual psychological well-being encompass not only the origin of health, or salutogenesis, but also the sources of psychological strength, or fortigenesis (Strümpfer, 1995).
- The nature, dynamics and enhancement of psychological well-being are central to the study of how individuals cope with the demands of stress in all spheres of life (Coetzee & Cilliers, 2001).

Specific reference will be made to theories of the mentioned constructs, including sense of coherence as proposed by Antonovsky (1987), locus of control by Rotter (1966), coping by Lazarus (1966) and Folkman et al. (1986), and emotional intelligence by Salovey and Mayer (1990).

1.4.3 Methodological convictions

Methodological convictions are beliefs concerning the nature of social sciences and scientific research. The research model of Mouton and Marais (1993) serves as a framework in this research. Its purpose is to incorporate the five dimensions of social science research (sociological, ontological, teleological, epistemological and methodological), and operationalize them in the framework of the research process.

1.4.3.1 Sociological dimension

The sociological dimension indicates that scientists operate within a clearly defined community linked in research networks that form the basis for further research. This research will focus on the quantitative analysis of variables, and will make use of research networks through the examination of various scientific publications.

1.4.3.2 Ontological dimension

The ontological dimension refers to the discussions and disputes on the various ways in which research domains can be defined and classified, and defines the reality that is being measured. This research will focus on the measurement of emotional intelligence and wellness related constructs, the results of which will be aggregated to analyse group tendencies.

1.4.3.3 Teleological dimension

This dimension refers to the fact that social science is goal-driven, with practical and theoretical research objectives or outcomes. The goals of this research are definitive, namely to investigate the construct validity of a measure of emotional intelligence from a wellness perspective. This dimension aims at furthering the field of Industrial Psychology by expanding the body of knowledge on the psychometric properties of Emotional intelligence measures.

1.4.3.4 Epistemological dimension

This dimension relates to the search for truth, indicating that the aim of research is to generate valid findings which are as close to the truth as possible. This research will attempt to achieve this dimension through a sound research design and the achievement of valid results.

1.4.3.5 Methodological dimension

The methodological dimension relates to the logic of the application of scientific methods to the investigation of the phenomena. The three methodological approaches are quantitative, qualitative and participatory action research. The research process followed in this study will be described in more detail in chapter 4, and involve data collection through questionnaires, data analysis through statistical techniques and inference through inductive reasoning.

1.4.4 The central hypothesis

The central hypothesis for this study can be formulated as follows:

The EIS possesses satisfactory construct validity from a wellness perspective.

1.5 RESEARCH DESIGN

The structure of the research design is highlighted below. The research variables, the types of research, and methods to ensure reliability and validity will be discussed.

1.5.1 Research variables

The dependent variables in this study are the salutogenic constructs of sense of coherence, locus of control and coping. The independent variable is emotional intelligence (Babbie, 1995). The objective of this research is to determine whether emotional intelligence (independent variable) is related to sense of coherence, locus of control and coping (dependent variables).

1.5.2 Type of research

This research will be conducted by means of a quantitative research approach. This implies that the hypotheses will be explicitly stated, formulated beforehand and measurable through the use of measuring instruments (Babbie, 1995). The research will be conducted with a view to testing the hypotheses and, ultimately, either accepting or rejecting the formulated hypotheses.

Based on the definition of exploratory, descriptive and explanatory research (Babbie, 1995; Bless & Higson-Smith, 1995; Mouton & Marais, 1993), this research can be seen as follows:

- This research is exploratory in that it attempts to gain insight into the construct validity of a psychological measure from a wellness perspective.
- This research meets the requirements of descriptive research by describing the characteristics of the constructs of emotional intelligence, sense of coherence, coping and locus of control, as well as the relationships between these.
- This research meets the requirement of explanatory research, because the researcher seeks to validate a psychological measure of emotional intelligence from a wellness perspective. The researcher attempts to demonstrate the

magnitude or nature of the relationship between emotional intelligence and the wellness-related variables, which makes this research explanatory in nature.

This study will be conducted according to a non-experimental, correlational research design. This design was chosen primarily to facilitate the quantitative nature of the study, i.e. the collection of data through questionnaires and scales to enable the calculation of statistics for the determination of the EIS' construct validity. The study also tests specific hypotheses regarding the relationship of emotional intelligence measured by the EIS, with specified wellness-related constructs.

1.5.3 Roles

The applicable person roles are that of researcher and psychometrist. The researcher designs the research and structures the method, reports and interprets the results, formulates conclusions and presents recommendations to the theoretical and practical fields of Industrial Psychology. The psychometrist administers the chosen measuring instruments according to standard psychometric principles.

1.5.4 Unit of analysis

The unit of analysis in this study will be the group. The research design encompasses a correlational analysis of group tendencies. Results of all questionnaires used in this study will be examined at group level to provide data amenable to statistical analysis and interpretation.

1.5.5 Methods to ensure validity and reliability

1.5.5.1 Validity

Research should be properly designed to ensure that it is both internally and externally valid. Research is internally valid when the constructs are measured in a valid way and the data that is measured is accurate and reliable. The analysis should be relevant to the type of data collected and the final solutions should be adequately supported by the data. External validity refers to the extent to which the results of the research can be applied to and across different persons, settings and times. (Babbie, 1995).

Theoretical validity, which postulates the clarity of concepts and their scope, should be addressed in the literature review (Mouton & Marais, 1993). To address theoretical validity in this research project, chapters 2 and 3 of the research report will involve the detailed conceptualisation of emotional intelligence and the wellness-related constructs of sense of coherence, locus of control and coping, in order to ensure that the concepts are clear and well-defined. These conceptualisations will be extracted from relevant literature, and the meanings of each will be operationally defined and all the sub-components will be listed. The latest literature will be explored in this research, while a number of classical sources will also be referred to due to their relevance to the concepts and to provide a historical perspective on the emergence of the concepts.

In the empirical study, validity will be ensured through the use of appropriate, scientifically validated measuring instruments. Validation studies have been conducted on the EIS in the United States, while the instruments for sense of coherence, locus of control and coping have been validated in the international and South African contexts. A possible threat to the external validity of the study is the fact that subjects will be asked to volunteer their participation as opposed to being selected through a randomised sampling strategy. Internal validity will be ensured primarily by focusing the theoretical framework on a sound conceptualisation of the construct of emotional intelligence, its measurement and its relation to wellness through salutogenic concepts.

1.5.5.2 Reliability

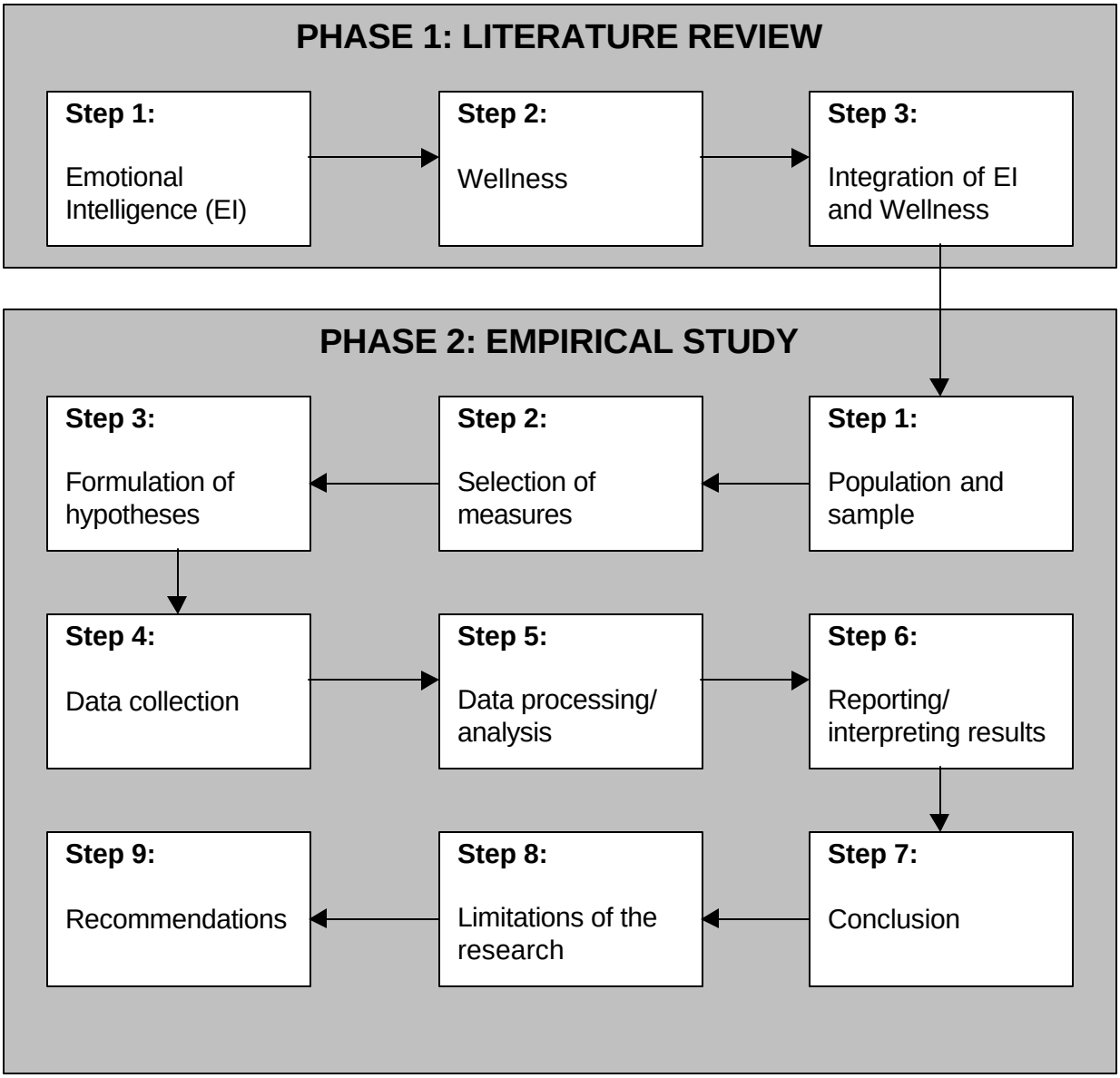
According to Foxcroft and Roodt (2001), reliability refers to the consistency or stability of measurement. Reliability in the literature review will be addressed by using existing literature sources, theories and models that are widely available to other interested researchers.

In the empirical research, the data gathering techniques used will ensure anonymity to ensure that the participant effects of motivation are addressed. Reliability of this study will be addressed through standardized assessment conditions and adherence to standard scoring instructions for instruments, as well as through the use of scientifically validated and reliable instruments to assess the research variables. The data gathered will be used to test the reliability of the instrument selected.

1.6 RESEARCH METHOD

The research method is divided into two phases, which address the literature review and the empirical study respectively. The flow of the research process is illustrated in Figure 1.1

Figure 1.1: Flow Diagram of the Research Method



1.6.1 Phase 1: Literature review

The literature review phase will consist of a review of emotional intelligence literature and wellness literature, as well as an integration of the literature on these variables.

The first to third specific aims of the research involve conceptualising emotional intelligence and determining its key aspects. Various accredited sources on emotional intelligence will be examined for the purpose of

- explaining the emergence of emotional intelligence and conceptualising the construct of emotional intelligence clearly

- providing an overview of key issues in the measurement of emotional intelligence

- providing an overview of the development and psychometric properties of the EIS

The fourth to fifth specific aims of the research involve conceptualising salutogenic constructs and psychological well-being. Various accredited sources on salutogenesis and psychological well-being will be examined for the purpose of

- Conceptualising salutogenesis and its core constructs, including
    - sense of coherence
    - locus of control
    - coping

- providing an overview of psychological well-being

- integrating the concepts of emotional intelligence, salutogenesis and psychological well-being

The evaluation of the above will be done within the context of contemporary and classical literature on the subject, with a view to determining a wellness-framework against which to evaluate the construct validity of the EIS.

Once the literature on emotional intelligence, salutogenesis and psychological well-being has been examined, the concepts clearly conceptualised and their key components defined, these concepts will be integrated. The aim of this step of the research is to establish links between the concepts and dimensions of emotional intelligence and wellness, within the context of the EIS's construct validation.

1.6.2 Phase 2: Empirical study

The empirical study was conducted within a South African software development organisation. The population consisted of approximately 240 information technology workers employed in a team-based environment. A team-based workplace was specifically selected because it emphasizes the importance of emotional intelligence in ensuring successful functioning at a psychological level. A non-random sample of convenience was composed through invitation to all employees; however, the sample size (N=118) was dependent on the number of respondents who voluntarily completed the questionnaires.

In addition to a short biographical questionnaire measuring gender, tenure, job level and age, the following instruments were used to quantitatively assess the variables of this study: Emotional Intelligence Scale (EIS), Sense of Coherence Scale (SOCS), the Work Locus of Control Scale (WLOCS) and the COPE Scale. More detail on the technical aspects of these instruments is provided in Chapter 4.

To operationalise the research, empirical hypotheses were formulated from the central hypothesis to test whether a relationship exists between emotional intelligence and the wellness-related constructs of sense of coherence, locus of control and coping.

Participants attended data collection sessions of between 30 minutes and 1 hour in groups of 10-15, scheduled during non-core working hours (such as lunch times) to avoid work disruption. During these sessions subjects completed the above set of

paper-and-pencil questionnaires. The researcher, or a trained research assistant, administered each of the sessions.

The completed questionnaires were scored, and the data coded and captured into spreadsheet format. Statistical packages (SPSS and GPOWER) were utilized for the calculation of statistical analyses.

The statistical procedures relevant to this research include:

- Pearson's product moment correlation coefficient
- Cronbach's coefficient alpha
- Analysis of variance (ANOVA)
- T-test
- Level of significance (p-value)
- Power
- Effect size
- Mean
- Standard deviation
- Frequency

More detailed information on the statistical analysis techniques applied in this study is provided in Chapter 4. The results of the above analysis will be reported in tables and interpreted in light of existing literature on the measurement of emotional intelligence, previous research done on the EIS, and the wellness conceptual framework.

The research findings will be concluded at the end of phase two of the research project. The results will specifically be reported to indicate the extent to which the general and specific research aims of this study were met, i.e. whether or not the results are an indication of the construct validity of the EIS. Limitations that may influence the success of the research project will be presented. The recommendations section of the research report will involve addressing the research problem, as well as the following:

- recommendations for industrial psychologists when working in the field of emotional intelligence
- recommendations for further research based on the limitations and conclusions of the research.

1.7 CHAPTER DIVISION

Based on the flow of research reflected in figure 1.1, the following sequence of chapters was determined.

Chapter 2: Emotional Intelligence

The purpose of this chapter is to conduct a literature review to describe the emergence of emotional intelligence, to conceptualise the construct and its key aspects, and to provide an overview of key issues in its measurement. Finally, the development and psychometric properties of the EIS are described, based on the literature reviewed.

Chapter 3: The conceptualisation of wellness through salutogenic constructs

This chapter provides a theoretical conceptualisation of salutogenesis and the core salutogenic constructs. Key findings on the nature of psychological well-being are presented, and the chapter concludes with an integration of the concepts of emotional intelligence, salutogenesis and psychological well-being in a conceptual wellness framework.

Chapter 4: Methodology

The purpose of this chapter is to describe the empirical research study. The chapter begins by highlighting the aims of the empirical research and then explains the research

population and sample, the measuring instruments selected, the administration of the assessments, data processing, statistical analysis, and the formulation of the research hypotheses.

Chapter 5: Results

The purpose of this chapter is to test the research hypothesis by presenting the results of the empirical study.

Chapter 6: Conclusions, Limitations and Recommendations

The research results are integrated and conclusions drawn in this final chapter. The limitations of the study are explained and recommendations made for the field of Industrial Psychology and further research. The chapter closes with a few concluding remarks to integrate the research.

1.8 CHAPTER SUMMARY

Chapter 1 provided the scientific background to the research. The purpose of this research is to investigate the construct validity of the EIS from a wellness perspective. The chapter started with the background and problem statement of the research. Then the aims, paradigm perspective, research design and methods were discussed and the logical flow of the research was presented. The chapter ended with an outline of the chapters to follow.

In Chapter 2, emotional intelligence will be conceptualised as the first step in the literature study.

CHAPTER 2
EMOTIONAL INTELLIGENCE

This aim of this chapter is to focus on step 1 of the literature review, as described in chapter 1. Firstly, a background to the emergence of emotional intelligence is provided, followed by a discussion of the definition and composition thereof. Thereafter issues in the measurement of emotional intelligence will be presented, with specific reference to the development and psychometric properties of the EIS, which forms the subject of this study.

2.1 THE EMERGENCE OF EMOTIONAL INTELLIGENCE

Mayer (2001) defined and described five chronological eras that organize the emergence of the emotional intelligence concept. An overview of these eras and the developments that characterized each is provided below.

2.1.1 The first era: 1900-1969

The roots of the construct of emotional intelligence can be traced back as far as the 1920's, during which Thorndike (1920) reviewed the predictive power of the Intelligence Quotient (IQ), and subsequently developed the concept of social intelligences to explain aspects of success which could not be accounted for by intellectual ability. However, in general, this view was relatively isolated in an era (lasting until the 1970's) during which research in intelligence and emotion were treated as distinctly separate areas (Mayer, 2001). While the arena of intelligence research saw its first empirically constructed tests developed, explored and understood, emotion-related research was comparatively less substantial, with a focus on the macro-level question of whether emotions held universal meaning, or whether they were culturally determined and idiosyncratic (Ekman, 1973).

2.1.2 The second era: 1970-1989

Between 1970 and 1989, several precursors of emotional intelligence were put in place (Mayer, 2001). Whereas intelligence and emotion previously had been considered separate concepts, they were now integrated in the new field of cognition and affect, with researchers attempting to examine how emotions interacted with thought (e.g. Buck, 1984; Dyer, 1983; Mayer, 1986). Although the term emotional intelligence was used sporadically during this time, it was never defined or described in any definite way. Where such definitions did arise, they could be considered precursor definitions (Mayer, 2001), since they either referred explicitly to emotional intelligence but were unclear (e.g. Payne, 1986), or were clear but failed to refer directly to emotional intelligence (e.g. Gardner, 1983). Gardner (1983), for example, described the concept as consisting of adaptive skills, whereby an individual has a deep awareness of his or her emotions and the ability to label and draw upon those emotions as a resource to guide behaviour. While remarkably similar to contemporary, refined definitions of the construct, this conceptualization nonetheless did not make specific reference to emotional intelligence itself.

There were several research tasks to be completed in the late 1980's before the field of emotional intelligence could properly emerge (Mayer, 2001). One was to draw together the various strands of research that had been performed and to recognize that they pointed to an overlooked human capacity. Another was to define the term emotional intelligence in an explicit, clear fashion and to connect the term to the relevant research lines that supported it. Yet another was to demonstrate substantial empirical evidence for the concept.

2.1.3 The third era: 1990-1993

The third era, ranging from 1990 to 1993, is generally regarded as the demarcation point for the emergence of the study of emotional intelligence (e.g. Epstein, 1998; Goleman, 1995; Sternberg, 1997). Salovey and Mayer (1990) drew on relevant evidence from

intelligence and emotions research, as well as studies in aesthetics, artificial intelligence, brain research, and clinical psychology, to develop a formal theory of emotional intelligence. The term emotional intelligence was definitively applied to a previously loosely defined human capacity, and the first argument for the existence of emotional intelligence as an actual intelligence was published (Mayer & Salovey, 1993). In addition, a study employing the first empirical test designed explicitly to measure the concept, was reported (Mayer, DiPaolo, & Salovey, 1990; Salovey & Mayer, 1990).

2.1.4 The fourth era: 1994-1997

The fourth era, between 1994 and 1997, marked the popularization and broadening of the field of emotional intelligence. A proliferation of popular literature (e.g. Goleman, 1995) ensued, providing loose definitions of the concept while espousing potential benefits. This growth in the appeal of the concept was matched by a number of tests, especially personality scales (see Bar-On & Parker, 2000; Cooper & Sawaf, 1997; Goleman, 1995) published under the name of emotional intelligence.

2.1.5 The fifth era: 1998 to present

The current era, commencing in 1998, has seen a marked increase in empirical research on, and institutionalization of, emotional intelligence (Mayer, 2001). Moreover, Matthews et al. (2002) have indicated that the frequency of emotional intelligence-related publications have increased almost ten-fold between 1990 and 2001. During this most recent era in the development of the concept, theoretical and research refinements in the domain have taken place, new measures of emotional intelligence have been developed, and significant research is occurring within a field complicated by its possession of both scientific and popular appeal (Mayer, 2001). Nonetheless, the publication of the first peer-reviewed research articles on this relatively new subject (see Bar-On, 1997; Davies, Stankov & Roberts, 1998; Mayer, Caruso & Salovey, 1999) have undoubtedly heralded the arrival of a construct with definitive implications for numerous spheres of human functioning, including that of the organizational context.

2.2 DEFINITION AND COMPOSITION OF EMOTIONAL INTELLIGENCE

Possibly due to its relatively recent development and conceptualization (Matthews et al., 2002), there appears from the literature to be some debate about what precisely constitutes the domain of emotional intelligence (Dulewicz et al., 2003). Contributing to a general lack of consensus around what the concept comprises, is the observation of Dulewicz and Higgs (2000) that literature in this emerging field contains a confusing range of varyingly related and overlapping terminology, including emotional intelligence (e.g. Goleman, 1996; Salovey & Mayer, 1990), emotional literacy (e.g. Steiner, 1997), emotional quotient (e.g. Bar-On, 1997; Cooper, 1997; Goleman, 1996; 1998), personal intelligences (e.g. Gardner, 1983), social intelligence (Thorndike, 1920) and interpersonal intelligence (e.g. Gardner & Hatch, 1989).

Mayer (2001) identified two broad lines of definitions of emotional intelligence, namely the original approach that defined emotional intelligence as an intelligence involving emotion, and the mixed approaches that blended emotional intelligence with other skills and characteristics.

2.2.1 Ability models of emotional intelligence

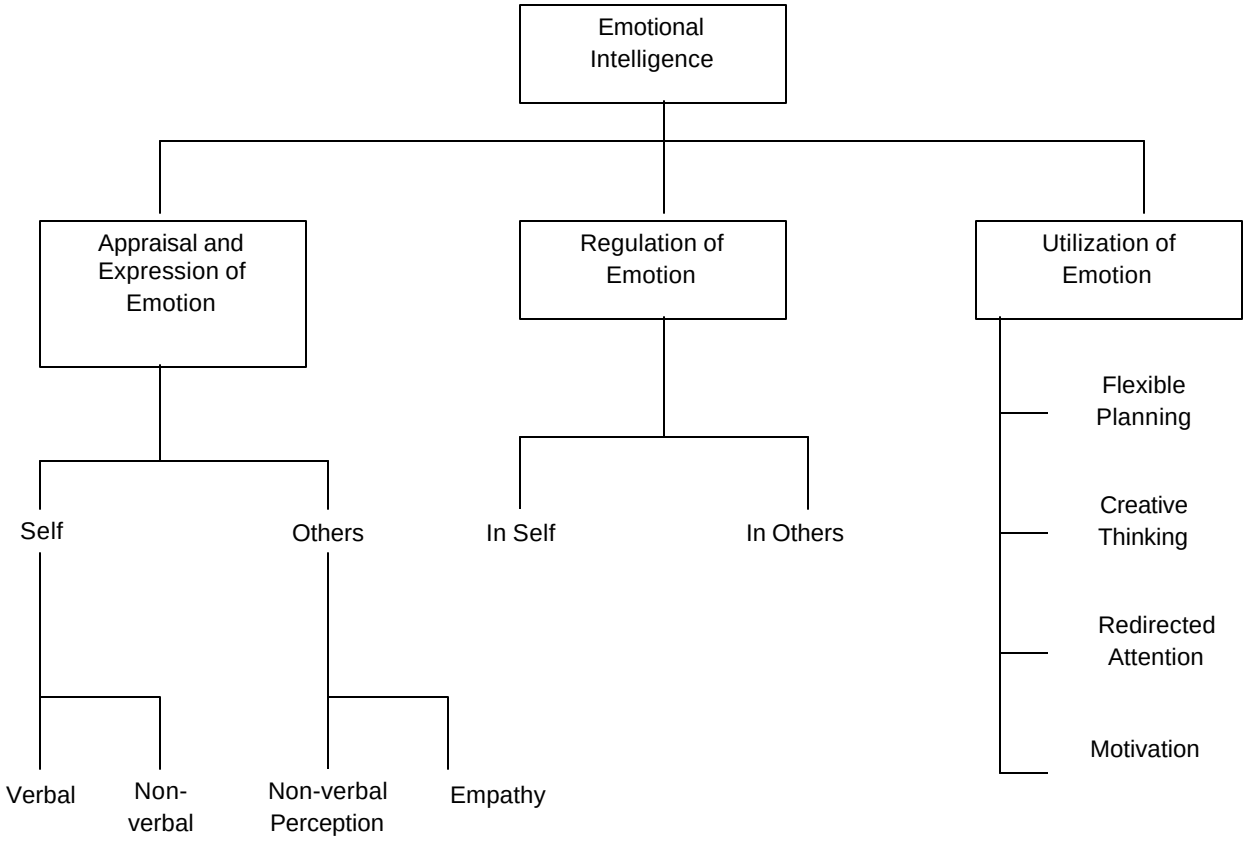
Mayer et al. (1990, p. 773) were frontrunners in the ability or pure line of emotional intelligence conceptualization with their early definition of emotional intelligence as “a type of emotional information processing that includes accurate appraisal of emotions in oneself and others, appropriate expression of emotion, and adaptive regulation of emotion in such a way as to enhance living”. This definition reflected a two-part approach, speaking first of the general processing of emotional information and secondly specifying the skills involved in such processing.

Mayer, Caruso and Salovey (1999, p. 267) later expanded on this definition, while keeping its two part form, when they defined emotional intelligence as “an ability to

recognize the meanings of emotions and their relationships, and to reason and problem-solve on the basis of them. Emotional intelligence is involved in the capacity to perceive emotions, assimilate emotion-related feelings, understand the information of those emotions, and manage them".

Citing a need to distinguish emotional intelligence abilities from social traits or talents, Salovey and Mayer (1990) evolved from their original contribution an updated model with a cognitive emphasis. It focused on specific mental aptitudes for recognizing and marshalling emotions, and reflected what they viewed an imperative characteristic – some measure of thinking about feeling, an aptitude lacked by models that focus on simply perceiving and regulating feelings. This broadened conceptualization (Mayer & Salovey, 1993) comprised several distinct but interrelated sub-domains, represented in Figure 2.1.

Figure 2.1: Conceptualisation of Emotional Intelligence



According to this framework, Morand (2001) indicates that emotional intelligence can be conceptualized relative to

- an individual's awareness of their own emotions and their ability to express those emotions,
- an individual's perceptions of and awareness of emotions expressed by others,
- the regulation of emotion both in the self and in others, and
- the utilization of emotion.

In line with the rapid and ongoing development of the concept of emotional intelligence during the last decade, Salovey and Mayer's original (1990) model underwent further

rethinking, with their current model reflecting a decidedly more cognitive focus (Mayer & Salovey, 1997). In this model, emotional intelligence comprises four tiers of abilities that range from basic psychological functions to more complex processes integrating emotion and cognition. These tiers are described briefly below.

- In the first tier are the skills that allow an individual to perceive, appraise, and express emotions. Abilities here include identifying one's own and other's emotions, expressing one's emotions and discriminating the expressions of emotion in others.
- The second tier abilities involve using emotions to facilitate and prioritize thought: employing the emotions to aid in judgement, recognizing that mood swings can lead to a consideration of alternative viewpoints, and understanding that a shift in emotional state and perspective can facilitate different kinds of problem solving.
- In the third tier are skills such as labelling and distinguishing between emotions, understanding complex mixtures of feelings, and formulating rules about feelings.
- The fourth tier of the model is the general ability to marshal the emotions in support of some social goal. In this more complex level of emotional intelligence are the skills that allow individuals to selectively engage in or detach from emotions and to monitor and manage emotions in themselves and others.

Goleman (2001) contends that Salovey and Mayer's (1990) model is developmental: the complexity of emotional skill grows form the first tier to the fourth. Nonetheless, all the mental aptitudes they describe appear to fit within the general matrix of self-other recognition and regulation that is critical to the conceptualization of emotional intelligence (Matthews et al., 2002).

Mayer, Salovey and Caruso's (2000) general approach to the modelling of emotional intelligence draws upon a psychometric tradition that an intelligence must meet three criteria to be defined as such. The proposed intelligence must be conceptual - it must reflect mental aptitudes rather than behaviours. It must be correlational - it must share similarities with, yet remain distinct from other established intelligences. And it must be developmental - the aptitudes that characterize it must increase with an individual's

experience and age. In their definition of the concept, Mayer et al. (2000) are considered to have met these criteria (Goleman, 2001).

2.2.2 Mixed models of emotional intelligence

During the popularization of emotional intelligence, its definition was altered quite substantially by shifting the emphasis towards motivation (motivating oneself) and social interactions in general (handling relationships). The ability to understand and process emotion was mixed in with some other characteristics, as reflected in Goleman's (1995, p. xii) description of emotional intelligence as comprising the five areas of "knowing one's emotions…managing emotions…motivating oneself…recognizing emotions in others… [and] handling relationships". A different mixed model of the construct is presented by Bar-On (1997) in his conceptualization of emotional intelligence as an array of emotional and social knowledge and abilities that influence one's overall ability to effectively cope with environmental demands. This array, according to Bar-On (as cited in Goleman, 2001) includes:

- the ability to be aware of, to understand, and to express oneself,
- the ability to be aware of, to understand, and to relate to others,
- the ability to deal with strong emotions and control one's impulses,
- the ability to adapt to change and to solve problems of a personal or a social nature.

Arguing from a different perspective to theorists of the ability model of emotional intelligence (Salovey & Mayer, 1990; Mayer et al., 2000), Gardner (1983, 1993) proposed broadening the notion of intelligence so that it includes many significant faculties that have traditionally been beyond its scope. The psychometric tradition invoked by Mayer et al. (2000), has been criticized for its narrow focus (Gardner, 1999; Goleman, 2001) and for focusing on intellectual aptitudes that can be measured by standardized tests, but with performance on such tests not necessarily translating into success in everyday life. In expanding the range of significant aptitudes for success, Gardner (1999, pp. 33-34) defines an intelligence as "the biopsychological potential to

process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture". This definition added the dimension of culture to our understanding of intelligence, and in so doing set the scene for a modern-day view of intelligence that is inevitably influenced by our belief systems, values and social environment.

Gardner (1999) therefore proposed the addition of several new items to the standard list of criteria for an intelligence. His criteria suggest further arguments for considering emotional intelligence a distinct variety of intelligence, with limited liability of measurement against what has traditionally constituted the psychometric criteria of a human intelligence. These criteria include emotional intelligence's distinct developmental history (along with a definable set of expert or end state performances) as well as the concept's link to physiological evolutionary history and plausibility (Goleman, 2001).

2.2.3 Integration

Mayer (2001) contends that not only are the theoretical differences between ability-based and mixed model approaches to emotional intelligence pronounced, but there may also be substantial differences in the utility of each. While mixed model approaches are of potential value in that they are studying multiple aspects of personality at once, they are not particularly related to any new concept of emotional intelligence. Mixed model researchers (e.g. Bar-On & Parker, 2000) acknowledge that emotional intelligence is not, in fact, a new field per se, but refute the arguments of ability model researchers that the mixed-model approach amounts to "little more than haphazard compositions of personality traits" (Mayer, 2001, p. 15).

Matthews et al. (2002) indicate that the above debate is not unusual in a concept so relatively new and under-exposed to empirical investigation. The basic problem in developing conceptualizations of emotional intelligence is that psychology already has some understanding of both intelligence and personality traits linked to emotional

functioning. The merits and disadvantages of both mixed model and ability approaches are undeniable, and further investigation of this elusive construct is undoubtedly required to provide greater clarity on the debate (Goleman, 2001; Mayer, 2001).

For the purposes of this research, the ability approach to defining emotional intelligence was adopted, primarily because the instrument which forms the subject of this construct validation study, the EIS (Schutte et al., 1998), was developed using Salovey and Mayer's initial (1990) framework of emotional intelligence. This model conceptualizes emotional intelligence as the ability to adaptively recognize emotion, express emotion, regulate emotion, and harness emotions in the self and others (Schutte & Malouff, 1999).

2.3 MEASUREMENT OF EMOTIONAL INTELLIGENCE

Determining to what extent emotional intelligence is a measurable quality of the human organism is pivotal to a scientific account of the construct (Matthews et al., 2002). Schutte and Malouff (1999) reinforce this view by indicating that reliable and valid measures of emotional intelligence and its components are important in efforts to:

- make theoretical advances in the area of emotional intelligence,
- explore the nature and development of emotional intelligence,
- predict the future functioning of individuals,
- identify individuals likely to experience problems because of deficits in emotional skills, and
- evaluate the effectiveness of interventions designed to increase emotional intelligence.

Throughout the literature on emotional intelligence, the considerable debate around the conceptualization of the construct has resulted in similar controversy around the feasibility of measuring it (e.g. Fisher, 1998; Goleman, 1996; Martinez, 1997; Matthews, 1996; Steiner, 1997). Although positive evidence exists to support emotional

intelligence's measurement potential (Ciarrochi, et al., 2001; Dulewicz & Higgs, 1999; Dulewicz & Higgs, 2000; Dulewicz et al., 2003; Matthews et al., 2002), issues in the measurement of emotional intelligence still exist. In particular, Ciarrochi et al. (2001) indicate the confounding effect of the various definitions of emotional intelligence, as well as different measurement approaches, on the assessment of the construct.

The field of psychological assessment, with its rich research history (Ciarrochi et al, 2001; Foxcroft, 2001), provides a series of psychometric principles for determining whether a test indeed has good measurement properties. Importantly, psychological assessment, unlike the relatively fledgling field of emotional intelligence, is relatively uncontroversial (Matthews et al., 2002). Therefore a good deal of expert consensus has now been reached on how to establish the worthiness of a psychological test (see Anastasi & Urbina, 1997).

Matthews et al. (2002) provide a brief roadmap of the process for arriving at a robust measure of a new construct, such as emotional intelligence:

- Identifying and conceptualizing several distinct qualities of the human organism, that may cluster together to define a meaningful, scientific construct.
- Checking that the source of this clustering is not some trivial artefact, such as a response bias, the particular measurement operations and methods employed to assess the construct, or other extraneous factors.
- Checking that the cluster of qualities represents a new, rather than existing, scientific construct.
- Establishing that the construct has some predictive validity, in other words, that the test relates to other psychologically meaningful or practically useful criteria.

2.3.1 Psychometric criteria of the ideal emotional intelligence measure

Using internationally acclaimed opinion and research from the field of psychometrics (e.g. Anastasi & Urbina, 1997; Gregory, 2003; Murphy & Davidshofer, 1998), Matthews et al. (2002) and Ciarrochi et al. (2001) indicate that the ideal measure of emotional intelligence should satisfy each of the following criteria:

2.3.1.1 Content validity

A psychometrically valid test of emotional intelligence is required to cover a representative sample of the domain that it was designed to assess. This indicates an issue of conceptualization; deciding a priori what qualities should be assessed as components of emotional intelligence and what qualities should be excluded from emotional intelligence.

Content validity is difficult to ascertain when the proposed psychological test measures an ill-defined trait (Gregory, 2003). One of the primary methods for ascertaining content validity in the past has been consensual judgement of experts in the field, so that content validity can be quantified (see Hambleton, 1984; Lawshe, 1975). Matthews et al. (2002) indicate the relatively scarce use of such techniques in the validation of current psychological tests claiming to assess emotional intelligence.

2.3.1.2 Reliability

For emotional intelligence to exist as a scientifically meaningful individual difference construct, individuals must differ reliably across its major dimensions. In particular, if an individual taking an emotional intelligence test obtains a certain score on one occasion, then that same person should get a similar score when given the same test again some time in the future. Therefore, in assessing what is termed the test-retest reliability of a measure (Wolfaardt, 2001), an individual's performance should be similar from one test session to the next. If performance is inconsistent, then what is being measured is unstable, likely not an enduring disposition, and therefore of questionable value.

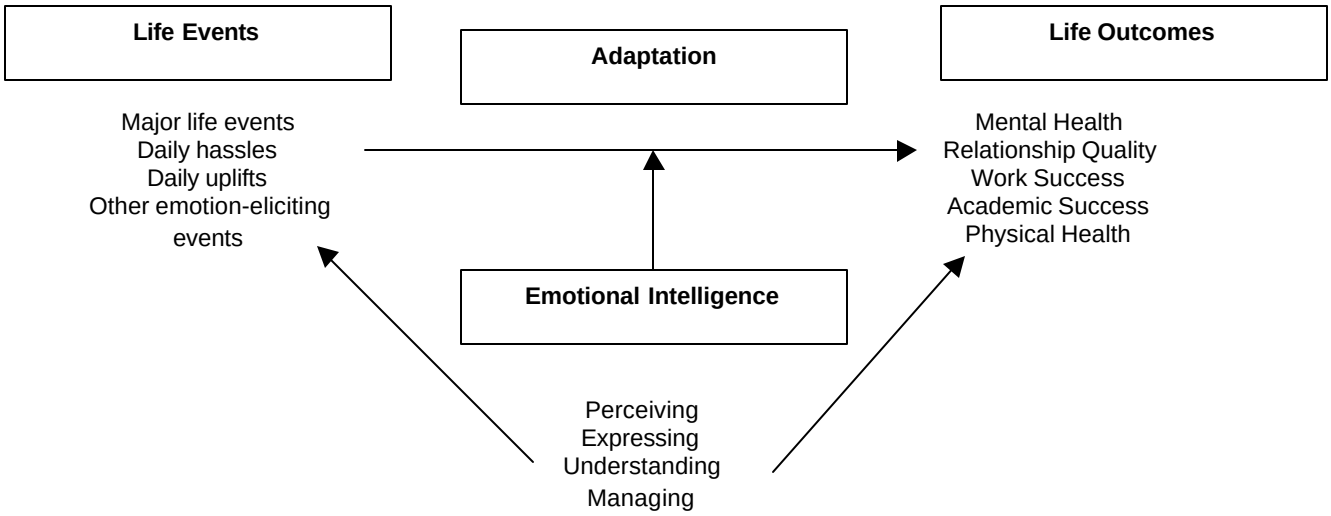
Another important form of reliability involves determining the extent to which responses that people give on items correlate with other items of the same test, known as internal-consistency reliability (Foxcroft, 2001). If each item in a test of emotional intelligence is measuring emotional intelligence, then responses to each item should correlate in a meaningful and statistically significant manner with responses to all the other items of this test.

2.3.1.3 Predictive validity and usefulness

To be of value, emotional intelligence measures should predict important practical outcomes of emotional life. If an emotional intelligence test has no predictive power, then it does not matter whether other criteria are satisfied. In many sub-fields of industrial psychology, such as organizational psychology, the extent to which a psychological test satisfies this criterion has, in recent years, become increasingly important (Schmidt & Hunter, 1998). Emotional intelligence measures should predict important practical outcomes, such as how people deal with stress, how effective they are at maintaining relationships, how respected they are by their peers, and how well they deal with others in emotional turmoil.

This criteria implies the importance of the measure's ability to reflect the relationship between the construct of emotional intelligence and potential life outcomes. Ciarrochi et al. (2001) provide a number of hypotheses of how emotional intelligence might impact on everyday life. These hypotheses that illustrate possible lines of evidence towards the usefulness or predictive validity of measures of the construct, are displayed in Figure 2.2.

Figure 2.2: Potential usefulness of Emotional Intelligence



2.3.1.4 Construct validity

Construct validation is the process of ascertaining whether or not a test actually measures some theoretical construct or trait (Anastasi & Urbina, 1997). The critical point is that no criterion or universe of content is accepted as entirely adequate to define the quality to be measured (Cronbach & Meehl, 1955), especially when the construct is as complex, multifaceted, and theory-bound, as emotional intelligence appears to be. As such, the demonstration of construct validity rests on a systematic program of research using a number of diverse procedures. To successfully evaluate the construct validity of a test, a variety of evidence from numerous sources should be accumulated. Indeed, studies pertaining to content and predictive validity are considered supporting evidence in the cumulative quest for construct validation (Anastasi & Urbina, 1997; Cronbach, 1988; Guion, 1980; Matthews et al., 2002). In addition, construct validation is often viewed as a process without end – that all studies should continue to provide construct validity, but that no study represents an endpoint in this process. Although

construct validation is a lengthy and complex process, each empirical procedure is designed to answer a crucial, specific question: “Based on the current theoretical understanding of the construct which the test claims to measure, do we find the kinds of relationships with non-test criteria that the theory predicts?” (Gregory, 2003, p. 119).

One of the most important forms of construct validation involves convergent and discriminant validity (Campbell & Fiske, 1959). A test should correlate highly with other variables that theory specifies should relate to the underlying construct (convergent validity). Therefore, alternate tests of emotional intelligence should inter-correlate highly. Conversely, the test should not correlate highly with theoretically unrelated variables (divergent validity). If it does, the test may be measuring something other than the construct targeted for measurement, and it may indeed be redundant with existing measures. When an emotional intelligence measure has large overlap with another non-emotional intelligence measure, it might be argued that the emotional intelligence measure in question is just another measure of the non-emotional intelligence construct. Ciarrochi et al. (2001) indicate that to evaluate the distinctiveness of emotional intelligence, it is necessary to ascertain to what extent emotional intelligence overlaps with measures of intelligence as well as with well-established personality dimensions.

The present study investigates the construct validity of one such measure of emotional intelligence by researching its relationship with conceptually-linked indicators of wellness, namely locus of control, sense of coherence and coping.

2.3.2 Types of emotional intelligence measures

Mayer (2001) indicates that existing measures of emotional intelligence are characterized according to two criteria:

- The definition/conceptualization of emotional intelligence they are based upon, as previously explained by Mayer’s (2001) distinction between ability versus mixed-models of emotional intelligence.

- The measurement approach followed by the instrument.

The measurement approach refers to whether the measure in question is designed as a self-report questionnaire (requiring respondents to report on their own levels of functioning) or a performance test (eliciting responses that can be evaluated against objective, predetermined scoring criteria). In either case, the emotionally intelligent response must be specified, but the principles for doing so are different. Performance testing requires criteria for rating responses (i.e. selecting answers) that are more or less intelligent. Self-report assessment specifies, in advance, the qualities of emotional intelligence, as written into the questionnaire items, and scoring simply depends on the match between self-report and the target qualities.

2.3.3 Differences between performance and self-report emotional intelligence measures

Matthews et al. (2002) listed five major differences between performance and self-report measures:

2.3.3.1 Maximal versus typical performance

Performance tests assess actual or objectified emotional intelligence, whereas self-report measures assess perceived emotional intelligence. This distinction indicates that performance tests are indicative of maximal attainment, whereas self-report measures assess typical attributes (Cronbach, 1970).

2.3.3.2 Internal versus external appraisal

Unlike performance measures, self-report measures require individuals to have insight into their own level of emotional intelligence. Individuals may not have an accurate understanding of either their academic or emotional intelligence, a hypothesis supported by the finding of only modest correlations between self-rated and actual ability measures (Paulhus, Lysy & Yik, 1998).

2.3.3.3 Response bias

A perceived difficulty with self-report measures is that individuals can distort their responses in order to appear better (or worse) than they actually are. The problem may be especially acute for self-reports of ability: individuals in the lower quartile on several abilities have been shown to grossly over-estimate their performance and ability (Kruger & Dunning, 1999). Moreover, Matthews et al. (2002) warn of the capacity of low-emotional intelligence individuals to recognize their deficiencies.

2.3.3.4 Practical considerations

Performance measures are generally more time-consuming to complete, and more difficult to score, and require more detailed instructions and greater training for the test giver to administer the test competently, than self-report measures. These various disparities occur because self-report measures allow people to summarize their level of emotional intelligence in a few concise statements. Performance measures, on the other hand, require a substantial number of observations before emotional intelligence level can be ascertained with any degree of accuracy.

2.3.3.5 Emotional intelligence as personality versus intelligence

Some self-report measures of emotional intelligence have been found to be related to well-established personality traits and in particular the various factors comprising the Big Five Factor model (Davies et al., 1998; Dawda & Hart, 2000; McCrae, 2000). Performance measures of emotional intelligence on the other hand, tend to be less related to personality measures, sharing overlap instead with traditional intelligence measures (see Ciarrochi et al., 2001; Matthews et al., 2002).

In what could be considered an extension of the ability versus mixed model conceptualization debate, some commentators have questioned the usefulness of self-

report measures in the assessment of emotional intelligence (Ciarrochi et al., 2001; Salovey, Woolery & Mayer, 2001). Others have insisted that the ideal measurement approach will depend on the model of definition, while yet others have indicated the advantages and disadvantages of both approaches (Mayer, 2001).

It may appear to follow from the foregoing discussion that emotional intelligence measures based on the ability framework of the construct would necessarily be performance-based in nature, and those instruments based on the mixed model conceptualisation would be operationalised as self-report tests. However, this is not always the case. Most existing measures of the construct are self-report, owing primarily to the relative complexity of developing performance measures (Matthews et al., 2002) of emotional intelligence. Of the self-report measures, most are based on the mixed model conceptualisation of emotional intelligence, for example the Bar-On Emotional Quotient Inventory (EQ-I) (Bar-On, 1997) and the Emotional Competence Inventory (ECI) (Sala, 2002). Performance measures are more recent additions to the practice of emotional intelligence measurement, the most well known being the Mayer, Salovey, Caruso, Emotional Intelligence Test (MSCEIT) (Mayer, Salovey & Caruso, 2002) which is based on the ability conceptualisation of emotional intelligence. However, some self-report assessments, such as the EIS (Schutte et al., 1998) are based on the ability conceptualisation, of the construct and may even be considered precursors to the performance based measurement of emotional intelligence (Matthews et al., 2002).

Since it forms the subject of this study, the remainder of this chapter is dedicated to a description of the development and psychometric properties of the EIS.

2.4 THE EMOTIONAL INTELLIGENCE SCALE (EIS)

For the purposes of this study, the EIS (Schutte et al., 1998) was selected as subject for the investigation of its construct validity. Primary reasons for this were its relatively widespread availability and the practical consideration of available time for test

completion (as explained in 2.3.3.4). Possible implications and limitations of the selection of this questionnaire are discussed more thoroughly in Chapter 6.

The EIS was developed due to the perceived need for brief, validated measures of emotional intelligence based on a theoretically cohesive and comprehensive model of emotional intelligence (Schutte et al., 1998). The authors believed that the original model of Salovey and Mayer (1990) and the Mayer and Salovey (1997) revised model to be the most theoretically sound and comprehensive models of emotional intelligence. While the revised model was considered to be a good process-oriented model emphasizing the stages of development of the construct, the original model of Salovey & Mayer (1990) was chosen since it lends itself better to conceptualizing the various dimensions of an individual's current state of emotional development, and also because most dimensions of other models can be integrated into this model (Schutte et al., 1998).

2.4.1 Development of the Emotional Intelligence Scale

Schutte et al. (1998) generated a pool of 62 items based on the theoretical model of emotional intelligence developed by Salovey and Mayer (1990), with each item selected for this initial pool reflecting an adaptive tendency toward emotional intelligence within the framework of the model. Items were constructed with a 5-point Likert-scale response format, on which a 1 represented "strongly disagree" and a 5 denoted "strongly agree".

All components of the model were represented by multiple items, and each of the first four authors independently evaluated each item for the following criteria:

- Fidelity to the theoretical definition of the emotional intelligence construct according to Salovey and Mayer's (1990) conceptualisation.
- Clarity.
- Readability.

The authors thereafter deleted, added and revised some items, and pilot tested items by asking several individuals to complete the scale and note any unclear elements. This process resulted in a pilot-tested pool of 62 items.

A principal-components, orthogonal-rotation factor analysis was performed after 346 respondents completed the initial 62-item version. The first factor had an eigenvalue of 10.79 and 33 of the items loaded at 0.40 or above on this first factor (Schutte et al., 1998). The second through fourth factors in the solution had eigenvalues of 3.58, 2.90 and 2.53, respectively. Very few items that did not have higher loadings on the first factor loaded on factors two through four; factor two had four additional items loading on it, factor three had three additional items and factor four had one additional item. The items loading on factors two through four were not recognizable as conceptually distinct from the items loading on factor one. The strength of factor one and the conceptual parsimony of the 33 items that loaded on the first factor led to a one-factor model being accepted for the final scale.

The 33 items loading on factor one represented all portions of the conceptual model of Salovey and Mayer (1990), and representation of different categories of the model was roughly proportionate to the model. Thirteen items came from among those generated for the appraisal and expression of emotion category, ten of the items came from among those generated for the regulation of emotion category of the model, and ten came from among those items generated for the utilization of emotion category of the model. Schutte et al. (1998) further indicated that items reflected each of the components and sub-components of each category, e.g. regulation of emotion in the self and regulation of emotion in others. The strength of factor one and the conceptual parsimony of the 33 items that loaded on the first factor led the authors to select these 33 items for inclusion in the final scale. The resulting questionnaire measures overall emotional intelligence on a scale with scores ranging from 33 to 165.

2.4.2 Previous investigations into the psychometric properties of the EIS

2.4.2.1 Reliability and readability

In their study of the development and validation of the EIS, Schutte et al. (1998) reported an internal consistency analysis showing a Cronbach's alpha of 0.90 for the 33-item scale, based on a sample of 346 participants. In addition, the Flesch-Kincaid reading grade level formula provided information regarding the reading ability needed to complete the scale. The analysis indicated that the 33-item scale requires a reading level typical of fifth graders (Flesch-Kincaid = grade level 5.68).

To confirm the prior findings of internal consistency, a sample of 32 students responded to the 33-item measure, resulting in a Cronbach's alpha of 0.87. Test-retest reliability of the measure was evaluated using a sample of 28 students who completed the measure twice, with a two-week interval between measurements. Two-week test-retest reliability was 0.78. While these findings provided some preliminary indication of good reliability, the very small sample sizes are a major limiting factor, hence the decision to investigate the reliability of the scale in this study, in addition to its construct validity.

2.4.2.2 Validity

In a study investigating the construct validity of the EIS, Schutte et al., (1998) hypothesized that a valid measure of emotional intelligence would be related to measures that assess specific aspects of awareness and expression of emotion, outlook on life, depressed mood, ability to regulate emotions and impulsivity. As expected, higher scores on the 33-item EIS were associated with the following findings:

- Less alexithymia (lack of, or flat emotional affect) as measured by the Toronto Alexithymia Scale [$r(24)= -0.65$, $p<0.0001$]
- Greater attention to feelings as measured by the Attention subscale of the Trait Meta Mood Scale [$r(48)= 0.63$, $p<0.0001$]

- Greater clarity of feeling as measured by the Clarity subscale of the Trait Meta Mood Scale [$r(47)= 0.52$, $p<0.0001$]
- More mood repair as measured by the Mood Repair subscale of the Trait Meta Mood Scale [$r(47)= 0.68$, $p<0.0001$]
- Greater optimism as measured by the optimism scale of the Life Orientation Test [$r(26)= 0.52$, $p<0.006$]
- Less pessimism as measured by the pessimism scale of the Life Orientation Test [$r(26)= -0.43$, $p<0.025$]
- Less depression as measured by the Zung Depression Scale [$r(37)= -0.37$, $p<0.021$]
- Less impulsivity as measured by the Barratt Impulsiveness Scale [$r(55)= -0.39$, $p<0.003$].

Nonverbal expressiveness of emotion, as assessed by the Affective Communication Test was the only dimension expected to have a relationship with emotional intelligence, but instead was not significantly related to scores on the EIS [$r(34)= 0.17$].

Schutte et al. (1998) hypothesized that, on a valid measure of emotional intelligence, there would be certain between-group differences. Previous findings (e.g. Bjorklund & Kipp, 1996; Goleman, 1995; Gross & John, 1995; Skuse et al., 1997) suggest that women are more adept at emotional expression and relating to others, which are skills theorized to be components of emotional intelligence (Salovey & Mayer, 1990). It was therefore expected that women would score higher than men. Another hypothesis was that psychotherapists would score higher than prisoners and higher than psychotherapy clients.

These hypotheses were confirmed in an exploratory study of 346 participants, where Schutte et al. (1998) found that women scored significantly higher (M = 130.94, S.D. = 15.09) than men (M = 124.78, S.D. = 16.52), $t(327) = 3.39$, $p < 0.001$. As expected, psychotherapists scored significantly higher (M = 134.92, S.D. = 20.25) than prisoners (M = 120.08, S.D. = 17.71), $t(37)= 2.35$, $p <0.012$ and than clients in a substance abuse treatment program (M = 122.23, S.D. = 14.08), t (2) = 1.86, $p < 0.035$. Malouff and Schutte (1998) further found that scores on the EIS successfully predict counsellor

performance, therefore providing some promising initial evidence of the instrument's predictive validity.

According to Goleman (1995), cognitive intelligence may provide individuals with entry to a setting, but emotional intelligence plays an important role in determining how successful they are after they enter the setting. To gauge the EIS's predictive criterion-related validity, Schutte et al. (1998) conducted a longitudinal study to test whether scores on the emotional intelligence measure would predict college students' success in their first year. A sample of 64 first-year college students completed the EIS during their first month at university. At the end of the academic year, the students' cumulative grade point averages were correlated with their initial EIS scores. Scores on the EIS significantly predicted grade point average at the end of the year, [$r(63) = 0.32$, $p < 0.01$].

Schutte et al. (1989) also conducted two studies aimed at investigating the discriminant validity of the EIS. Mayer and Salovey (1997) considered emotional intelligence related to, but at the same time, distinct from, other types of intelligences. Schutte et al. (1998) predicted that the EIS would not be so highly related to cognitive ability as to be redundant. This prediction was tested by relating scores on the EIS to scores on the Scholastic Aptitude Test's (SAT) combined math and verbal sections (College Entrance Examination Board and Educational Testing Service, 1995), which are widely used measures of cognitive ability related to college aptitude. The results showed that scores on the EIS were not related to SAT scores [$r(41) = - 0.06$].

Emotional intelligence is generally conceptualized as a somewhat enduring, trait-like characteristic (e.g. Goleman, 1995; Mayer & Salovey, 1997; Salovey & Mayer, 1990). Most such trait-like characteristics are related to one of the big five personality dimensions (e.g. Ackerman & Heggestad, 1997; Digman, 1990), namely neuroticism, extraversion, agreeableness, conscientiousness and openness. While emotional intelligence is said to be relevant to personality dimensions, scores on an emotional intelligence measure should not correlate so highly with a dimension of the big five as to be redundant. In a study correlating scores on the EIS with scores for each of the big

five personality dimensions from the NEO Personality Inventory (Costa & McCrae, 1992), higher scores on the EIS were significantly associated with greater openness to experience [$r(22) = 0.54$, $p<0.009$] and not significantly related to any of the other big five dimensions. The magnitude of these non-significant correlations between the EIS and the four other big five dimensions was as follows: neuroticism, -0.28; extraversion, 0.28; agreeableness, 0.26 and conscientiousness 0.21.

Despite the promising initial evidence of the psychometric properties of the EIS (Schutte et al., 1998) further investigation, particularly into its construct validity, is required for the measure to enjoy widespread use in a variety of contexts. This study focuses specifically on its construct validity from a wellness perspective, by investigating its relationship with the conceptually-related salutogenic constructs of locus of control, sense of coherence and coping.

2.5 CHAPTER SUMMARY

The emergence and development of the construct of emotional intelligence was chronicled, with specific reference to five demarcated eras commencing early in the twentieth century. The ability and mixed models of emotional intelligence were discussed, culminating in the definition of emotional intelligence as the ability to adaptively recognize emotion, express emotion, regulate emotion, and harness emotions in the self and others. The psychometric criteria of an ideal measure of emotional intelligence were presented, with emphasis on the criterion of construct validity, and a distinction was drawn between performance and self-report emotional intelligence measures. Finally, the measure serving as subject of this study – the EIS – was discussed with particular focus on its development, as well as on previous research done to investigate its psychometric properties.

Herewith the first literature aim is accomplished.

Chapter 3 will focus on the link between emotional intelligence and wellness, as conceptualized by the salutogenic constructs of locus of control, sense of coherence and coping.

CHAPTER 3
THE CONCEPTUALIZATION OF WELLNESS THROUGH SALUTOGENIC CONSTRUCTS

The aim of this chapter is to focus on step 3 of the literature review, as described in chapter 1. This involves conceptualising psychological well-being or wellness through its relation to key concepts from the salutogenic paradigm, and to integrate this conceptualization with the construct of emotional intelligence. Firstly, a discussion of the salutogenic paradigm is provided, including a description of some key constructs therein. Thereafter the definition and dimensions of psychological well-being will be presented. This will culminate in an integration of the framework of wellness and salutogenesis with the concept of emotional intelligence. The chapter will end with a summary.

3.1 SALUTOGENESIS

3.1.1 The development and description of salutogenesis

Widely considered the founder of the paradigm of salutogenesis, Antonovsky (1979) first questioned existing theories which perceived stress as a threat to the well-being of people. In response to the predominantly pathogenic view of the human-stressor interaction (Seyle, 1956, 1974), Antonovsky (1979) proposed a new paradigm that emphasizes the maintenance and enhancement of health and wellness irrespective of the omnipresence of stressors.

In trying to answer the question of why people stay healthy despite being bombarded by multiple stressors and traumatic experiences in everyday living, Antonovsky (1979) turned to the study of the post concentration camps experience in women. Antonovsky (1979, p. 13) argued as follows:

> "Given the ubiquity of pathogens – microbiological, chemical, physical, psychological, social and cultural – it seems to me self-evident that everyone should succumb to this bombardment and constantly be dying".

Since this is clearly not the case, he sought to unravel "the mystery of health" and discover how people manage stress and stay well (Antonovsky, 1987). A study on the sequelae of the concentration camp experience on women 25 years later (Antonovsky, Maoz, Dowty & Wijsenbeek, 1971) was seminal in the development of the salutogeneic paradigm. The data showed camp survivors in general to be more poorly adjusted than the controls; however, a "not inconsiderable number" (p. 190) of them were found to be well-adapted. Antonovsky et al. (1971, pp. 190-191) questioned:

> "What, we must ask, has given these women the strength, despite their experience, to maintain what would seem to be the capacity not only to function well but even to be happy, at least on some level?".

The findings showed that a certain number of survivors were well adapted despite the difficult environment they lived in. The study of concentration camp survivors led to the acknowledgement of the existence of so called general resistance resources (GRR's) (Antonovsky, 1979, 1987). This concept, central to the explanation of salutogenesis, is described as any characteristic of the person, group, sub-culture or society that facilitates avoiding or combating a wide variety of stressors.

By way of definition, Antonovsky (1979) introduced the concept of salutogenesis through its origin from the Latin word "salus" meaning health, and the Greek word "genesis" meaning origins. De Wet (1998) defined salutogenesis as the study of the strength individuals exhibit to manage the tension and stress in their lives and not to succumb to illness. Strümpfer (1990) described three important implications of the salutogenic paradigm, as pointed out by Antonovsky (1984a, 1984b, 1987). Firstly, it requires doing away with the dichotomy of people being either diseased or healthy, in favour of what is known as the "health ease/disease continuum" (Antonovsky, 1987, p. 3). Secondly, the salutogenic model rejects the commonly held assumption that stressors are inherently

bad (Antonovsky, 1979, 1984a), in favour of the “possibility that stressors may have salutory consequences” (Antonovsky & Bernstein, 1986, p. 53). A third implication of the salutogenic paradigm is that we should study the “deviant case” (Antonovsky, 1984a, 1984b, 1987). This means that when a hypothesis about the relationship between a pathogen/ stressor and given conditions has been confirmed, even at a very high level of probability, still only part of the variance is accounted for. Antonovsky (1984b, p. 117) summed this up by indicating that, in general, “the deviants are those who make it against the high odds that human existence poses”.

Extending Antonovsky’s original (1979) conceptualization, Cilliers, Pheiffer and Visser (1995) indicated the existence of two critical salutogenic questions that help in the understanding of stress and coping, namely:

- How do people manage to stay healthy?
- How is it that some people are able to develop a sense of coherence within the world of which they form part?

In addition to Antonovsky’s seminal (1979) work, the salutogenic paradigm and its constructs further developed from various personality theories emphasizing personality growth, wellness and optimal psychological functioning (Cilliers, 1988). Within the last five years, the evolution of these theories got grounded into what has become known as positive psychology (Lopez & Snyder, 2003; Sheldon & King, 2001; Snyder & Lopez, 2002), defined as the scientific study of ordinary, positive, subjective human strengths, virtues, experience and functioning (Sheldon & King, 2001). The measurement and understanding of the numerous behavioural constructs found in positive psychology has become central to explaining the way in which individuals function and develop in many occupational contexts, including the fields of management development, labour relations and performance management (Kossuth, 1998).

Strümpfer (1995) argued that the paradigm should be broadened to include sources of strength, and coined the term “fortigenesis” as a more holistic alternative, literally meaning the origins of psychological strength. He maintains that these behavioural

phenomena would better be served if called fortigenesis since this shifts the focus to the enhancement of strength in the individual rather than emphasizing only the determinants of wellness (Strümpfer, 1995). Wissing and Van Eeden (1997a) further argued that the focus should not only be on origins of psychological strengths, as implied by the names salutogenesis and fortigenesis, but also on the nature, dynamics and enhancement of psychological well-being. They suggested the more encompassing term of psychofortology (the science of psychological strengths), later investigated by Coetzee and Cilliers (2001) for its potential to explain coping behaviour in organizations.

While the salutogenic paradigm's focus is an individual's positive psychological well-being and strengths in coping with the demands of stress (Coetzee & Cilliers, 2001), acceptance of the salutogenic school of thought does not imply rejection or abandonment of the pathogenic view (Antonovsky, 1984b; 1987). The benefits of the pathogenic approach are visible in all clinical fields, and the arrival of salutogenesis does not reduce the importance of research directed at the discovery of pathogens and the effects of stressors. Strümpfer (1990) indicated that the pathogenic and salutogenic paradigms do different things and in many respects complement each other. This interplay is alluded to by Antonovsky's (1979) proposed coexistence of psychological well-being and psychopathology on a health/disease continuum, implying that the absence of psychopathology does not necessarily indicate wellness or the presence of psychological strengths, and vice versa. In summary, Strümpfer (1990) emphasized the vital importance of the salutogenic paradigm through its provision of new insights and growth in the understanding of human coping and stress management.

Over the last decade, the focus on individual salutogenic functioning has spread from the field of growth psychology to also include its application in the work environment (Cilliers & Coetzee, 2003; Coetzee & Cilliers, 2001; Viviers, 1996). Moreover, Antonovsky (1987) supports the notion that work has a significant role to play in shaping a person's salutogenic functioning, in addition to being significantly affected by it.

Substantial South African research has focused on salutogenesis (Strümpfer, 1990), with some contributors indicating the need to explicate this paradigm and its constructs

further (Strümpfer & Wissing, 1999), especially in the unique South African work environment (Strümpfer, 1990; Wissing & Van Eeden, 1994; 1997a; 1997b). Nonetheless, the paradigm's guidelines for the conceptualization, measurement and operationalisation of psychological growth and wellness of employees and managers are becoming increasingly clearer and widely accepted.

3.1.2 Salutogenic constructs

Strümpfer (1990) identified six constructs that conceptualize aspects of psychological well-being from a salutogenic perspective, including processes involved in the coping of individuals and the enhancement of wellness. These constructs, which are proposed to describe the core of salutogenic functioning, have become widely known, accepted and used by many researchers (Baloyi, 2000; Marais, 1997; Viviers, 1999; Wissing & Van Eeden, 1994, 1997a, 1997b). The six constructs, forming part of a salutogenic profile (Viviers, 1996) with emphasis on psychologically optimal functioning at both the intra- and interpersonal levels, have been proven to possess high inter-correlations between them (Kossuth, 1998; Strümpfer, 1995; Viviers & Cilliers, 1999).

Each of these constructs – namely, sense of coherence, locus of control, self-efficacy, hardiness, potency, and learned resourcefulness – are discussed briefly below.

3.1.2.1 Sense of coherence

Sense of Coherence (Antonovsky, 1984b, 1987) is defined as a global construct that expresses the extent to which one has a pervasive, enduring, though dynamic feeling that (1) the stimuli deriving from one's internal and external environments in the course of living are structured, predictable, and explicable, that (2) the resources are available to one to meet the demands posed by these stimuli, and that (3) these demands are challenges worthy of investment and engagement. Furthermore, according to Antonovsky (1979), the sense of coherence predicts the extent to which one feels that there is a probability that things will work out well.

Each portion of the above definition reflects or describes one of the three core dimensions that make up sense of coherence, namely:

- Comprehensibility

Comprehensibility refers to the extent to which one can make sense of stimuli from the environment (Antonovsky, 1987). Although such information may be disordered, accidental, inexplicable, surprising or random, the individual with a high sense of comprehensibility expects that these stimuli will become orderable and explicable in the future. Comprehensibility, in essence, is concerned with whether one's perceptions make cognitive sense (Strümpfer, 1990).

- Manageability

According to Antonovsky (1987), manageability refers to how well an individual feels they are able to cope with the environmental stimuli, given their available resources (resources being under one's control). People with a high sense of manageability will not feel victimized by events or have the perception that life treats one unfairly. Manageability is about whether an individual perceives their life experiences as bearable or as challenges that can be met or coped with. The available resources referred to may be under the person's own control or under the power of legitimate others (such as a spouse or employer) who have the power to resolve problems in the individual's interest (Strümpfer, 1990).

- Meaningfulness

The feeling that it is worthwhile to try to cope actively with stressors from the environment, is known as meaningfulness (Antonovsky, 1987). It focuses on the extent to which an individual can identify emotionally, rather than cognitively, with events in their lives (Antonovsky, 1979). According to Strümpfer (1990), at least some of the problems and demands of living are welcome challenges, motivating an individual towards the investment of energy in those challenges. Meaningfulness, therefore, is concerned with the problems and demands posed by living which require commitment, engagement and challenge. Individuals with a high sense of meaningfulness will

willingly take up a challenge, will try to find meaning in stressful situations, and will do their best to meet such challenges with dignity (Antonovsky, 1987).

Antonovsky (1979) indicates that the strength of an individual's overall sense of coherence is connected to a variety of generalized resistance resources (GRR's), which are any characteristic of the person, group or environment that can facilitate effective tension management. The significant GRR's present in the workplace, according to Antonovsky (1979) are artifactual-material such as financial resources (money and wealth), cognitive-emotional-intrapersonal and emotional (such as knowledge, intelligence and ego identity), value-attitudinal (such as rationality, flexibility and farsightedness), interpersonal-relational (social support systems) and macro-socio-cultural (the cultural norms and rules that define society's behaviour).

3.1.2.2 Locus of control

Locus of control, arguably the salutogenic construct that has received the most attention in the study of individuals at work (Erwee & Pottas, 1982), describes the extent to which individuals believe that their behaviour has a direct impact on events that follow. Based on social learning theory, it is believed that individuals learn from their environment through modeling, past experience and reinforcement of certain behaviours. 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 what happens to them as a function of luck, fate, or powerful others, have an external locus of control (externals). Broedling (1975) supported this view by postulating that internals feel in control of aspects affecting them, whilst externals feel that events are beyond personal influence.

The development of an individual's internal or external locus of control is based on the person's objective situation (Cooper & Payne, 1991) and the behavioural consequences of action taken by the individual (Erwee & Pottas, 1982). Rotter (1966) emphasized that an important aspect determining the characteristics of internal/external control of

reinforcement, is the effect that the situation reinforcement has on the behaviour of the person.

Antonovsky (Cooper & Payne, 1991) indicated that where the individual perceives a degree of freedom for effective action, such a person develops an internal locus of control. If the person views the reinforcement as being outside their control, the individual will likely develop an orientation of external locus of control. This view is confirmed by Collins (1974) and Lefcourt (1966) who indicate that externals attribute the cause of events to the environment or behaviour outside of their personal control, whilst internals attribute the cause of events to themselves or their own actions.

Internals have been shown to suffer less threat and fewer adverse consequences than external oriented individuals (Sutherland & Cooper, 1990) and also put more effort into obtaining information because they feel more in control of the results of their behaviour (McKenna, 1987). Externals are likely to see themselves as more helpless, and be more compliant, conforming and prone to several forms of defensive behaviour such as projection, denial and displacement (Goldberger & Breznitz, 1993; Sutherland & Cooper, 1990). Enhanced cognitive performance has been proposed as a reason why internals possess better overall personal effectiveness compared to externals (Phares, 1976), while Anderson (1977) postulated that it is achievement in performance that is the differentiating factor between internals' and externals' outcome behaviour.

3.1.2.3 Self-efficacy

Self-efficacy refers to an individual's belief that they can successfully perform the behaviour required for a specific task. It is a relatively enduring set of beliefs that one can cope effectively in a broad range of situations (Bandura, 1982). Kirsch (1986) points out that being successful at executing a self-initiated task is a reflection of self-efficacy. Wood and Bandura (1989) state that self-efficacy refers to beliefs in one's capabilities to mobilize the motivation, cognitive resources and courses of action needed to meet given situation-demands. Self-efficacy expectations determine what activities people engage

in, how much effort they will expend and how long they will persevere in the face of adversity (Gist & Mitchell, 1992).

Bandura (1997) suggested that a high sense of personal efficacy develops in a responsive environment that rewards valued accomplishments, fosters aspirations and encourages productive engagement in activities. Self-efficacy comprises three dimensions, namely magnitude, strength and generality.

- Magnitude

Magnitude indicates the level of difficulty an individual feels capable of mastering or performing (Ayres, 1992). Bandura (1986) indicated that the magnitude of self-efficacy, in a hierarchy of behaviours, refers to the number of steps or levels of increasing difficulty or threat a person believes him or herself capable of performing.

- Strength

Strength refers to the effort an individual places on maintaining the behaviour in spite of obstacles, otherwise stated as the durability of an expectation in the face of disconfirming experiences. This dimension is related to resistance in the face of frustration, pain and other barriers to performance (Bandura, 1986) and refers therefore to the resoluteness of a person's convictions that they are capable of performing a specific behaviour or overcoming a particular obstacle.

- Generality

How far an efficacy expectation extends beyond a specific behavioural domain is known as generality, and addresses the broadness of the applicability of the belief. This dimension refers to the extent to which success or failure experiences influence self-efficacy expectations in a limited, behavioural manner, or whether changes in self-efficacy expectancy extend to other similar behaviours and contexts (Bandura, 1986).

3.1.2.4 Hardiness

Hardiness, evolved out of the stress and coping literature to explain individual differences in stress resiliency (Kobasa, Maddi & Kahn, 1982), refers to a source of resistance to the negative effects of stressful life events on health. Closely related to the existential personality view, hardiness is considered a personality style that facilitates the kind of perception, evaluation and coping that lead to successful resolution of the situation created by stressful events. Kobasa et al. (1982) postulated that a positive association between hardiness and adaptive coping might explain why hardiness operates as a psychological buffer when one is confronted by stressors.

Hardiness is comprised of three dimensions, namely commitment, control and challenge.

- Commitment

Commitment is defined as a disposition to involve oneself in whatever one is doing (Kobasa et al., 1982), and refers to the occurrence of some individuals experiencing their environment and themselves as interesting, worthwhile and satisfying, while others find them dull, meaningless and frustrating. Commitment is the ability to believe in the truth, importance and value of what one is and what one is doing, and reflects a tendency to involve oneself in many situations in life. People who are committed have a sense of direction, a purpose and a sense of active involvement in life (Kobasa & Pucetti, 1983). While committed individuals always have something to do and make the best of the situation they find themselves in, alienated people (or those low on commitment) find things boring or meaningless and avoid involvement (Maddi & Kobasa, 1984).

- Control

Related conceptually to internality in locus of control, Kobasa (1982) defined the Control dimension of hardiness as a tendency to believe and act as if one can influence the course of events. This dimension was expanded on by Best (1994) who states that

individuals with high levels of control attempt to identify reasons for occurrences from the perspective of their own determination or responsibility as opposed to the viewpoint of the actions of others, luck or even fate. They perceive the stressful situation as one that can be controlled, manipulated or guided by the self. Therefore, control is the tendency to believe and act as if, by and large, one can influence the events in one's life, through what one imagines, says and does.

Whereas individuals with high levels of control believe they have the power to turn a disadvantaged situation into an advantage, those with a low level of control feel helpless and see themselves as passive victims of forces beyond their control or guidance (Maddi & Kobasa, 1984).

- Challenge

Dobson (1982) defined challenge as a readiness to change things which appear threatening or at least to face up to them in a positive way, rather than adopt a defeatist attitude. Individuals with a strong sense of challenge accept and expect change as a normal occurrence in life (Manning, Williams & Wolfe, 1988), and they tend to view change as a positive opportunity for development. Conversely, threatened people think that things will remain stable and they fear the possibility of change for the threat it holds to their comfort and security.

Challenge can be seen as the expectation that it is normal for life to change and that such change will present one with opportunities and incentives for development, rather than merely constituting a threat to one's security. Best (1994) further indicates that individuals with high levels of this dimension can more readily identify and mobilize the appropriate resources to face difficult or challenging situations.

3.1.2.5 Potency

Potency refers to a person's "enduring confidence in his/her own capacities, as well as confidence in and commitment to the social environment which is perceived as being

characterized by a basically meaningful and predictable order and by a reliable and just distribution of rewards" (Ben-Sira, 1985, p. 399). In a situation where the resources at the disposal of a person are inadequate for meeting certain demands and this causes tension (a disturbance in homeostasis), potency will enable the individual to restore this homeostasis and therefore prevent the tension from turning into lasting stress. Ben-Sira (1989) introduced the concept of potency as a stress-buffering mechanism that will limit the homeostasis-disturbing impact of an occasional failure, in meeting a demand because of resource inadequacy.

According to Ben-Sira (1985), potency functions in a primary and a secondary phase. The primary stage is based on an individual's response to a demand upon confrontation, while the secondary stage is related to the restoring of homeostasis if coping in the initial stage was not adequate. The objective of this two-stage process is the notion that there needs to be a homeostasis-stabilizing mechanism over and above the normal resources of the individual.

3.1.2.6 Learned resourcefulness

The concept of learned resourcefulness was first coined by Meichenbaum (1977) to denote the belief of people who have been trained in stress inoculation that they can deal effectively with manageable levels of stress. Rosenbaum (1988) later definitively established the concept as a personality repertoire or a set of complex behaviours, cognitions and affects that are in constant interaction with one's physical and social environments and are evoked by many situations, but which also provide the basis for further learning.

Rosenbaum (1980) suggested that individuals might differ in the extent to which they have acquired an effective repertoire of self-control behaviour during their learning history. Therefore the basic premise of this concept is that "individuals may differ in the extent to which they are able and willing to self-regulate internal responses (such as emotions, pain, and cognitions) that interfere with the smooth execution of target behaviour" (Rosenbaum & Palmon, 1984, p. 245). Moreover, Seyle (1983) indicated that

the attributes people assign to the causes of life-changing events or difficulties, and their own responsibility in the process, have important consequences for the ways they adapt to the demands of the situation and for their feelings about it.

Rosenbaum's (1988) model of learned resourcefulness conceptualized this process of self-regulation in three phases or dimensions.

- Representation

Representation refers to the process during which the individual experiences, without any conscious effort, a cognitive and/or emotional reaction to changes within him or herself, or the environment.

- Evaluation

This phase refers to the individual's evaluation of the changes, first, as desirable or threatening, thereafter (if a threat is appraised), a re-evaluation of whether anything can be done about it (Strümpfer, 1990).

- Action

Otherwise known as the concept of coping, the Action phase is aimed at minimizing negative effects of the internal or external changes (Rosenbaum, 1988), thus reflecting the individual's active attempt to cope with the stressor. This phase calls for attempts at self-regulation or self-control, indicating a focus on the return to homeostatic functioning. In summary, the individual attempts to minimize the interfering effects that this disruption has on the smooth execution of routine actions (Rosenbaum, 1988).

Rosenbaum and Ben-Ari (1985) suggest that individuals who succeed in this process of self-regulation acquire a skill in doing so, with the learned resourcefulness providing a basis for further learning.

3.1.2.7 Coping

Though not included as one of the six core salutogenic constructs, coping nonetheless forms part of the field of positive psychology in general, and salutogenesis in particular, due to its obvious conceptual links with positive, subjective human strengths and functioning (Sheldon & King, 2001; Somerfield & McCrae, 2000).

Coping is defined as an individual's cognitive and behavioural efforts to manage (reduce, minimize, master, or tolerate) the internal and external demands of the person-environment transaction that is appraised as taxing or exceeding the person's resources (Folkman et al., 1986). Coping has two major functions: dealing with the problem that is causing the distress, also known as problem-focused coping, and regulating the emotion associated with the stressor, otherwise described as emotion-focused coping (Folkman & Lazarus, 1980; Larazus & Folkman, 1984). Coping and cognitive appraisal are transactional variables, reflecting the integration between person and environment in any given stressful situation (Folkman et al., 1986). Therefore, coping consists of the particular thoughts and behaviours an individual uses to manage the demands of a specific person-environment transaction that has relevance to his or her well-being.

Carver, Scheier and Weintraub (1989) distinguished between problem-focused coping strategies (active coping, planning, suppressing of competing activities, restraint coping and seeking support for instrumental reasons), and emotion-focused coping strategies (seeking social support for emotional reasons, positive reinterpretation and growth, acceptance/ resignation, denial and turning to religion). These strategies are used selectively based on individual preferences and situational demands, and provide useful information about an individual's capacity to deal with stressors from both practical and emotional perspectives.

Since salutogenesis refers to the origin of health from a psychological perspective (Antonovsky, 1979), and is concerned with how individuals cope with the demands of stress, the concept of coping defined as an individual's efforts to manage the person-environment interaction on an ongoing basis, clearly illustrates the conceptual link

between coping and salutogenic functioning. Emotion-focused coping strategies are focused on in this study, primarily due to their definitive conceptual link with the construct of emotional intelligence.

Due to the limited scope of this study, only three of the abovementioned salutogenic constructs - namely sense of coherence, locus of control and coping - were selected to form part of this research study. The reasons for their inclusion are detailed in a later section of this chapter, focusing upon the integration of salutogenesis, wellness and emotional intelligence.

3.2 PSYCHOLOGICAL WELL-BEING

Increased interest in the study of psychological well-being follows from the recognition that the field of psychology, since its inception, has devoted much more attention to human unhappiness and suffering than to the causes and consequences of positive functioning (Diener, 1984; Jahoda, 1958). Ryff (1989) argues that, there has been particular neglect at the most fundamental level in this realm, namely, the task of defining the essential features of psychological well-being.

3.2.1 A historical review of psychological well-being's conceptualization

While the literature reflects a considerable focus on the creation and evaluation of measures of subjective well-being (e.g. Diener, 1984; Larson, Diener & Emmons, 1985), attempts at conceptualizing the basic structure of psychological well-being were traditionally almost always centred around the distinction between positive and negative affect and life satisfaction (Andrews & Withey, 1976; Bradburn, 1969; Bryant & Veroff, 1982; Diener & Emmons, 1984; Liang, 1984, 1985; Stock, Okun & Benin, 1986).

Bradburn's (1969) seminal work on the structure of psychological well-being focused on the distinction between positive and negative affect, and resulted in the focus on

happiness as the outcome variable in the study of human responses to various life and social changes (Bradburn, 1969). At this stage, positive and negative affect were viewed as distinct dimensions of well-being, and the balance between them served as an index of happiness (Ryff, 1989), with reference to Aristotle's (1947) statement that the highest of all good achievable by human action is happiness.

For many years hereafter, happiness became the primary indicator of positive psychological functioning in many empirical studies. Waterman (1984, p. 16) later contended that this translation was questionable, and provided an alternate perspective of eudaimonia as "the feelings accompanying behaviour in the direction of, and consistent with, one's true potential". This definition, explaining psychological well-being as a realization of one's true potential rather than as happiness, reflected a different stream of research into the construct, possibly one from which much literature has been generated on well-being defined as life satisfaction (e.g. Neugarten, Havighurst & Tobin, 1961). This strand of research, however, was pre-empted by assessment as opposed to theory, and was therefore limited by criticisms of its general neglect of theory in formulating life satisfaction and related constructs (Sauer & Warland, 1982).

Regardless of the absence of theory, however, efforts to define the structure of well-being on the basis of measures persist, including the testing of various models of subjective well-being (e.g. Liang, 1984, 1985; Liang & Bollen, 1983; Stock et al., 1986) while continuing to emphasize a basic distinction between positive and negative affect.

This line of research, focusing on positive versus negative affect, became one of two primary conceptions of positive functioning (Ryff & Keyes, 1995), with conceptual and methodological refinements being built on this early operationalization of well-being. Further research efforts included a focus on the intensity and frequency of affect (Diener, Larson, Levine & Emmons, 1985) as well as measurement issues, calling for more valid and reliable indicators of positive and negative affect (Watson, Clark, & Tellegen, 1988). These results also suggest that measurement error obscures the bipolarity of positive and negative affect (Green, Goldman, & Salovey, 1993). The second primary conception emphasizes life satisfaction as a key indicator of well-being,

since it complements happiness which is the more affective dimension of positive functioning (e.g. Andrews & McKennell, 1980; Andrews & Withey, 1976; Bryant & Veroff, 1982; Campbell, Converse & Rodgers, 1976). Ryff and Keyes (1995) indicate that other studies defined well-being according to global questions about overall life satisfaction, and domain-specific questions about other spheres of life such as work, income and social relationships (Andrews, 1991; Diener, 1984).

Overall, the literature on psychological well-being was not, in its inception, strongly theory guided. Instruments were developed for other purposes, and these became the standard bearers for defining positive functioning. Moreover, Waterman's (1993) distinction between eudaimonic and hedonic conceptions of happiness provides one of the few notable exceptions in what Ryff and Keyes (1995, p. 719) termed a largely "atheoretical climate". Ryff (1989), in her review of these contributions, argues that these prior formulations (mostly based on multivariate analyses of early instruments designed for other purposes) neglect important aspects of positive psychological functioning. Ryff (1989) therefore identified the need to consider literature that, despite its central concern with defining positive function, has not generally been a part of the empirical agenda on psychological well-being.

The extensive literature aimed at defining positive psychological functioning includes perspectives such as Maslow's (1968) self-actualization theory, Rogers's (1961) view of the fully functioning person, Jung's (1933) and Von Franz's (1964) formulation of individuation, and Allport's (1961) conception of maturity. Jahoda's (1958) positive criteria of mental health, generated to replace definitions of well-being as the absence of illness, also offer in-depth descriptions of what it means to be in good psychological health. More recently, the salutogenic paradigm, with its emphasis on personality growth, wellness and optimal psychological functioning (Cilliers, 1988; Strümpfer, 1990) and the field of positive psychology (Lopez & Snyder, 2003) that studies ordinary, positive, subjective human strengths, virtues, experience and functioning, both display strong conceptual links with psychological wellness.

For the most part, the older perspectives listed above (excluding salutogenesis and positive psychology) have had very slight empirical impact (Ryff, 1982; 1985), primarily because few of them have been supplemented with credible measurement procedures. In addition, Ryff (1989) indicates a second stumbling block – namely that the criteria for psychological well-being generated by these perspectives are diverse and vast, making it difficult to distinguish core features of positive psychological functioning.

3.2.2 An integrated structure of psychological well-being

Ryff and Keyes (1995) commented on the puzzling general absence of theory-based formulations of well-being, considering the abundant accounts of positive functioning in subfields of psychology described above. Despite their often loose conceptualizations, Ryff (1989) set about integrating these numerous perspectives into a summary framework, arguing that when one reviews the characteristics of well-being described in these various formulations, it becomes apparent that many theorists have written about similar features of positive psychological functioning.

Ryff's (1989) work resulted in the proposal of a multi-dimensional model of well-being. Consisting of six distinct components or dimensions of positive psychological functioning, this framework represents the points of convergence in a broad range of previously disconnected theories. In combination these dimensions encompass a breadth of wellness that was operationalized (Ryff, 1989) and scientifically tested for fit between theoretical model and empirical data (Ryff & Keyes, 1995).

The dimensions of Ryff's (1989) model of psychological well-being, are detailed below with specific reference to the wellness-related literature and theories that contributed to their inclusion in the model.

3.2.2.1 Self-acceptance

The most recurring criterion of well-being evident in the previously mentioned perspectives, is the individual's sense of self-acceptance. Defined as a central feature of mental health and a key concept in life span theories, self-acceptance is also a characteristic of self-actualization, optimal functioning, and maturity. Overall, holding positive attitudes toward oneself emerged as a central characteristic to positive psychological functioning in Ryff's (1989) review of literature on the subject.

3.2.2.2 Positive relations with others

The ability to love is widely viewed as a central component of mental health (Ryff, 1989), and many of the preceding theories emphasize the importance of warm, trusting interpersonal relations. The ability to have strong feelings of empathy and affection for all humans, and being capable of greater love, deeper friendship and more complete identification with others are all key features of self-actualization (Maslow, 1968). Mature individuals are considered able to warmly relate to others (Allport, 1961), and Erikson (1959) emphasizes the achievement of close unions with others (intimacy) and the guidance and direction of others (generativity) in his psychosocial developmental stages.

3.2.2.3 Autonomy

Maslow (1968) described self-actualizers as showing autonomous functioning and resistance to enculturation, while Rogers' (1961) account of the fully functioning person reflected the possession of an internal locus of evaluation, whereby one does not look to others for approval, but evaluates oneself by personal standards. Individuation is considered to involve a deliverance from convention (Jung, 1933) in which the person no longer clings to collective fears, beliefs and laws of the masses. So too, life span theorists see the process of turning inward in later years as providing the person with a sense of freedom from everyday norms.

3.2.2.4 Environmental mastery

Ryff (1989) describes the person's ability to choose or create environments suitable to their psychic conditions as a characteristic of psychological wellness. Numerous theories emphasize one's ability to advance in the world and change it creatively through physical or mental activities, for example Allport's (1961) formulation of maturity as requiring participation in a significant sphere of activity outside of self. Life span development also requires the ability to manipulate and control complex environments. Together, these perspectives suggest active participation in and mastery of the environment as critical components in an integrated framework of positive psychological functioning.

3.2.2.5 Purpose in life

Jahoda (1958) defined mental health to include beliefs that give one the feeling there is purpose in and meaning to life. While life span developmental theories refer to a variety of changing purposes or goals in life, such as being productive and creative, Allport's (1961) definition of maturity also emphasizes a clear comprehension of life's purpose, a sense of directedness, and intentionality. Overall, one who is psychologically well has goals, intentions, and a sense of direction, all of which contribute to the feeling that life is meaningful (Ryff, 1989).

3.2.2.6 Personal growth

In addition to achieving the prior characteristics, optimal psychological well-being also requires that an individual continues to develop their potential, to grow and expand as a person (Ryff, 1989). The need to actualize oneself is central to Maslow's (1968) self-actualization theory, and openness to experience is a key characteristic of the fully functioning person (Rogers, 1961). This dimension is about continuous development as opposed to achieving a fixed state wherein all problems are solved, and life span theories also provide clear indication of the importance of continued growth and the

confronting of new challenges or tasks at different stages of life. Overall, continued personal growth and self-realization is a prominent theme in the literature on psychological well-being, and Ryff (1989) asserts that it may be the dimension of well-being that comes closest to Aristotle's notion of eudaimonia described earlier in this chapter.

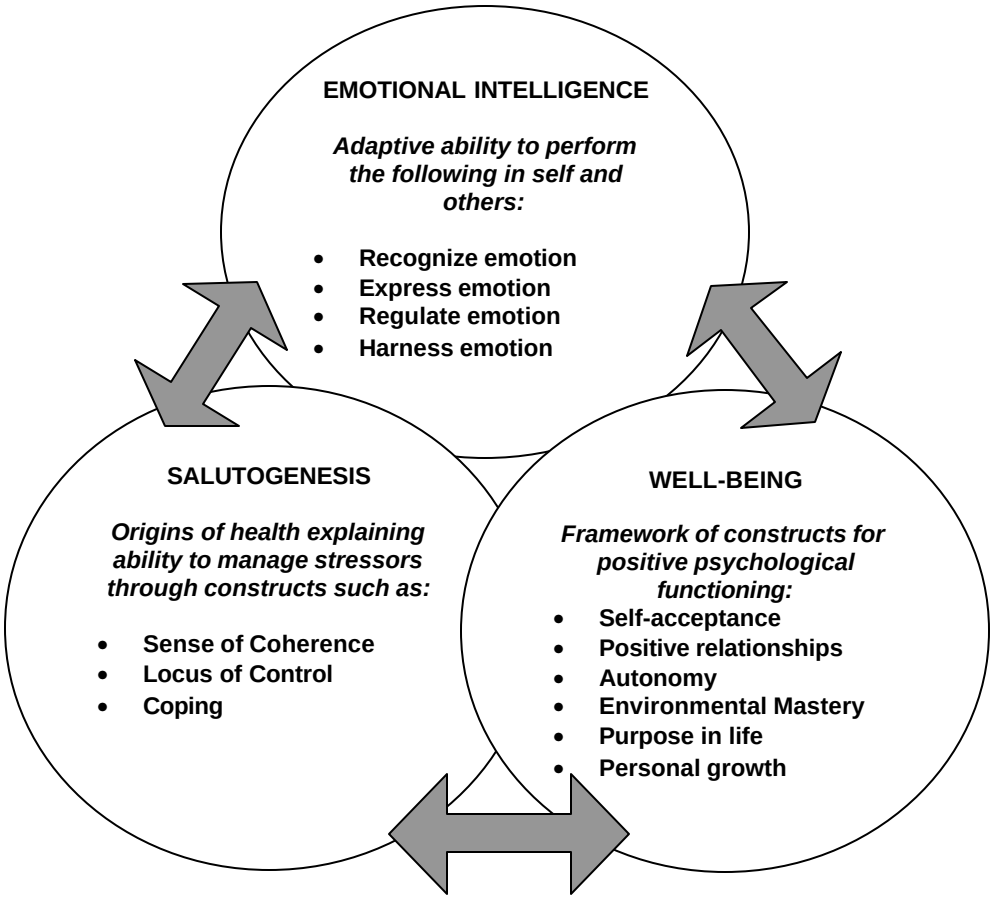
In conclusion, Ryff's (1985) framework, incorporates multiple converging aspects of psychological functioning from diverse mental health, clinical, and life span developmental theories into an integrated whole - one of the few theory-based (as opposed to measure-based) attempts at doing so. Due partly to its integrated nature, this multi-dimensional model is generally considered one of the most comprehensive conceptualizations of adult positive psychological well-being (Keyes & Waterman, 2003) in the literature today.

3.3 CONCEPTUAL INTEGRATION OF EMOTIONAL INTELLIGENCE, SALUTOGENESIS AND WELL-BEING

Given the focus of this study on the construct validity of a measure of emotional intelligence from a wellness perspective, this section will focus on integrating the literature review of emotional intelligence with that of salutogenesis and psychological well-being respectively. The aim of this integration is to illustrate the conceptual links between emotional intelligence and wellness (as detailed in this study through contributions from salutogenic constructs and psychological well-being) to investigate the construct validity of a measure of emotional intelligence from a wellness perspective.

These conceptual links are illustrated in Figure 3.1, and elaborated upon in the discussion that follows.

Figure 3.1: Conceptual integration of Emotional Intelligence, Salutogenesis and Well-being



3.3.1 Emotional intelligence and salutogenesis

The following theoretical linkages between emotional intelligence and salutogenesis are presented in support of including the salutogenic constructs of locus of control, sense of coherence and coping in this investigation of the EIS' construct validity from a wellness perspective:

- Since the EIS by Schutte et al. (1998), which forms the subject of this study, is based on Salovey and Mayer's (1990) model of emotional intelligence, it was explained in chapter two that their conceptualization would be adopted in this study. In this ability model of emotional intelligence, Salovey and Mayer (1990) defined the construct as

the ability to adaptively recognize emotion, express emotion, regulate emotion, and harness emotions in the self and others. The salutogenic paradigm focuses on the origins of health in general, and an individual's ability to cope with multiple stressors in everyday life in particular (Antonovsky, 1979). In the theory of emotional intelligence, emotions could be considered internal or external environmental stressors that present the individual with particular challenges regarding their constructive management. The potentially negative effects of poorly managed emotions in all spheres of life are well-documented (see Matthews et al., 2002). These life spheres or settings include the work setting (Caruso & Wolfe, 2001), physical health (Salovey, 2001), mental health (Taylor, 2001) and intimate relationships (Fitness, 2001). Therefore it follows that those individuals with higher emotional intelligence would be better able to manage emotional stressors in everyday life, and still cope well and stay psychologically healthy, i.e. maintain a positive level of salutogenic functioning.

- Salovey and Mayer's (1990) definition reflects the importance of an individual's adaptive coping with emotions in the self and others. Salutogenesis acknowledges that humans are continually bombarded with stressors and traumatic experiences, and that healthy psychological functioning is incorporated in an individual's capacity to successfully cope with these stresses on an ongoing basis. This acknowledgement of a form of adaptive coping by the salutogenic paradigm further strengthens the conceptual link between emotional intelligence and salutogenic functioning.

- The incorporation in Salovey and Mayer's (1990) definition of the ability to harness emotion in the self and others is related to the salutogenic model's rejection of the commonly held assumption that stressors are inherently bad (Antonovsky, 1979, 1984a), in favour of the "possibility that stressors may have salutory consequences (Antonovsky & Bernstein, 1986, p. 53). While emotions may take the form of stressors in ourselves or the environment, they also present an opportunity for healthy or salutogenic growth.

- Salutogenesis' concept of general resistance resources (GRR's) (Antonovsky, 1979; 1987) described as any characteristic of the person, group, subculture or society that facilitates avoiding or combating a wide variety of stressors, is also related to emotionally intelligent functioning. This is because Salovey and Mayer's (1990) conceptualization reflects the construct's existence as an ability or characteristic of the person or individual that facilitates the avoidance of a number of negative outcomes related to dysfunctional emotional functioning.

- As with the "health/disease continuum" (Antonovsky, 1987, p. 3) of salutogenesis, emotionally intelligent functioning is conceptualized in terms of a continuum (Matthews et al., 2002). This requires doing away with the dichotomy of people being either diseased or healthy, or entirely emotionally intelligent or unintelligent, and implies that an individual will function between the two poles of complete emotional intelligence and complete lack of emotional intelligence.

- Rotter's (1966) description of the salutogenic construct of locus of control has definite conceptual links to emotional intelligence. The belief that one can control what happens to one from an emotional perspective (either originating from the self or others) is not only indicative of high emotional intelligence, but also relates to having an internal locus of control (internals). Those who view their successful handling of emotional stimuli or stressors as a function of luck, fate, or powerful others, are not only likely to have lower levels of emotional intelligence, but will also likely display an external locus of control (externals). Therefore, according to Broedling's (1975) view, internals would feel in control of emotions affecting them, while externals would likely feel that emotional events and their outcomes are beyond personal influence.

- All three of its constituent dimensions, as well as the overall definition of Antonovsky's (1987) concept of sense of coherence, reflect a theoretical link with emotionally intelligent functioning. Overall, individuals with a higher level of emotional intelligence should feel more confident that their own and others' emotional responses are predictable and that there is a high probability that

emotionally-charged situations will work out as well as can reasonably be expected. So too, it could be expected that a more emotionally intelligent individual would perceive the emotional stimuli from themselves and others as structured and predictable (comprehensibility), they will perceive that their own resources available to meet these emotional demands are sufficient (manageability), and they will also feel that these emotional demands and challenges are worth spending their energy on (meaningfulness).

- Coping is the salutogenic construct investigated in this study that possibly displays the strongest conceptual link with emotionally intelligent behaviour. Coping's definition as an individual's cognitive and behavioural efforts to manage (reduce, minimize, master, or tolerate) the internal and external demands of the person-environment transaction that is appraised as taxing or exceeding the person's resources (Folkman et al., 1986) can clearly be applied to emotional stressors. Individuals faced with emotional stimuli from themselves or others are more likely to manage these in an emotionally intelligent way if they have stronger coping capabilities. In particular, emotion-focused coping (Folkman & Lazarus, 1980; Larazus & Folkman, 1984), is related to how well an individual can manage or respond to challenges on an emotional level.

3.3.2 Emotional intelligence and psychological well-being

The following theoretical links between emotional intelligence and psychological well-being are presented in support of investigating the EIS' construct validity from a wellness perspective:

- Holding positive attitudes toward oneself emerged as a central characteristic to positive psychological functioning in Ryff's (1989) review of literature on the subject. This dimension of wellness partly involves acknowledging and accepting multiple aspects of self, that include being comfortable with acknowledging, expressing and

managing the emotional aspect of the self – an important aspect of emotional intelligence (Salovey & Mayer, 1990).

- Warm, trusting interpersonal relations is an important component of psychological well-being (Ryff, 1989). The ability to have strong feelings of empathy and affection for all humans, and being capable of greater love, the achievement of close unions, deeper friendship and more complete identification with others are all key (Allport, 1961; Erikson, 1959; Maslow, 1968). It follows therefore, that individuals with greater psychological well-being would also be in a better position to cultivate positive emotional relationships with themselves (through emotional self awareness) and others (through empathy) – an ability which also denotes higher levels of emotional intelligence.

- The possession of an internal locus of evaluation, whereby one does not look to others for approval, but evaluates oneself by personal standards and is able to resist social pressures to act in certain ways reflects the autonomy dimension in the structure of psychological well-being (Ryff, 1989). In a society where different genders, age groups and even cultures are expected to express and manage emotions in predetermined ways (Matthews et al., 2002), e.g. men are socialized to internalize emotion in most situations, more emotionally intelligent individuals will, for example, likely display higher levels of autonomy in their emotional expression and management by resisting these social pressures in the interest of enhancing their psychological well-being.

- Ryff (1989) describes the person's ability to choose or create environments suitable to their psychic conditions, and the ability to manipulate and control complex environments, as the environmental mastery component of psychological wellness. Emotionally intelligent individuals are better able to manage their emotional environments, both intra- and interpersonally, and could therefore be considered to possess higher levels of environmental mastery on an emotional level.

- Jahoda (1958) defined mental health to include beliefs that give one the feeling there is purpose in and meaning to life and one who is psychologically well has goals, intentions, and a sense of direction, all of which contribute to the feeling that life is meaningful (Ryff, 1989). This sense of purpose is reflected in emotionally intelligent individuals who are more likely to identify purpose and meaning in their emotional functioning, as opposed to less emotionally intelligent individuals who may have difficulty understanding the purpose of emotions in themselves and others (Matthews et al., 2002).

- Optimal psychological well-being requires that an individual continues to develop their potential, to grow and expand as a person (Ryff, 1989), to self-actualize (Maslow, 1968) and be open to experience (Rogers, 1961). Emotional intelligence literature has increasingly indicated the development and growth potential of emotional intelligence (Caruso & Wolfe, 2001), implying together with the numerous benefits of being more emotionally intelligent (e.g. Cooper & Sawaf, 1997; Gates, 1995; Megerian & Sosik, 1996; Moriarty & Buckley, 2003) that personal growth from an emotional expression, management and regulation perspective is not only possible, but highly desirable to enhance positive psychological functioning and well-being in general as well as in the work context.

The above literature review provides strong evidence for the hypothesis that emotional intelligence is conceptually related to wellness as conceptualized through salutogenic constructs in particular and psychological well-being in general.

3.4 CHAPTER SUMMARY

The salutogenic paradigm was described in terms of its development, description and core constructs. Thereafter, past and present thinking on the structure of psychological well-being was presented. These literature findings were integrated with the concept of emotional intelligence, supporting this study's investigation of the EIS's construct validity from a wellness perspective.

Herewith the second literature aim is accomplished. In chapter 4 the empirical study will be presented.

CHAPTER 4

METHODOLOGY

The aim of this chapter is to focus on steps 1 to 5 of the empirical study, as described in chapter 1. This involves outlining the empirical method utilised in this study. Firstly an overview of the study's population and sample is presented. The measuring instruments will be discussed and the choice of each justified, followed by a description of the data gathering and processing. An operational review of the problem will be related, the research hypotheses will be stated, and the chapter will end with a chapter summary.

4.1 POPULATION AND SAMPLE

This research project was conducted at a South African Information Technology (Software Development) organization, employing a total of 240 employees, which formed the population of this study.

The organization's operations are organized in a team-based structure. Since this necessitates increased interpersonal interaction between staff members (and consequently increased emotional demands on individuals), this organization was considered an ideal population for the study of Emotional Intelligence.

The entire population of 240 staff members represented a non-random sample of convenience. Of these, 121 voluntarily completed the measuring instruments. Responses for three participants had to be discarded due to various sections of the questionnaires being incomplete, bringing the final sample to 118 respondents (N= 118).

4.2 MEASURING INSTRUMENTS

For the purpose of this research, four questionnaires were used, namely the EIS (Schutte et al., 1998), Sense of Coherence Scale (Antonovsky, 1987), Work Locus of Control Scale (Spector, 1988) and the COPE Scale (Carver, Scheier & Weintraub, 1989). The three latter questionnaires were used to measure wellness-related concepts as described in Chapter 3. A biographical data form was used to collect sample data of gender, tenure, job level and age (see Appendix A).

Each of the four questionnaires used are described below in terms of the following:

- Aim and rationale
- Administration and interpretation
- Reliability and validity
- Justification for inclusion

4.2.1 The Emotional Intelligence Scale (EIS)

Since the general empirical objective of this study is the investigation of the EIS's construct validity, a comprehensive description of its general and technical characteristics was detailed as part of the literature conceptualisation of emotional intelligence (Chapter 2). A summarized version of this description is provided below.

4.2.1.1 Aim and rationale

The EIS is a 33-item self-report measure of the ability to adaptively recognize, express, regulate and harness emotions in the self and others (Schutte et al., 1998). The authors

used Salovey and Mayer's (1990) model of emotional intelligence to generate an initial pool of 62 items. On the basis of a factor analysis, which generated one strong factor, the final 33 scale items were selected. These items, which were the ones with the highest loading on the first factor, represented all dimensions of Salovey and Mayer's (1990) model (Schutte & Malouff, 1998).

4.2.1.2 Administration and interpretation

Respondents are required to respond to each of 33, 5-point Likert-type items. On the 5-point scale, a "1" represents "strongly disagree", and a "5" represents "strongly agree", to indicate to what extent each item describes the respondents. Three items (5, 28 and 33) are formulated in the negative, and have to be reverse scored. All the items are added to form the total score. High scores on the EIS represent high levels of overall emotional intelligence. Such a person will have greater ability to adaptively recognize, express, regulate, and harness emotion in the self and in others (Schutte & Malouff, 1998).

4.2.1.3 Reliability and validity

Since the EIS forms the subject of this study, a detailed overview of its development and psychometric properties is provided in the literature review (chapter 2). A brief summary of the relevant findings regarding reliability and validity is provided below.

Although extensive studies have not yet been done to support the validity and reliability of the EIS, some promising initial evidence does exist. Moreover, the purpose of this study is to broaden the body of knowledge around the validity of the EIS from a wellness perspective.

In their study of the development and validation of the EIS, Schutte et al. (1998) tested the scale's internal consistency reliability, resulting in a Cronbach's alpha of 0.90 and two-week test-retest reliability of 0.78. In a study investigating the construct validity of

the EIS, Schutte et al., (1998) found that higher scores on the 33-item EIS were associated with less alexithymia (flat emotional affect), greater attention to feelings, greater clarity of feelings, greater optimism and less depression.

In a study investigating the EIS's predictive criterion-related validity, Schutte et al. (1998) found that university students' cumulative end-year grade point averages were statistically significantly correlated with their EIS scores derived at the start of the academic year.

4.2.1.4 Justification for inclusion

As indicated in chapter 2, determining to what extent emotional intelligence is measurable, is pivotal to a scientific account of the construct (Matthews et al., 2002). Despite promising initial evidence of the psychometric properties of the EIS (Schutte et al., 1998), further investigation, particularly into its construct validity, is essential for the measure to enjoy widespread use in a variety of organizational contexts. In particular, more information is required to motivate its use in a workplace context, and in the South African environment. This study focuses specifically on its construct validity from a wellness perspective, by investigating its relationship with the conceptually-related salutogenic constructs of locus of control, sense of coherence and coping.

4.2.2 The Sense of Coherence Scale (SOCS)

Antonovsky's (1987) Sense of Coherence Scale was used to measure sense of coherence in this study.

4.2.2.1 Aim and rationale

The aim of this questionnaire is to measure sense of coherence in a total score, as well as its three dimensions, namely comprehensibility (seeing the world as structured and predictable), manageability (believing that the individual has adequate personal and social resources to meet the environmental demands and circumstances) and meaningfulness (feeling that it is worthwhile to try to cope actively within stressful circumstances). A high total score represents a strong sense of coherence. High scores in the three dimensions are seen as supportive to the total score and indicate a high level of behaviour according to the above descriptions (Antonovsky, 1987).

4.2.2.2 Administration and interpretation

The respondent is required to answer each of 29, seven-point Likert-type items on the questionnaire. Thirteen items are formulated in the negative and have to be reverse-scored. All the items are added to form the total sense of coherence score. Eleven items (1, 3, 5, 10, 12, 15, 17, 19, 21, 24, 26) measure comprehensibility, ten manageability (2, 6, 9, 13, 18, 20, 23, 25, 27, 29) and eight meaningfulness (4, 7, 8, 11, 14, 16, 22, 28).

High scores indicate high levels of overall sense of coherence as well as high levels of functioning on the three dimensions (comprehensibility, manageability and meaningfulness). Such an individual will experience life and its challenge as comprehensible, will be able to manage the demands of coping with them, and will be able to find the coping emotionally meaningful.

4.2.2.3 Reliability and validity

Antonovsky (1993) lists evidence from studies conducted in 20 countries for the reliability of this scale. In 26 studies using the 29-item scale, the Cronbach alpha measure of internal consistency ranged from 0.82 to 0.95. South African studies using the measure have reported Cronbach alpha coefficients of 0.85 (Kossuth, 1998) and 0.89 (Basson & Rothmann, 2001). Radmacher and Sheridan (1989) reported test-retest reliability coefficients of 0.91 after six weeks, 0.76 after one year and 0.55 after two years. Fiorentino (1986) reported a test-retest reliability coefficient of 0.78 after one year.

Antonovsky (1993) investigated the face- and content validity of the measure by having each item in the instrument analysed by three of his colleagues, familiar with the theory, therefore confirming the inclusion of each item as relevant to the conceptualization of sense of coherence. Construct validity of the instrument has been found to vary between 0.38 and 0.72 (Antonovsky, 1993). Dana, Hoffman, Armstrong and Wilson (1985) reported favourably on the instrument's concurrent criterion-related validity, while Strümpfer and Wissing (1999) provide further confirmatory evidence of its reliability and validity in various South African studies.

4.2.2.4 Justification for inclusion

Proven both reliable and valid, the questionnaire is universally accepted as a measurement instrument of the sense of coherence construct, and is based upon a very distinguished theoretical framework that has been empirically tested within the salutogenic framework (see chapter 3).

4.2.3 The Work Locus of Control Scale (WLOC)

4.2.3.1 Aim and rationale

The Work Locus of Control Scale (WLCS) is a 16-item instrument designed to assess control beliefs in the workplace (Spector, 1988). The aim of the scale is to measure the extent to which an individual feels they are in control of work-related outcomes. It is a domain-specific locus of control scale, that correlates about 0.50 to 0.55 with general locus of control (Spector, 1988).

4.2.3.2 Administration and interpretation

The format of the scale is summated rating on a Likert-type scale with six responses, ranging from “disagree very much” to “agree very much”, scored from 1 to 6 respectively. Total score is the sum of all items, and ranges from 16 to 96. The scale is scored so that respondents with an external work locus of control receive high scores, and respondents with an internal work locus of control receive low scores. The WLCS has half of its items written in each direction – external and internal – and the internally worded items (1, 2, 3, 4, 7, 11, 14, 15) must be reverse scored before summing.

4.2.3.3 Reliability and validity

Internal consistency (coefficient alpha) ranges from 0.80 to 0.95 in the English language version, with an average of 0.83 in 35 samples comprising 4775 diverse participants from numerous countries (Spector, 1988). Test-retest reliability for a year was reported as 0.57 by Bond and Bunce (2003), and 0.60 by Moyle (1995) with samples from the work context. The scale has been shown to be related to several work variables, including job performance (Blau, 1993), job satisfaction (Fleury, Opperman & Postemski, 1992, Mingote, 1995) and organizational commitment (Coleman, Irving & Cooper, 1999).

Scores on the scale have also been found to relate to counter-productive behaviour such as burnout (Graham, 1993), and to organizational climate (Furnham & Drakeley, 1993).

4.2.3.4 Justification for inclusion

The WLCS is a very well-used and accepted domain-specific measure of the locus of control construct. Since this study focuses on wellness in the Industrial-Organizational context, the use of a work-related measure of locus of control is justified. Combined with the measure's solid psychometric properties (Spector, 1988, 1992) and frequent use for research purposes, this provides sufficient motivation for its inclusion in this study.

4.2.4 The COPE Scale

4.2.4.1 Aim and rationale

The COPE is a multi-dimensional 53-item coping questionnaire that indicates the common strategies people use to cope with stressors in different circumstances (Carver et al., 1989). This theoretically-guided coping measure assesses 14 different coping strategies.

Five sub-scales (four items each) measure different aspects of problem-focused coping:

- Active coping (taking action or exerting efforts to remove or circumvent the stressor)
- Planning (thinking about how to confront the stressor; planning one's active coping efforts)
- Suppressing of Competing Activities (suppressing one's attention to other activities in which one might engage in order to concentrate more completely on dealing with the stressor),

- Restraint Coping (coping passively by holding back one's coping attempts until they can be of use)
- Seeking Social Support for Instrumental Reasons (seeking assistance, information or advice about what to do).

Five sub-scales (four items each) measure aspects of emotion-focused coping:

- Seeking Social Support for Emotional Reasons (getting emotional support or sympathy/empathy from someone)
- Positive Reinterpretation and Growth (making the best of the situation by growing from it or viewing it in a more favourable light)
- Acceptance/ Resignation (accepting the fact that the stressful event has occurred and is real)
- Denial (a psychological attempt to reject the reality of the stressful event)
- Turning to Religion (increased engagement in religious activities).

Four sub-scales indicate coping responses that are used less commonly:

- Focus on Venting of Emotions (an increased awareness of one's emotional distress, and a concomitant tendency to ventilate or discharge those feelings)
- Behavioural Disengagement (giving up, or withdrawing effort from, the attempt to attain the goal with which the stressor is interfering)
- Mental Disengagement (psychological disengagement from the goal with which the stressor is interfering, through day-dreaming, sleep, or self-distraction)
- Alcohol-drug Disengagement (turning to the use of alcohol and other drugs as a way of disengaging from the stressor).

Of these coping strategies, the five emotion-focused dimensions (Focus on Venting Emotions, Seeking Social Support for Emotional Reasons, Acceptance, Denial, and Positive Reinterpretation and Growth) are investigated in this study due to their theoretical relation to the concept of emotional intelligence.

4.2.4.2 Administration and interpretation

The 53-item COPE scale requires respondents to rate the degree to which they use a each coping strategy to deal with a particular stressful event. Ratings are made on a 4-point Likert-type scale that ranges from 1 (“I usually don’t do this at all”) to 4 (“I usually do this a lot”). Scores are obtained for each of the sub-scales/ dimensions, and no overall score is generated for the scale.

4.2.4.3 Reliability and validity

Carver et al. (1989) reported Cronbach alpha coefficients varying from 0.45 to 0.92, with all the sub-scales analysed for this study reporting acceptable alpha coefficients (α > 0.70) (Nunnally, 1978). Test-retest reliability varies from 0.46 to 0.86 and 0.42 to 0.89 (applied after two weeks), and the scale has produced strong evidence of discriminant and convergent validity, with constructs such as hardiness, optimism, control, and self-esteem.

4.2.4.4 Justification for inclusion

The scale’s theoretically grounded development (Carver et al., 1989), and its specific stipulation of emotion-focused coping strategies (along with traditional, problem-focused strategies), make it relevant to this investigation of the relationship between emotional intelligence and coping. The COPE also displays sound psychometric properties, and has formed the basis of numerous studies on coping, including some in the South African context.

4.3 DATA COLLECTION

For two weeks leading up to the commencement of the study, it was advertised on the organization's Intranet front page, at the Human Resource Forum meeting, at the Management meeting, and at various departmental meetings. In addition, all staff members were invited to participate in the study via e-mail. Potential participants indicated their interest via e-mail.

Data collection sessions of approximately 45 minutes each were scheduled around lunchtimes to minimize work disruption, and staff members who indicated interest in participating were calendar booked via e-mail to attend (8-10 staff members per session). At the beginning of each session, the administrator explained the purpose of the study and provided verbal instructions for completion of the questionnaires.

Each participant received a set of questionnaires, including detailed instructions for the completion of each measure. Respondents who wanted to receive individual feedback on their results were invited to indicate their names on their questionnaire sets. While those participants who wished to remain anonymous were instructed to leave this field blank.

Respondents placed their completed questionnaires in a central data collection box to ensure anonymity for those who requested it.

4.4 DATA PROCESSING AND ANALYSIS

Responses to each of the measures were coded, scored (including reverse scoring where applicable) and captured onto a Microsoft Excel spreadsheet in the first instance.

Formulas were used to calculate the overall scores and (where applicable) total scores for dimensions/ sub-scales, as follows:

- Emotional Intelligence Scale – an overall score was calculated
- Sense of Coherence Scale – an overall score was calculated, as well as a score for each of the sub-scales of sense of coherence (comprehensibility, manageability and meaningfulness)
- Work Locus of Control Scale – an overall score was calculated
- COPE Scale – a total score was calculated for each of the 5 emotion-focused coping strategies measured by the instrument. Because not all the dimensions were measured by an equal number of items, an average score (on a scale of 1 to 4) was calculated for each dimension (total score divided by the number of items) to facilitate statistical analysis.
- Biographical questionnaire – the dimensions of gender, age, tenure and level were coded and captured.

After initially capturing data in Microsoft Excel spreadsheet format, the results were imported to the SPSS (SPSS Inc., 1998) and GPOWER (Erdfelder, Faul & Buchner, 1996) statistical software programmes for analysis. A variety of statistical methods were utilized in this study to test the hypotheses outlined in section 4.2 of this chapter. Additional analyses were also conducted to further enhance some of the findings. These are detailed below.

4.4.1 Internal consistency reliability analysis

Apart from the hypothesis-testing data analysis reported hereafter, the Cronbach alpha reliability coefficient (Lemke & Wiersma, 1976) was calculated for the EIS due to its hereto limited use in the South African context. Defined as the instrument's accuracy or precision (Kerlinger, 1986), the reliability of the EIS is an important psychometric property that determines the overall utility of the measure.

A Cronbach alpha coefficient of between 0.50 and 0.60 is sufficient for basic research purposes (Nunnally, 1978; Stevens, 1992), while coefficients of 0.80 and higher are considered ideal.

4.4.2 Pearson product moment correlations

Kerlinger (1986, p. 63) describes this correlation as being based upon the concomitant variation of the members of an ordered pair set. If these covary (vary together), for example high values with high values and low values with low values, a positive relationship exists. A negative relationship exists if high values covary with low values or vice versa (Howell, 1999).

The use of this correlation indicates the intensity of the relationship between paired values of the two characteristics being measured (Winer, 1971). This statistic varies from –1 (a perfect negative linear relationship) through zero (no linear relationship) to +1 (a perfect positive linear relationship) (Bohrenstedt & Knoke, 1988). Suppose the correlation is negative between two scales, it means that the higher scores on one scale, the lower the scores tend to be on the other scale. If the correlation is positive, then the higher the scores on one variable, the higher the scores on the other variable tend to be.

In this study, Pearson's product moment correlation coefficient was used to test hypotheses regarding relationships (positive or negative) between scores on the EIS, and other wellness-related constructs (e.g. Sense of Coherence, Locus of Control and Coping).

4.4.3 t-Test analysis

The t-test is a statistical technique used to determine significant differences between two sample means (Howell, 1999). For the purposes of this study, t-tests were used to determine statistically significant differences between groups of participants on the basis of gender (i.e. whether male or female participants reported higher levels of emotional intelligence) and organizational level (i.e. whether participants in supervisory or staff level positions display higher levels of emotional intelligence).

4.4.4 Analysis of Variance (ANOVA)

Although not the primary aim of this study, sub-samples, such as for example respondents from different age categories, were compared with regard to their mean scores on the EIS.

The analysis of variance deals with differences between sample means, but unlike the t-test, it has no restriction on the number of means (Howell, 1999). As the EIS measures the construct of emotional intelligence on a continuous scale, and scores are assumed to be normally distributed in the population, one-way analysis of variance tests (Kerlinger, 1986; Winer, 1971) were computed to determine whether differences between the groups regarding their mean scores on the EIS (the dependent variables) were statistically significant. The various groups which were compared in this way, and that serve as independent variables for this analysis, are the following:

- Groups of different age levels,
- Groups with different levels of tenure.

4.4.5 Power and effect size calculations

Statistical power refers to the probability of finding statistical significance when the hypothesis being tested is true, while effect size indicates the practical significance of a statistical analysis result (Cohen, 1988). To determine the practical significance and utility of the correlations, t-tests and analyses of variance, power and effect sizes were also calculated and interpreted for each of the statistically significant results produced by these analyses.

4.5 OPERATIONAL REVIEW OF THE PROBLEM

As the problem was outlined in chapter one, and the variables were integrated via theoretical review in chapter three, it will merely be stated here for operational reasons. The generic objective is to investigate the construct validity of the EIS from a wellness perspective.

Kerlinger (1986, p. 16) outlines the criteria for a complete problem statement. These entail a clear and unambiguous expression of the relationship between two or more variables, which imply empirical investigation.

The general research question that requires further research is as follows:

Does the EIS display construct validity when correlated with:
Sense of Coherence, Locus of Control, and Coping?

There are several sub-hypotheses related to this statement, particularly to depict the relationship between emotional intelligence and dimensions of sense of coherence, locus of control and specific emotion-focused coping strategies. These will be outlined in the next section of this chapter. Furthermore, individual demographic aspects and organizational related variables are also reviewed in the context of emotional intelligence to enhance the understanding of this last mentioned concept.

4.6 HYPOTHESES OF THE STUDY

Kerlinger (1986, p. 17) states that a hypothetical statement should meet the criteria of depicting a relationship which can be empirically tested. Based on the literature review in the previous chapters, the following sets of hypotheses are formulated.

4.6.1 Hypotheses related to Emotional Intelligence and Sense of Coherence

This first set of hypotheses is related to Emotional Intelligence, as measured by the EIS, and Sense of Coherence, to achieve the general objectives of this study.

Sub-hypotheses can be outlined as follows:

H1: There is a statistically significant positive relationship between Emotional Intelligence and overall Sense of Coherence (SOC).

H2: There is a statistically significant positive relationship between Emotional Intelligence and the SOC dimension of Comprehensibility.

H3: There is a statistically significant positive relationship between Emotional Intelligence and the SOC dimension of Manageability.

H4: There is a statistically significant positive relationship between Emotional Intelligence and the SOC dimension of Meaningfulness.

4.6.2 Hypothesis related to Emotional Intelligence and Locus of Control

The hypothesis related to the relationship between these constructs can be depicted as follows:

H5: There is a statistically significant negative relationship between Emotional Intelligence and External Locus of Control.

4.6.3 Hypotheses related to Emotional Intelligence and Coping

The hypotheses related to the relationship between these constructs can be depicted as follows:

H6: There is a statistically significant positive relationship between Emotional Intelligence and the Coping strategy/ dimension of Acceptance.

H7: There is a statistically significant positive relationship between Emotional Intelligence and the Coping strategy/ dimension of Seeking Support for Emotional Reasons.

H8: There is a statistically significant positive relationship between Emotional Intelligence and the Coping strategy/ dimension of Focus on Venting Emotions.

H9: There is a statistically significant positive relationship between Emotional Intelligence and the Coping strategy/ dimension of Positive Reinterpretation and Growth.

H10: There is a statistically significant negative relationship between Emotional Intelligence and the Coping strategy/ dimension of Denial.

4.6.4 Hypotheses related to individual and organizational demographic characteristics, and Emotional Intelligence

Here the objective is to verify trends in emerging research, in a South African organization. Hypotheses related to these components are:

H11: Female participants display statistically significantly higher levels of Emotional Intelligence (Gender).

H12: Participants in Supervisory positions display statistically significantly higher levels of Emotional Intelligence (Level).

H13: Older participants display statistically significantly higher levels of Emotional Intelligence (Age).

H14: Participants who have been with the organization longer display statistically significantly higher levels of Emotional Intelligence (Tenure).

4.7 CHAPTER SUMMARY

This chapter commenced with an operational review of the research problem, followed by a description of the study's population and sample. Thereafter the measuring instruments were discussed (including a justification of each measure's inclusion) followed by an overview of the data collection and data analysis processes. The chapter concluded with a description of the study's hypotheses.

In chapter 5, the results of the empirical study will be reported and interpreted.

CHAPTER 5

RESULTS

This aim of this chapter is to focus on step 6 of the empirical study, as described in chapter 1. This involves reporting and interpreting the results of the statistical analysis, as generated by the SPSS (SPSS Inc., 1998) and GPOWER (Erdfelder et al., 1996) statistical software programmes. These results are aligned to the research methodology discussion of the previous chapter.

First, the biographical composition of the sample is presented, then a brief, univariate description of the study's variables is provided. The reliability analysis of the measurement scales will be reported and interpreted. Thereafter, the results of the hypotheses testing are provided, followed by an interpretation of the power of the study. The chapter ends with an integration of the results and a chapter summary.

5.1 BIOGRAPHICAL DATA

The biographical data will be presented for gender, age, tenure and level.

5.1.1 Gender distribution of the sample

Table 5.1 illustrates the gender distribution of respondents.

Table 5.1: Gender distribution of the sample

GENDER	N	PERCENTAGE OF SAMPLE
Male	65	55%
Female	53	45%
	N = 118	*100%*

Of the total sample, 55 percent comprised male respondents. This distribution is not representative of the natural demographic of the population, since the organization employs approximately 71% males and 29% females. Given that the sampling technique employed was one of convenience, it follows that females employees participated more readily in this study than their male colleagues. A possible reason for this could be the nature of the study's topic. Female employees may have traditionally been socialized to be more aware and accepting of their emotional functioning, making it more socially acceptable for females to participate in a study that focuses on the measurement of one's emotional intelligence.

5.1.2 Age distribution of the sample

Table 5.2 illustrates the age distribution of respondents.

Table 5.2: Age distribution of the sample

AGE	N	PERCENTAGE OF SAMPLE
20 – 24 years	11	9.2%
25 – 29 years	46	39.1%
30 – 34 years	37	31.3%
35 – 39 years	14	12.0%
40 – 44 years	4	3.2%
45 – 49 years	4	3.1%
50 years or older	2	2.1%
	N= 118	*100%*

This distribution implies that the greatest portion of the sample (70.4%) is between the ages of 25 and 34 years of age. The remaining 29.6% is made up of employees

between the ages of 20 – 24 years, or 40 years and older. The breakdown reflects the organization's relatively young workforce, having been in existence for only 7 years after its formation by a group of entrepreneurs in their late teens and early twenties.

5.1.3 Tenure distribution of the sample

Table 5.3 illustrates the tenure distribution of respondents.

Table 5.3: Tenure distribution of the sample

TENURE	N	PERCENTAGE OF SAMPLE
Less than 1 year	13	11.1%
1 year – 1 year 11 months	19	16.4%
2 years – 2 years 11 months	38	32.1%
3 years – 3 years 11 months	25	21.0%
4 years or more	23	19.4%
	N = 118	*100%*

As the above table indicates, the majority of respondents (53.1%) have been employed by the organization for between 2 and 4 years. The longest tenure category of 4 years or more followed (19.4%), while the remaining 27% have been working for their current employer for less than 2 years.

5.1.4 Job level distribution of the sample

Table 5.4 illustrates the distribution of respondents according to their job level.

Table 5.4: Job level distribution of the sample

JOB LEVEL	N	PERCENTAGE OF SAMPLE
Staff	73	62%
Supervisory	45	38%
	N = 118	*100%*

Of all respondents, 62% are employed in staff level positions, while the remaining 38% function in supervisory (either team leader or head of department) roles at the sample organization.

5.2 UNIVARIATE PRESENTATION OF VARIABLES

The descriptive data for the study's variables and their subscales is depicted in Table 5.5 below, with a discussion of these results in the sections that follow.

Table 5.5: Descriptive analysis of data (N = 118)

VARIABLE	MIN SCORE	MAX SCORE	MEAN	STANDARD DEVIATION
Emotional Intelligence	74	160	127.74	.97
Sense of Coherence	68	192	142.69	22.85
Comprehensibility	6	70	46.70	10.54
Manageability	7	68	49.86	11.22
Meaningfulness	18	56	44.33	7.42
Work Locus of Control	16	69	33.05	10.33
Active Coping	1.75	4	3.17	.50
Planning	1.75	4	3.35	.55
Suppressing Competing Activities	1	3.75	2.59	.56
Restraint Coping	1.25	4	2.77	.63
Seeking Support for Instrumental Reasons	1	4	2.91	.65
Seeking Support for Emotional Reasons	1	4	2.53	.85
Positive Reinterpretation and Growth	1.5	4	3.25	.60
Acceptance	1.25	4	3.10	.85
Turning to Religion	1	4	2.35	1.01
Focus on Venting Emotions	1	3.75	2.25	.74
Denial	1	2.5	1.23	.37
Behavioural Disengagement	1	3	1.36	.45
Mental Disengagement	1	3.25	2.06	.52
Alcohol/Drug Disengagement	1	3	1.29	.60

Note: Items printed in Italics refer to sub-scales of major variables.

The final fourteen items (in Italics) are subscales of the COPE scale, and represent the different coping strategies measured by the instrument.

5.2.1 Emotional Intelligence

Based on the mean emotional intelligence score of 127.74, respondents in this study averaged a score of 3.87, on the measure's scale of 1 to 5. This result indicates that, on average, the participants in this study display above average emotional intelligence. This finding may reflect the fact that the sample organization's structure reflects project-based grouping of individuals, thereby requiring employees to develop strategies to interact effectively on an emotional level. Another factor that may contribute to this result is the company's training and development strategy that emphasizes the development of effective interpersonal skills (including an individual and group programme for increasing emotional intelligence). It is also worth noting that this above average level of emotional intelligence may also be a reflection of the sampling technique (i.e. non-random sample of convenience), indicating that mostly those employees with above average emotional intelligence opted to participate in the study. The utilisation of a random sample may have resulted in a lower overall level of emotional intelligence.

While the scale lacks normative data from the South African context, an American study by Schutte et al. (1998) produced a similar mean score of approximately 3.9 amongst its respondents. Possible scores on this scale range from 33 to 165, and participants in this study scored between 74 and 160.

5.2.2 Sense of Coherence

Total sense of coherence was measured on a scale of 29 to 203, and the scores of participants in this study ranged between 68 and 192. The average total sense of coherence score was 142.69, which is within the range (131.20 to 154.08) of results

from previous studies in the South African context that utilised this measure (Jackson & Rothmann, 2001; Strümpfer & Mlonzi, 2001). This result indicated that participants display a level of sense of coherence corresponding to 4.92 on a scale of 1 to 7 which can be interpreted as an above average overall level of sense of coherence. The sample organization has been in existence for ten years, during which it has implemented numerous structures, procedures and processes that ensure clarity and consistency in its operations. This may have helped enhance the levels of sense of coherence of its employees, compared to those of organizations with a less well defined level of functioning.

The results indicate that participants scored the highest average mean for the sense of coherence dimension of manageability (49.86), and the lowest average mean for the dimension of comprehensibility (46.70). From an organizational perspective, the latter finding may be due to the rapidly changing nature of the sample organization's high technology business operations, while the former could be a reflection of the organization's well-defined structures and procedures.

5.2.3 Locus of Control

On a scale ranging from 16 (high internal locus of control) to 96 (high external locus of control), participants in this study scored on average 33.1 for this dimension, indicating a definite internal locus of control. Locus of control is a variable that has been specifically targeted in the sample organization's career development training, efforts which may be reflected in the relative prevalence of internally oriented employees. Once again, this result may also be a factor of the non-random sample, since individuals with an internal locus of control would be more likely to participate in a study such as this to learn more about themselves and contribute to the development of the overall well-being of the company's employees.

In a cross-national study of work locus of control, Spector et al. (2002) found the average score of participants across three South African samples to be 37.7, while the

mean of all samples across 24 nations/ territories was 40.1, both slightly higher (and therefore slightly more externally oriented) results than those obtained in the present study.

5.2.4 Coping

Based on a scale of 1 (not used at all) to 4 (used a lot), the descriptive analysis indicates that, on average, the coping strategy used most often by respondents is Planning (3.35), followed by Positive Reinterpretation and Growth (3.25). On average, the coping strategy participants use least is Denial (1.23), followed by Alcohol/Drug Disengagement (1.28).

Taking into account Carver et al.'s (1989) distinction between problem-focused (Active coping, Planning, Suppressing Competing Activities, Restraint Coping, Seeking Social Support for Instrumental Reasons) and emotion-focused (Seeking Social Support for Emotional Reasons, Positive Reinterpretation and Growth, Acceptance, Denial, Turning to Religion) coping strategies, the average score for these two categories was calculated for the current study. The result indicated that respondents in this study make more frequent use of problem-focused coping strategies (2.95) than emotion-focused coping mechanisms (2.49).

5.3 RELIABILITY ANALYSIS OF THE MEASURING INSTRUMENTS

Given this study's focus on the psychometric properties of the EIS, which has enjoyed very limited previous application in the South African context, reliability analysis was conducted for all instruments used in the study. Cronbach Alpha coefficients are displayed in Table 5.6 as indices of internal consistency reliability for each of the measures used.

Table 5.6: Cronbach Alpha coefficients (N = 118)

MEASURE	CRONBACH ALPHA
Emotional Intelligence Scale (EIS)	0.91
Sense of Coherence Scale (SOC)	0.91
Work Locus of Control Scale (WLOC)	0.87
COPE Scale	0.81

Given that a Cronbach alpha coefficient of between 0.50 and 0.60 is sufficient for basic research purposes, while coefficients of 0.80 and higher are considered ideal (Nunnally, 1978; Stevens, 1992), the internal consistency of all instruments used in this study can be considered high. In particular these results provide a much needed positive indication of the reliability of the EIS in the South African context (α= 0.91). In addition, they confirm previous findings of encouraging internal consistency for the Sense of Coherence Scale (Basson & Rothmann, 2001; Kossuth, 1998), the Work Locus of Control Scale (Spector, 1988) and the COPE questionnaire (Carver et al., 1989).

5.4 TESTING OF THE STUDY HYPOTHESES

In this section, the results of the statistical techniques used to test the study's hypotheses are presented and interpreted. To interpret the practical significance of the statistical results, Cohen's (1988) guidelines for the interpretation of effect sizes will be applied.

The purpose of calculating and interpreting effect sizes is to determine the practical significance of statistical findings, and to prevent the probability of deducing statistically

significant differences between groups, or relationships between variables, when the size of the effect is very small (Cohen, 1988).

Therefore, where statistically significant results were found for differences between means (t-tests and analyses of variance), d-values will be calculated and interpreted according to the following guidelines:

- d= 0.3 (small effect)
- d = 0.5 (medium effect)
- d = 0.8 (large effect).

Where statistically significant relationships were found through correlation coefficients, r-values (equal to the correlation magnitude) will be interpreted according to the following guidelines:

- r = 0.1 (small effect)
- r = 0.3 (medium effect)
- r = 0.5 (large effect).

5.4.1 Hypotheses related to Emotional Intelligence and Sense of Coherence

The research results of the Pearson product-moment correlation coefficient between Emotional Intelligence and Sense of Coherence (overall and dimensions) are presented in Table 5.7, and discussed thereafter according to the hypothesis statements in section 4.6.1.

Table 5.7: Correlation between Emotional Intelligence and Sense of Coherence (N = 118)

		Sense of Coherence *(Comprehen-sibility)*	**Sense of Coherence *(Manage-ability)***	**Sense of Coherence *(Meaning-fulness)***	**Sense of Coherence *(Total)***
Emotional Intelligence	r p (two-tailed)	.416** .000	.308** .001	.670** .000	.642** .000

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

The results indicate that Emotional Intelligence is positively and statistically significantly related (at the 0.01 level) to total Sense of Coherence (r= .642; p= .000), Comprehensibility (r= 0.416; p= .000), Manageability (r= .308; p= .001), and Meaningfulness (r= .670; p= .000). In terms of the practical significance guidelines provided by Cohen (1988), the relationships between Emotional Intelligence and the Sense of Coherence variables possess effect sizes that vary from medium (Comprehensibility and Manageability) to large (Meaningfulness and total Sense of Coherence). All four hypotheses (H1, H2, H3 and H4) regarding the relationship between Emotional Intelligence and Sense of Coherence (specified in section 4.6.1) are therefore accepted.

The strongest relationship (r= .670) in this group of hypotheses exists between Emotional Intelligence and the Sense of Coherence dimension of Meaningfulness. This relationship is reflected conceptually in the definition of emotional intelligence as encompassing the ability to motivate oneself (Goleman, 1995), the competence to influence one's overall ability to cope with environmental demands (Bar-On, 1997; Bar-On & Parker, 2000), and the ability to harness and regulate emotion in the self and

others (Schutte & Malouff, 1999). Therefore, it follows that individuals with higher emotional intelligence will also be better equipped to positively reinterpret or derive meaning from emotionally charged or challenging situations.

5.4.2 Hypothesis related to Emotional Intelligence and Locus of Control

The result of the Pearson product-moment correlation between Emotional Intelligence and Locus of Control is presented in Table 5.8, and discussed thereafter according to the hypothesis statement in section 4.6.2.

Table 5.8: Correlation between Emotional Intelligence and Locus of Control (N = 118)

		Locus of Control
Emotional Intelligence	r p (2-tailed)	-.245** .008

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

The results indicate that Emotional Intelligence is negatively and statistically significantly related (at the 0.01 level) to external Work Locus of Control (r= - .245; p= .008). In terms of the practical significance guidelines provided by Cohen (1988), the relationship between Emotional Intelligence and Locus of control displays an effect size classified between small and medium. Since the Work Locus of Control Scale is scored so that respondents with an external work-related locus of control receive high scores, this result could also be interpreted to indicate that individuals with higher emotional intelligence would possess higher levels of internal locus of control than those individuals with lower levels of emotional intelligence. The hypothesis (H5) regarding

the relationship between Emotional Intelligence and Locus of Control (specified in section 4.6.2) is therefore accepted.

This finding is congruent with the theoretical conceptualisation of emotional intelligence as the ability to motivate oneself (Goleman, 1995), or the competence to influence one's overall ability to effectively cope with environmental demands (Bar-On, 1997). Since individuals who believe they are in control of the outcomes in their (work-related) lives are considered to have internal loci of control (Rotter, 1966), these individuals would also be expected to be more adept at the self-motivation or coping-related aspects of emotional intelligence.

5.4.3 Hypotheses related to Emotional Intelligence and Coping

The research results of the Pearson product-moment correlation coefficient between Emotional Intelligence and the five emotion-focused dimensions of Coping measured by the COPE scale, are presented in Table 5.9, and discussed thereafter according to the hypothesis statements in section 4.6.3.

Table 5.9: Correlations between Emotional Intelligence and Coping (N = 118)

		Acceptance	**Seeking Support for Emotional Reasons**	**Positive Reinter-pretation**	**Focus on Venting Emotions**	**Denial**
Emotional Intelligence	r p	.117 .207	.530** .000	.547** .000	.327** .000	-.156 .091

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

The results indicate that Emotional Intelligence is positively and statistically significantly related (at the 0.01 level) to the following emotion-focused coping dimensions/ strategies:

- Seeking Support for Emotional Reasons (r= .530; p=.000)
- Positive Reinterpretation and Growth (r= .547; p=.000)
- Focus on Venting Emotions (r= .327; p= .000).

In terms of the practical significance guidelines provided by Cohen (1988), the relationship between Emotional Intelligence and each of the five emotion-focused coping strategies possess effect sizes that vary from medium (Focus on Venting Emotions) to large (Seeking Support for Emotional Reasons and Positive Reinterpretation and Growth).

On the basis of these statistical findings, the hypotheses (specified in section 4.6.3) regarding the relationship between Emotional Intelligence and the emotion-focused coping strategies of Seeking Support for Emotional Reasons (H7), Focus on Venting Emotions (H8) and Positive Reinterpretation and Growth (H9) are therefore accepted. Since no statistically significant relationship was found between Emotional Intelligence and the coping strategies of Acceptance and Denial, the hypotheses (specified in section 4.6.3) relating to these two relationships (H6 and H10) are rejected.

A possible reason why Acceptance shows no statistically significant correlation with Emotional Intelligence as was expected, could be the phrasing of the items for this dimension in the COPE questionnaire. While the Acceptance dimension is conceptualised as a positive or constructive coping strategy (as opposed to Denial), some of the items in the scale itself may not be interpreted as such (for example “I accept that this has happened and that it can’t be changed”). Individuals high in emotional intelligence might draw on their self-motivation to drive them to face the stressor in question instead of accepting that it cannot be changed. Therefore their interpretation of items such as these, designed to measure Acceptance, may have been more negative than intended by the developers of the scale.

While the hypothesized negative relationship between Denial and Emotional Intelligence exists, it was too weak and insignificant (r= -.156; p= .091) to prove the original hypothesis. So too, while there may be a conceptual link between denying the existence of a stressor and acting in an emotionally intelligent manner, this theoretical relationship may be too tenuous or indirect to support validation under statistical observation, such as that found for the present sample.

5.4.4 Hypotheses related to individual and organizational demographic characteristics, and Emotional Intelligence

5.4.4.1 Emotional Intelligence and Gender

The research results of the t-test investigating the relationship between Emotional Intelligence and the demographic variable of gender are presented in Table 5.10, and discussed thereafter according to the hypothesis statement in section 4.6.4.

Table 5.10: T-test comparison of mean EI of gender groups (N = 118)

GENDER	MEAN	STD. DEVIATION	STD. ERROR	VARIANCES	t	p	Effect size
MALE	123.600	18.202	2.258	UNEQUAL	-3.247	.002	0.506
FEMALE	132.811	12.501	1.717				

The results indicate that female participants have, on average, a statistically significantly higher level of emotional intelligence than male participants (t= -3.247; p= .002), significant at the p < .01 level. In terms of the practical significance guidelines provided by Cohen (1988), the difference in Emotional Intelligence on the basis of age displays a

medium effect size. The hypothesis (H11) regarding the relationship between Emotional Intelligence and Gender (specified in section 4.6.4) is therefore accepted.

This finding is commensurate with the findings of other emotional intelligence studies (Matthews et al., 2002; Schutte et al., 1998) indicating that women generally have higher levels of emotional intelligence than their male counterparts. One reason that has been advanced for this is the traditional socialization of females to more readily acknowledge and express their emotions than males.

5.4.4.2 Emotional Intelligence and Level

The research results of the t-test investigating the relationship between emotional intelligence and the demographic variable of level of position are presented in Table 5.11, and discussed thereafter according to the hypothesis statement in section 4.6.4.

Table 5.11: T-test comparison of mean EI of job level groups (N = 118)

LEVEL	MEAN	STD. DEVIATION	STD. ERROR	VARIANCES	t	p
STAFF	126.904	16.040	1.877	EQUAL	-2.185	.487
SUPERVISORY	129.089	17.289	2.577			

The results indicate that there is no statistically significant difference between the emotional intelligence of participants at staff and supervisory (management or team lead) level (t= -2.185; p= .487). The hypothesis (H12) regarding the relationship between Emotional Intelligence and Level (specified in section 4.2.6) is therefore rejected.

5.4.4.3 Emotional Intelligence and Age

The research results of the analysis of variance investigating the relationship between Emotional Intelligence and the demographic variable of age are presented in Table 5.12, and discussed thereafter according to the hypothesis statement in section 4.6.4.

Table 5.12: Analysis of variance: Comparing EI levels of age groups (N = 118)

	df	SUM OF SQUARES	MEAN OF SQUARES	F	P
Between Groups	6	2779.466	463.244	1.771	.111
Within Groups	111	29027.390	261.508		

The results indicate that there is no statistically significant difference between the emotional intelligence of participants at different age levels (f= 1.771; p= .111). The hypothesis (H13) regarding the relationship between Emotional Intelligence and Age (specified in section 4.2.4) is therefore rejected.

This finding may reflect the trend in the sample organization of providing younger staff with as many opportunities to lead projects and interact with colleagues as were traditionally afforded older, more experienced workers. This may have resulted in younger employees actively developing their levels of emotional intelligence to deal with the people interaction required in these project, team or technical leadership roles. This shift may, consequently, be reflected in an overall reduced difference in the levels of emotional intelligence between older and younger workers.

5.4.4.4 Emotional Intelligence and Tenure

The research results of the analysis of variance investigating the relationship between Emotional Intelligence and the demographic variable of tenure are presented in Table 5.13, and discussed thereafter according to the hypothesis statement in section 4.2.4.

Table 5.13: Analysis of variance: Comparing EI levels of tenure groups (N = 118)

	df	SUM OF SQUARES	MEAN OF SQUARES	F	P
Between Groups	4	755.432	188.858	.687	.602
Within Groups	113	31051.424	274.791		

The results indicate that there is no statistically significant difference between the emotional intelligence of participants with different tenures (f= .687; p= .602). The hypothesis (H14) regarding the relationship between Emotional Intelligence and Tenure (specified in section 4.6.4) is thus rejected.

While it was expected that individuals who have been with the organization longer would have higher levels of emotional intelligence, this finding may reflect the fact that tenure at the sample organization does not reflect overall years of work experience. Therefore, an individual with a short tenure at the current organization may have many years of experience prior to joining the company, which may explain why this analysis did not find a meaningful difference in levels of emotional intelligence on the basis of tenure.

5.5 POWER OF THE STUDY

Statistical power refers to the probability of finding statistical significance when the hypothesis being tested is true (Cohen, 1988). The statistical power can vary between 0 and 1, but for behavioural research 0.8 is commonly accepted as an acceptable value for the power of an analysis. This value subtracted from 1 (0.2) represents the risk we are prepared to accept of committing a Type II error, i.e. concluding that there is an effect when there is not, in other words a false positive (Erdfelder, et al., 1996).

Post-hoc power analyses were conducted for the hypothesis testing analyses performed in this study, using the GPOWER (Erdfelder et al., 1996) software package.

The results of the power analyses in this study are presented in Table 5.14 for the three primary types of statistical techniques used: correlations, t-tests and analyses of variance (ANOVA), and discussed thereafter.

Table 5.14: Power Analyses

Statistical Technique	Variables	Power
t-test	EI & Gender	*0.9426*
t-test	EI & Level of Position	*1.000*
Average Power for t-tests		0.9713
Correlation	*EI & Sense of Coherence (Total)*	*1.000*
Correlation	*EI & Sense of Coherence (Comprehensibility)*	*0.8203*
Correlation	*EI & Sense of Coherence (Manageability)*	*0.6384*
Correlation	*EI & Sense of Coherence (Meaningfulness)*	*1.000*
Correlation	*EI & Locus of Control*	*0.5205*
Correlation	*EI & Coping (Seeking support for emotional reasons)*	*0.9963*
Correlation	*EI & Coping (Positive Reinterpretation & Growth)*	*0.9985*
Correlation	*EI & Coping (Focus on Venting Emotions)*	*0.3998*
Correlation	*EI & Coping (Denial)*	*0.5663*
Correlation	*EI & Coping (Acceptance)*	*0.9973*
Average Power for Pearson's Product Moment Correlations		0.79374
ANOVA	*EI & Age*	*0.9878*
ANOVA	*EI & Tenure*	*0.9151*
Average Power for ANOVA's		0.9515
Average Power of overall study		*0.8416*

KEY:

EI = Emotional Intelligence

The above analyses indicate that the power of the hypothesis-testing statistical techniques performed in this study range overall from 0.3998 to 1.000, with an average of 0.8416. The t-tests have the highest average power (0.9713) followed by the ANOVA's (0.9515) and correlations (0.79374).

These results provide a cautionary indication that the statistical analyses according to which relationships were confirmed between emotional intelligence and the following variables/ dimensions in this study, could possibly be affected by Type II error (false positive, or concluding that there is a relationship or effect where this is not the case):

- Work locus of control (WLOC)
- Focus on Venting Emotions – a dimension of Coping (COP)
- Denial – a dimension of Coping (COP).

5.6 SUMMARY AND INTEGRATION OF RESULTS

This chapter depicted the outcomes of the study. Biographical data was presented, indicating that the majority of respondents were males (55%), with the greatest portion of respondents between the ages of 25 and 34 years (70%) and employed at staff level (62%). Descriptive statistics were presented for each of the instruments used to measure the variables of this study, including their sub-dimensions.

A reliability analysis of the measuring instruments indicated that all four scales possess adequate internal consistency (ranging from α= 0.81 to α= 0.91), with the EIS producing the joint highest Cronbach Alpha coefficient (α= 0.91).

The Pearson's product moment correlation coefficients indicated the following:

- Participants with higher levels of emotional intelligence are likely to possess higher levels of overall Sense of Coherence, as well as higher levels of all three dimensions of Sense of Coherence (i.e. Comprehensibility, Manageability and Meaningfulness).
- Respondents with higher levels of emotional intelligence are likely to display greater levels of internal locus of control.
- Higher levels of emotional intelligence were found to be significantly related to the utilisation of the emotion-focused coping strategies of Seeking Support for Emotional Reasons, Positive Reinterpretation and Growth, and Focus on Venting Emotions.

The relationship between Emotional Intelligence and the demographic variables of gender, level of position, tenure and age were analysed utilising t-tests and analyses of variance (ANOVA). The results indicated statistically significant differences in Emotional Intelligence only on the basis of gender (with female participants scoring higher on Emotional Intelligence than males).

The power calculations indicated that the statistical analyses in this study possessed an average power of 0.8416, which provides satisfactory evidence that the majority of conclusions drawn from the study's results were not likely due to Type II error (i.e. false positives).

5.7 CHAPTER SUMMARY

This chapter presented the reporting and interpretation of the study's results. Firstly, the biographical data was presented, followed by an overview of descriptive statistics for the study's variables. Reliability data for the measuring instruments was discussed, followed by testing of the study hypotheses and finally an analysis of the power of the study's statistical calculations. The chapter concluded with a summary and integration of the results.

Herewith the empirical aim of the research is accomplished.

In chapter 6, the conclusions, limitations and recommendations will be discussed.

CHAPTER 6

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

This aim of this chapter is to focus on steps 7 to 9 of the empirical investigation, as described in chapter 1. The conclusions of this research will be formulated on the basis of the literature review and the results of the empirical research. The shortcomings will then be discussed in the context of the conclusions of this research and recommendations for further research will be given.

6.1 CONCLUSIONS

Conclusions will be drawn about the literature review and the empirical research in accordance with the aims of the research.

6.1.1 Conclusions regarding the literature review

Conclusions will be drawn about emotional intelligence and wellness with specific reference to the contextual framework of the research and the literature reviewed.

6.1.1.1 First Aim: Conceptualisation of emotional intelligence

The first aim, namely to conceptualise emotional intelligence and to determine its key aspects, was achieved in chapter 2 (refer to 2.2). The conclusion can be made that the conceptualisation of emotional intelligence is subject to some debate, possibly due to its relatively recent emergence. While there is no single accepted definition of or theory on the concept, two main streams of conceptualisation have arisen in the literature:

- The original ability approach that defined emotional intelligence as an ability or competence involving the appraisal, expression, regulation and utilization of emotion.

- The mixed model approach that blended emotional intelligence with other skills and characteristics (such as self-motivation and effective social skills)

For the purpose of this study, the ability approach to defining emotional intelligence was adopted, primarily because the instrument that forms the subject of this construct validation study was developed using Salovey and Mayer's initial (1990) ability framework of emotional intelligence. According to this framework, emotional intelligence can be conceptualised relative to individuals' awareness of their own emotions and their ability to express those emotions, to individuals' perceptions and awareness of emotions expressed by others, to the regulation both in the self and in others, as well as to the utilization of emotion (Morand, 2001).

It was concluded that the debate between mixed model and ability model definitions of emotional intelligence is not unusual in a concept so relatively new and underexposed to empirical investigation. The basic problem in developing conceptualisations of emotional intelligence is that psychology already has some understanding of both intelligence and personality traits linked to emotional functioning (Matthews et al., 2002). It is envisaged that further empirical investigation of the construct would be necessary to provide greater clarity on the debate (Goleman, 2001; Mayer, 2001).

6.1.1.2 Second Aim: Measurement of emotional intelligence

The second aim, namely to provide an overview of key issues in the measurement of emotional intelligence, was achieved in chapter 2 (refer to 2.3). It can be concluded that the debate around the conceptualisation of emotional intelligence extends to its measurement, with two key approaches to the psychometrics of the construct emerging: self-report and performance. While self-report measures are more accessible and easier to score, they require respondents to report on their own levels of functioning, which may lead to response bias (Kruger & Dunning, 1999). Performance measures, on the other hand, encompass greater complexity in their development, completion and scoring, while they are less prone to response bias and share less overlap with well-established personality traits (Ciarrochi et al., 2001; Matthews et al., 2001). It was also

indicated that the models of conceptualisation do not necessarily correspond exactly with the measurement approach of emotional intelligence measures. Therefore, self-report measures are not necessarily exclusively derived from the mixed model conceptualisations, as are performance measures not always based on the ability model of emotional intelligence. The subject of this study was the EIS which is a self-report measure of emotional intelligence based on the ability framework of the construct.

6.1.1.3 Third Aim: Development and psychometric properties of the EIS

The third aim, namely to provide an overview of the development and psychometric properties of the EIS, was achieved in chapter 2 (refer to 2.4). It was concluded that some basic psychometric evidence of the scale's utility exists. The following findings resulted from previous research on the instrument's psychometric properties:

- The EIS produced sufficient evidence of internal consistency and test-retest reliability, although these results were achieved with small samples.
- Higher scores on the EIS were associated with less alexithymia (lack of, or flat emotional affect), greater attention to and clarity of feeling, higher mood repair and optimism, and less pessimism, depression and impulsivity.
- Scores on the EIS significantly predicted higher college grade-point averages
- Expected between-group differences were confirmed, for example women were found to be more adept at emotional expression and relating to others. In addition, psychotherapists scored higher than their clients in a substance abuse treatment program, and higher than prisoners.
- The EIS did not display overlap with traditional cognitive ability measures.

It can be concluded that despite promising initial evidence of the psychometric properties of the EIS (Schutte et al., 1998) further investigation, particularly into its construct validity, is required for the measure to enjoy widespread use in a variety of contexts. In particular, it was concluded that evidence should be produced to illustrate the utility of the measure in the Industrial & Organizational context.

6.1.1.4 Fourth Aim: Conceptualisation of salutogenesis

The fourth aim, namely to conceptualise salutogenesis and its core constructs, was achieved in chapter 3 (refer to 3.1). It can be concluded that the salutogenic paradigm provides an empirically-sound alternative to the pathogenic paradigm in explaining how individuals maintain and enhance psychological well-being irrespective of the omnipresence of stressors (Antonovsky, 1979). The salutogenic constructs that were motivated for inclusion in this study due to their conceptual link with emotional intelligence were:

- Sense of coherence
- Locus of control
- Coping

6.1.1.5 Fifth Aim: Overview of psychological well-being

The fifth aim, namely to provide an overview of psychological well-being, was achieved in chapter 3 (refer to 3.2). The conclusion was made that an integrated structure of psychological well-being include the following components or dimensions of positive human functioning (Ryff, 1985):

- Self-Acceptance, or having positive attitudes toward oneself.
- Positive relations with others, incorporating the ability to love, to have strong feelings of empathy and affection for others, and to be capable of deeper friendships and complete identification with others.
- Autonomy, including the possession of an internal locus of evaluation, whereby one does not look to others for approval, but evaluates oneself by personal standards.
- Environmental mastery, which encompasses the person's ability to choose or create environments suitable to his or her psychic conditions
- Purpose in life, or a clear sense of directedness and intentionality.

- Personal growth, which requires that an individual continues to develop their potential, to grow and expand as a person, in accordance with self-actualization theory.

It was concluded that Ryff's framework of psychological well-being explained in an integrated, multi-dimensional manner the dynamic and varied aspects that define individual wellness or well-being.

6.1.1.6 Sixth Aim: Integration of emotional intelligence, salutogenesis and psychological well-being

The sixth aim, namely to integrate the concepts of emotional intelligence, salutogenesis and psychological well-being, was achieved at the end of chapter 3 (see 3.3). The conclusion was made that emotional intelligence possesses definite conceptual links with wellness as explained through psychological well-being and salutogenic functioning. Conceptual linkages that supported this conclusion include:

- Individuals with higher emotional intelligence should be more capable of managing emotional stressors while maintaining a functional level of coping and psychological health (i.e. salutogenic functioning)
- Ongoing, adaptive coping with stressors and traumatic experience is a hallmark of healthy psychological functioning.
- While emotions may take the form of stressors in our internal or external environments, they also present an opportunity for healthy or salutogenic growth.
- Individuals with an internal locus of control would more likely feel in control of emotional stimuli affecting them, while externals would attribute emotional outcomes to factors beyond their personal influence.
- Individuals with higher levels of sense of coherence would likely be able to make sense of or comprehend emotional stimuli in themselves and others (comprehensibility), perceive that their own resources are sufficient to meet these

emotional demands (manageability), and that these emotional demands and challenges are worth spending their energy on (meaningfulness).

- Individuals faced with emotional stimuli from themselves or others are more likely to manage these in an emotionally intelligent way if they have stronger coping capabilities, particularly in terms of emotion-focused coping (Lazarus & Folkman, 1984).

6.1.2 Conclusions regarding the empirical study

Conclusions will be drawn about emotional intelligence and wellness with specific reference to the results of the empirical investigation that was conducted.

6.1.2.1 First Aim: Emotional intelligence and sense of coherence

The first aim, namely to investigate the relationship between emotional intelligence and Sense of Coherence, was achieved in chapter 5. Antonovsky's (1979) Sense of Coherence Scale was used to gather information on the levels of sense of coherence of participants, and the resulting correlation between scores on the Sense of Coherence Scale and the EIS was presented in chapter 5 (refer to table 5.7). The results indicated that emotional intelligence is positively and statistically significantly related (at the 0.01 level) to sense of coherence, as well as to its 3 sub-dimensions (comprehensibility, manageability and meaningfulness), with effect sizes ranging from medium to large.

These findings confirmed the expected conceptual relationship between emotional intelligence and sense of coherence, and provided supporting evidence for the construct validity of the EIS. It was concluded that individuals with higher levels of emotional intelligence would also be better equipped to make sense of, manage, and derive meaning from stimuli in their internal and external environments.

6.1.2.2 Second Aim: Emotional intelligence and locus of control

The second aim, namely to investigate the relationship between emotional intelligence and locus of control, was achieved in chapter 5. Spector's (1988) Work Locus of Control Scale was used to measure participants' locus of control, and the resulting correlation between emotional intelligence and locus of control is displayed in chapter 5 (refer to table 5.8). The results indicated that individuals with higher levels of emotional intelligence are statistically significantly less likely (at the 0.01 level) to have an external locus of control (small to medium effect size).

It was concluded that individuals who believe they are in control of outcomes in their (work-related) lives would also be more likely to manage the emotions of themselves and others.

6.1.2.3 Third Aim: Emotional intelligence and emotion-focused coping

The third aim, namely to investigate the relationship between emotional intelligence and emotion-focused coping, was achieved in chapter 5. The COPE Scale (Carver et al., 1989) was used to measure five emotion-focused coping strategies (Acceptance, Denial, Seeking Support for Emotional Reasons, Positive Reinterpretation and Growth, and Focus on Venting Emotions), and the resultant correlations are displayed in chapter 5 (refer to table 5.9). The results confirmed the relationship between emotional intelligence and the emotion-focused coping strategies of Seeking Support for Emotional Reasons, Positive Reinterpretation and Growth, and Focus on Venting Emotions.

The lack of a statistically significant relationship between emotional intelligence and the coping dimensions of Denial and Acceptance was explored in chapter 5 (refer to 5.4.3) as a possible function of the instrument and/or the nature of the sample.

6.1.2.4 Fourth Aim: Emotional intelligence and individual/ organizational variables

The fourth aim, namely to investigate the relationship between emotional intelligence and individual or organizational variables, was achieved in chapter 5. A biographical questionnaire was used to collect the gender, level, age and tenure of participants. The results of t-tests and analyses of variances indicated only one statistically significant difference based on individual or organizational variables: female participants displayed higher levels of emotional intelligence than their male counterparts.

6.1.2.5 Fifth Aim: Formulating recommendations

The fifth aim, namely to formulate recommendations for Industrial Psychology and further research based on the findings of this research, will be discussed in section 6.3.

6.2 LIMITATIONS OF THE RESEARCH

The limitations for the literature study and the empirical investigation are outlined below.

6.2.1 Limitations of the literature review

With regard to the literature review, the following limitations were encountered:

- There is no generally accepted definition of emotional intelligence, and there appears to be limited agreement on how it should be observed and measured.

- There are two primary models of emotional intelligence (ability and mixed model), each with its own set of strengths, weaknesses and sub-dimensions. The model of emotional intelligence upon which an assessment is based will have a definitive effect on any construct validity investigation.

- The debate around what comprises emotional intelligence has inevitably affected the measurement of the construct. The two main approaches (self-report and performance) to quantifying emotional intelligence each have distinct advantages and disadvantages, that have as yet not been thoroughly resolved and consolidated. This is further exacerbated by limited availability and the relative complexity of use associated with performance measures of emotional intelligence.

- The conceptualisation of wellness in this study integrated salutogenic and well-being concepts. However, research on the construct validity of assessments such as this one seldom make use of the same conceptual models. It therefore becomes difficult to compare the results from one study with the next.

6.2.2 Limitations of the empirical investigation

The limitations encountered in the empirical investigation are outlined below:

6.2.2.1 Sample

The research was conducted within a single organisation and thus the results cannot be generalised to the broader population of all South African organizations, or all software development houses. In addition to this, a sample of convenience was used (voluntary participants), which reduced the sample size, and also further minimized the

generalisability of findings. This may also have negatively affected the power of the statistical calculations in this study.

When considering the biographical make-up of the sample, the vast majority of respondents were younger than 34 years of age, and white. Although this was representative of the demographics of the sample organization, it has an impact on the generalisability of the results to the broader, multi-cultural South African population.

6.2.2.2 Limitations of the Emotional Intelligence Scale

The EIS has been designed and validated in the American context. No data currently exists for the validation of the instrument in the South African context, and this is the first research paper to present such results. A second limitation is that the norm group used for comparison purposes was based on the results of American studies, with no South African organizations represented in the benchmark group. This could mean that the standards set for comparison purposes were not accurate.

A third limitation of using the EIS is that, as a self-report measure of emotional intelligence, it is subject to response bias (Kruger & Dunning, 1999), and Matthews et al. (2002) warn of the limited capacity of individuals with low emotional intelligence to accurately gauge their own level of the construct. This limitation casts some doubt on the potential utility of self-report measures such as the EIS for industrial and organizational purposes other than research and development, where intentional response bias may be problematic (for example selection settings).

6.2.2.3 Choice of salutogenic variables

To prevent the scope of the study from becoming too large, only three salutogenic constructs (sense of coherence, locus of control and coping) were chosen to represent the concept of wellness for the purposes of the EIS's construct validation. This choice may affect the extent to which the results represent adequate evidence of the scale's construct validity from a wellness perspective. While most salutogenic constructs are inter-related to some extent, the choice of a different set of variables within the same wellness or salutogenic framework may have produced different results that could potentially provide less confirmatory evidence of the instrument's construct validity.

6.3 RECOMMENDATIONS

Against the background of the aforementioned conclusions and limitations, recommendations for Industrial Psychology and further research in the field are outlined below.

6.3.1 Recommendations for Industrial Psychologists working in the field of emotional intelligence

The conclusions of the research tend to indicate that practitioners should be mindful of the different approaches to the definition of emotional intelligence when working in the field, and should take cognisance of the strengths and weaknesses of the two types of emotional intelligence assessments (self-report and performance). In this regard, they should be cautioned to take into account the purpose of the assessment when selecting an instrument for workplace application. Understanding how the results of assessments will be used is critical since it will in turn inform the approach of test takers to the completion of the instrument. It will also affect the integrity of potential decisions made upon the basis of test results.

In addition, practitioners should be mindful of the psychometric properties of emotional intelligence instruments before utilising them in organizational initiatives. When important organizational outcomes depend on the results of assessment, the instrument used must be supported by sufficient reliability and validity data to support its use, particularly in the South African context. So too, practitioners should ensure that they are aware of the different aspects of a proposed instrument's psychometric make-up and utility. In doing so, they can gain an extensive amount of credibility and buy-in by clearly communicating the potential utility and shortcomings of an emotional intelligence measure before it is used in an intervention.

Finally, practitioners have a role to play in helping organizations and individuals understand how to correct the gender imbalance in levels of emotional intelligence found in this and other studies. Given the potential benefits of emotional intelligence in the organizational context, it follows that male employees should be empowered to harness the advantages of emotional intelligence in the workplace in the same measure as their female counterparts do. This could be done through targeted development interventions that aim to improve those emotional intelligence dimensions or competencies where male employees are traditionally weak.

6.3.2 Recommendations for further research

In an attempt to address the limitations of this research discussed in the previous section, it is recommended that a more in-depth study is conducted according to a randomised design to study the construct validity of the EIS in a multi-cultural South-African context. In addition to this, it is recommended that in order to achieve true value from the research, a number of organisations across industries should be selected to participate in the research. This will help produce more generalisable findings to support the utility of the EIS.

A second recommendation for further research stems from the choice of salutogenic variables in this study, as mentioned in the limitations of the empirical investigation. This could be overcome through further investigations into the construct validation of the EIS using other constructs in the salutogenic or wellness framework as a construct validation reference, for example, hardiness, self-efficacy, potency and learned resourcefulness.

The third recommendation relates to the previously limited use of the EIS in the South African context. It is recommended that studies be conducted around other aspects of the instrument's validity, for example content and predictive validity. This could involve using more than one validated emotional intelligence instrument to determine whether the questionnaires correlate, and designing a study that will specifically investigate criterion-related validity (concurrent and/or predictive) in the workplace context. This will help provide evidence of the practical utility of the scale in predicting work-related outcomes in the South African milieu.

The fourth recommendation relates to the conclusions of this research, and is that further studies should be conducted to explore the relationship between emotion-focused coping and emotional intelligence, potentially making use of a different instrument to measure Coping.

6.4 INTEGRATION OF THE RESEARCH

This dissertation focuses on the construct validity of the EIS from a wellness perspective. The acknowledgement that emotions play a critical role in organizational life in general, and business success in particular, has played a pivotal role in the enormous growth of interest in the concept of emotional intelligence during the last decade (Higgs & Dulewicz, 1999; Goleman, 1996, 1998; Kouzes & Posner, 2000; Mayer & Salovey, 1995). As with any relatively new construct, the exact nature, potential utility and measurement have all been the subject of extensive debate. The result has been the development of an extensive range of emotional intelligence instruments. And while

reliable and valid measures of emotional intelligence are essential to make theoretical advances in the nature and development of the construct (Schutte & Malouff, 1998), comparatively few of these instruments have been the subjected to thorough empirical investigation of their psychometric properties, and even less so in the South African context.

For Industrial Psychologists to harness emotional intelligence to predict the future functioning of individuals, identify those likely to experience problems because of deficits in emotional skills, and evaluate the effectiveness of interventions designed to increase emotional intelligence, it becomes evident that focus should be placed on research into the psychometric properties of emotional intelligence instruments. Given the strong conceptual links between emotional intelligence and wellness, and the pronounced contribution of the latter concept to Industrial Psychology, it would make sense to use this relationship as a starting point when investigating the construct validity of emotional intelligence instruments, such as the EIS, in the work context.

The research aim was to investigate the construct validity of the EIS in the South African context by exploring its relationship with a number of constructs defined within the wellness paradigm. The findings of the empirical research were presented in chapter 5 and the conclusions related to each of the specific aims of both the literature and empirical studies were discussed in this chapter.

In conclusion, the research has provided some encouraging support for the construct validity of the EIS, using a small sample within a South African software development organization. The set of data was unfortunately too small to draw significant conclusions in support of all the research hypotheses, and there were several limitations to this study, including the sample size and nature, the debate around approaches to the definition and measurement of emotional intelligence, and the conceptualisation of, as well as the choice of variables from, the wellness paradigm. However, the relationships that were revealed may provide additional insight into the potential utility of the EIS.

Recommendations have been made for further research, and this should therefore be seen as the beginning of a stream of research which could make a significant contribution to the measurement of emotional intelligence in the South African context.

6.5 CHAPTER SUMMARY

In this chapter the conclusions, limitations and recommendations of the study were discussed. Finally, an integration of the research was presented, emphasising the extent to which the study's results provided support for the construct validity of the EIS.

REFERENCES

Ackerman, P.L. & Heggestad, E.D. (1997). Intelligence, personality and interests: Evidence for overlapping traits. *Psychological Bulletin, 121,* 219-245.

Allport, G.W. (1961). *Pattern and growth in personality.* New York: Holt, Rinehart & Winston.

Anastasi, A. & Urbina, S. (1997). *Psychological Testing.* Upper Saddle River, NJ: Simon & Schuster.

Anderson, C.R. (1977). Locus of control, coping behaviours and performance in a stress setting: A longitudinal study. *Journal of Applied Psychology, 62* (4), 446-451.

Andrews, F.M. (1991). Stability and change in levels and structure of subjective well-being. *Social Indicators Research, 25,* 1-30.

Andrews, F.M. & McKennell, A.C. (1980). Measures of self-reported well-being. *Social Indicators Research, 8,* 127-156.

Andrews, F.M. & Withey, S.B. (1976). *Social indicators of well-being: America's perception of life quality.* New York: Plenum Press.

Antonovsky, A. (1979). *Health, stress and coping: New perspectives on mental and physical wellbeing.* San Francisco: Jossey-Bass.

Antonovsky, A. (1984a). A call for a new question – salutogenesis – and a proposed answer – the sense of coherence. *Journal of Preventive Psychiatry, 2,* 1-13.

Antonovsky, A. (1984b). The sense of coherence as a determinant of health. In J.D. Matarazzo, J.A. Herd, M.E. Miller & S.M. Weiss (Eds), *Behavioural health: A handbook of health enhancement and disease prevention* (pp. 114-129). New York: Wiley-Interscience.

Antonovsky, A. (1987). *Unraveling the mystery of health: How people manage stress and stay well.* San Francisco: Jossey-Bass.

Antonovsky, A. (1993). The structure and properties of the sense of coherence scale. *Social Sciences Medical Journal, 36*(6), 725-733.

Antonovsky, A. & Bernstein, J. (1986). Pathogenesis and salutogenesis in war and other crises: Who studies the successful coper? In N.A. Milgram (Ed), *Stress and coping in time of war: Generalizations from the Israeli experience* (pp. 52-65). New York: Brunner/Mazel.

Antonovsky, A., Maoz, B., Dowty, N. & Wijsenbeek, H. (1971). Twenty-five years later: a limited study of the sequelae of the concentration camp experience. *Social Psychiatry, 6,* 186-193.

Aristotle. (1947). *Nichomachean ethics* (W.D. Ross, Trans.). In R. McKeon (Ed), *Introduction to Aristotle.* New York: Modern Library.

Ayres, G.A. (1992). *Self-efficacy theory: Implications for the career development of women.* Ann Arbor: University of Microfilms International.

Babbie, E. (1995). *The Practice of Social Research* (7th Ed.). Belmont: Wadsworth Publishing Company.

Baloyi, J. (2000). *Confirmatory factor analysis on the measurement of six salutogenic constructs.* Unpublished M.Admin thesis. Pretoria: University of South Africa.

Bandura, A. (1982). Self-efficacy mechanisms in human agency. *American Psychologist, 37,* 122-147.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Englewood Cliffs: Prentice-Hall.

Bandura, A. (1997). *Self-Efficacy: The exercise of control.* New York: W.H. Freeman & Company.

Bar-On, R. (1997). *The Emotional Intelligence Inventory (EQ-i): Technical manual.* Toronto: Multi-Health Systems.

Bar-On, R. & Parker, J.D.A. (2000). Introduction. In R. Bar-On, & J.D.A. Parker (Eds), *The Handbook of Emotional Intelligence.* San Francisco: Jossey-Bass.

Basson, M. & Rothmann, S. (2001, June). *Sense of coherence, coping and burnout of pharmacists.* Paper presented at the Annual Conference of the Society of Industrial Psychology, Pretoria.

Ben-Sira, Z. (1985). Potency: A stress-buffering link in the coping-stress-disease relationship. *Social Sciences and Medicine, 21* (4), 397-406.

Ben-Sira, Z. (1989). Potency: A readjustment-promoting link in the rehabilitation of disabled persons. *Sociology of Health and Illness, 11* (1), 41-61.

Best, P.W. (1994). *Locus of control, personal commitment and commitment to the organization.* Unpublished M.Comm dissertation. University of South Africa, Pretoria.

Bjorkland, D.F. & Kipp, K. (1996). Parental investment theory and gender differences in the evolution of inhibition mechanisms. *Psychological Bulletin, 120,* 163-188.

Blau, G. (1993). Testing the relationship of locus of control to different performance dimensions. *Journal of Occupational and Organizational Psychology, 66,* 125-138.

Bless, C. & Higson-Smith, C. (1995). *Social Research Methods: An African Perspective* (2nd Ed.). Cape Town: Juta and Co, Ltd.

Bohrenstedt, G.W., & Knoke, D. (1988). *Statistics for social data analysis.* Itasca: Peacock Publishers.

Bond, F.W. & Bunce, D. (2003). The role of acceptance and job control in mental health, job satisfaction, and work performance. *Journal of Applied Psychology, 88,* 1057-1067.

Bradburn, N.M. (1969). *The structure of psychological well-being.* Chicago: Aldine.

Broedling, L.A. (1975). Relationship of Internal-External control to work motivation and performance in an expectancy model. *Journal of Applied Psychology, 60* (10), 65-70.

Bryant, F.B. & Veroff, J. (1982). The structure of psychological well-being: A sociohistorical analysis. *Journal of Personality and Social Psychology, 43,* 653-673.

Buck, R. (1984). *The communication of emotion.* New York: Guilford.

Campbell, A., Converse, P.E. & Rodgers, W.L. (1976). *The quality of American life: Perceptions, evaluations, and satisfactions.* New York: Russel Sage Foundation.

Campbell, D.T. & Fiske, D.W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin, 56,* 81-105.

Caruso, D.R. & Wolfe, C.J. (2001). Emotional Intelligence in the Workplace. In J.Ciarrochi, J.P. Forgas & J.D. Mayer (Eds), *Emotional Intelligence in Everyday Life: A Scientific Inquiry* (pp. 150-167). Philadelphia: Psychology Press.

Carver, C.S., Scheier, M.R., & Weintraub, J.K. (1989). Assessing coping strategies: a theoretically based approach. *Journal of Personality and Social Psychology, 56,* 267-283.

Cascio, W.F. (1998). *Applied Psychology in Human Resource Management* (5th ed.). Upper Saddle River: Prentice Hall.

Ciarrochi, J., Chan, A., Caputi, P. & Roberts, R. (2001). Measuring Emotional Intelligence. In J.Ciarrochi, J.P. Forgas & J.D. Mayer (Eds), *Emotional Intelligence in Everyday Life: A Scientific Inquiry* (pp. 25-45). Philadelphia: Psychology Press.

Cilliers, F. (1988). The concept of psychological optimality in management. *Institute of Personnel Management Journal, 7* (5), 15-18.

Cilliers, F. & Coetzee, S.C. (2003). The theoretical-empirical fit between three psychological wellness constructs: Sense of coherence, learned resourcefulness and self-actualization. *South African Journal of Labour Relations, 27* (1), 4-24.

Cilliers, F., Pheiffer, J. & Visser, C. (1995). *Salutogenesis as paradigm in industrial psychology.* Pretoria: Department of Industrial Psychology, UNISA.

Coetzee, S. & Cilliers, F. (2001). Psychofortology: Explaining coping behaviour in organizations. *The Industrial-Organizational Psychologist, 38* (4), 62-68.

Cohen, J. (1988). *Statistical power analysis for the behavioural sciences.* (2nd ed.). Hillsdale: Erlbaum.

Coleman, D.F., Irving, G.P. & Cooper, C.L. (1999). Another look at the locus of control-organizational commitment relationship: It depends on the form of commitment. *Journal of Organizational Behaviour, 20,* 995-1001.

College Entrance Examination Board and Educational Testing Service (1995). *Admission officer's handbook for the SAT program: April 1995 through June 1996.* Princeton, NJ: College Board SAT Program.

Collins, B.E. (1974). Four components of the Rotter Internal-External Scale: Belief in a difficult world, a just world, a predictable world and a politically responsive world. *Journal of Personality and Social Psychology, 29* (3), 311-391.

Cooper, C.L. & Payne, R. (1991). *Personality and stress: Individual differences in the stress process.* New York: Wiley.

Cooper, R.K. & Sawaf, A. (1997). *Executive EQ: Emotional intelligence in leaders and organizations.* New York: Grosset/Putnam.

Costa, P.T. & McCrae, R.R. (1992). Normal personality assessment in clinical practice: The NEO Personality Inventory. *Psychological Assessment, 4,* 5-13.

Cronbach, L.J. (1970). *Essentials of psychological testing* (3rd ed.). New York: Harper & Row.

Cronbach, L.J. (1988). Five perspectives on the validity argument. In H. Wainer & H.I. Braun (Eds), *Test validity*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Cronbach, L.J. & Meehl, P.E. (1955). Construct validity in psychological tests. *Psychological Bulletin, 52,* 281-302.

Dana, R.H., Hoffman, T., Armstrong, B. & Wilson, J. (1985). *Sense of coherence: Examination of the construct.* Poster session presented at the Southwestern Psychological Association Conference, Texas, USA.

Davies, M., Stankov, L. & Roberts, R.D. (1998). Emotional Intelligence: In search of an elusive construct. *Journal of Personality and Social Psychology, 75,* 989-1015.

Dawda, D. & Hart, S.D. (2000). Assessing emotional intelligence: Reliability and validity of the Bar-On Emotional Quotient Inventory (EQ-i) in university students. *Personality and Individual Differences, 28,* 797-812.

De Wet, C.F. (1998). *A salutogenic perspective of burnout in the nursing profession.* Unpublished D.Litt et Phil thesis. Pretoria: University of South Africa.

Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95,* 542-575.

Diener, E. & Emmons, R.A. (1984). The independence of positive and negative affect. *Journal of Personality and Social Psychology, 47,* 1105-1117.

Diener, E., Larson, R.J., Levine, S. & Emmons, R.A. (1985). Intensity and frequency: Dimensions underlying positive and negative affect. *Journal of Personality and Social Psychology, 48*, 1253-1265.

Digman, J.M. (1990). Personality structure: Emergence of the five-factor model. *Annual Review of Psychology, 41,* 417-440.

Dobson, C.B. (1982). *Stress: the hidden adversary.* Lancaster: MTP Press.

Dulewicz, V. & Higgs, M.J. (1999). Can emotional intelligence be measured and developed? *Leadership and Organization Development Journal, 20* (5), 242-252.

Dulewicz, V. & Higgs, M.J. (2000). Emotional intelligence: a review and evaluation study. *Journal of Managerial Psychology, 15* (4), 341-368.

Dulewicz, V., Higgs, M. & Slaski, M. (2003). Measuring emotional intelligence: content, construct and criterion-related validity. *Journal of Managerial Psychology, 18* (5), 405-420.

Dyer, M.G. (1983). The role of affect in narratives. *Cognitive Science, 7,* 211-242.

Ekman, P. (1973). *Darwin and facial expression: A century of research in review.* New York: Academic Press.

Epstein, S. (1998). *Constructive thinking: The key to emotional intelligence.* Westport, CT: Praeger.

Erdfelder, E., Faul, F. & Buchner, A. (1996). GPOWER: A general power analysis program. *Behaviour Research Methods, Instruments, & Computers, 28,* 1-11.

Erikson, E. (1959). Identity and the life cycle. *Psychological Issues, 1,* 18-164.

Erwee, R. & Pottas, C.D. (1982). Locus of control and achievement of motivation of managers. *Psychologia Africana, 21,* 79-102.

Fineman, S. (1993). *Emotion in Organizations.* London: Sage Publications.

Fiorentino, L.M. (1986). Stress: The high cost to industry. *Occupational Health Nursing, 34,* 217-220.

Fisher, A. (October 1998). Success secret: a high emotional IQ. *Fortune,* 293-298.

Fitness, J. (2001). Emotional intelligence and intimate relationships. In J. Ciarrochi, J.P. Forgas & J.D. Mayer (Eds.), *Emotional Intelligence in everyday life* (pp. 98-112). Philadelphia: Psychology Press.

Fleury, P., Opperman, P. & Postemski, P. (1992). Job satisfaction among human resource professionals: Is it related to work locus of control? Unpublished manuscript, University of Hartford, Connecticut.

Foley, J.R. & Clifton, R.A. (1990). Locus of control, organizational climate, and participation in staff development: A study of college students. *The Canadian Journal of Higher Education, 20* (2), 45-59.

Folkman, S. & Lazarus, R.S. (1980). An analysis of coping in a middle-aged community sample. *Journal of Health and Social Behaviour, 21,* 219-239.

Folkman, S., Lazarus, R.S., Gruen, R.J. & DeLongis, A. (1986). Appraisal, coping, health status, and psychological symptoms. *Journal of Personality and Social Psychology, 50,* 571-579.

Foxcroft, C. (2001). Developing a psychological measure. In C. Foxcroft & G. Roodt (Eds), *An introduction to psychological assessment in the South African context* (pp. 69-85). Cape Town: Oxford University Press.

Furnham, A., & Drakeley, R.J. (1993). Work locus of control and perceived organizational climate. *European Work and Organizational Psychologist, 3,* 1-9.

Gardner, H. (1983). *Frames of mind.* New York: Basic Books.

Gardner, H. (1993). *Multiple Intelligences.* New York: Basic Books.

Gardner, H. (February 1999). Who owns intelligence? *Atlantic Monthly, 283*, 000-000.

Gardner, H. & Hatch, T. (1989). Multiple intelligences go to school. *Educational Researcher, 18* (8), 8-14.

Gates, G. (1995). A review of literature on leadership and emotion: exposing theory, posing questions, and forwarding an agenda. *The Journal of Leadership Studies, 2,* 98-110.

Gist, M.E. & Mitchell, T.R. (1992). Self efficacy: A theoretical analysis of its determinants and malleability. *Academy of Management Review, 17* (2), 183-211.

Goldberger, L. & Breznitz, S. (1993). *Handbook of Stress: Theoretical and clinical aspects.* New York: The Free Press.

Goleman, D. (1995). *Emotional Intelligence.* New York: Bantam Books.

Goleman, D. (1996). *Emotional Intelligence: Why it can Matter More than IQ.* London: Bloomsbury Publishing.

Goleman, D. (1998). *Working with emotional intelligence.* New York: Bantam.

Goleman, D. (2001). Emotional Intelligence: Issues in paradigm building. In C. Cherniss & D. Goleman (Eds), *The Emotionally Intelligent Workplace* (pp. 13-26). Jossey-Bass: San Francisco.

Graham, S.D.J. (1993). *Staff burnout and job-induced tension: The buffering effects of social support and locus of control*. Unpublished M.A. Thesis. Toronto: Simon Fraser University.

Green, D.P., Goldman, S.L. & Salovey, P. (1993). Measurement error masks bipolarity in affect ratings. *Journal of Personality and Social Psychology, 64,* 1029-1041.

Gregory, R.J. (2003). *Psychological testing: History, principles, and applications* (4th ed.). Boston: Allyn-Bacon.

Gross, J.J. & John, O.P. (1995). Facets of emotional expressivity: Three self-report factors and their correlates. *Personality and Individual Differences, 19,* 555-568.

Guion, R.M. (1965). *Personnel testing.* New York: McGraw-Hill.

Guion, R.M. (1980). On Trinitarian doctrines of validity. *Professional Psychology, 11,* 385-398.

Hambleton, R.K. (1984). Validating the test scores. In R.A. Berk (Ed), *A guide to criterion-referenced test construction*. Baltimore: Johns Hopkins University Press.

Higgs, M. (2001). Is there a relationship between the Myers-Briggs type indicator and emotional intelligence? *Journal of Managerial Psychology, 16* (7), 509-533.

Higgs, M.J. & Dulewicz, S.V. (1999). *Making Sense of Emotional Intelligence.* Windsor: NFER-Nelson.

Homberg, I. & Riddersdale, J. (2000). Sensational Leadership. In S. Chowdhury (Ed), *Management 21C: Someday We'll All Manage This Way*. London: Pearson Education.

Howell, D.C. (1999). *Fundamental statistics for the behavioural sciences.* Pacific Grove, CA: Brooks/Cole.

Jackson, L. & Rothmann, S. (2001, May). *Sense of coherence, self efficacy, and locus of control as predictors of job satisfaction.* Poster session presented at the 10th European Congress on Work and Organizational Psychology, Prague, Czech Republic.

Jahoda, M. (1958). *Current concepts of positive mental health.* New York: Basic Books.

Johnson, P.R. & Indvik, J. (1999). Organizational benefits of having emotionally intelligent managers and employees. *Journal of Workplace Learning, 11* (3), 84-88.

Jung, C.G. (1933). *Current concepts of positive mental health.* New York: Basic Books.

Kerlinger, F.M. (1986). *Foundations of behavioural research.* New York: Holt, Rinehart and Winston.

Keyes, C.L.M. & Ryff, C.D. (1999). Psychological well-being in midlife. In S.L. Willis & J.D. Reid (Eds), *Middle aging: Development in the third quarter of life* (pp. 161-180). Orlando, FL: Academic Press.

Keyes, C.L.M. & Waterman, M.B. (2003). Dimensions of well-being and mental health in adulthood. In M.H. Bornstein, L. Davidson, C.L.M. Keyes & K.A. Moore (Eds), *Well-being: Positive development across the life course* (pp. 477-497). Mahwah, NJ: Lawrence Erlbaum.

Kirsch, I. (1986). Early research on self-efficacy: What we already know without knowing we knew. *Journal of Social and Clinical Psychology, 4* (3), 339-358.

Kobasa, S.C. (1982). The hardy personality: Toward a social psychology of stress and health. In G.S. Sanders & J. Suls (Eds), *The Social Psychology of Health and Illness* (pp. 124-147). Hillside: Lawrence Erlbaum.

Kobasa, S.C., Maddi, S.R. & Kahn, S. (1982). Hardiness and Health: A prospective study. *Journal of Personality and Social Psychology, 42,* 168-177.

Kobasa, S.C. & Pucccetti, M.C. (1983). Personality and social resources in stress resistance. *Journal of Personality and Social Psychology, 45* (4), 839-850.

Kossuth, S.P. (1998). *Team building and salutogenic orientations contextualized in a performance model.* Unpublished D.Com thesis. University of South Africa, Pretoria.

Kouzes, J.M. & Posner, B.Z. (2000). The Janusian Leader. In. S. Chowdhury (Ed), *Management 21C: Someday we'll all manage this way.* London: Pearson Education.

Kruger, J. & Dunning, D. (1999). Unskilled and unaware of it: How difficulties in recognizing one's own incompetence lead to inflated self-assessments. *Journal of Personality & Social Psychology, 77,* 1121-1134.

Kuhn, T. (1970). *The Structure of Scientific Revolutions.* Chicago: University of Chicago Press.

Larson, R.J., Diener, E. & Emmons, R.A. (1985). An evaluation of subjective well-being measures. *Social Indicators Research, 17,* 1-17.

Lawshe, C.H. (1975). A quantitative approach to content validity. *Personnel Psychology, 28,* 563-575.

Lazarus, R.A. & Folkman, S. (1984). *Stress, appraisal, and coping.* New York: Springer.

Lazarus, R.S. (1966). *Psychological stress and the coping process.* New York: McGraw-Hill.

Lefcourt, H.M. (1966). Internal versus External control of reinforcement. *Psychological Bulletin, 63* (4), 206-220.

Lemke, E. & Wiersma, W. (1976). *Principles of psychological measurement.* Chicago: Rand McNally.

Liang, J. (1984). Dimensions of the Life Satisfaction Index A: A structural formulation. *Journal of Gerontology, 39*, 613-622.

Liang, J. (1985). A structural integration of the Affect Balance Scale and the Life Satisfaction Index A. *Journal of Gerontology, 40,* 552-561.

Liang, J. & Bollen, K.A. (1983). The structure of the Philadelphia Geriatric Center Morale Scale: A reinterpretation. *Journal of Gerontology, 38,* 181-189.

Lopez, S.J. & Snyder, C.R. (2003). *Positive psychological assessment. A handbook of models and measures.* Washington: American Psychological Association.

Maddi, S. R. & Kobasa, S. (1984). *The hardy executive: Health under stress*. Homewood: Dow Jones-Irwin.

Malouff, J.M. & Schutte, N.S. (1998). *Emotional intelligence scale scores predict counsellor performance.* Paper presented at the conference of the American Psychological Society, Washington D.C.

Manning, M.R., Williams, R.F. & Wolfe, D.M. (1988). Hardiness and the relationship between stressors and outcomes. *Work and stress, 2* (3), 205-216.

Marais, C.P. (1997). *Salutogenesis as a paradigm in change management.* Unpublished M.Comm dissertation. Pretoria: University of South Africa.

Martinez, M.N. (1997). The smarts that count. *HR Magazine, 42* (11), 72-78.

Maslow, A.H. (1968). *Towards a psychology of being* (2nd ed.). New York: Van Nostrand.

Matthews, G., Zeidner, M. & Roberts, R.D. (2002). *Emotional Intelligence: Science and Myth.* Cambridge: MIT Press.

Matthews, L. (1996). The EQ factor. *Management, 43* (3), 29-31.

Mayer, J.D. (1986). How mood influences cognition. In N.E. Sharkley (Ed), *Advances in cognitive science* (pp. 290-314). Chichester, West Sussex: Ellis Horwood.

Mayer, J.D. (2001). A Field Guide to Emotional Intelligence. In J.Ciarrochi, J.P. Forgas & J.D. Mayer (Eds), *Emotional Intelligence in Everyday Life: A Scientific Inquiry* (pp. 3-24). Philadelphia: Psychology Press.

Mayer, J.D., Caruso, D. & Salovey, P. (1999). Emotional intelligence meets traditional standards for an intelligence. *Intelligence, 27,* 267-298.

Mayer, J.D., DiPaolo, M.T. & Salovey, P. (1990). Perceiving affective content in ambiguous visual stimuli: A component of emotional intelligence. *Journal of Personality Assessment, 54,* 772-781.

Mayer, J.D. & Salovey, P. (1993). The intelligence of emotional intelligence. *Intelligence, 17* (4), 433-442.

Mayer, J.D. & Salovey, P. (1995). Emotional intelligence and the construction and regulation of feelings. *Applied and Preventive Psychology, 4,* 197-208.

Mayer, J.D. & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D.J. Sluyter (Eds), *Emotional development and emotional intelligence: Educatoinal implications.* New York: Basic Books.

Mayer, J.D., Salovey, P. & Caruso, D.R. (2000). Models of emotional intelligence. In R.J. Sternberg (Ed). *Handbook of intelligence* (pp. 396-420). Cambridge: Cambridge University Press.

Mayer, J.D., Salovey, P. & Caruso, D.R. (2002). *Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) User Manual*. Toronto: MHS Publishers.

McCrae, R.R. (2000). Emotional intelligence from the perspective of the Five-Factor Model of Personality. In R. Bar-On & J.D.A. Parker (Eds), *The handbook of emotional intelligence* (pp. 263-276). New York: Jossey-Bass.

McKenna, E.F. (1987). *Psychology in Business: Theory and Applications.* London: Lawrence Erlbaum.

Megerian, L.E. & Sosik, J.J. (1996). An affair of the heart: emotional intelligence and transformational leadership. *Journal of Leadership Studies, 3,* 31-48.

Meichenbaum, D. (1977). *Cognitive-behaviour modification: An integrative approach.* New York: Plenum.

Mingote, J.C. (1995). *Job satisfaction, work-related strain and quality of life in doctors.* Unpublished doctoral dissertation. University of Madrid, Spain.

Morand, D.A. (2001). The emotional intelligence of managers: Assessing the construct validity of a nonverbal measure of “people skills”. *Journal of Business and Psychology, 16* (1), 21-33.

Moriarty, P. & Buckley, F. (2003). Increasing team emotional intelligence through process. *Journal of European Industrial Training, 27* (2), 98-110.

Mouton, J. & Marais, H.C. (1993). *Basic concepts in the methodology of the social sciences.* Pretoria: Human Sciences Research Council.

Moyle, P. (1995). The role of negative affectivity in the stress process: tests of alternative models. *Journal of Organizational Behaviour, 16,* 647-668.

Murphy, K.R. & Davidshofer, C.O. (1998). *Psychological testing: Principles and applications* (4th ed.). Upper Saddle River, NJ: Prentice-Hall.

Neugarten, B.L., Havighurst, R. & Tobin, S. (1961). The measurement of life satisfaction. *Journal of Gerontology, 16,* 134-143.

Nunnally, J.C. (1978). *Psychometric theory.* New York: McGraw-Hill.

Paulhus, D.L., Lysy, D.C. & Yik, M.S.M. (1998). Self-report measures of intelligence: Are they useful proxies as IQ tests? *Journal of Personality, 66,* 525-554.

Payne, W.L. (1986). A study of emotion: Developing emotional intelligence; Self-integration; relating to fear, pain and desire. *Dissertation Abstracts International, 47*(01), 203A. (University Microfilms No. AAC 8605928).

Phares, E.J. (1976). *Locus of control in personality.* Morristown: General Learning Press.

Prati, L.M., Douglas, C., Ferris, G.R., Ammeter, A.P. & Buckley, M.R. (2003) Emotional intelligence, leadership effectiveness, and team outcomes. *The International Journal of Organizational Analysis, 11* (1), 21-40.

Radmacher, S.A. & Sheridan, C.L. (1989). The global inventory of stress: A comprehensive approach to stress assessment. *Medical Psychotherapist, 2,* 183-188.

Rogers, C.R. (1961). *On becoming a person.* Boston: Houghton Mifflin.

Rosenbaum, M. (1980). A schedule for assessing self-control behaviours: preliminary findings. *Behaviour Therapy, 11,* 109-121.

Rosenbaum, M. (1988). Learned resourcefulness, stress and self-regulation. In S. Fisher & J. Reason (Eds), *Handbook of life-stress, cognition and health* (pp. 483-496). Chichester: Wiley.

Rosenbaum, M. & Ben-Ari, K. (1985). Learned helplessness and learned resourcefulness: Effects of non-contingent success and failure on individuals differing in self-control skills. *Journal of Personality and Social Psychology*, *48* (1), 198-215.

Rosenbaum, M. & Palmon, N. (1984). Helplessness and resourcefulness in coping with epilepsy. *Journal of Consulting and Clinical Psychology, 52* (2), 244-253.

Rotter, J.B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs, 80* (1), 1-28.

Ryff, C.D. (1982). Successful aging: A developmental approach. *The Gerontologist, 22,* 209-214.

Ryff, C.D. (1985). Adult personality development and the motivation for personal growth. In D. Kleiber & M. Maehr (Eds), *Advances in motivation and achievement: Vol 4. Motivation and adulthood* (pp. 55-92). Greenwich, CT: JAI Press.

Ryff, C.D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality & Social Psychology, 57*, 1069-1081.

Ryff, C.D. & Keyes, C.L.M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology, 69,* 719-727.

Sala, F. (2002). *Emotional Competence Inventory (ECI): Technical Manual.* Boston: Hay/Mcber Group.

Salovey, P. (2001). Applied Emotional Intelligence: Regulating emotions to become healthy, wealthy, and wise. In J. Ciarrochi, J.P. Forgas & J.D. Mayer (Eds.), *Emotional Intelligence in everyday life* (pp. 168-184). Philadelphia: Psychology Press.

Salovey, P. & Mayer, J.D. (1990). Emotional intelligence. *Imagination, Cognition, and Personality, 9,* 185-211.

Salovey, P., Woolery, A. & Mayer, J.D. (2001). Emotional intelligence: Conceptualization and measurement. In G. Fletcher & M.S. Clark (Eds), *The Blackwell handbook of social psychology*, V*ol. 2*: *Interpersonal processes.* Oxford: Blackwell Publishers.

Sauer, W.J. & Warland, R. (1982). Morale and life satisfaction. In D.A. Mangen & W.A. Peterson (Eds), *Research instruments in social gerontology: Vol 1: Clinical and social psychology* (pp. 195-240). Minneapolis: University of Minnesota Press.

Schmidt, F.L. & Hunter, J.E. (1998). The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years in research findings. *Psychological Bulletin, 124,* 262-274.

Schutte, N.S. & Malouff, J.M. (1998). *Developmental and interpersonal aspects of emotional intelligence.* Paper presented at the Convention of the American Psychological Society, Washington D.C.

Schutte, N.S. & Malouff, J.M. (1999). *Measuring Emotional Intelligence and Related Constructs.* New York: Edwin Mellen Press.

Schutte, N.S., Malouff, J.M., Hall, L.E., Haggerty, D.J., Cooper, J.T., Golden, C.J. & Dornheim, L. (1998). Development and validation of a measure of emotional intelligence. *Personality and Individual Differences, 6,* 167-177.

Seyle, H. (1956). *The Stress of life.* New York: McGraw-Hill.

Seyle, H. (1974). *Stress without distress.* Philadelphia: J.B. Lippincott.

Seyle, H. (1983). *Seyle's guide to stress research, Volume 2*. New York: Van Nostrand Reinhold.

Sheldon, K.M. & King, L. (2001). Why positive psychology is necessary. *American Psychologist, 56* (3), 216-217.

Skuse, D.H., James, R.S., Bishop, D.V., Coppin, B., Dalton, P., Aamodt-Leeper, G., Bacarese-Hamilton, M., Cresswell, C., McGurk, R., & Jacobs, P.A. (1997). Evidence from Turner's syndrome of an imprinted x-linked locus affecting cognitive function. *Nature, 387,* 705-708.

Slaski, A.M. & Cartwright, S. (2002). Health, performance and emotional intelligence: an exploratory study of retail managers. *Stress and Health*, *18,* 63-68.

Snyder, C.R. & Lopez, S.J. (2002). *Handbook of positive psychology.* Oxford: Oxford.

Somerfield, M.R. & McCrae, R.R. (2000). Stress and coping research. *American Psychologist, 55* (6), 620-625.

Sosik, J.J. & Megerian, L.E. (1999). Understanding leader emotional intelligence and performance: the role of self-other agreement on transformational leadership perceptions. *Group & Organization Management, 24,* 367-390.

Spector, P.E. (1988). Development of the work locus of control scale. *Journal of Occupational Psychology, 61,* 335-340.

Spector, P.E. (1992). *Summated Rating Scales.* Newbury Park, CA: Sage.

Spector, P.E., Cooper, C.L., Sanchez, J.L., O'Driscoll, M., Sparks, K., Bernin, P., Bussing, A., Dewe, P., Hart, P., Lu, L., Miller, K., Renault de Moraes, L., Ostrognay, G.M., Pagon, M., Pitariu, H., Poelmans, S., Radhakrishnan, P., Russinova, V., Salamatov, V., Salgado, J., Shima, S., Siu, O.L., Stora, J.B., Teichmann, M., Theorell, T., Vlerick, P., Westman, M., Widerszal-Bazyl, M., Wong, P. & Yu, S. (2002). A 24 nation/territory study of work locus of control in relation to well-being at work: How generalizable are western findings? *Academy of Management Journal, 45,* 453-466.

SPSS Inc. (1998). *SPSS Base 8.0 for Windows User's Guide*. Chicago: SPSS Inc.

Steiner, C. (1997). *Achieving emotional literacy.* London: Bloomsbury Publishing.

Sternberg, R.J. (1997). The concept of intelligence and its role in lifelong learning and success. *American Psychologist, 52,* 1030-1037.

Stevens, J. (1992). *Applied statistics for social sciences.* Hillsdale: Lawrence Erlbaum.

Stock, W.A., Okun, M.A. & Benin, M. (1986). Structure of subjective well-being among the elderly. *Psychology and Aging, 1,* 91-102.

Strümpfer, D.J.W. (1990). Salutogenesis: a new paradigm. *South African Journal of Psychology, 20* (4), 264-276.

Strümpfer, D.J.W. (1995). The origins of health and strength: From 'salutogenesis' to 'fortigenesis'. *South African Journal of Psychology, 25* (2), 81-89.

Strümpfer, D.J.W. & Mlonzi, E.N. (2001). Antonovsky's Sense of Coherence scale and job attitudes: Three studies. *South African Journal of Psychology, 31* (2), 30-38.

Strümpfer, D.J.W. & Wissing, M.P. (1999). *Review of South African data on the sense of coherence scale as a measure of fortigenesis and salutogenesis.* Paper presented at the National Congress of the Psychology Society of South Africa, Durban.

Sutherland, V.J. & Cooper, C.L. (1990). *Understanding stress: a psychological perspective for helping professionals.* London: Chapman & Hal.

Taylor, G.J. (2001). Low emotional intelligence and mental illness. In J. Ciarrochi, J.P. Forgas & J.D. Mayer (Eds.), *Emotional Intelligence in everyday life* (pp. 67-81). Philadelphia: Psychology Press.

Thorndike, E.L. (1920). Intelligence and its uses. *Harper's Magazine, 140,* 227-235.

Viviers, A.M. (1996). *Salutogenese in organisatoriese konteks.* Unpublished Doctoral thesis. Pretoria: University of South Africa.

Viviers, A.M. (1999). Die persoonlikheidsorientasieprofiel van die salutogenies-funksionerende mens. *Journal of Industrial Psychology, 25* (1), 21-26.

Viviers, A.M. & Cilliers, F. (1999). Die verband tussen salutogenese en werkorientasie. *Journal of Industrial Psychology, 25* (1), 27-32.

Von Franz, M.L. (1964). The process of individuation. In C.G. Jung (Ed), *Man and his symbols* (pp. 158-229). New York: Doubleday.

Waterman, A.S. (1984). *The psychology of individualism.* New York: Praeger.

Waterman, A.S. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. *Journal of Personality and Social Psychology, 64,* 678-691.

Watson, D., Clark, L.A. & Tellegen, A. (1988). Development and validation of brief measures of positive and negative effect: The PANAS scales. *Journal of Personality and Social Psychology, 54,* 1063-1070.

Welch, J. (2003). The best teams are emotionally literate. *Industrial and Commercial Training, 35* (4), 168-170.

Winer, B.J. (1971). *Statistical principles in experimental design.* Tokyo: McGraw-Hill.

Wissing, M.P. & Van Eeden, C. (1994). *Psychological wellbeing: Measurement and construct clarification*. Paper presented at the 23rd International Congress of Applied Psychology, Madrid, Spain.

Wissing, M.P. & Van Eeden, C. (1997a). *Facing the challenge to explicate mental health salutogenically: Sense of coherence and psychological well-being.* Paper presented at the 55th Annual Convention of the International Council of Psychology, Graz, Austria.

Wissing, M.P. & Van Eeden, C. (1997b). *Psychological well-being: A fortigenic conceptualization and empirical clarification*. Paper presented at the 3rd Annual Congress of the Psychological Society of South Africa. Durban, South Africa.

Wolfaardt, J. (2001). Basic Concepts. In C. Foxcroft & G. Roodt (Eds), *An introduction to psychological assessment in the South African context* (pp. 34-68). Cape Town: Oxford University Press.

Wood, R. & Bandura, A. (1989). Social cognitive theory of organizational management. *Academy of Management Review, 14* (3), 36.

APPENDIX A - BIOGRAPHICAL DATA FORM

Please complete each of the following questions by indicating with a cross (X) which (single) option applies to you:

Your gender	Male	Female

Your age	Under 20	20-24	25-29	30-34	35-39	40-44	45-49	50 +

The level of your current position	Staff	Supervisory (Manager/ Team Lead)

Years in your current job	Less than 1 year	1 year – 1 year 11 months	2 years – 2 years 11 months	3 years – 3 years 11 months	4 years +

Your participation in this study is appreciated.