THE RELATIONSHIP BETWEEN PERSONALITY PREFERENCE GROUPINGS AND EMOTIONAL INTELLIGENCE

by

MONICA REGINA RODRIGUES BAPTISTA

submitted in part fulfilment of the requirements for the degree of

MASTER OF ARTS

in the subject

INDUSTRIAL AND ORGANISATIONAL PSYCHOLOGY

at the

UNIVERSITY OF SOUTH AFRICA

SUPERVISOR: DR H A BARNARD

October 2009

ABSTRACT

An exploratory study was undertaken to investigate the relationship between personality preference groupings, as described by Jung's (1959) type theory, and emotional intelligence, as measured by Bar-On's emotional intelligence quotient (Bar-On, 1997). The sample group consisted of 1 121 recruitment candidates for a South African investment bank. The sixteen personality types, as measured by the Myers-Briggs Type Indicator, were represented in the sample. The statistical analysis conducted for this study included comparison of means, correlation analysis and analysis of variance. The results indicated statistically significant relationships between the preferences of Extroversion, Judgement, their combined preference grouping and emotional intelligence. No statistically significant relationships were found between the preference groupings of Intuition and Thinking, Sensing and Thinking, Intuition and Feeling, and Sensing and Feeling. The preferred Feeling preference type consistently scored the lowest in terms of emotional intelligence scores.

Key Terms

Personality types, personality type theory, emotional intelligence, Bar-On, Jung, Bar-On EQ-i, Myers-Briggs Type Indicatory (MBTI), mixed model of emotional intelligence, personality preference groupings, analysis of variance, relationships, correlations.

Declaration

Student no: 34807551

I declare that “The relationship between personality preference groupings and emotional intelligence” 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.

_____ _____

SIGNATURE DATE

(MISS M BAPTISTA)

Acknowledgements

I would like to express my gratitude and heartfelt thanks to the following people who played an important role in assisting me to complete this dissertation:

- my supervisor, Dr Antoni Barnard, for her constant encouragement, guidance, time and flexibility
- Helen Muller, for her assistance and guidance with the statistics
- my family and friends who provided much moral support and helped me to keep my sense of humour
- the Lord's helping hand from above

LIST OF ABBREVIATIONS

ANOVA	Analysis of variance
Bar-On EQ-i	Bar-On emotional intelligence quotient
E	Extroversion
EQ	Emotional intelligence
F	Feeling
I	Introversion
J	Judgement
MBTI	Myers-Briggs Type Indicator
MEIS	Multifactor Emotional Intelligence Scale
MSCEIT	Mayer-Salovey-Caruso Emotional Intelligence Test
N	Intuition
P	Perception
S	Sensing
SSRI	Schutte Self-report Inventory
T	Thinking
TMMS	Trait Meta Mood Scale

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1: SCIENTIFIC BACKGROUND TO THE RESEARCH

Personality has historically been widely used as a predictor of employee work attitudes, since people have always differed in the way in which they react to all aspects of the world. Individual personality differences such as locus of control, affectivity and openness to experience have been shown to play an important role in employee work attitudes such as organisational commitment and satisfaction (Vakola, Tsacuisi & Nikolaou, 2004). The increasing interest in the role of emotions in organisational life, however, has led researchers to investigate the significance of understanding and managing the impact of emotions on organisational success. If emotional intelligence is to be of value, however, it must measure something unique and distinct from standard personality traits, and the relationship between both constructs needs to be further understood.

This dissertation focuses on exploring the relationship between personality preference groupings and emotional intelligence (EQ) from a humanistic perspective. This first chapter outlines the background and motivation for the research, followed by the problem statement and research questions. The general objectives, as well as the theoretical and empirical objectives underlying the research, are stated. The paradigm perspective that encompasses this research study is discussed, followed by a discussion of the research design and methodology. The first chapter concludes with an outline of the succeeding chapters of this dissertation.

1.1 BACKGROUND AND MOTIVATION

In recent times there has been much interest in the construct of EQ, a set of abilities relating to emotions and to the processing of emotional information (Palmer, Donaldson & Stough, 2002). During the last decade, research has predominantly concentrated on the theoretical development of the construct and

on the establishment of assessment measures (Palmer et al., 2002). In an early conceptualisation of EQ, Gardner, in Abraham (1999), described EQ as consisting of adaptive skills whereby an emotionally intelligent person has a deep awareness of their emotions and the ability to label and draw upon those emotions as a resource to guide behaviour. Subsequently, Salovey and Mayer (1990) provided a more comprehensive framework for defining EQ. They described EQ as the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions (Salovey & Mayer, 1990).

For some time there has been an increasing interest in the role of emotion in the organisational sphere of life (Higgs, 2001). In a review of the managerial and leadership challenges for the new century, the significance of understanding and managing the impact of emotions and related behaviours is emphasised in terms of organisational success (Higgs, 2001). Vakola et al. (2004), too, found that during the last decade organisational research had focused on the way EQ can predict work-related behaviours such as leadership potential, career development and team effectiveness. This interest in the field led to some interesting findings, with Abraham (1999) finding EQ to be directly related to, and a powerful predictor of, organisational commitment. The same study also found EQ to be directly related to work–group cohesion, with higher EQ manifested in harmonious relationships among workers (Abraham, 1999). Goleman, in Abraham (1999), looked at performance and found that peak performances that stretch human potential well beyond its limits are achieved in a state of flow. Flow is described as the harnessing of emotions to achieve superior performance and learning (Abraham, 1999). As a consequence, EQ, in the form of intuitive feelings based on knowledge of the criteria for success in the marketplace, has led to the development of new products for consumer needs not previously identified (Abraham, 1999).

Bar-On, in Vakola et al. (2004), subsequently began placing EQ in the context of personality theory, with most interest for human resource professionals being in the application and utility of personality in an occupational setting. This is because personality traits are said to predict a range of outcomes such as job satisfaction, job commitment and absenteeism (Vakola et al., 2004). Although the dimensions of a personality measure such as the Myers Briggs Type Indicator (MBTI) have no apparent linkages to EQ, a number of authors assert that MBTI-"type" profiles might well indicate levels of EQ and provide a basis for developing the aspects of an individual's behaviour that will in turn lead to improved organisational performance (Higgs, 2001).

Higgs (2001) conducted such a study and found there to be a relationship between personality (as measured by the MBTI) and EQ, although not a particularly comprehensive one. His study showed strong positive relationships between EQ and the mental function of Intuition (N), and negative relationships between EQ and the mental function of Sensing (S). Positive relationships were also found between EQ and the attitude of Extraversion (E). A subsequent study examining the same relationships was conducted by Dulewicz and Higgs, in Higgs (2001). This study found there to be positive relationships with the Thinking (T) pole of the MBTI mental function and the EQ element of self-awareness. Negative relationships between the MBTI attitude dimension of Introversion (I) and the EQ elements of both Motivation and Influence; and between the MBTI mental function of Feeling (F) and EQ Decisiveness/Intuitiveness, were also reported. Adding to the sometimes contradictory research in this field of investigation were Bastian, Burns and Nettlebeck (2005). In their study, self-report EQ measures were moderately correlated with the five-factor model of personality whilst ability EQ measures had low correlations. Lopes, Salovey and Straus (2003) further found a pattern of low correlations between EQ and the "Big Five" personality traits.

In today's world of work, EQ is likely to continue garnering the attention of researchers, as team-based job design systems continue to be adopted by organisations (Frye, Bennett & Caldwell, 2006). Over the past decade, organisations have increased the use of self-managed teams to accomplish work tasks and organisational goals. Since, by their nature, this involves individuals being engaged in interpersonal interactions and adapting to an array of individual differences as well as environmental and job demands, it is likely that EQ will become a requisite aptitude (Frye et al., 2006). The Bar-On mixed measure of EQ is deemed to be an appropriate measure of the construct, as it blends various aspects of personality in an often a-theoretical manner (Mayer, Salovey & Caruso, 2000), resulting in a conglomerate of traits, dispositions, skills, competencies and abilities being labelled EQ (Caruso, Mayer & Salovey, 2002).

Kluckhohn and Murray in Hergenham (1994) observed that every human being is like every other human being, like some other human beings and like no other human being. It's therefore understandable that the complex construct of personality has various definitions, but can be broadly defined as the enduring characteristics and dispositions of a person that provide some degree of coherence across the various ways in which people behave (Sternberg, 1994). Different theories of personality attempt to define personality in different ways. This includes Allport's trait personality theory, which refers to those patterns of traits that characterise individuals and the way in which a particular trait manifests itself in a particular individual's personality (Hergenham (1994). Jungian type theory of personality, on the other hand, divides people into definable types on the basis of a combination of preferred behaviour and focusing on similarities between people (DiCaprio, 1983).

Hirsch (1985) explains that the use of Jung's typology theory of personality has become one of the most widely used psychological assessment tools with both individuals and groups. Part of the reason personality type is so effective for organisational use is that it can help reduce unproductive interpersonal and intra-

organisational conflict by assessing the strengths and blind spots of teams and individuals in a non-judgemental way (Hirsch, 1985). Moreover, individuals with different personality types to that of the organisation can experience degrees of alienation and frustration. Understanding personality then becomes an integral part of the interpretation of organisational culture and of organisational health surveys (Hirsch, 1985). Individual employees can also use personality type to evaluate the fit between them and their jobs by determining the personality characteristics more associated with a particular job (Hirsch, 1985).

Since organisations are increasingly considering their people to be their only competitive advantage, both EQ and personality can be used to develop individual and team leadership skills, enhance stress management, aid in self-understanding and development, and in the understanding of preferred learning and communication styles. Higgs (2001) asserts that personality measures should be used by organisations to develop EQ, which suggests a strong relationship between the two. Should this be the case, programmes to address development of one construct could have an impact on the development of the other. This could greatly benefit an organisation, both financially and in terms of time and effort spent.

As seen from the research studies mentioned above, further investigation is required in order to explore potential EQ and personality type relationships in more detail (compare also Frye et al., 2006).

1.2 PROBLEM STATEMENT

Dainty and Anderson (2000) and Higgs (2001) emphasise the feasibility of seeing and analysing the relationship between measures of EQ and broader-based measures of personality, as in the MBTI. Industrial psychologists' knowledge about the theoretical and empirical relationship between personality preferences and EQ, and particularly their understanding of how personality preferences

influence EQ in an organisational context, may be enhanced should the nature of such a relationship be explored empirically.

In further adding to the current body of knowledge, the opportunity extends itself to clarifying and exploring the relationships between these two constructs, specifically in a South African context.

1.2.1 Research questions with regard to the literature review

From the problem statement discussed in the previous section, the following research questions are formulated with regards to a theoretical analysis of the relationship between EQ and personality preference groupings.

- How are the constructs and measurements of personality preference groupings and EQ conceptualised and explained by theoretical models in the literature?
- Does a theoretical relationship exist between the constructs of personality preference groupings and EQ, and how can this be explained?

1.2.2 Research questions with regard to the empirical study

From the problem statement already discussed, the following research questions are formulated with regards to an empirical analysis of the relationship between EQ and personality preference groupings.

- What is the nature of the relationship between personality preference groupings as measured by the MBTI, and EQ as measured by the Bar-On Emotional Quotient Inventory (EQ-i)?
- Which of the category types within the four MBTI personality preference groupings show a relationship with total EQ and its five composite scales, as measured by the Bar-On EQ-i?

- To what extent do MBTI personality preference groupings differ on the basis of individual variables (age, gender, race and occupational level)?
- To what extent do levels of EQ, measured by the Bar-On EQ-i, differ on the basis of individual variables (age, gender, race and occupational level)?

1.3 AIMS OF THE RESEARCH

From the above research questions, the following aims are formulated:

1.3.1 General aim of the research

The general aim of this research is to examine the relationship between four personality preference groupings (as measured by the MBTI) and EQ constructs (as measured by the Bar-On EQ-i) in a sample of recruitment candidates for a South African investment bank.

1.3.2 Specific aims of the research

The following aims are specifically formulated for the literature review and the empirical study:

1.3.2.1 Literature review

- To conceptualise the constructs of personality preference groupings and EQ from a theoretical perspective
- To explore the relationship between personality preference groupings and EQ from a theoretical perspective
- To provide an overview of the development and psychometric properties of the measures of personality preference groupings and EQ

1.3.2.2 Empirical study

- To investigate the empirical relationship between personality preference groupings and EQ
- To determine which of the categories within the MBTI personality preference groupings are related to total EQ and its five composite scales
- To investigate whether MBTI personality preference groupings differ on the basis of individual variables (age, gender, race and occupational level)
- To investigate whether levels of EQ differ on the basis of individual variables (age, gender, race and occupational level)

1.4 PARADIGM PERSPECTIVE

The following section outlines the relevant paradigm perspective underlying the study as well as meta-theoretical statements and theoretical models used in this research.

1.4.1 Underlying paradigm perspective

Paradigms are world views and encompass an entire constellation of beliefs, values and techniques which are shared by all members of a given community. The notion of paradigms provides a framework to increase our awareness of multiple theories, models and perspectives about human behaviour and the social environment (Schriver, 1995).

The current research study falls within the social-scientific paradigm, explored from a functionalistic perspective. This philosophy assumes a physical world in which we act, but stresses the necessity of assuming a social world populated by other people (Guba, 1990). Functionalism is primarily regulative and pragmatic in

its basic orientations and has as its concern the understanding of society in a way that generates useful empirical knowledge (Morgan, 1983). The underlying assumptions of functionalism encourage an approach to social theory that focuses on understanding the role of human beings in society, with behaviour always seen as being contextually bound in a real world of concrete and tangible relationships (Morgan, 1983). Functionalism therefore underscores the belief that behaviour can be objectively measured, which is compatible with the quantitative research approach of this study.

The normative, axiological aspect of the above approach is humanistic. The assumptions underlying humanism include positive growth, uniqueness, awareness of being, the making of choices, and that human beings are more than the sum of their parts (Schriver, 1995). The hallmark of the humanistic perspective has been its insistent that the only way to understand another human being is by understanding his or her distinctive experience of reality (Schriver, 1995). Since axiology also refers to what each individual personally values and believes to be worthwhile (Woodd, 1997), it can be said to be compatible with humanism.

Because the theory underlying both EQ and personality type has the individual as it focus, the humanistic paradigm is appropriate. The self-report MBTI, based on Jung's theory of personality type, was developed by Katharine Briggs and Isabel Briggs Myers in order to measure normal variation in personality preferences (Kennedy & Kennedy, 2004). Jung assumed that everyone can use all four core processes, but that people differ in the priority given to each (Opt & Loffredo, 2003). Development of type is thus possible. Similarly, the Bar-On EQ-i is a self-report measure of a mixed EQ model, measuring a multidimensional array of noncognitive capabilities, competencies and skills. Bar-On's EQ-i is a process-oriented measure that captures respondents' potential for EQ behaviour (Bar-On in Frye et al., 2006). Underlying the development of both instruments is, thus, the developmental nature of the constructs being measured, placing them

compatibly within the humanistic framework. The research method chosen for this study is therefore paradigmatically compatible with the functionalist paradigm and its meta-theoretical assumptions with humanism.

1.4.2 The disciplinary context

From a disciplinary context, this research focuses on psychology with industrial psychology as its field of application. The focus of the literature review is on the constructs of personality and EQ, while the empirical study makes use of psychometrics and statistical analysis to interpret results.

The current research is categorised within the discipline of industrial and organisational psychology. It further falls within the sub discipline of organisational and personnel psychology. Industrial and organisational psychology applies psychological concepts and methods to optimize human potential in the workplace (Myers, 2004). Organisational psychology specifically examines the effects of work environments and management styles on worker motivation, job satisfaction, and productivity (Myers, 2004). Within this research study, personality and EQ will be investigated, both of which influence human and organisational behaviour.

1.4.3 Theoretical models

The literature review on personality, personality type groupings and EQ will be presented from a humanistic perspective. Specifically, the review of personality will be viewed from a psychoanalytical approach, and will be assuming a “type” view of personality, as reflected in Jung’s theory of type (Feshbach, Weiner & Bohart, 1996). EQ will be explored from the perspective of Bar-On’s mixed model of EQ. The theoretical models underpinning each of these constructs will be further elaborated on in chapters 2 and 3.

1.4.4 Meta-theoretical concepts

The conceptual descriptions relevant to this study are defined as follows:

1.4.4.1 Personality

According to Saville and Holdsworth (1999), personality refers to a person's typical or preferred way of behaving, thinking and feeling. This definition refers to relatively stable and enduring characteristics whilst recognising that behaviour is to some extent determined by the current environment and circumstances (Saville & Holdsworth, 1999).

There are many different approaches to studying and understanding personality. For the purpose of this study, personality is contextualised within the psychodynamic approach, as defined by Jung's analytical psychology. Jung's psychodynamic approach represents a hopeful and optimistic image of human nature, in which personality is more a product of environment than of inherited, psychological forces (Jung, in Hergenhahn, 1994). Jung defines personality types as patterns in the way people prefer to perceive and make judgements (DiCaprio, 1983). Jung believed that an individual's unconscious preferences for performing certain tasks and for using their minds dictated various personal traits and choices (Kennedy & Kennedy, 2004).

1.4.4.2 EQ

Salovey and Mayer (1990) formulated a model of EQ by defining EQ as a subset of social intelligence, incorporating the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions. As EQ theory progressed, models based on alternative theoretical perspectives emerged. Some researchers perceived EQ

as an ability, whereas others viewed EQ as a dispositional tendency such as personality (Ciarrochi, Chan & Caputi, 2000).

For the purpose of this study, EQ will be considered in the light of Bar-On's mixed model of EQ. According Reuven Bar-On, EQ is defined as an array of noncognitive capabilities, competencies, and skills that influence one's ability to succeed in coping with environmental demands and pressures (Bar-On, 1998). Mixed EQ models blend various aspects of personality in an often a-theoretical manner (Mayer et al., 2000), resulting in a conglomerate of traits, dispositions, skills, competencies and abilities being labelled EQ (Caruso et al., 2002). EQ will also be seen as a developable trait or ability (Cooper, 1997; Steiner, 1997), reaffirming the value of its relevance and focus in the workplace.

1.4.5 Central hypotheses

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

- There is a relationship between MBTI personality preference groupings and EQ.
- There is a relationship between the demographic variables of age, gender, race and occupational level and the MBTI personality preference groupings and EQ.

1.5 RESEARCH DESIGN

According to Mouton and Marais (1992), the aim of a research design is to plan and structure a research project in such a manner that the eventual external and internal validity of the research findings is maximised. As such, necessary controls are put in place so that there is confidence in the conclusions (Graziano & Raulin, 2000). Research methodology is, thus, what makes the social sciences scientific. Research methods can be classified as either quantitative or qualitative

with quantitative research requiring numerical data to answer the given research question (Rosnow & Rosenthal, 1996). In discussing the research design for this study, the overall research purpose, research variables, unit of analysis, as well as strategies to enhance validity and reliability, are highlighted and discussed.

1.5.1 Overall purpose of the research

The relational research design used in this quantitative study is descriptive and non-experimental in nature, as there is no sample randomisation, control group or manipulation of an independent variable (Rosnow & Rosenthal, 1996). Descriptive research aims to systematically classify the relationship between variables in the research domain and to investigate certain domains in depth (Mouton & Marais, 1994). In the literature review, descriptive research is also applicable to the conceptualisation of the constructs of personality preferences and emotional intelligence.

1.5.2 Research variables

For this study, MBTI personality preference groupings are considered the independent variable and EQ the dependent variable. The objective of this research is to determine whether personality preference groupings (independent variable) are related to EQ (dependent variable).

1.5.3 Unit of analysis

The unit of analysis in this research is the individual, since the characteristics being examined are those of individual behaviour, that is, individual personality preferences and individual EQ. Correlations describe relationships formally, using observation and measurement to quantify the degree of association between variables (Rosnow & Rosenthal, 1996). For this research correlation analysis is based on group results obtained at an individual level.

1.5.4 Validity and reliability

Internal and external validity measures are considered and incorporated into the research design in order to ensure that the research findings are as valid as possible (Foxcroft & Roodt, 2001). Reliability, in turn, refers to the consistency or stability of measurement (Foxcroft & Roodt, 2001), and is ensured by structuring the research model in such a way that nuisance variables are limited.

1.5.4.1 Validity

In this research, chapters 2 and 3 report detailed conceptualisations of personality, personality types and EQ, which have been extracted from the relevant literature. Theoretical validity was enhanced through the focus on sound theoretical frameworks for the constructs and for their integration.

Empirically, validity is enhanced by the use of appropriate, scientifically validated measuring instruments. A possible threat is that the sample was predetermined as opposed to randomly selected. However, a valid and reliable research methodology (discussed in ch. 4) was applied which was relevant to the type of data collected.

1.5.4.2 Reliability

Reliability in the literature review (ch. 2 and 3) was addressed by the use of existing literature sources, theories and models which are widely available. Empirically, the data gathering techniques employed ensured anonymity, and standard scoring instructions were adhered to. The reliability of the measuring instruments used is reported in chapter 4.

1.6 RESEARCH METHODOLOGY

This research will be presented in two phases, namely a literature review and an empirical investigation.

PHASE 1: LITERATURE REVIEW

The literature review phase consists of a review of personality and personality types, and EQ. The literature review includes the following steps:

Step 1 involves explaining the conceptualisation and development of personality and a personality type, as well as key issues in its measurement.

Step 2 entails explaining the emergence and conceptualisation of EQ as well as key issues in its measurement.

Step 3 comprises the theoretical integration of the constructs of personality and EQ.

PHASE 2: THE EMPIRICAL STUDY

The empirical investigation was conducted within the South African organisational context, comprising of the following:

Step 1: Population and Sample

The research sample for the present study was gathered from prospective employment candidates at a leading emerging market investment bank in South Africa, which currently has a staff compliment of approximately 4 000 people.

A non-random sample of 1 121 prospective employment candidates, who recently underwent psychometric assessment testing, was used for this study. The relatively high sample size in comparison to other studies allows for greater confidence in the results, since the larger the sample size the greater the confidence levels (Cohen, 2008). The sample included adequate representations across race, gender and occupational level, as well as across personality preference groupings.

Step 2: Measuring instruments

A biographical questionnaire, the MBTI and Bar-On's EQ-i were used in the collection of data for this study.

- **Biographical questionnaire**

A biographical questionnaire was used to yield demographic information from the sample. This information is relevant to the current study and included age, gender, race and occupational level.

- **The MBTI**

Personality preference groupings in this study were measured by the use of the MBTI. Jung's type theory was developed on the basis of three dimensions exploring individual cognitive style (Higgs, 2001). These were

1. how individuals approach life
2. the way in which individuals become aware of the world
3. the way in which individuals reach conclusions about the world

Attitudinal orientations relate to an individual's focus of attention and flow of psychic energy (Higgs, 2001). Extraversion (E) is the preference that relates to

drawing energy from outside oneself whilst Introversion (I) is the preference that relates to drawing energy from the inner world of ideas, emotions and impressions (Kennedy & Kennedy, 2004). Two additional orientations exist relating to the way in which individuals approach the outer world (Myers, 1962). Judging (J) refers to an orientation to cope with external stimuli by means of structure and control. Perception (P) refers to the preference for living in a more spontaneous and flexible way (Kennedy & Kennedy, 2004).

The four basic psychological functions relate to perceptual functions which mediate the way in which information is handled by individuals (Higgs, 2001). Sensing (S) relates to the preference for paying attention to information perceived through the five senses (Kennedy & Kennedy, 2004) whilst Intuitive (N) perception refers to paying attention to possibilities through insights (Higgs, 2001). With regards to decision making, Thinking (T) judgement is the preference related to linking ideas through logical connection and critical thought (Higgs, 2001), whilst Feeling (F) is related to the preference for organising information in a personal, value-oriented way (Kennedy & Kennedy, 2004).

McCrae and Costa, in Higgs (2001), point out that the MBTI is built around preference scores, measuring types rather than traits or continuous variables, and that it is the dynamics of type which are critical (Myers & McCaulley in Higgs, 2001). Based on this, four personality preference groupings were identified for the present study, namely

- I/E attitude grouping
- J/P attitude grouping
- N/S and T/F function grouping
- I/E and J/P attitude grouping

Extensive research on the instrument since its development supports its reliability and validity (Carskadon, 1979; Carlson, 1989; Harvey, 1996; Murray, 1990 in Moore, Dettlaff & Dietz, 2004). Opt and Loffredo (2003) support this and state that the MBTI has been found to be a reliable and valid instrument.

In general the reliability and internal consistency of the MBTI has been found to be high, and is discussed in more detail in chapter 4. Examination of the test-retest reliability of type categories for the instrument range from 0,48 to 0,89 (Capraro & Capraro, in Salter, Forney & Evans, 2005). Thus Myers, McCaulley, Quenk and Hammer, in Moore et al. (2004), claim that the actual test-retest probabilities are different from chance and concluded that test-retest reliabilities of the MBTI show consistency over time.

Most validation data for the MBTI focuses on the construct validity of the instrument. Numerous studies have established the construct validity of the MBTI through factor analysis and correlations with personality variables measured by other instruments (Carlson, 1985; 1989; Myers, McCaulley, Quenk & Hammer, 1998; Thompson & Borello, 1986 in Moore et al., 2004). In the literature, there is general agreement on the high levels of face validity of the MBTI (Dulewicz & Higgs, in Moore et al., 2004). Results also seem to have high face validity for many clients (Carskadon, 1975; Carkson & Cook, 1982 in Vacha-Haase & Thompson, 2002). Chapter 4 examines the relationships between the MBTI and other personality measures in more detail.

- **The Bar-On Emotional Quotient Inventory (Bar-On EQ-i)**

The structure of the Bar-On EQ-i is based in literature and its author's research experience as a clinical psychologist. The concept of EQ was theoretically developed from logically clustering variables and identifying underlying key factors purported to determine effective and successful functioning as well as positive emotional health (Bar-On, in Dulewicz, Higgs & Slaski, 2003).

The Bar-On EQ-i measure is composed of five composite scales and fifteen subscales, which are organised to report a total EQ score (Bar-On, in Dulewicz, Higgs & Slaski, 2003), that is:

- Interpersonal EQ scale
- Intrapersonal EQ scale
- Adaptability EQ scale
- Stress Management EQ scale
- General Mood EQ scale

Each item is presented as a declarative statement phrased in the first person singular. Respondents respond to each statement by choosing one response on a five-point Likert scale (1 = not true of me, and 5 = true of me). Raw scores are transformed into standard scores with a mean of 100 and a standard deviation of 15 (Dulewicz et al., 2003).

A number of factor analyses were performed, and provided empirical support for the 1–5–15 structure of the Bar-On EQ-i. Bar-On EQ-i therefore presents a hierarchical structure of EQ (Bar-On, in Dulewicz et al., 2003).

The internal reliability of the Bar-On EQ-i was examined using Cronbach's alpha (Bar-On, 1997). The internal consistency coefficients for the EQ-i subscales ranged from 0.70–0.89 based on seven different samples, thus demonstrating good reliability. Test-retest reliability has also been examined with two groups. Reliabilities for a one-month study ranged from 0.78–0.92, and for a four-month study from 0.55–0.87 (Bar-On, in Dulewicz et al., 2003).

Construct validity for the Bar-On EQ-i has been extensively examined by correlating the inventory's subscale scores with various scale scores of other personality, mental health and job satisfaction measures. According to its author,

the coefficients are high enough to give ample support that the Bar-On EQ-i subscales are measuring the constructs that they were intended to measure and yet not so high as to suggest that the Bar-On EQ-i is a duplication of existing inventories (Bar-On, 1997).

According to Bar-On and Parker, in Dulewicz et al. (2003), the Bar-On EQ-i was originally constructed as an experimental instrument designed to examine the concept of emotional and social functioning. The results from applying such an instrument across diverse populations in various settings would tell us more about emotionally and socially competent behaviour and eventually about the underlying construct of emotional and social intelligence. The main conclusion of Dulewicz et al.'s (2003) study is that there is clear evidence for the content and construct validity of the two instruments and therefore for the EQ personal factor model of EQ.

Step 3: Data collection

The researcher obtained the data for this study from the psychometric consulting house responsible for conducting psychometric assessments on prospective employment candidates to the investment bank. All relevant biographical and research data were captured and coded by the researcher.

Step 4: Data analysis

Once the data had been coded, they were statistically analysed with the aid of the statistical package SAS, version 9.2. Statistics applied included descriptive statistics (frequency tables, means and standard deviations), common statistics (Pearson's correlation coefficient and Spearman's correlation coefficient) and inferential statistics (Analysis of Variance (ANOVA)).

More detailed information on the statistical analysis techniques applied in this study is provided in chapter 4.

Step 5: Hypotheses

To operationalise the research, empirical hypotheses were formulated from the central hypothesis to test whether a relationship exists between personality preference groupings and EQ. These are stated in chapter 4.

Step 6: Interpreting empirical results

The statistical results obtained from the above analyses were reported and interpreted through the use of tables and graphs. The results allowed for reporting on the rejection or acceptance of the research hypotheses, and for comparisons with results obtained in previous research studies.

Step 7: Integration of the literature review and empirical results

The results of the empirical study were integrated with the findings of the literature review in order to provide the overall findings of the research study.

Step 8: Conclusions, limitations and recommendations

At the end of the present study, conclusions from the results obtained were drawn and related back to the aims and objectives of the study. The results obtained were compared to those already found in previous literature in the field.

The limitations encountered in conducting the present research are reported on in chapter 6. These limitations refer to the selected theoretical frameworks of the constructs, the types of instrument, the type of participant and the sample used, as well as the research methods and procedures followed.

Finally, recommendations for the use, applicability and generalisation of the results are made in chapter 6. Areas for future research, resulting from the present study, are also suggested.

1.7 CHAPTER DIVISION

The chapters comprising this study are presented in the following sequence:

Chapter 2: Personality and personality preference grouping
Chapter 3: Emotional intelligence
Integrations of the literature review
Chapter 4: The empirical research
Chapter 5: Research results
Chapter 6: Conclusions, limitations and recommendations

1.8 CHAPTER SUMMARY

In this chapter, the background to the research is discussed. The problem, aims of the research, paradigm perspective, research design and research methods are also presented.

In chapter 2, personality is conceptualised as the first step in the literature study.

CHAPTER 2: PERSONALITY

The objective of this chapter is to define personality and explore personality theories. After a general review of various personality theories, the focus falls specifically on explaining the theoretical background to Jung's personality-type theory and on defining personality types. Thereafter, the focus is on personality-type development, personality type measurement and its relevance in and impact on the workplace. Finally, a critical evaluation of Jung's personality-type theory is presented, as well as previous correlative research findings.

2.1 THE CONCEPT OF PERSONALITY

Despite several similarities between people, it remains a common fact that all human beings are unique and different from each other. Although differences can vary from the intellectual to the physical, personality differences remain a key variance to be considered when studying human behaviour (Furnham, 1992).

In general, personality can be defined as the enduring characteristics and dispositions of a person that provide some degree of coherence across the various ways in which people behave (Sternberg, 1994). In psychology, personality research is concerned with understanding the complex relationships between cognitions (thought processes), affects (emotions) and overt behaviours in a person (Pervin, 1989). For the purposes of this study, personality is defined as a person's preferred way of thinking, feeling and behaving (Saville & Holdsworth, 1999).

Personality theorists are concerned with the whole person since people function as organised wholes; and it is in this light that we need to understand them (Pervin, 1989). The focus, therefore, is the individual in its entirety and on individual differences. In an organisational context, Furnham (1992) highlights the importance of the information that personality (and therefore individual

differences) can provide in terms of work motivation, productivity, job satisfaction, training interventions, absenteeism, turnover and stress. Many organisational differences can thus, in part, be ascribed to differences between employees (Furnham, 1992).

The role of personality in predicting human performance has been extensively examined, with studies having demonstrated the utility of personality in predicting job performance and personal discipline (Schutte et al., 1998). This is because understanding the concept of personality will most likely enable us to predict what a person will do in real-life situations (Sternberg, 1994).

2.2 PERSONALITY THEORIES

Research in the field of personality resulted in the development of various personality theories proposing distinct sets of assumptions and concepts regarding individual differences (Pervin, 1989). These include theories from the psychoanalytic perspective, phenomenology, behaviourism and trait and type theories of personality, which are briefly discussed below. Type theory, in particular, underlies the manner in which the personality construct is approached in this research and is discussed in more depth.

2.2.1 Psychoanalytical personality theory

Sigmund Freud was a pioneer of research into the personality. He developed a psychoanalytic view of personality, believing all individual behaviour to be a result of struggles and compromises that occurred among motives, drives, needs and conflicts (Pervin, 1989). Freud spoke of three central areas of psychoanalytical theory, that is, the tripartite structure of the mind, the psychosexual stages of development and the operation of defence mechanisms (Derlega, Winstead & Jones, 2005).

Freud called the three constructs that define the structure of the personality the id, the ego and the superego. The id is said to comprise the whole of the psyche that is present at birth and is entirely unconscious. Its sole motivation is to gain pleasure (Freud called this the pleasure principle). It has no perception of reality or self-preservation (Ewen, 1988). Unlike the id, the ego is sane and realistic and forms realistic plans of action to satisfy the needs of the id through a process called reality testing (Ewen, 1988). According to Freud, the superego is the last of the three personality structures to develop and has two main functions: to reward individuals for acceptable moral behaviour and to punish actions that are not socially sanctioned by creating guilt. The superego thus represents internalised moral codes, often called the conscience (Feshbach et al., 1996).

In terms of the psychosexual phases of development, Freud believed every child goes through a sequence of developmental stages, and that the child's experiences during these stages determine adult personality characteristics (Hergenhahn, 1994). Each stage is said to have an erogenous zone associated with it which is the greatest sources of stimulation and pleasure during that particular stage of development. In order to make a smooth transition from one stage to the next, the child must neither be under gratified or over gratified (Hergenhahn, 1994). Since Freud was a doctor, he viewed personality development as closely tied to biological processes, which is evident in his psychosexual phases (Derlega et al., 2005).

The first stage, called the oral stage, was said to occur during the first year of life with the erogenous zone being the mouth. Gratification during this stage results in trust and independence whilst frustration results in gullibility and unrealistic optimism (Scroggs, 1985). The anal phase occurs during the second year of life and the erogenous zone is the anus (Hergenhan, 1994). Gratification during this stage results in self-control and frustration during this stage in stinginess, conscientiousness and obstinacy (Scroggs, 1985). At approximately age three or four, the child enters the third stage of infantile development, the phallic stage, a

time when the genital area becomes the leading erogenous zone (Feist, 1994). This stage is the scene of the Oedipus complex, the resolution of which has a profound influence on adult life. It is during this stage that subsequent adjustments to members of the opposite sex is determined (Hergenhahn, 1994), as gratification during this stage results in a healthy sexual identity; whilst frustration in men results in vanity and exhibitionism and in promiscuity and seductiveness in women (Scroggs, 1985).

According to Freud, the above three psychosexual stages are by far the most important to personality development as he believed the basic ingredients of the adult personality are formulated by the end of the phallic stage (Hergenhahn, 1994).

A third central area of Freud's psychoanalytical theory is that of defence mechanisms. When normal, rational approaches to the reduction or removal of anxiety are ineffective, the ego may revert to irrational methods called ego-defence mechanisms (Hergenhahn, 1994). These defence mechanisms all have two things in common, that is, they are unconscious processes and they distort reality. The most basic defence mechanism, because it is involved in each of the others, is repression. When anxiety is intensified to the point where the ego can no longer tolerate it, the ego represses the instinct by forcing the unwanted feeling into the unconscious (Feist, 1994).

Displacement, another defence mechanism, is the substitution of one need satisfier for another. For example, the ego may substitute an available object for one that is not available. With displacement, what a person truly desires is repressed and is replaced by something safer (Feist, 1994). Freud believed that all impulses can be displaced (Hergenhahn, 1994) and that when displacement takes a socially productive form it is called sublimation (Derlega et al., 2005). The defence mechanism of projection is the ascribing of unacceptable, anxiety-producing facts about the self to someone else (Derlega et al., 2005). In this way,

unacceptable feelings or tendencies that reside in one's own unconscious, causing anxiety, are seen in others (Feist, 1994). Through the defence mechanism of rationalisation, a person rationally explains or justifies behaviour or thoughts that may otherwise be anxiety provoking. By using logic, the ego excuses, outcomes that would be disturbing if they were not explained in some way (Hergenhahn, 1994).

Freud's theory of personality has had much criticism levelled at it, including its overemphasis on unconscious and sexual motivations and its pessimistic view of human nature (Hergenhahn, 1994). Despite this, it can be said that nearly every aspect of the field of psychology, and much of our everyday understanding of human personality, has been influenced by Freud's ideas. He is said to have provided the first and perhaps most comprehensive theory of personality development (Derlega et al., 2005).

2.2.2 Phenomenological personality theory

Unlike Freud, who was primarily a theorist and secondarily a therapist, Carl Rogers was a consummate therapist but a reluctant theorist (Feist, 1994). Nonetheless, building on Freud's psychoanalytical approach, Rogers developed a phenomenological approach to personality, stressing why people can and should be understood in terms of how they view themselves and the world around them (Pervin, 1989).

Unlike the psychoanalytical emphasis on the unconscious, Rogers' theory emphasises what is conscious, preferring to focus on present tensions and needs, and stating that these are the only ones that an organism endeavours to reduce or satisfy (Ewen, 1988). Rogers held an optimistic view of human motivation and human nature. He believed that a "master" motive, which he called the actualising tendency, guides all human behaviour. In contrast to Freud, Rogers believed in the innate goodness and basic integrity of human beings.

Therefore, he suggested that the direction of the actualising tendency, one of Rogers's greatest contributions to personality theory, is positive and growth promoting (Derlega et al., 2005).

2.2.3 Learning personality theory

John Watson set out to change the definition of psychology from the study of mental life to the sciences of behaviour He considered the unconscious and conscious mind to be an unscientific abstraction, and that the prediction and control of observable behaviour should be the primary goal of psychology (Derlega et al., 2005). Whereas psychodynamic theories emphasise the causes of behaviour that are inside the organism (Pervin, 1989), learning theory is based on the assumption that nearly all behaviour is learnt (Feshbach et al., 1996). Watson suggested that behaviour patterns are learnt entirely through experience with the environment.

Albert Bandura helped pioneer the transition from Watson's traditional behaviourism to social learning theory by studying the role of observational learning in the acquisition of human behaviour through a process called vicarious reinforcement. This is the process of learning by watching the consequences of other people's behaviour (Derlega et al., 2005). Bandura's theory is therefore at odds with personality theorists who emphasise biological temperament and enduring traits (Derlega et al., 2005).

2.2.4 Trait personality theory

In direct contrast to the behavioural approach, trait personality theory emphasises temperamentally driven dispositions; with personality traits being genetically based and fairly stable over time (Caspi, Kagan, McCrae & Watson, in Lopes et al., 2003). Trait theories see personality as a combination of traits, which can be any characteristic way of behaving, thinking, feeling or operating

(Caspi et al., in Lopes et al., 2003) and which will permit a prediction of what a person will do in a given situation (Scroggs, 1985).

One such trait theory was developed by Raymond Catell, who considers traits to be the building blocks of personality – clearly the most important concept of his theory (Hergenhahn, 1994). The differentiation between surface and source traits is probably the most important distinction of his theory, with surface traits said to be groups of observations that are correlated and which can, and probably do, have many causes (Hergenhahn, 1994). Source traits, on the other hand, are the causes of behaviours, constituting the most important part of a person's personality structure and being ultimately responsible for all consistent behaviour (Hergenhahn, 1994).

Cattell's theory has come to be known as The Big Five theory of personality, based on five emotional dispositions that may be influenced by emotional regulation skills. These five dispositions, as explained in Lopes et al. (2003), are the following:

- Extraversion: individuals that successfully assert themselves and gain acceptance in the social environment through social interactions
- Agreeableness: individuals identified as team players through the formation of reciprocal social alliances and the building of social capital in the organisation
- Conscientiousness: trusted, diligent cohorts that are productive and supportive of increased organisational performance
- Emotional Stability: the intrapersonal ability to adapt and cope with stress in professional and personal spheres of one's life
- Openness and Intellect: having the ability to effectively complete functional assignments, and at the same time an awareness of the environment to allow for adaptation of behaviour to changing conditions in that environment

Cattell's theory has been praised for providing scientific rigour to the study of personality, and for providing tools (such as Cattell's Sixteen Personality Factor Questionnaire (16PF)) that can be applied in a large number of settings, including vocational counselling and personnel selection in organisations (Hergenhahn, 1994).

However, the portrait of human nature that emerges from Cattell's key idea has been criticised for being barren and narrow (Scroggs, 1985). The numbers of traits identified are said not to do justice to the richness of human personality. Although these traits may provide enough data to make accurate predictions of performance in certain situations, this may not be the same thing as understanding personality (Scroggs, 1985).

2.2.5 Type theory of personality

Type theories of personality divide people into distinct groups on the basis of a combination of preferred behaviour and focusing on similarities between people (DiCaprio, 1983). In chapter 1, personality was contextualised within a psychodynamic approach and, more specifically, within Jung's 1969 analytical psychology. Although Jung did not deny the uniqueness and complexity of each individual, he nevertheless argued that people could be categorised into definable types (DiCaprio, 1983).

Jung defined personality types as patterns in the way people prefer to perceive and make judgements (DiCaprio, 1983). Individuals choose either perception or judgement as a dominant mode to guide their lives and the other as an auxiliary process. By combining an individual's dominant attitude and function, their basic personality type can be determined (DiCaprio, 1983). The various personality types differ in their interests, values and needs. Different types learn in different ways, cherish different ambitions and respond to different rewards (Jung, 1969).

When considering personality types such as Freud's oral and anal phallic types, Jung's introverted and extroverted types, Adler's dominant, getting, avoiding and socially useful types, people are grouped or classified in discrete categories in which they are perceived as exclusively their type, with no characteristics of one or other type (Pervin, 1989). Traits, on the other hand, as postulated by Gordon Allport and Raymond Cattell, involve classifying or categorising people in terms of how much of some characteristics they possess (Pervin, 1989). As mentioned previously, trait theorists believe that traits exist on a continuum ranging from a very small amount to a large amount of the characteristic (Feist, 1994).

In this research, personality is viewed from a type perspective. Therefore, the discussion continues with an analysis of type theory, developments thereof as well as the way personality is measured according to this approach.

2.3 THEORETICAL BACKGROUND TO JUNG'S ANALYTICAL TYPE THEORY OF PERSONALITY

Typology, the theory of innate personality differences, is an important part of Swiss psychiatrist Carl G Jung's work. In the early 1900s, Jung conducted extensive research into the identification of personality types and preferences, generating a theory of personality which stems from analytical psychology (Kennedy & Kennedy, 2004). Jung sought to clarify his own position by showing how people with innate differences can find it difficult to understand each other (Kennedy & Kennedy, 2004). In his attempt to understand the psychological functioning of individuals, Jung drew on information from a broad spectrum of disciplines such as psychology, philosophy, psychiatry, biology, physics, chemistry, literature and mythology (DiCaprio, 1983, Pervin, 1989; Moller, 1995).

Jung believed that individuals have mental or psychological preferences for performing certain tasks and for using their minds (Myers, in Opt & Loffredo, 2003), just as they have physical preferences such as a dominant eye or hand

(Kennedy & Kennedy, 2004). Though not conscious, Jung believed that these processes nonetheless dictated various personal traits and choices (Kennedy & Kennedy, 2004). Jung further believed that behaviour was a subsystem of personality and was something which can change as a result of inputs from, and interactions with, the external environment (Higgs, 2001). This differed from Freud's image of human nature in that Jung did not hold a deterministic view of human nature, but postulated that the drive towards self-actualisation is innate and can either be facilitated or thwarted by experience and learning (Feist, 1994). As with other personality theories, Jung described the structure and dynamics of personality in a particular way.

2.3.1 The structure of personality

Jung, like Freud, based his personality theory on the primary assumption that the psyche has both a conscious and an unconscious level. Unlike Freud, however, Jung asserted that the most important portion of the unconscious springs not from personal experiences of the individual but from the distant past of human existence (Feist, 1994). The psyche, therefore, can be divided into the conscious and the unconscious, with the latter being subdivided into the personal unconscious and the collective unconscious (Feist, 1994).

The first system is the personal conscious of which the ego is a part. Jung stated that the ego is the part of the psyche concerned with perceiving, thinking, feeling and remembering and is responsible for carrying out the normal activities of waking life (Jung, 1969a).

The second system of the psyche is called the personal unconscious. This consists of material that was once conscious, but was repressed or forgotten because it was either trivial or disturbing (Hergenhahn, 1994). It is unique to each person since it is formed by individual experiences. Central to Jung's belief is that

everything passes into the consciousness by way of the unconscious first (Fordham, 1966).

Jung contended that there remained a much bigger entity than the personal unconscious, which he termed the collective unconscious. The collective unconscious is the deepest level of the psyche, containing inherited, accumulated experience of the human and pre-human species (Feist & Feist, 2002). Jung believed that just as individuals accumulate and file their past experiences, so does humankind collectively. The contents of the collective unconscious do not lie dormant but are active and influence a person's thoughts, emotions and actions (Feist, 1994). This is one of the most unique teachings of analytical psychology (Feist & Feist, 2002).

According to Jung, archetypes are the powerful, primordial elements making up the collective unconscious (Feshbach et al., 1996). Each archetype is associated with an instinctive tendency to have a particular kind of feeling or thought with regard to a corresponding object or experience (Robertson, 1987). Among the archetypes postulated by Jung are the wise man, God, the demon, and each key member of the family. As the world is experienced through such archetypes, personal memories are accumulated around each to form complexes; the more personal the experiences, the higher the form the archetypes take on in an individual (Robertson, 1987).

Two especially significant archetypes from Jung's theory are the Animus and Anima. The Animus is the male archetype that is experienced by a woman, while the Anima is the female archetype experienced by a man (Feshbach et al., 1996). These archetypes imply that, to a certain extent, women have innate dispositions towards particular ideas and attitudes about men and that men have analogous innate ideas about women (Feshbach et al., 1996). In addition, Jung proposed the Shadow archetype, the baser, animal side of human nature. All those parts of an individual's personal life which have been deemed unsuitable

and denied collect around this single, archetypal core (Robertson, 1987), which is not unlike Freud's id. In contrast, the Persona archetype is the socially acceptable, protective mask that each person wears in public (Feshbach et al., 1996). The Persona helps individuals deal with other people by indicating what may be expected from them (Ewen, 1988).

Jung found that, in a zone between consciousness and unconsciousness, was an archetype of transcendence and wholeness called the Self (Feshbach et al., 1996). The archetype of the Self signifies the innate tendency to balance and integrate the diverse components of the person, including the Persona, the Shadow and other archetypes. In other words, this process of self-actualisation is the development of, understanding of and sensitivity to the archetypes that comprise the collective unconscious (Feshbach et al., 1996).

According to Jung, the primary symbolic representation of the Self archetype is the magic circle, or mandala. This symmetrical circle symbolises human striving for unity and wholeness (Feshbach et al., 1996). Ewen (1988), however, states that whilst every personality possesses the innate tendency to individuate and develop selfhood and stability, this ideal is rarely if ever achieved to the fullest and that for some people it remains totally out of reach.

2.3.2 The dynamics of personality

Like Freud, Jung viewed personality as an energy system (Pervin, 1989). Jung (1969) referred to the total personality (the psyche) as a complex network of systems interacting with each other, believing that psychic energy flowed continually from one system to another, striving for harmony. Jung (1959) used the term *libido* to refer to the psychic or general life process. Psychic energy can be expressed in sexuality, hunger or a desire/decision of the will. When a large amount of psychic energy is manifested in a specific thought or feeling, such a thought or feeling will exercise a strong influence on the person's behaviour.

Jung also believed that opposites are the indispensable preconditions of all psychic life (Moller, 1995). The principle of opposites explains how psychic energy is generated. Opposing forces (desires, thoughts or feelings) within personality create a conflict that generates energy, which is expressed in behaviour. Without these polarities, there would be no process towards equalisation (Moller, 1995). The principle of equivalence refers to the continuing redistribution of energy within personality. Jung (1969a) stated that energy expended in bringing about some position will not be lost to personality, but rather shifted to another part of personality (its opposite). The entropy principle further refers to an exchange of energy resulting in a homeostatic balance between objects or states (Moller, 1995).

Human motivation springs from both past causes and teleological goals. According to Jung (1969), causality holds that present events have their origin in previous experiences. Conversely, teleology holds that present events are motivated by goals and aspirations for the future and direct a person's destiny.

Adaptation to the outside world involves the forward flow of psychic energy and is called progression, whereas adaptation to the inner world relies on a backward flow of energy and is called regression. Both are essential if people are to achieve individual growth or self-realisation (Jung, 1969a).

Jung's assumptions about the structure and dynamics of the personality, as detailed above, led him to identify various personality types based on people's unique cognitive processing styles. He referred to these personality types as psychological types, each constituting a unique nature, as discussed below.

2.4 THE NATURE OF THE PERSONALITY TYPES

Jung's type theory was developed on the basis of three dimensions exploring individual cognitive style (Higgs, 2001). These concerned:

- the way individuals approach life
- the way in which individuals become aware of the world
- the way in which individuals reach conclusions about the world

Jung (1990) recognised various psychological types which grow out of a union of two basic attitudes, namely Introversion (I) and Extraversion (E), and four separate functions, namely Thinking (T), Feeling (F), Sensing (S) and Intuiting (I). The underlying assumptions are that past experience and expectations about the future influence behaviour and personality. Since personality is an open system which is receptive to inputs, the assumption is further that individuals are capable of constant and creative development (Higgs, 2001).

2.4.1 Attitudes

The attitudinal orientations consist of Introversion and Extraversion. This relates to an individual's focus of attention and flow of psychic energy (Higgs, 2001). Extraversion is the preference that relates to drawing energy from outside oneself in the external world of peers, activities and things. Introversion is the preference that relates to drawing energy from the inner world of ideas, emotions and impressions (Kennedy & Kennedy, 2004).

Jung's typology implies two additional orientations relating to the way in which individuals approach the outer world in terms of Perception (P) or Judgement (J) (Myers, 1962). Judging refers to the evaluation of external stimuli and an orientation to cope with these by means of structure and control. Perception refers to the preference for living in a more spontaneous and flexible way (Kennedy & Kennedy, 2004).

2.4.2 Functions

The four basic psychological functions relate to perceptual functions which mediate the way in which information is handled by the individual (Higgs, 2001).

Sensing relates to the preference for paying attention to information perceived through the five senses and focusing on what exists (Kennedy & Kennedy, 2004). Intuitive perception refers to paying attention to possibilities through insights and is future oriented, that is, noticing what might or could be, rather than what actually exists (Higgs, 2001).

Two further psychological functions relate to how one makes decisions, that is, either through Thinking or Feeling. Thinking judgement is the preference related to linking ideas through logical connection, critical thought and cause-and-effect analysis (Higgs, 2001). Feeling is related to the preference for organising information in a personal, value-oriented way and is more subjective in nature (Kennedy & Kennedy, 2004).

In table 2.1 a brief description of each attitude orientation and psychological function is given, highlighting the differences in the way each is used to create energy, gather information and draw conclusions.

Table 2.1: The four attitudes and the four mental functions (Quenk, 1996)

The four attitudes	
Extraversion	**Introversion**
Energy is produced through interaction with the outer world of people and objects. Focus is on breadth and variety of experiences in the world.	Energy is produced through interaction with inner experiences and ideas. Focus is on depth and intensity of private reflections.
Judging	**Perceiving**
Approach to outer world is to come to conclusions and make judgements. Focus is on closure, predictability, planning, organising and control.	Approach to the outer world is to gather information and perceive. Focus is on adaptability, flexibility, spontaneity and openness to new information.
The four mental functions	
Perceiving functions	
Sensing	**Intuition**
Information is gathered through the five senses. Focus is on concrete facts, details and experiences that occur in the present.	Information is acquired as patterns or global wholes. Focus is on interrelationships, meanings and possibilities in the future.
Judging functions	
Thinking	**Feeling**
Conclusions are based on logical analysis of Sensing or Intuitive information. Focus is on impartiality and objectivity.	Conclusions are based on personal values about Sensing or Intuitive information. Focus is on empathy and harmony.

2.5 CRITIQUES OF JUNG'S PERSONALITY TYPE THEORY

Jung's complex theory is one of the most intriguing of all conceptions of personality (Feist, 1994). Attracting some criticism, the theory is characterised by an unnecessarily large variety of concepts for describing personality and its functioning. A specific behaviour may, at any given moment, be the result of a single, a few or various archetypes. However, the theory does not explain why a specific archetype will be dominant and motivate behaviour at a certain moment (Moller, 1995).

The description of personality has long made use of types. As early as the reign of Edward I, a distinction was made between the “born fool” and the lunatic who “by grief or other cause hath lost his reason” (Moller, 1995). The term “type” therefore implies discontinuity and is hence not particularly apt for most personality descriptions because the great majority of human traits appear to be continuous (Moller, 1995).

It can therefore be understood why the basic personality measures have developed primarily around traits (Boyle, Matthews & Saklofske, 2008). Types, where they exist, have been defined as patterns or trait measures, any one such type being singled out because it occurs in our populations with some peculiar, useful frequency. It cannot be denied, however, that Jung made a very important contribution to the literature on personality (Moller, 1995).

Jung’s construct of the Self, arguably one of Jung’s most important contributions to the theory of personality, can be seen as the “archetype of archetypes”, as it pulls together the other archetypes and unites them in the process of self-actualisation, which he first introduced (Feist, 1994; Hergenhan, 1994). Jung deserves credit for his emphasis on the goal directedness of behaviour in that he described behaviour as both causative and purposeful, thereby moving away from the traditional psychoanalytical view of the role of the unconscious (Moller, 1995).

Although Jung emphasised the unconscious by describing the ego and the personal unconscious, he demonstrated that conscious processes can play an important role in the motivation and development of personality (Moller, 1995). Although there are many problems involved in operationalising Jung’s theoretical constructs, rendering little support for his theory, aspects of his psychological types have been studied empirically (Feist, 1994) – indeed the MBTI was developed for this purpose. Previous studies in which the MBTI scale was used offered support for Jung’s typology and showed a correlation between

psychological types, career interest, social involvement and service rendering (Moller, 1995). Furthermore, support for Jung's distinction between Introversion and Extraversion also emerges from studies by trait theorists. Cattell (1965), for example, incorporated the two dimensions into his well-known 16 Personality Factor Questionnaire. This research indicates that it is in fact possible to operationalise specific concepts from Jung's theory with a view to empirical verification (Moller, 1995).

2.6 EXTENSIONS OF JUNG'S PERSONALITY TYPES

Jung added a refinement to his typology by introducing what he termed the auxiliary function, a constantly present process in personality type theory which balances the dominant functions (Myers, 1980). Jung commented that this less differentiated function of secondary importance is invariably present in the consciousness and exerts a co-determining influence (Spoto, 1989). By positioning the auxiliary function in this way, Jung effectively asserted that consciousness normally acts from a balanced position of its own (Spoto, 1989).

Personality type development thus demands that the auxiliary function supplement the dominant process with perception and judgement, and extraversion and introversion. When this does not happen the individual is left feeling "unbalanced" having retreated into the preferred world and remaining consciously or unconsciously afraid of the other world (Myers, 1980). To live effectively in both worlds, people need a balancing auxiliary that will make it possible to adapt in both directions (Myers, 1980).

2.6.1 Personality types

When the auxiliary process is considered, it splits Jung's types into two, resulting in 16 types in place of Jung's four scales of eight preferences. The combination of attitudes and functions (refer table 2.1 above),compounded with the auxiliary process to produce the 16 personality types, providing a device for viewing all the types in relation to each other (Myers, 1980) as is evident in table 2.2 below. Table 2.2 presents a brief description of the characteristics and predispositions of each of the sixteen personality types.

2.6.2 Personality type development

General patterns of behaviour can be attributed to each of the sixteen types. However, the strengths of each type materialise only when the type development is adequate, otherwise people are likely to have the characteristic weaknesses of their type and little else (Myers, 1980). Jung, along with Myers, viewed type development as a lifelong process. Type theory assumes children are born with a predisposition to prefer certain functions (Spoto, 1989). Children are most interested in the domain of their preferred function, and are motivated to exercise their dominant function, becoming more skilful, adept and differentiated in its use (Myers, 1980).

Table 2.2: Brief description of the sixteen personality types (Lawrence, in Bayne, 1995)

ENTJ	**ISFP**
Intuitive, innovative *organiser*, analytical, systematic, confident, pushes to get action on new ideas and challenges	Observant, loyal *helper*, reflective, realistic, empathetic, patient with details, gentle and retiring, shuns disagreements, enjoys the moment
ESTJ	**INFP**
Fact-minded, practical *organiser*, assertive, analytical, systematic, pushes to get things done and works smoothly and efficiently	Imaginative, independent *helper*, reflective, inquisitive, empathetic, loyal to ideals, more interested in possibilities than practicalities
INTP	**ESFJ**
Inquisitive *analyser*, reflective, independent, curious, more interested in organising ideas than situations or people	Practical *harmoniser* and worker with people, sociable, sociable, orderly, opinionated, conscientious, realistic and well tuned to the here and now
ISTP	**ENFJ**
Practical *analyser*, values exactness, more interested in organising data than situations or people, reflective, a cool and curious observer of life	Imaginative *harmoniser* and worker with people, sociable, expressive, orderly, opinionated, conscientious, curious about new ideas and possibilities
ESTP	**INFJ**
Realistic *adapter* in the world of material things, good-natured, tolerant, easy going, oriented to practical, firsthand experience, highly observant of details of things	People oriented *innovator* of ideas. Serious, quietly forceful and persevering, concerned with the common good, with helping others to develop
ESFP	**INTJ**
Realistic *adapter* in human relationships, friendly and easy with people, highly observant of their feelings and needs, oriented to practical, firsthand experience	Logical, critical, decisive *innovator* of serious intent, highly independent, concerned with organisation, determined and often stubborn
ISTJ	**ENFP**
Analytical *manager of facts and details,* dependable, decisive, painstaking and systematic, concerned with systems and organisation, stable and conservative	Warmly enthusiastic *planner of change*, imaginative, individualistic, pursues inspiration with impulsive energy, seeks to understand and inspire others
ISFJ	**ENTP**
Sympathetic *manager of facts and details*, concerned with people's welfare, dependable, painstaking and systematic, stable and conservative	Inventive, analytical *planner of change*, enthusiastic and independent, pursues inspiration with impulsive energy, seeks to understand and inspire others

Normal type development involves each person gradually discovering what they are best at – their talents, gifts and central motives (Bayne, 1995). As children grow older, they may begin to explore and develop the least preferred processes (Myers & McCaulley, in Opt & Loffredo, 2003). In midlife, the task is to gain greater command over the less preferred third and fourth functions (Myers & McCaulley, in Opt & Loffredo, 2003). The theory therefore further assumes that youth is the time for specialisation and that midlife is time to become a generalist.

With the reinforcement of constant practice, the preferred function becomes more controlled and trustworthy, and a sense of competence comes from exercising a function well. The pleasure of using the function generalises to other activities requiring the use of the function, and leads to the surface traits, behaviours and skills associated with the function (Myers, 1980).

Type theory assumes that very few people are able to use all eight preferences easily and appropriately, even after using these for most of their lives. It also assumes that equal development of all the functions is not desirable; that the dominant function should be the most developed function (Bayne, 1995). Good type development therefore demands the equal development of a judging and perceptive process – one of which dominates and the other being dominated (Myers & McCaulley, 1985). When both conditions are met, the person's type development is well balanced.

Both Jung and Myers suggested that personality types arise biologically but can be influenced environmentally, for example, through cultural influences (Myers & McCaulley, in Opt & Loffredo, 2003). According to Myers and McCaulley (1985), the environment becomes extremely important because environmental factors can foster development of each person's natural preferences, or it can discourage a person's natural bent by reinforcing activities that are less satisfying and less motivating, making skills development more difficult.

Myers and Myers (1980) contend that Western-based civilisations socialise men towards the personality preference Thinking, women towards Feeling and both genders towards Extraversion, Sensing and Judging. Thus, the personality types ESTJ in men and ESFJ in women represent the majority of the Western population.

Although current evidence supports the use of the MBTI in most multicultural settings, Myers et al. (1998) also state that cultures with value systems that can be described as collectivist may not find the MBTI appropriate. Collectivist values may make it difficult for individuals to separate their own preferences from those of the group.

In essence, environmental interference with type development can result in "falsification" of type. Falsified individuals may become skilful in using an initially less-preferred function, but may also be less content, may feel less competent or may be out of touch with their own best gifts (Myers & McCaulley, 1985).

2.7 MEASUREMENT OF PERSONALITY

Different theories of personality require different measuring instruments relevant to the models and constructs of each, thereby allowing for the operationalisation of different personality theories (Gregory, 2003).

The Five Factor model of personality, often used in the workplace and previously discussed in this chapter, provides a useful broad-based typology of the personality dimensions needed to describe personality. The instrument used to measure these dimensions is called the Neo Personality Inventory (McCrae & Costa, 1987). Cattell's 16 Personality Factor questionnaire is used to measure the 16 personality dimensions based on Cattell's personality trait factors. It measures a person's distinctive style of thinking, perceiving and acting over a comparatively long period of time and in a wide range of situations (Cattell,

1979). Today this instrument is commonly used for counselling, career guidance, recruitment, selection and research purposes (Cattell, 1979).

Because this research prefers Jung's psychoanalytic personality theory, the discussion on measuring personality is based on a type theory perspective.

Older Jungian type measures include the Grey-Wheelwright Jungian Type Survey (Wheelwright, Wheelwright & Buehler, 1964), the Keirsey Temperament Sorter (Keirsey & Bates, in Bayne, 1995) and the Murphy-Meisgeier Type Indicator for children (Meisgeier & Murphy, in Bayne, 1995). The primary measure of personality types and the most popular, the MBTI, was developed by Katherine C Brigg and her daughter, Isabel Briggs Myers (Vacha-Haase & Thompson, 2002).

Instruments that measure Carl Jung's theory of psychological types have been widely used in various counselling contexts, including career counselling, marital and family therapy and team building; however, the MBTI is the most used and the most useful in an industrial psychology and work context (Vacha-Haase & Thompson, 2002).

2.7.1 The Myers-Briggs Type Indicator

Based on Jung's premise that people have preferences and that there are two opposing dichotomies for each of four basis preferences, the MBTI identifies and measures eight mental preferences for performing tasks (Hirsh & Kummerow, in Kennedy & Kennedy, 2004).

In the early 1940s, two students of Jung's work conducted research on how to measure personality preferences (Kennedy & Kennedy, 2004). As a result, the MBTI was developed as a self-report questionnaire, making Jung's theory of psychological type understandable and usable in everyday life (Myers &

McCaulley, 1998). The accompanying personality-type theory provided a framework for examining similarities and differences in personality traits (Myers, 1993).

Consisting of 126 items, the MBTI forces respondents to choose between one or two answers that reflect the two poles for each dimension. Each response is weighted 0, 1 or 2 points, and the total points for each dimension indicate a person's preference on that pole (Opt & Loffredo, 2003).

The categorical scorings provided by the MBTI combine to form 16 personality types, which Salter et al. (2005) felt provided the most useful information. The psychological types, based on the four personality dimensions, are higher order interactions of the dimensions that produce the unique behaviours observed by Jung (Salter et al., 2005). Jung, however, assumed that everyone can use all four core processes, but that people differ in the priority given to each (Opt & Loffredo, 2003).

The MBTI is a valuable tool, aiding in self-insight and development. Results can benefit individuals by identifying their dominant and nonpreferred personality preferences, thereby leading to the achievement of more balanced behaviour. This is discussed in more detail in chapter 6.

2.7.2 Critique of the MBTI

The MBTI has been criticised for dichotomous scoring, forced-choice response formats and differential gender weighting of item responses (Vacha-Haase & Thompson, 2002). Addressing the criticism of dichotomous instead of continuous scoring, Kerlinger, in Vacha-Haase and Thompson (2002), states that the item responses are thus in order to optimise the prediction ratios for dichotomous type classifications. They further argue that differences in attitude only become

observable when we are confronted with a well-differentiated individual, which may not always be the case.

A further criticism is that of the forced-choice response format (ipsative responses). An item presents two or more alternatives, only one of which may be selected. The forced choice format has the advantage of avoiding bias of acquiescence and social desirability. Ipsative responses as a statistical artefact inherently yield spurious negative correlations among item responses (Kerlinger, in Vacha-Haase & Thompson, 2002).

Continuing research and development over more than 50 years has made the current MBTI the most widely used instrument for understanding normal personality differences (Kennedy & Kennedy, 2004). Multiple studies have documented the MBTI's utility as a measure of personality in research and practice (Salter et al., 2005) particularly as it is value-neutral and views different type preferences merely as "gifts differing" (Vacha-Haase & Thompson, 2002). Jung's theory assesses normal variations in personality, and more people have normal than abnormal personalities (Vacha-Haase & Thompson, 2002).

2.8 RELEVANCE OF PERSONALITY TO ORGANISATIONS

Personality types can be used extensively to identify organisation and team types, which can then be extrapolated to identify organisational cultures (Hirsch, 1985). This is based on the assumption that the collated personality types of members within the organisation can determine the combined organisation's personality type. By defining the organisation's type, various assumptions can be made about the organisation's gifts and dilemmas as described in terms of the MBTI personality types (Hirsch, 1985).

Hirsch (1985) explains that the use of personality types has become one of the most widely used psychological assessment tools with both individuals and

groups. As noted by trainers and participants in organisational settings, the use of psychological type in group settings can be quite dramatic. Group exercises clearly demonstrate the concepts of psychological type – people are not only able to affirm and understand their own preferences, but also those of others (Hirsch, 1985). The identification of personality types can be done in a wide variety of settings, from corporates to government to religious institutions.

Wherever personality types are used, people are assisted to become more self-aware, especially of their personality preferences for sources of energy, information gathering and decision making, and the way these preferences affect their approach to work and life in general (Hirsch, 1985). Part of the reason the personality typing is so effective for organisational use is that it can help to reduce unproductive interpersonal and intra-organisational conflict. Project team members and departmental unit members find that using personality type is helpful in assessing the strengths and blind spots of their team in a non-judgemental way (Hirsch, 1985).

Jung used this knowledge in dealing with patients, students and people whom he came into contact with, and he wrote and lectured on his theory of personality preferences (Kennedy & Kennedy, 2004). The instrument's application thus cuts across many areas, including self-understanding and development, stress management, team building, organisational development, understanding learning styles and preferred communication styles (Kennedy & Kennedy, 2004).

Jung emphasised the importance of personal growth, believing it was important for all of us to develop all sides of our personalities (Vacha-Haase & Thompson, 2002). The MBTI can help people understand themselves, their motivations, natural strengths and potential for growth better (Kennedy & Kennedy, 2004). In this way, they may explore underdeveloped tendencies in order to actualise their potential (Vacha-Haase & Thompson, 2002).

2.9 RELATED RESEARCH FINDINGS

Based on the above literature, the importance of empirical research in substantiating extrapolations from personality theory and investigating relationships between differing variables becomes apparent.

Correlative research studies have been conducted on personality and its relationship with various variables, with relationships having been confirmed between personality and job satisfaction, job commitment, voluntary turnover and absenteeism (De Fruyt & Salgado, 2003). Similarly, the role of personality in predicting job performance criteria has been extensively examined, with studies having demonstrated the utility of personality in predicting job performance (De Fruyt & Salgado, 2003).

Further studies have been conducted which are specific to organisational and team-based contexts. One such study by Opt and Loffredo (2003) looked at the relationship between communicator image and the MBTI dimensions of Extraversion and Introversion. Results showed that individuals who prefer Extraversion tend to have a more positive communicator image than those who prefer Introversion. This study supports other research which shows that personality preferences differ in communication behaviours and traits, which could have implications for the individual's comfort and success in society (Opt & Loffredo, 2003).

Previous research has shown that individuals who preferred Extraversion, Intuition and Thinking had a greater tendency to be argumentative than those who preferred Introversion, Sensing and Feeling (Loffredo & Opt, in Opt & Loffredo, 2003).

2.10 CHAPTER SUMMARY

In this chapter, the construct of personality was defined. Typical theories of personality were explored with a specific focus on the origin and theoretical underpinnings of Jung's analytical theory of personality type.

The chapter provided an extension of Jung's personality type theory by focusing on the 16 personality types developed by Myers (1980), and their measurement. The relevance of personality types to organisations was highlighted and the chapter concluded with a discussion on previous correlation research between personality types and other variables.

In the next chapter, the concept of emotional intelligence is explored, clarified and defined.

CHAPTER 3: EMOTIONAL INTELLIGENCE

In order to achieve the objectives of the literature review set out in chapter 1, the focus of this chapter is to conceptualise the construct of EQ and explore the key issues around its measurement. Firstly, a background to the emergence of EQ is provided, followed by a discussion of its definition, composition and measurement. Secondly, the relevance and impact of EQ in the workplace and relevant research findings will be presented. This chapter concludes with a conceptual integration of personality and EQ, as conceptualised in chapter 2.

3.1 BACKGROUND TO EMOTIONAL INTELLIGENCE

Over recent years, EQ has been a very topical item of conversation, with the concept of EQ having received much attention in the popular literature since its introduction by Salovey and Mayer in 1990 (Nikolaou & Tsaousis, 2002). The construct of EQ began to emerge as an additional explanatory concept for life success, psychological well-being and human behaviour, over and above that of cognitive intelligence (Nikolaou & Tsaousis, 2002). However, this research was steeped in much debate around how EQ should be defined and assessed, and what it might predict (Lopes et al., 2003). Concerns regarding the application of EQ centred mainly on the difficulty involved in defining and assessing the measurement of the construct accurately, largely because of the varying definitions thereof and the difficulty created in attempting to measure subjective abilities (Petrides & Furnham, 2003).

Although intelligence has been defined in a number of different ways, it is widely accepted as being a person's generalised adaptation to the environment (Sternberg, 1997). Theorists generally agree that intelligence consists of a hierarchy of the abilities needed to solve abstract reasoning problems and is largely represented by verbal and performance intelligence, as well as academic abilities (Brody, 2000). Cognitive intelligence (IQ) has thus long been credited

with being predicative of career and life success (Brody, 2000). Nowadays however, many theorists will readily admit that the traditional narrow definitions of intelligence may not be the whole story.

Whereas early psychologists believed that rational thought was different from (even antithetical to) human emotions, and viewed emotional processes as mere interruptions to rational mental activities (Leible & Snell, 2004), contemporary psychologists now realise that emotions can aid in understanding adaptive social relations (Mayer, in Leible & Snell, 2004). Some of this understanding can be attributed to the development of the EQ field.

3.2 THE EMERGENCE OF EQ

3.2.1 EQ origins in social intelligence

The origins of EQ can be traced back to EL Thorndike's (1992) social intelligence and Gardner's (1983) intrapersonal and interpersonal intelligences. In fact, the term EQ was discussed in the literature several times before Salovey and Mayer proposed the first definition and model of the construct in 1990. As early as 1920, Thorndike, in Kihlstrom and Cantor (2000), proposed that humans possess a personal or social intelligence above that of general intelligence. Thorndike defined social intelligence as the ability to perceive your own internal states, motives and behaviour as well as those of others and to use this information to act towards others in an optimal way (Kihlstrom & Cantor, 2000). However, in general, this view was relatively isolated in an era during which research into intelligence and emotion was treated as being distinctly separate (Mayer, 2001).

3.2.2 Multiple intelligences

In 1983, Gardner introduced a more comprehensive theory of multiple intelligences, which challenged the traditional view of intelligence based only on

the capacity for logical reasoning (Gardner, 1993). Gardner viewed intelligence as consisting of the ability to adapt and solve problems within a large number of contexts, and maintained that human intelligence should be defined as a set of abilities rather than as a single construct (Gardner, 1993). Gardner included a social intelligence in his theory of multiple intelligences, which served to integrate the cognitive and noncognitive intelligence factors in everyday functioning.

In this way, Gardner laid the foundation for future theories of EQ by describing an intrapersonal intelligence which refers to a person's ability to access his or her own range of emotions, to discriminate these feelings, label them and to transform them into symbolism. In this way a person would be able to understand and guide his or her own behaviour, thereby effectively regulating his or her own life (Gardner, 1993). Gardner also referred to an interpersonal intelligence that involved the ability to interpret the intentions, motivations and desires of others and to react accordingly by using this knowledge to work effectively with them (Gardner, 1993).

Gardner's multiple intelligence theory did not, however, account for the difference in expected or achieved success based on the application of intrapersonal and/or interpersonal intelligences.

3.2.3 Sternberg's successful intelligence

Sternberg (2004) developed a theory of successful intelligence to an attempt to explain why students who display high intelligence or cognitive abilities often do not perform successfully in academic situations. Sternberg (1988) maintains that intellectual abilities cannot be fully understood unless there is an understanding of the way individuals apply them in adapting to the demands of their environment.

Successful intelligence theory holds that definitions of success are largely dependent on the community, subgroups and even on individuals, for example, success may be academic prestige as much as it may be raising a family (Sternberg, 2003). Success thus includes adapting to and changing one's environment, and in this manner pushes beyond the boundaries of academic achievements to include all facets of one's life, for example success in personal relationships (Sternberg, 2003).

Successful intelligence theory presents similar processes to EQ theory in that self-awareness and the ability to manage one's emotions underlie them both. The limitation, however, is that successful intelligence theory does not explain why some people are able to adapt effectively in this way and why others are not. There is a possibility that further dimensions of intelligence are responsible for the manner in which people respond to their environment and the awareness they have of this environment.

As high levels of EQ have been found to contribute to success in important facets of life such as education, work (Petrides, Furnham & Frederickson, 2004) and relationships (Bastian et al., 2005), EQ theory could provide insight into why some people are better able to synthesise cues from the environment and use them to adapt effectively.

3.3 DEFINITION AND COMPOSITION OF EQ

Drawing on relevant evidence from intelligence and emotions research, as well as from studies in artificial intelligence, brain research and clinical psychology, Salovey and Mayer (1990) developed a formal theory of EQ. Few constructs have grabbed the attention of researchers, theorists and practitioners alike with such intensity and suddenness (Petrides et al., 2004).

The person mainly responsible for the popularisation of the field of EQ was Goleman, who defined the concept in 1995 in a popular book. Goleman based his work on the initial Salovey and Mayer (1990) definition but added components such as zeal, persistence and social skills. From here, the topic of EQ began attracting the attention of researchers and professionals alike (Ciarrochi, Forgas & Mayer, in Leible & Snell, 2004).

Corporate organisations hailed the term as the new solution to personnel selection and the media heralded EQ as a model to explain social and emotional competence (Goleman, 1995). It was claimed that people who are emotionally aware have a competitive edge both in their personal lives and in their professional lives, and as a consequence are happier and more successful. It was even suggested that EQ is a better predictor of academic and occupational achievement than general intelligence (Goleman, 1995).

The result of this popularisation led to a broad range of approaches to the subject: from the Mayer-Salovey ability-based conception, to lists of competencies (Goleman, 1998), to approaches centring on psychological wellbeing (Bar-On, 1997). Each of these EQ models in the literature comprises many different components. Petrides and Furnham in Petrides et al. (2004) identify 15 distinct components (via content analysis) common to more than one salient EQ model, suggesting inconclusive operationalisation of the construct.

Owing to the lack of a coherent operational framework at the time, there was a haphazard development of the construct and numerous apparently conflicting findings (Petrides et al., 2004). Some researchers cast a critical eye over the EQ field, aiming to tease out the fad from the science. The key issues being debated were whether EQ could be operationalised, whether reliable assessment tests could be constructed, whether EQ was a new construct which could be differentiated from existing personality traits and whether correct answers could be determined (Petrides et al., 2004).

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

3.3.1 Trait models of EQ

Trait EQ comprises emotion-related dispositions and self-perceived abilities and is measured through self-report. This is congruent with the subjective nature of emotional experience. This approach to EQ aligns the construct with personality traits rather than with cognitive abilities (Petrides et al., 2004). Caruso et al., (2002), however, state that if it is to be of value, EQ must measure something unique and distinct from standard personality traits.

Maddocks, Cooper and Sparrow's (2005) view is that EQ is not part of personality, but is about how we manage our personality (traits) from moment to moment in order to be both personally and interpersonally effective. That is, EQ is the practice of using thinking about feeling (and feeling about thinking) to guide behaviour. The essential point is that EQ is "the practice of" (the doing, not the being) as implied by trait theory (Maddocks et al., 2005).

Other key differences between EQ and personality traits are that EQ is based on bodily awareness or emotional state (wants, fears, likes, fears etc), whereas personality traits focus on awareness of behaviour. EQ is changeable and developable; whereas traits are relatively stable (Maddocks et al., 2005). EQ is about performance, personality traits are not (Maddocks et al., 2005).

The concept of EQ as having a personality base is valuable because it explains how we can manage our personality traits to guide our behaviour (Maddocks et al., 2005). Petrides et al. (2004), however, state that there are conceptual shortcomings of early measures of EQ, because some of the key propositions of the trait model are unsound. One example is that traits are presented as both

causes (predictors) of behaviour and descriptors (explanation) of the individuals who display the behaviours (Davies, 2004). Furthermore, important cognitive and metacognitive topics, such as free will and life strategies, are disregarded in trait theory (Davies, 2004).

3.3.2 Ability models of EQ

As the theory of EQ progressed, models based on alternative theoretical perspectives emerged. Whilst EQ was perceived by some researchers as a dispositional tendency such as personality, other theorists viewed EQ as an ability (Petrides et al., 2004).

Salovey and Mayer's (1990) model of EQ defined EQ as a subset of social intelligence, incorporating the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions. This definition positioned EQ as an adaptive ability (Mayer et al., 2000).

The proposed ability-based model focuses on emotional skills that can be developed through learning and experience (Lopes et al., 2003), placing EQ within the sphere of an intelligence in which emotion and thought interact in meaningful and adaptive ways (Mayer et al., 2000). Based on this, EQ is viewed much like verbal or special intelligence, except that it operates on and with emotional content (Mayer et al., 2000).

The ability-based theory posits four central abilities: perceiving, using, understanding and managing emotions (Lopes et al., 2003). Thus, this model of EQ centres on a person's skills in reorganising information and carrying out abstract reasoning using EQ. More specifically, Mayer and Salovey, in Caruso et al. (2002) go on to say that EQ involves the abilities to perceive, appraise and express emotion, to access and/or generate feelings when they facilitate thought;

to understand emotion and emotional knowledge, and to regulate emotions to promote emotional and intellectual growth.

Some theorists have suggested that EQ qualifies as an intelligence because, to solve problems, individuals discriminate and monitor emotions in themselves and others and, to this extent, some people are better at these activities than others (Bastian et al., 2005).

In order to facilitate research in this area, proponents of the ability-based model developed ability tests to assess these EQ skills. The first test was called the Multifactor Emotional Intelligence Test (MEIS). This instrument was subsequently improved on, leading to a shorter more reliable and better-normed test called the Mayer, Salovey, Caruso Emotional Intelligence Test (MSCEIT) (Lopes et al., 2003). Mayer and his colleagues (see Lopes et al., 2003) have argued that the emotional skills mapped by their model can be viewed as intelligence, because (a) they represent an inter-correlated set of competencies that can be statistically interpreted as a single factor with four sub factors mapping onto the four branches of the theoretical model, (b) they are distinct from, but meaningfully related to, abilities such as verbal intelligence, and (c) they develop with age. Studies with the MSCEIT provided preliminary evidence that EQ measured as a set of abilities shows convergent, discriminant and predictive validity (Lopes et al., 2003).

Some scholars criticise the competency-based Salovey and Mayer model of EQ by stating that such models fail to adequately consider the broad range of noncognitive aptitudes and abilities that influence interpersonal interactions between individuals (Goleman & Bar-On, in Frye et al., 2006).

Petrides et al. (2004) also state that EQ as an ability proposes a subjective nature of emotional experience. They further note that the fact that ability tests, after over a decade of development and many iterations, continue to tackle

issues of internal consistency and factor structure, does not augur well for the long term. It is therefore not surprising that the conceptual differences between trait and ability EQ are directly reflected in emerging empirical findings, which reveal very low correlations between ability and trait EQ measures (O'Connor & Labit, in Petrides et al., 2004).

3.3.3 Mixed models of EQ

Whereas Salovey and Mayer proposed a theory narrowly focused on emotional skills, others have written about EQ as a general capacity for social and emotional adaptation or as an umbrella term to designate a wide array of competencies (Bar-On, Boyatzis et al., Goleman & Goleman, in Lopes et al., 2003). These broader views encompass social and emotional skills and traits, overlapping with personality and motivation dispositions (Lopes et al., 2003). Alternative models of EQ are thus based on a broader conceptualisation of the construct (Frye et al., 2006).

Mixed EQ models blend various aspects of personality in what is often an atheoretical manner (Mayer et al., 2000). The resulting conglomerate of traits, dispositions, skills, competencies and abilities is labelled EQ, even though the model predominately involves neither emotion nor intelligence (Caruso et al., 2002).

One such mixed model, the Goleman EQ model, conceptualises EQ as encompassing four noncognitive components of interpersonal competence: self-awareness, self-management, social awareness and relationship management (Goleman, in Frye et al., 2006). Similarly, the Bar-On EQ model theorises that EQ is comprised of five noncognitive dimensions, abilities and skills labelled interpersonal EQ, intrapersonal EQ, stress management EQ, adaptability EQ and general mood EQ (Bar-On, in Frye et al., 2006).

3.3.4 Integration

Mayer (2001) contends that not only are the theoretical differences between approaches to EQ pronounced, but there may also be substantial differences in the utility of each. For example, whilst mixed model approaches are of potential value in that they study multiple aspects of personality at once, they are not particularly related to any new concept of EQ.

For the purpose of this research, the mixed model approach to defining the construct of EQ was adopted. The instrument used to measure EQ, the Bar-On EQ-i, was developed on the basis of Bar-On's framework of EQ. According to this framework, EQ is defined as an array of noncognitive capabilities, competencies and skills that influence one's ability to succeed in coping with environmental demands and pressures (Bar-On, 1997).

3.3.5 Emotional Intelligence development

Various factors in research have been shown to have an impact on EQ development, regardless of the model used to conceptualise the construct. Hofstede (1980) states that people from more masculine cultures are more likely to be stoic and show more restraint in experiencing and displaying emotion than people from feminine cultures. Triandis (1994) found that collectivist cultures (cultures with greater emotional dependence on one another) are more likely than individualist cultures (cultures where autonomy over action is afforded to the individual) to empathise with others and are more likely to restrain their emotional display so as not to impose on others within the group.

Group and family-oriented value systems lead to specific emotional response behaviour based on beliefs of racial appropriateness (Hewitt, 2002). According to Hewitt (2002), racial culture provides alternative goals and vocabularies for

experiencing mood and emotion. Hence it is not necessarily obvious to the individual what actions will produce more desirable effective results, and the link between social demands and individual lines is not always a strong one.
Pugh (2002) researched the impact of gender on EQ. The research indicated that males and females do not differ in terms of emotional experience. According to Bar-On (1997) and Fatt and Howe (2003), both men and women generally have the same level of EQ but there are shared, gender-specific strong and weak points, for example, men generally are more self-confident and optimistic and better with stress management, whilst women are more aware of emotions, show more empathy and fare better interpersonally.

Mandell and Pherwani (2003) support this, stating that gender differences in EQ have been limited and inconclusive. Mayer, Caruso and Salovey (1999) and Mayer and Geher (1996), however, indicate that women score higher on measures of EQ than men.

Literature tells us that individual differences in emotional experience and regulation may change over time as a function of maturation, changing goals and experiences (Carstensen, 1992; Eisenberg, Fabes, Gutrie & Reiser, 2000). Research suggests that while frequency and intensity of emotions may decrease (Diener, Sandvik & Larsen, 1985), emotion regulation and control increases with age (Lawton, Kleban, Rajagopal & Dean, 1992).

3.4 MEASUREMENT OF EMOTIONAL INTELLIGENCE

In research, the type of measurement method has far-reaching implications for the operationalisation of any construct (Petrides et al., 2004). Schutte and Malouff (1999) support this view by indicating that reliable and valid measures of EQ and its components are important in order to

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

Throughout the literature on EQ, the considerable debate around the conceptualisation of the construct has resulted in similar controversy around the feasibility of measuring it (Steiner, 1997). A critical discussion of different types of EQ measure follows.

3.4.1 Types of emotional intelligence measures

Mayer (2001) indicates that existing EQ measures are characterised according to the definition of EQ that they are based on and the measurement approach followed by the instrument.

3.4.1.1 Performance-based measures of EQ

The ability EQ models stated that for EQ to be justified as intelligence, it must be measured on the basis of an individual's performance rather than by self-report questionnaires (Matthews, Zeidner & Roberts, 2003). Caruso et al. (2002) also believe that performance tests of EQ operationalise the construct most directly and relate more to a traditional perspective of intelligence (Petrides et al., 2004). Performance measures of EQ tend to focus on measurement issues, including the development of criteria for defining correct responses and the internal consistency, factor structure and construct validity of the tests (Petrides et al., 2004).

EQ performance measures that have been developed include the Multifactor Emotional Intelligence Scale (MEIS) and the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) (Mayer & Salovey, 1997). The MEIS is the original instrument created by Mayer and Salovey (1997) to measure how well people perform on EQ tasks rather than relying on people's subjective assessment of their emotional skills. The test consists of 12 ability measures divided into the four dimensions of EQ (Mayer et al., 2000).

3.4.1.2 Self-report measures of EQ

Mixed models of EQ, on the other hand, have been operationalised in self-report measures (Bar-On, 1997) or observer ratings such as 360-degree assessments and are said to correlate with personality dimensions (Dawda & Hart, 2000).

A number of researchers have attempted to develop accurate self-report measures of EQ or its related constructs. The Schutte Self report Inventory (SSRI) developed by Schutte et al. (1998) and the Trait Meta Mood Scale (TMMS) developed by Salovey, Mayer, Goldman, Turvey and Palfai (1995) are both based on Salovey and Mayer's (1990) original model of EQ.

Since Bar-On (1997) conceptualised EQ as a multidimensional array of noncognitive capabilities, competencies and skills, he designed an EQ instrument as a process-oriented measure to capture respondents' potential for emotional intelligent behaviour, the Bar-On EQ-i.

The Bar-On EQ-i is a commercially available 133-item inventory consisting of 15 clinical subscales and two validity subscales. The Bar-On EQ-i reports six scores for each respondent; an overall EQ score as well as five composite scale scores for interpersonal, intrapersonal, adaptability, stress management and general mood EQ, which are formed from fifteen subscales (Frye et al., 2006).

Other self-report measures of EQ include Goleman's Emotional Competence Inventory (ECI) (Bar-On, 1997).

3.4.2 Critique of EQ measures: performance versus self-report measures

Performance measures of EQ have mostly been criticised for the potential conformity bias they measure. The scores generated are easily influenced by values and trends relative to modern societies and different countries (Van Rooy & Viswesvaran, 2004). Results are thus likely to reflect adjustment to social norms rather than EQ (Roberts, Zeidner & Matthews, 2001). One advantage of performance measures over self-report measures however, is that they represent an individual's performance level on a task, making it more difficult to fake it (Mayer et al., 2000).

The validity and reliability of many of the self-report measures of EQ have also been criticised. Self-report tests are subject to response bias as very few instruments have measures built in to detect this. Often these measures are subject to deliberate or unconscious social desirability response bias (Ciarrochi et al., 2000). Austin, Saklofske, Huang and McKenny (2004), however, state that self-report measures have construct validity, as EQ has been associated with a number of theoretically related constructs which would be expected to be related to high EQ.

Critics state that self-report measures are not good indicators of actual ability, but rather present only an indication of a person's perception of their abilities. Therefore, they are heavily reliant on the test taker's honesty and accurate self-knowledge (Ciarrochi et al., 2000).

Dulewicz and Higgs (1999) state that measuring self-awareness is especially difficult as most people are unaware of how they present themselves to people. They require people to have insight into their own perceived level of EQ, which is filtered through one's own self-concept (Mayer et al., 2000).

The scoring methods, however, are more concrete than those used by the performance measures, as the qualities of EQ are specified in advance and scoring simply depends on a match between self-report and target qualities (Matthews et al., 2003).

Regardless of the criticisms these assessment measures have received, self-report measures are still the most popular method used to assess EQ in research. This is because they are less complicated to administer and the instruments are readily available, making them more accessible.

As a result of this study's focus on personality and EQ, a self-report measure was deemed to be most suitable in measuring EQ.

3.5 RELEVANCE OF EQ TO ORGANISATIONS

Recent changes in environmental, political and economic conditions suggest that future organisational concerns about the determinants and consequences of leadership, individual and team effectiveness and the quality of social interactions in a multicultural or global environment will continue to grow. More than ever before will the workforce making up organisations be expected to successfully deal with unpredictability, uncertainty and change.

These factors provide strong motivation for interest in the role of emotions in the workplace, since attempts to change behaviours in organisations to more effective patterns may also require changing emotions.

With growing competition and increasing demands for innovation in today's globalised working world, team-based job designs look like they will continue to be adopted by organisations (Frye et al., 2006). Since EQ considers interpersonal interactions and adaptations of many individual differences (both required when working in teams), EQ aptitude will become essential (Frye et al., 2006).

Organisations in future will also need to conceptualise and realise new, competitive opportunities. Abraham (1999) found that EQ encouraged a state of flow, where peak performance is achieved and human potential stretched. Focusing on the development of this competence within an organisation can thus be hugely advantageous. Furthermore, with great skills shortages across many professional fields, organisations will increasingly need to compete in order to attract and retain resources. Emotional intelligence is an important consideration, as Abraham (1999) found it to be directly related to and a powerful predictor of organisational commitment.

Organisations and the requirements for effective leadership have changed considerably in recent years, necessitating people in leadership positions to change with them. George (2000) proposes that the ability to understand and manage moods and emotions in oneself and others theoretically contributes to the effectiveness of leaders.

Since EQ is developmental in nature, information obtained from EQ assessment tools can be used for developmental purposes, helping individuals focus on developing behaviours relating to their less dominant personality functions (see chapter 2, section 2.5 for discussion on dominant and auxiliary functions of personality). Not only will this be attractive to employees looking for holistic development, but will also provide employers with a competitive advantage through their staff.

3.5.1 Research findings emphasising the relevance of EQ in organisations

The relevance of EQ to organisations and to the field of Industrial and Organisational Psychology has led to much research and investigation on the construct. Samples of some pertinent findings are presented below.

Considerable research has focused on workplace success and interpersonal relationships. One such study examined the relationship between EQ, stress, wellbeing and performance on a sample of 224 managers. The findings indicated that those with higher EQ scores reported significantly lower stress and distress, significantly higher morale and quality of working life, and significantly better health and work performance than managers with lower EQ (Slaski & Cartwright, in Dulewicz et al., 2003). Furthermore, Wong and Law, in Petrides et al. (2004), provide evidence that trait EQ may be positively related to job performance and job satisfaction.

Emotional intelligence showed significant correlations with several indicators of quality social interaction (Lopes et al., 2003). It is suggested that emotionally intelligent individuals can perceive, understand and regulate the emotions of others, thus making EQ a significant factor in the success of interpersonal interaction in a work context (Mayer et al., in Dulewicz et al., 2003).

In an exploratory study conducted by Frye et al. (2006), the relationship between the EQ of self-directed teams and two dimensions of team interpersonal processes were examined, that is, team-task orientation and team-maintenance function. This was investigated using the five-dimensional model of EQ measured by the Bar-On EQ-i. The results revealed significant predictive relationships between team-averaged interpersonal EQ and team-maintenance functions, and team-averaged interpersonal EQ and team-task orientation (Frye et al., 2006). Jordan and Troth in Frye et al. (2006) furthermore found that teams

with higher average levels of EQ performed better on problem-solving tasks, and adopted collaboration as their preferred style of conflict resolution.

A study by McClelland (1999) found that division leaders selected on the basis of emotional competence outperformed their targets by 15 to 20%. Pesuric and Byham (1996) found that after supervisors in a manufacturing plant had received training in emotional competencies, lost-time accidents were reduced by 50%, formal grievances were reduced from an average of fifteen per year to three per year and the plant exceeded productivity goals.

Ciarrochi, Chan and Bajgar, in Bastian et al. (2005), positively correlated EQ with social network size and quality positive relations with others, perceived parental support and fewer negative interactions with close friends. Salovey, Bedell, Detweiller and Mayer, in Bastian et al. (2005), suggest that more emotionally intelligent individuals should be more successful at meeting the demands of stressful situations because they are better able to perceive, appraise and, therefore, regulate their emotions.

Some contrasting findings were found by Bastian et al. (2005), which investigated the relationships between EQ and a number of life skills. Correlations between EQ and academic achievement were small and not statistically significant, although higher EQ was correlated with higher life satisfaction, better problem solving and coping ability, and lower anxiety (Bastian et al., 2005). However, after controlling for the influence of personality and cognitive abilities, the variance was 6% or less (Bastian et al., 2005).

Several research studies have also examined life satisfaction in relation to various EQ measures, with all reporting low-to-moderate positive correlations (Martinez-Pons, 1997; Ciarrochi et al., 2000; Gannon & Ranzijn, 2005; Mayer et al. in Bastian et al., 2005). It is important to note that correlations between life skills and EQ were higher with self-report than with performance measures of

EQ, and that these studies may not have comprehensively controlled for the possible effects of personality and cognitive abilities (Bastian et al., 2005).

3.6 CONCEPTUAL INTEGRATION OF PERSONALITY AND EQ

Given the focus of this study on the relationship between personality preferences and EQ, this section will focus on integrating the literature review of EQ with that of personality.

Based on the aforementioned literature review on personality and EQ, it can be hypothesised that people differ in their demonstration of EQ to the degree that they have learnt to consciously apply and use their preferred personality attitudes and mental functions. The knowledge of one's personality preferences will assist one in developing EQ, whilst the development of EQ will aid personality development by enabling the differentiation and balancing of the use of the mental functions and attitudes. Apart from these assumptions, based on the theoretical analysis of the constructs, research has been done in terms of exploring the potential relationship between EQ and personality. As such, interesting, yet sometimes contradictory, research findings have been reported on when examining the relationship between personality and EQ.

Lopes et al. (2003) found there to be a general pattern of low correlations between scores on an EQ test, on the one hand, and personality traits and verbal intelligence on the other (Lopes et al., 2003).

On the other hand, Bastian et al. (2005) found high correlations between personality and self-report EQ measures. Their study showed that self-report EQ measures were moderately correlated with personality, but their correlations with cognitive abilities were generally near zero. In contrast, performance measures of EQ have low correlations with personality measures. The general trend of these results was that higher EQ is associated with higher extraversion,

openness, agreeableness and conscientiousness, but with lower neuroticism (Bastian et al., 2005). These results support previous research findings that self-report EQ measures are more closely related to personality than are performance EQ measures (Bastian et al., 2005).

Unlike many other drivers of individual behaviour, EQ is shown to be developable, at least in part. The developmental nature of EQ in itself suggests a possible link with aspects of personality that develop and change throughout one's life in adaptation to the environment (see chapter 2, section 2.5.2). In particular Higgs (2001) initiated research in exploring possible relationships between EQ and personality type as measured by the MBTI.

Higgs (2001) explored the MBTI's apparent linkages to EQ highlighted by a number of authors (e.g. Dainty & Anderson, 2000). The assertion was that MBTI profiles might well indicate levels of EQ and provide a basis for developing aspects of an individual's behaviour, which in turn will lead to improved organisational performance.

Higgs's 2001 study was built on the initial work of Dulewicz and Higgs (1999a) in which some tentative relationship based on a sample of 111 managers was demonstrated. Dulewicz and Higgs (1999) demonstrated positive relationships between the MBTI Feeling and Thinking pole, with the EQ element of self-awareness. They also demonstrated negative relationships between the MBTI dimension of Introversion and the EQ element of both motivation and influence, and between MBTI Feeling pole and intuitiveness. Their study, however, strongly proposed a need for further research to explore potential relationships in more detail (Dulewicz & Higgs, 1999).

In Higgs's 2001 study, expected relationships were encountered. Results between the Thinking/Feeling scale and emotional resilience were supported, as was the relationship between the Judging/Perceiving scale and both intuitiveness

and conscientiousness. Furthermore, the MBTI Extraversion and Intuition were positively correlated with the overall EQ score, with Extraversion correlating positively with the largest number of elements of EQ (motivation, influence, and intuitive decision making) and Intuition as a dominant function, seeming to be the most closely linked to EQ (Dulewicz & Higgs, 1999).

In conclusion, although studies have found correlations between EQ and personality and personality preferences, they have been found to be moderate and somewhat inconsistent.

Future studies should explore the direct relationship between personality preferences (as measured through the MBTI) and mixed models of EQ (as measured by the Bar-On EQ-i), and especially consider populations with higher "Feeling" preference scores, in order to draw stronger conclusions. Further detailed statistical analysis of the relationships between the two latter concepts within a broader range of organisations, will result in greater research information being available from which to draw correlations.

3.7 CHAPTER SUMMARY

In this chapter, the origins of EQ and its development were explored. Various models of EQ theory were discussed, followed by a review of the applicable measuring instruments. Thereafter, the relevance of EQ to the organisational setting was presented and a review of relevant research findings provided. The chapter concludes with an integration of the two constructs pertinent to this research study, namely personality and EQ.

In chapter 4 the empirical study is presented.

CHAPTER 4: THE EMPIRICAL RESEARCH

The aim of this chapter is to provide an overview of the research methodology, which is described in chapter 1 as steps 1 to 5 of the empirical study.

The research design used in this quantitative study was predominantly investigative in nature, and was tested by means of descriptive statistics. The study is non-experimental in nature, as there was no sample randomisation, control group or manipulation of an independent variable. Thus, no causal relationships can be inferred (Rosnow & Rosenthal, 1996). The empirical study has the specific aim of ascertaining the relationship between personality preference groupings and the construct of EQ and, if possible, the degree of the relationship.

The empirical study conducted is discussed under the following headings:

- population and sample selection
- research instruments
- data collection procedure
- data analysis procedure
- hypotheses
- chapter summary

4.1 POPULATION AND SAMPLE SELECTION

The population of interest for this study is the number of job applicants at a leading emerging market investment bank in South Africa over the past twenty-four months. As part of the recruitment process, candidates who successfully interviewed with the bank over the past twenty-four months were sent to complete a battery of psychometric assessments as the final step in the selection process. Of the job applicants to the investment bank who were sent for

assessment, a sample distribution of 1 121 applicants was selected for this study (55% of the total population).

Haphazard sampling (see Rosnow & Rosenthal, 1996) was used to select the sample. Haphazard sampling is a nonprobability sampling method according to which population elements are chosen on the basis of convenience. Owing to the requirements of the current study, the researcher selected a sample which represented all sixteen of the MBTI personality types.

4.2 RESEARCH INSTRUMENTS

The choice of research instruments used in this study was guided by the literature review of the field, with particular importance given to validity and reliability, as well as to the theoretical framework presented for the relevant constructs.

4.2.1 Measuring personality: The Myers-Briggs Type Indicator (MBTI)

4.2.1.1 Development

The MBTI was developed during World War II by two women who wanted to develop a tool that would enable people to gain access to their Jungian preference type, so that the effects of each preference (singly and in combination) could be established by research and put into practice (Myers & McCaulley, 1992). Their belief at the time was that if people could be placed in jobs that they would find satisfying, it would contribute to productivity.

The MBTI is a model of personality based on Jung's (1960) ideas about perception and judgement, and the extent to which these are used by different types of people. Since it is designed to implement a theory, the MBTI is seen to

differ from other personality instruments. Jung (1921) developed three dimensions to explore individual cognitive styles. These are

- how individuals approach life
- the way in which individuals become aware of the world
- the way in which individuals reach conclusions about the world (Higgs, 2001)

Through this framework, Jung (1921) articulates a number of his underlying assumptions which are the following:

- past experience, and expectations about the future, influence behaviour and personality
- individuals are capable of constant and creative development
- personality is an open system which is receptive to inputs and exchanges

The MBTI attempts to operationalise these constructs and identify, by means of self-report, the basic preferences of people so that the effects of each preference (singly or in combination) can be put to practical use (Myers et al., 1998).

4.2.1.2. Description

The MBTI is comprised of four separate indices, each reflecting one of four basic preferences, which, according to Jung's theory, direct the use of perception and judgement. These four indices or preferences are

- Introversion/Extraversion (I/E)
- Judgement/Perceiving (J/P)
- Sensing/Intuition (S/N)
- Thinking/Feeling (T/F)

In type theory, extraversion and introversion refer to the direction in which attention and energy are most easily drawn, that is, general orientations in relating to the world (Hergenhahn, 1994). For extroverts, this direction is outwards in that there is a desire to act in accordance with the environment and to affirm its importance (Bayne, 1995). People with a strong preference for extroversion can be described as action oriented, impulsive, frank and open. They can also be expected to act sociably and be communicative. The main interest of introverts is the inner world of concepts and ideas (Bayne, 1995). Their interest is on the clarity of their own responses over those of others, with introverts tending to be more thoughtful and self-sufficient (Myers et al., 1998).

The functions of thought, on the other hand, refer to how a person perceives the world and deals with information and experience (Hergenhahn, 1994). Sensing and intuition are called the irrational functions, as they are thought to be polar opposites. Sensing and intuition occur independently of logical thought processes, that is, sensing occurs automatically from the sensory mechanism of the body whilst intuition involves a prediction made in the absence of factual information (Hergenhahn, 1994). Sensing refers to perceptions observable through the senses and focuses on immediate experiences (Bayne, 1995). Sensing individuals are normally realistic, practical and detail-focused (Myers et al., 1998). Intuitive perception relates to the perception of possibilities through insights, meaning and relationships (Bayne, 1995). Intuitive types are said to perceive beyond what is visible to the senses through pattern perception; they have a future orientation and are imaginative and creative (Myers et al., 1998).

Thinking and feeling are called rational functions because they make judgements and evaluations about experiences. These are two ways of making decisions or coming to conclusions (Bayne, 1995). Thinking judgement links ideas by logical connection, cause-and-effect analysis, analytical ability, and objectivity. Feeling judgement weighs up the relative values and merits, understands relative values

and is more subjective than objective. The feeling function has a better understanding of people and a greater need for affiliation (Myers et al., 1998).

In terms of judgement and perception, Judging types tend to be more concerned with making decisions, seeking closure and planning or organising activities (Bayne, 1995). A perceptive attitude is more attuned to incoming information and focusing on realities and/or possibilities. Perceptive types are said to be more curious, open, spontaneous and adaptable that the Judging attitude (Myers et al., 1998).

The MBTI is a self-report instrument and consists of three parts. Part 1 contains 26 items, Part 2 consists of 45 items and Part 3 consists of 55 items. Parts 1 and 2 force individuals to choose between types of behaviour/reaction and Part 3 forces individuals to choose between word pairs. Items are arranged so that items that best predict total personality type are at the beginning, thus increasing the likelihood that respondents who do not finish the MBTI will receive accurate reports.

Choices are between seemingly inconsequential everyday events, chosen by Myers, as stimuli to evoke the more comprehensive-type preferences. According to Myers and McCaulley (1985; 1992), all items describe easily recognisable behaviours or reactions in various life settings. By choosing a preferred type of behaviour/word, individuals actually indicate preferences with regard to the four indices (Myers & McCaulley, 1992). The preferences on each scale of indices are independent of preferences for the other three scales, so that 16 personality types are created. The preferences affect not only what people attend to in any given situation, but also how they draw conclusions about what they perceive. The indices are not designed as scales for measurement of traits/behaviours, but are intended to reflect a habitual choice between rival alternatives, analogous to right and left handedness. Every person is assumed to use both poles of each of

the four preferences but to respond first or most often with the preferred functions.

For the purpose of this research project, the personality preference types of particular importance are

- I/E
- J/P
- the grouping of the S/N and T/F preferences to create preference combinations of ST, SF, NT and NF
- the grouping of the I/E and J/P preferences to create preference combinations of IJ, IP, EJ and EP

These personality preferences and groupings were selected in order to confirm previous research findings in the field as well as to explore new possible relationships. Some of these findings include Berthon, Pitt and Money's (1994) claim that the attitude dichotomy of E/I has the strongest correlation between the MBTI and other measures of personality and behaviour, whilst stating that the functional dichotomy of J/P is often overlooked (Pinder & Herriot, 1990). McCrae and Costa (1989) state that the relationship between psychological type and emotional intelligence is most likely far more complex than can be understood by looking at the preferences in isolation, and that the relationships between EQ and combinations of preferences on the MBTI should be analysed. For example, knowing how one gathers information (S/N) without also knowing something about one's preferences for making decisions (from the T/F scale) probably is not sufficient for making predictions about EQ.

4.2.1.3 Administration, scoring and interpretation

The MBTI is published in three formats, namely, a 166-item format, a 126-item format and a 50-item format. The 126-item MBTI (Form G, published in 1998)

was used in the present study. The MBTI can be administered individually or in groups, either via paper or electronically, and has no time limit. Omissions are permitted if respondents do not understand a question or cannot choose an answer. This is because no item can reliably contribute as useful evidence unless choices are understood, as the question lies within the respondents' experiences (Myers & McCaulley, 1992).

MBTI scoring generates four basic categorical scores. The scores are the sums of the "votes cast" for each pole of the four preference indices, namely, for I/E, S/N, T/F and J/P.

Each response to a question may be weighted as zero, one or two points, with weights reflecting the relative popularity of each answer with those for whom it was intended. Responses that best predict total type with a prediction ratio of 72% or greater carry a weight of two; items that predict type with a prediction rate of 63 to 71% carry a weight of one; over-popular responses carry a weight of zero. The totals for weighted scores for each preference are called points. As an example, persons with higher total points for extroversion than for introversion are called extroverts. The characteristics associated with a preference are often less apparent when the numerical portion of the preference score is low. A low score shows almost equal votes for each pole of the preference (Myers et al., 1998); whilst letters indicate the directions of the preference, the number indicates the strength (Myers et al., 1998).

It is asserted that, when using the MBTI in practice, it is the dynamics of type that are critical, expressed in terms of 16 types. Central to this are the dominant mental functions associated with each MBTI profile, that is, Sensing/Intuition, and Thinking/Feeling.

4.2.1.4 Reliability

There has been ongoing concern about the reliability of the scores produced by the MBTI instrument (Salter et al., 2005). Opt and Loffredo (2003) challenged this and state that the MBTI has been found to be a reliable and valid instrument. Extensive research on the instrument since its development supports its reliability and validity (see Carskadon, 1979; Carlson, 1989; McCrae & Costa, 1989; Harvey, 1996; Murray, 1990, in Moore et al., 2004).

Several studies have concluded that the MBTI has an internal consistency as high as that of most psychological scales, with coefficient alphas from 0,83–0,97 (Carskadon, 1979; Carlson, 1989; Harvey, 1996; Murray, 1990, in Moore et al., 2004). Capraro and Capraro (2002), in Salter et al. (2005), confirm this, finding an average internal consistency score for the MBTI of 0,81. Moreover, Myers and McCaulley (1998) examined internal consistencies based on alpha coefficients, none of which are below 0,7 for the four scales. Test-retest reliabilities for the instrument range from 0,48 to 0,89. Examination of the test-retest reliability of type categories shows probabilities significantly greater than the chance probability of choice for all four preferences on retest (Higgs, 2001). Thus, Myers and McCaulley (1998) claim that the actual test-retest probabilities differ from those of chance; they also conclude that test-retest reliabilities of the MBTI show consistency over time. Split-half reliabilities for the instrument range from 0,73 to 0,88.

4.2.1.5 Validity of the MBTI

Because the MBTI was designed to implement Jung's theory of psychological types, its validity is determined by its ability to demonstrate the relationships and outcomes predicted by theory (Myers & McCaulley, in Higgs, 2001). Most validation data focuses on the construct validity of the instrument. Myers and McCaulley (1985) reported several studies that provide evidence of construct

validity for the MBTI (Opt & Loffredo, 2003). Numerous studies have established construct validity for the MBTI through factor analysis and correlations with personality variables measured by other instruments (Carlson, 1985; 1989; Myers et al. 1998).

Although Berthon et al. (1994) claim that the attitude dichotomy of E/I and the functional dichotomy of J/P have been overlooked, a number of studies which do incorporate this attitude dichotomy find it to be the strongest area of correlation between the MBTI and other measures of personality, competency and behaviour (Pinder & Herriot, 1990). A large number of correlations with other personality instruments show a large number of significant results (Dulewicz & Higgs, 1999). From the range of instruments examined, Myers and McCaulley (1998) consider that the correlations between MBTI and the Jungian Type Survey (JTS) and the Gray Wheelwright instruments are of special interest in terms of construct validity. It would appear that the MBTI and JTS tap into similar constructs.

There seems to be general agreement on the high levels of face validity of the MBTI (Carskadon, 1975; Dulewicz & Higgs, 1999; Vacha-Haase & Thompson, 2002). Still, McCrae and Costa (1989) are of the opinion that while there is some evidence of the validity of the MBTI, it remains only a moderate predictor of behaviour.

4.2.1.6 Motivation for choice

Since personality plays a part in employee selection, appraisal, career development and job design within an organisation (Bayne, 1995), type theory has been used extensively to understand the choice of occupations and careers for individuals better. The MBTI was chosen for the purpose of this study as a result of the fact that the instrument is relevant and acceptable to the workplace (Bayne, 1995). It is also comprehensive and based on reputable personality

theory (Myers & McCaulley, in Higgs, 2001). The instrument is psychometrically sound and can be used on a wide variety of respondents; although McCrae and Costa, in Higgs (2001), point out that the MBTI is built around bimodal distribution or preference scores. It measures types rather than traits or continuous variables and, as the theory postulates dichotomies, some of the psychometric properties are unusual (Myers et al., 1998).

The MBTI is a very good development tool which can benefit individuals by providing insight into their dominant/weakest preferences, thereby enabling change through the development of more balanced behaviour (Bayne, 1995).

4.2.2 Measuring EQ (Bar-On EQ-i)

4.2.2.1 Development

The structure of the Bar-On EQ-i is based on literature and its author's research experience as a clinical psychologist (Bar-On in Dulewicz et al., 2003). According to Bar-On and Parker, in Dulewicz et al. (2003), the Bar-On EQ-i was originally constructed as an experimental instrument designed to examine the concept of emotional and social functioning. The concept was theoretically developed from logically clustering variables and identifying underlying key factors purported to determine effective and successful functioning as well as positive emotional health (Bar-On, 1997).

The Bar-On EQ-i model theorises that EQ is comprised of five noncognitive dimensions, abilities and skills labelled Interpersonal EQ, Intrapersonal EQ, Stress Management EQ, Adaptability EQ and General Mood EQ (Bar-On in Frye et al., 2006).

4.2.2.2 Description

The Bar-On EQ-i is now a commercially available inventory, reporting six scores for each respondent, namely, an overall EQ score as well as five composite scale scores which are formed from fifteen subscales (Frye et al., 2006). Table 4.1 describes the Bar-On EQ-i composite scales and subscales in more detail.

4.2.2.3 Administration and scoring

The Bar-On EQ-i produces a total EQ score, five composite scale scores and 15 subscale scores, as defined by Bar-On (1997). A number of factor analyses were performed and provided empirical support for the 1-5-15 structure of the Bar-On EQ-i. Therefore, the Bar-On EQ-i presents a solid hierarchical structure of EQ (Bar-On, 1997).

Respondents respond to each declarative statement, phrased in the first person singular, by choosing one response on a five-point Likert scale (1 = not true of me, and 5 = true of me). The Bar-On EQ-i thus results in continuous interval scores. Raw scores are transformed into standard scores with a mean of 100 and a standard deviation of 15 (see Dulewicz et al., 2003). Scores between 90 and 100 are indicative of normal emotional functioning, with scores higher than 110 indicating advanced emotional functioning. Scores of less than 90 are indicative of suboptimal EQ functioning (Bar-On, 2002).

According to Matthews et al. (2003), the Bar-On EQ-i scoring method is more concrete than those used by ability measures, as the qualities of EQ are specified in advance and scoring simply depends on a match between self-report and target qualities.

4.2.2.4 Reliability

(a) Internal reliability

Most reliability studies conducted on the Bar-On EQ-i have focused on internal consistency and test-retest reliabilities (Bar-On, 1997). The internal reliability of the Bar-On EQ-i has been examined through the use of Cronbach's alpha. The internal consistency coefficients for the Bar-On EQ-i subscales ranged from 0,70 (social responsibility) to –0,89 (self-regard), based on seven different population samples, thus demonstrating very good reliability (Bar-On, 1997).

(b) Test-retest reliability

Test-retest reliability refers to the stability of an instrument over time (Rosnow & Rosenthal, 1996). Test-retest reliability has been examined with two groups. Reliabilities for a one-month study ranged from 0,78–0,92, and for a four-month study from 0,55–0,87 (Bar-On, 1997).

4.2.2.5 Validity

(a) Content and face validity

Bar-On (1997) reports that the Bar-On EQ-i was validated principally by the systematic way in which the items were generated and selected, which involved expressing the essence of each factor based on definitions. The effectiveness of this type of validation was consequently examined by item analysis, and from direct feedback received from thousands of participants who had completed the inventory over the years. Bar-On (1997) argues that the current form of the inventory has adequately satisfied the requirements of content and face validity.

Table 4.1 Bar-On conceptual components and factors (Frye et al., 2006)

Composite EQ Scale and definition	Sub-scale	Definition
Intrapersonal EQ – the ability of an individual to know himself and his feelings	Emotional self-awareness	The ability to recognise and understand one's own feelings and emotions, differentiate between them and know what caused them and why
	Assertiveness	The ability to express feelings, beliefs and thoughts and defend one's rights in a non-destructive way
	Self-regard	The ability to look at and understand oneself, respect and accept oneself, accepting one's perceived positive and negative aspects as well as one's limitations and possibilities
	Self-actualisation	The ability to realise one's potential capabilities and to strive to do that which one wants to do and enjoys doing
	Independence	The ability to be self-reliant and self-directed in one's thinking and actions and to be free of emotional dependency
Interpersonal EQ – an individual's ability to interact, relate well with others and possess good social skills	Empathy	The ability to be attentive, understand and to appreciate the feelings of others
	Social responsibility	The ability to demonstrate oneself as a cooperative, contributing and constructive member of one's social group
	Interpersonal relationship	The ability to establish and maintain mutually satisfying relationships that are characterised by intimacy and by giving and receiving affection
Adaptability – an individual's capacity for reality testing, flexibility and aptitude for creative problem solving	Reality testing	The ability to assess the correspondence between what are experiences (the subjective) and what in reality exists (the objective)
	Flexibility	The ability to adjust one's emotions, thoughts and behaviours to changing situations and conditions
	Problem solving	The ability to identify and define problems as well as generate and implement potentially effective decisions
Stress Management - an individual's ability to work well under pressure without losing control	Stress tolerance	The ability to withstand adverse effects and stressful situations without falling apart by actively and confidently coping with stress
	Impulse control	The ability to resist or delay an impulse, drive or temptation to act
General Mood – an individual's capacity for satisfaction with oneself, life in general and others	Optimism	The ability to look at the brighter side of life and to maintain a positive attitude even in the face of adversity
	Happiness	The ability to feel satisfied with one's life, to enjoy oneself and being with others and to have fun

(b) Construct validity

The Bar-On EQ-i was subjected to extensive construct validity analyses to evaluate how well it assesses what it is designed to assess. Construct validity for the EQ-i has been extensively examined by correlating the inventory's subscale scores with various scale scores of other personality, mental health and job satisfaction measures. Bar-On reports that the correlations are, overall, moderate, ranging from 0,30 to 0,70. Austin et al. (2004) state that self-report measures do have construct validity, as EQ has been associated with a number of theoretically related constructs which would be expected to be related to high EQ.

He argues that the coefficients are high enough to give ample support that the Bar-On EQ-i sub-scales are measuring the constructs that they were intended to measure and yet not so high as to suggest that the Bar-On EQ-i is a duplication of existing inventories (Bar-On, in Dulewicz et al., 2003). The main conclusion from Dulewicz et al.'s (2003) study is that there is clear evidence for the content and construct validity of the Bar-On EQ-i instrument. However, it is important to note that the nature of the Bar-On EQ-i instrument is ipsative, which may limit the nature of the methods used to determine its validity and ability and to compare it with other instruments (Bar-On, in Higgs, 2001).

(c) Convergent validity

Convergent validity assesses whether an inventory correlates highly with another variable with which is should theoretically correlate (Anastasi & Urbina, 1997). Findings from several research studies indicate that the Bar-On EQ-i has demonstrated adequate convergent validity and that these findings reinforce the Bar-On EQ-i construct validity results (Bar-on, 1997).

(d) Factorial validity

Factorial analysis was applied to the data to examine the subscale structure of the Bar-On EQ-i to assess the extent to which it is empirically and theoretically justified (Bar-On, 1997). Bar-On states that there is sufficient empirical support for the 1-5-15 (total EQ scale-composite scales-subscales) structure of the Bar-On EQ-I, which means that this inventory measures a good hierarchical structure of noncognitive intelligence.

4.2.2.6 Motivation for choice

It has been demonstrated that the Bar-On EQ-i is capable of providing a reliable and valid measure of noncognitive intelligence. The emotionally healthy, well-functioning and potentially successful individual is expected to receive average to above-average scores (Bar-On, 1997). Bar-On claims that the brevity and multifaceted information that the Bar-On EQ-i provides can be used by psychologists as well as Human Resource and Organisational Development consultants as a screening device to select emotionally intelligent, psychologically healthy and potentially successful staff. For this study, the Bar-On EQ-i provided the most suitable measurement of EQ.

Regardless of the criticisms these tests have received, self-report measures are still the most popular method used to assess EQ in research. This is because they are less complicated to administer and the instruments are readily available, making them more accessible. As a result of the focus of this study on personality and EQ, a self-report measure was deemed to be most suitable in measuring EQ, rather than an ability measure.

4.2.3 Biographical data

This data were obtained from a self-report questionnaire completed by each person in this sample. These included race, age, gender and occupational level.

4.3 DATA COLLECTION PROCEDURE

On receipt of approval for access from the investment bank, the data for this study was obtained from an outsourced psychometric assessment company, which is solely used by the investment bank to assess prospective employment candidates. At the time that the candidates complete their assessments, they are ensured of confidentiality and further give their permission for the results to be used for research purposes in future.

4.4 DATA ANALYSIS PROCEDURE

The unit of analysis in this research study was the individual with correlation analysis based on group results obtained at an individual level. Correlations describe relationships in a formal way using observation and measurement to quantify the degree of association between variables (Rosnow & Rosenthal, 1996). To investigate the nature of dependency and relationships between personality preference groupings and EQ, the analysis methodology that was followed is next discussed in detail.

4.4.1 Descriptive statistics

As a first exploratory step, the frequency distributions of the four personality reference groupings were conducted, followed by an analysis of the overall mean scores for the six EQ score components (including total EQ). Mean overall and composite EQ scores were further calculated according to the four personality preference groupings, as measured by the MBTI.

The four personality preference groupings reported in the dataset were identified in the following manner:

- I/E attitude grouping (assigned the preference of either an I or E, depending on which score was the greatest)
- J/P attitude grouping (assigned the preference of either a J or P, depending on which score was the greatest)
- N/S and T/F temperament grouping, resulting in four preference combinations of NT, NF, ST and SF (assigned the combined preferences of N or S and T or F, depending on which scores were the greatest)
- I/E and J/P attitude grouping, resulting in four preference combinations of IJ, IP, EJ and EP (assigned the combined preferences of I or E and J or P, depending on which scores were the greatest)

It was reasoned that a first indication of possible relationships between EQ and personality preference groupings or EQ and biographical indicators would be reflected in mean scores.

4.4.2 Pearson's correlation coefficient and Spearman's correlation coefficient

Correlation coefficients were calculated to establish the significance of probable dependencies reflected in the abovementioned exploratory analyses. Correlation coefficients and their associated significance, as presented in chapter 5, measure the strength of established significant dependencies.

Pearson's correlation coefficient (r) is calculated as a measure of the linear relationship between any two variables when two or more scales are considered to be measured on an interval scale. The r indicates the extent to which the changes in one variable are associated with changes in another, on a range of +1 to –1. A correlation of +1 indicates a perfect positive relationship; a correlation of 0 indicates no relationship, whilst a –1 correlation represents a perfect negative relationship (Howell, 1999).

In this study, Pearson's correlation coefficients were calculated between the six interval scale EQ score components (including total EQ) in order to test the hypotheses in terms of the relationships (positive or negative) between them. Spearman's correlation coefficients were calculated between the four personality preference groupings for the purposes of establishing the reliability and validity of the sample, and for multicolinearity. In order to establish the relationship between the six interval scale EQ score components and the four MBTI ordinal personality preference groupings, Spearman's correlation coefficients were calculated. Spearman's correlation coefficients are appropriate when comparing these two data types.

Spearman's correlation coefficients were further calculated between the six interval scale EQ score components and the nominal scale variables of gender and race, and the ordinal scale variables of age and job level. The same process was used to analyse the relationships between the four personality preference groupings and age, gender, race and job level.

4.4.3 Analysis of variance (ANOVA)

A one-way analysis of variance F-test is a statistical technique used to test the significance of the differences between means of a number of different groups (Tredoux & Durrheim, 2002). ANOVA deals with differences between sample means and has no restrictions on the number of means (Howell, 1999).

Analysis of variance methods – suitable for unbalanced data – were used to validate the significance of dependencies of the personality preference groupings and the relevant biographical indicators on the EQ components. Once established, Bonferroni's multiple comparisons of means tests and associated tables of means were calculated to describe the nature and direction of significant dependencies. The test indicates which EQ mean scores for a specific EQ component, classified according to preference grouping or biographical

indicator, differ significantly from any other(s). These scores will be presented in chapter 5.

4.4.4 Statistical significance

The level of significance is the maximum probability with which a researcher would be willing to risk the rejection of the null hypothesis, where in fact it should have been accepted (Spiegel, 1972). In practice, a level of significance of 0,05 or 0,01 is customary. If a 0,01 (1%) level of significance is selected to test the hypothesis, the researcher will be 99% confident that the right decision has been made. The level of significance used in this study was that of a significance level of 0,05 as the cut-off point for rejecting the hypothesis.

The sample size is also important. The larger the sample size the more powerful the statistical test will be, and the more likely the chance of the null hypothesis being rejected when it is false (Jaccard & Becker, 2002).

In terms of the Pearson correlation coefficients, Tredoux and Durrheim (2002) offer informal interpretations for statistically significant correlations of various sizes:

Value of $r < 0,2$: slight, almost no relationship
Value of $r < 0,2 – 0,4$: low correlation, definite but small relationship
Value of $r < 0,4 – 0,7$: moderate correlation, substantial relationship
Value of $r < 0,7 – 0,9$: high correlation, strong relationship
Value of $r < 0,9 – 1,0$: very high correlation, very dependable relationship

In terms of the analysis of variance, general significance associated with the one-way ANOVA is indicated as the probability associated with the F-statistic, that is, the F (probability). The analysis is only significant and valid if the probability associated with the analysis is less than $p < 0,05$.

4.5 HYPOTHESES

4.5.1 Hypotheses relating to EQ and personality preference groupings

H1: There is a statistically significant positive relationship between EQ and its five composite scales.
H2: There are statistically significant positive relationships between the four personality preference groupings.

4.5.2 Hypotheses relating to the relationship between EQ and Personality preference groupings

H3: There is a statistically significant positive relationship between Extroversion and EQ (including the five EQ subscales).
H4: There is a statistically significant positive relationship between Judging and EQ (including the five EQ subscales).
H5: There is a statistically significant positive relationship between the NT personality preference combination and EQ (including the five EQ subscales).
H6: There is a statistically significant positive relationship between the EJ personality preference combination and EQ (including the five EQ subscales).

4.5.3 Hypotheses relating to individual demographic characteristics and EQ

H7: African participants display statistically significantly higher levels of EQ than White, Indian and Coloured participants (race).
H8: Older participants display statistically significantly higher levels of EQ than younger participants (age).
H9: Female participants display statistically significantly higher levels of EQ than male participants (gender).
H10: Managerial-level participants display statistically significantly higher levels of EQ than nonmanagerial level participants (occupational level).

4.5.4 Hypotheses relating to individual demographic characteristics, and personality preference groupings

H11: There is a statistically significant positive relationship between White participants and Judging.
H12: There is a statistically significant positive relationship between older participants and Perception.

Depending on the above results, further hypotheses will be explored on the effect of personality preference groupings (independent variable), together with biographical categories, on EQ and EQ subscales (dependent variable).

4.6 CHAPTER SUMMARY

In this chapter, the methods used for the empirical study were explained. The selection and composition of the sample, the measuring instruments, data gathering and data processing, as well as the relevant statistical analysis were discussed. The research hypotheses were also formulated. Chapter 5 focuses on the results and analysis of the empirical study.

CHAPTER 5: RESEARCH RESULTS

The aim of this chapter is to focus on steps 6 and 7 of the empirical study, as described in chapter 1. This involves reporting on the sample and interpreting the results of the statistical analysis as generated by the SAS (version 9.2) statistical software program. The results are aligned to the research methodology discussed in chapter 4.

The biographical composition of the sample is presented, followed by an analysis of the frequency and univariate description of the study's variables. The results of the hypothesis testing will follow, together with the interpretation. 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, occupational level and race.

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	SAMPLE SIZE (N)	PERCENTAGE OF SAMPLE
Male	680	60
Female	441	40
Total	**1 121**	**100**

The sampling-for-convenience technique employed was that of haphazard sampling, based on job applicants to the organisation within the last 24 months. Of the total sample, 60% comprised male respondents and 40% female respondents. This distribution is fairly representative of the natural demographics of the population, since the organisation employs approximately 54% males and 46% females. These statistics further tie in with the demographics that the company is currently trying to target in terms of its recruitment.

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	SAMPLE SIZE (N)	PERCENTAGE OF SAMPLE
21–30 years	45	43
31–40 years	46	43
41–50 years	15	14
Total	**106**	**100**

This age distribution implies that the overwhelming majority of the sample (86%) is between the ages of 21 and 40, with equal percentages in each category, that is, 43% of the sample being part of the 21–30 year age group and of the same for the 31–40 year age group. The remaining 14% is made up of candidates who are over 40 years of age.

Perceived as a dynamic, “best of breed” investment bank, this organisation naturally attracts young, ambitious professionals at the peak of their careers and this is reflected by age breakdown of the sample. Furthermore, the organisation has strongly positioned itself in the market as the “first choice” for graduates, thus attracting many young, university leavers to the organisation. The organisation

currently has a young workforce and culture, with an average age of below 35. It aims to maintain this by considering and recruiting like-minded individuals.

5.1.3 Occupational level distribution of the sample

Table 5.3 illustrates the occupational level distribution of respondents.

Table 5.3: Occupational level distribution of the sample

OCCUPATIONAL LEVEL	SAMPLE SIZE (N)	PERCENTAGE OF SAMPLE
General staff	328	40
Junior manager	98	12
Middle manager	277	35
Senior manager	77	10
Executive	25	3
Total	**805**	**100**

Sixty percent of the sample was assessed for managerial level roles, whilst the remaining 40% was assessed for roles at a general staff level. This distribution is representative of the existing occupational level of roles within the investment bank, which mostly require professionals in a managerial capacity.

5.1.4 Race distribution of the sample

Table 5.4 illustrates the race distribution of respondents.

Table 5.4: Race distribution of the sample

RACE	SAMPLE SIZE (N)	PERCENTAGE OF SAMPLE
African	415	41
Coloured	18	2
Indian	135	13
White	443	44
Total	**1 011**	**100%**

The two largest race components of the sample are the White (44%) respondents and the African respondents (41%). When combining all employment equity respondents (African, Coloured and Indian candidates), these make up 56% of the sample population. This distribution is representative of the current demographic composition of the organisation, since the organisation is comprised of 61% African, Indian and Coloured staff and 39% White staff. The sample is also representative of where the organisation is currently targeting its hiring practices.

5.2 FREQUENCY OF VARIABLES

5.2.1 Frequency distribution of MBTI preference groupings

The frequency tables below (tables 5.5–5.8) reflect the frequency distribution of the four personality preference groupings. Although the distributions are unbalanced within the four personality preference grouping categories, the least represented category percentage comprises at least 4.64% of the relevant sample. Since all categories across personality preference groupings included more than 50 people, the frequencies per category were regarded as sufficient to include all the personality preference groupings in the analyses which followed.

Frequency tables 5.5 and 5.6 present both differentiated and combined frequency scores for the I/E and J/P personality preference groupings. Extremely high scores on any of the E, I, J or P dimensions are represented by ++, less extreme scores by + and moderate scores purely by E, I, J or P. The total frequency scores for E, I, J and P represent the total of the extreme to moderate frequency scores. Table 5.7 presents the frequency distributions of the N/S and T/F preference grouping combinations, while table 5.8 presents the frequency distributions of the I/E and J/P preference grouping combinations.

Table 5.5: I/E difference-rated personality preference groupings

I/E	Frequency	Percent	Cumulative frequency	Cumulative percent
E++	277	24.71	277	24.71
E+	303	27.03	580	51.74
E	244	21.77	824	73.51
I	170	15.17	994	88.67
I+	82	7.31	1076	95.99
I++	45	4.01	1121	100
E total	824	82.35	1386	82.35
I total	297	17.65	1683	100

Table 5.6: J/P difference-rated personality preference groupings

J/P	Frequency	Percent	Cumulative frequency	Cumulative percent
P++	30	2.68	30	2.68
P+	69	6.16	99	8.83
P	137	12.22	236	21.05
J	190	16.95	426	38.00
J+	292	26.05	718	64.05
J++	403	35.95	1121	100
P total	236	47.42	798	47.42
J total	885	52.58	1683	100

Table 5.7: "N/S and T/F" personality preference groupings

NS and TF group	Frequency	Percent	Cumulative frequency	Cumulative percent
NT	413	36.84	413	36.84
NF	52	4.64	465	41.48
SF	61	5.44	526	46.92
ST	595	53.08	1121	100

Table 5.8: "I/E and J/P" personality preference groupings

IE and JP group	Frequency	Percent	Cumulative frequency	Cumulative percent
IP	68	6.07	68	6.07
IJ	229	20.43	297	26.49
EJ	656	58.52	953	85.01
EP	168	14.99	1121	100

5.2.2 Mean Scores for EQ

Overall mean scores for the six components of EQ were calculated to obtain a general impression of EQ ratings. EQ mean score values, classified according to the biographical indicators of gender, age, race and occupational level, were also calculated. Mean EQ scores were further calculated according to the four personality preference groupings mentioned.

It was reasoned that a first indication of possible relationships between EQ and either personality preference groupings or biographical indicators would be reflected in mean scores. Table 5.9 gives an indication of the EQ mean scores classified according to the "I/E" personality preference grouping. Table 5.9 demonstrates I/E score means on all EQ components, and indicates that mean scores decrease over all EQ components from the E++ category of I/E preference grouping to the I++ category. This is a first indication that dependencies between EQ and the I/E personality preference grouping exist. These indications are validated in the correlation analysis and analyses of variance techniques which follow.

Table 5.10 demonstrates J/P score means on all EQ components and indicates that mean scores increase over all EQ components from the P++ category of the JP personality preference grouping to the J++ category. This is a first indication that dependencies between EQ and the J/P personality preference grouping exist. These indications are validated in the correlation analysis and analyses of variance techniques which follow.

Table 5:9: EQ mean scores classified according to the "I/E" personality preference grouping

IE	N Obs	Variable	Label	N	Mean	Std Dev	Minimum	Maximum
E++	277	EQTot	EQTot	277	107.97	7.26	87	122
		EQIntra	EQIntra	277	108.52	7.76	76	123
		EQInter	EQInter	277	106.95	9.69	68	125
		EQStress	EQStress	277	107.78	10.21	65	128
		EQAdapt	EQAdapt	277	109.18	10.23	79	131
		EQMood	EQMood	277	107.57	8.76	82	125
E+	303	EQTot	EQTot	303	105.80	7.46	83	125
		EQIntra	EQIntra	303	105.88	8.28	80	124
		EQInter	EQInter	303	104.53	10.36	73	125
		EQStress	EQStress	303	106.58	10.53	66	132
		EQAdapt	EQAdapt	303	107.36	9.80	81	131
		EQMood	EQMood	303	105.50	8.35	72	124
E	244	EQTot	EQTot	244	103.28	8.02	85	124
		EQIntra	EQIntra	244	103.16	9.09	79	126
		EQInter	EQInter	244	102.28	10.71	57	127
		EQStress	EQStress	244	105.12	10.53	77	128
		EQAdapt	EQAdapt	244	103.98	10.64	76	129
		EQMood	EQMood	244	103.12	9.18	65	125
I	170	EQTot	EQTot	170	100.58	8.87	74	120
		EQIntra	EQIntra	170	99.94	10.53	73	123
		EQInter	EQInter	170	98.65	11.03	55	124
		EQStress	EQStress	170	103.47	11.95	68	125
		EQAdapt	EQAdapt	170	103.20	10.90	78	127
		EQMood	EQMood	170	99.09	10.42	60	118
I+	82	EQTot	EQTot	82	98.00	8.58	69	120
		EQIntra	EQIntra	82	97.73	10.58	63	119
		EQInter	EQInter	82	95.26	11.41	71	118
		EQStress	EQStress	82	101.37	11.28	63	129
		EQAdapt	EQAdapt	82	100.79	10.45	79	124
		EQMood	EQMood	82	96.23	10.60	70	123
I++	45	EQTot	EQTot	45	95.42	7.47	80	113
		EQIntra	EQIntra	45	93.80	9.82	72	112
		EQInter	EQInter	45	91.73	8.61	76	119
		EQStress	EQStress	45	103.44	11.56	74	126
		EQAdapt	EQAdapt	45	99.31	9.62	80	118
		EQMood	EQMood	45	92.27	10.91	72	116

Table 5.10: EQ mean scores classified according to the "JP" personality preference grouping

JP	N Obs	Variable	Label	N	Mean	Std Dev	Minimum	Maximum
P++	30	EQTot	EQTot	30	101.30	7.04	85	112
		EQIntra	EQIntra	30	102.63	8.63	82	118
		EQInter	EQInter	30	98.20	8.97	75	121
		EQStress	EQStress	30	102.80	11.85	77	119
		EQAdapt	EQAdapt	30	100.70	9.29	82	117
		EQMood	EQMood	30	103.13	7.72	83	118
P+	69	EQTot	EQTot	69	100.10	9.19	81	119
		EQIntra	EQIntra	69	99.43	11.83	73	120
		EQInter	EQInter	69	101.58	10.21	72	121
		EQStress	EQStress	69	100.80	10.15	73	123
		EQAdapt	EQAdapt	69	98.38	13.04	76	127
		EQMood	EQMood	69	101.42	9.78	79	117
P	137	EQTot	EQTot	137	101.82	8.98	69	124
		EQIntra	EQIntra	137	102.48	10.47	63	124
		EQInter	EQInter	137	100.28	10.45	71	120
		EQStress	EQStress	137	100.92	12.36	63	125
		EQAdapt	EQAdapt	137	102.81	10.66	79	131
		EQMood	EQMood	137	102.52	10.81	71	124
J	190	EQTot	EQTot	190	103.81	7.93	85	121
		EQIntra	EQIntra	190	103.58	9.05	77	123
		EQInter	EQInter	190	103.47	10.12	76	125
		EQStress	EQStress	190	104.30	10.93	66	126
		EQAdapt	EQAdapt	190	104.83	10.32	78	126
		EQMood	EQMood	190	104.11	10.12	72	125
J+	292	EQTot	EQTot	292	104.09	8.01	74	121
		EQIntra	EQIntra	292	104.39	9.15	76	121
		EQInter	EQInter	292	102.00	11.67	55	125
		EQStress	EQStress	292	105.93	9.28	73	125
		EQAdapt	EQAdapt	292	105.82	9.49	80	126
		EQMood	EQMood	292	103.20	10.19	60	123
J++	403	EQTot	EQTot	403	105.66	8.73	80	125
		EQIntra	EQIntra	403	105.20	9.75	72	126
		EQInter	EQInter	403	103.79	11.58	57	127
		EQStress	EQStress	403	108.55	10.63	65	132
		EQAdapt	EQAdapt	403	108.47	10.41	79	131
		EQMood	EQMood	403	103.63	10.02	65	123

Table 5.11 demonstrates N/S and T/F score means on all EQ components, and seems to indicate that mean scores decrease over all EQ components over the N/T, S/T, N/F and S/F categories where the EQ means are at their lowest. Dependencies, or a lack thereof, between EQ and this personality preference grouping were evaluated by means of a correlation analysis and analyses of variance techniques, the discussion of which follows in section 5.4.5.

Table 5.11: EQ mean scores classified according to the "N/S and T/F" personality preference grouping

NS & TF	N Obs	Variable	Label	N	Mean	Std Dev	Minimum	Maximum
NT	413	EQTot	EQTot	413	104.54	7.90	82	121
		EQIntra	EQIntra	413	105.00	9.02	74	123
		EQInter	EQInter	413	102.40	10.51	73	124
		EQStress	EQStress	413	105.63	10.03	66	125
		EQAdapt	EQAdapt	413	106.16	9.67	79	127
		EQMood	EQMood	413	104.04	9.66	72	125
NF	52	EQTot	EQTot	52	104.17	8.42	85	121
		EQIntra	EQIntra	52	102.94	10.51	76	121
		EQInter	EQInter	52	109.13	8.34	91	125
		EQStress	EQStress	52	103.56	10.00	70	120
		EQAdapt	EQAdapt	52	103.17	9.96	81	123
		EQMood	EQMood	52	102.96	10.90	80	122
SF	61	EQTot	EQTot	61	98.92	9.18	69	121
		EQIntra	EQIntra	61	95.87	11.29	63	117
		EQInter	EQInter	61	105.13	10.81	71	125
		EQStress	EQStress	61	99.54	11.87	63	123
		EQAdapt	EQAdapt	61	98.28	10.44	78	123
		EQMood	EQMood	61	98.56	10.13	71	122
ST	595	EQTot	EQTot	595	104.14	8.83	74	125
		EQIntra	EQIntra	595	104.15	9.69	72	126
		EQInter	EQInter	595	101.83	11.63	55	127
		EQStress	EQStress	595	106.34	11.30	65	132
		EQAdapt	EQAdapt	595	106.25	11.17	76	131
		EQMood	EQMood	595	103.33	10.24	60	125

Table 5.12 demonstrates I/E and J/P score means on all EQ components, and seems to indicate that mean scores tend to increase over all EQ components over the I/P, I/J, E/P and E/J categories, where the means are at their highest. Correlation analysis and analyses of variance techniques to determine any dependencies are described in section 5.4.5 below.

Table 5.12: EQ mean scores classified according to the "I/E and J/P" personality preference grouping:

IE & JP	N Obs	Variable	Label	N	Mean	Std Dev	Minimum	Maximum
IP	68	EQTot	EQTot	68	96.44	8.73	69	116
		EQIntra	EQIntra	68	95.43	10.87	63	116
		EQInter	EQInter	68	96.26	9.37	71	117
		EQStress	EQStress	68	97.94	13.12	63	122
		EQAdapt	EQAdapt	68	98.00	10.44	79	121
		EQMood	EQMood	68	95.93	10.98	71	118
IJ	229	EQTot	EQTot	229	99.87	8.65	74	120
		EQIntra	EQIntra	229	99.28	10.42	72	123
		EQInter	EQInter	229	96.78	11.55	55	124
		EQStress	EQStress	229	104.35	10.86	68	129
		EQAdapt	EQAdapt	229	103.12	10.47	78	127
		EQMood	EQMood	229	97.67	10.73	60	123
EJ	656	EQTot	EQTot	656	106.44	7.56	83	125
		EQIntra	EQIntra	656	106.44	8.28	76	126
		EQInter	EQInter	656	105.35	10.38	57	127
		EQStress	EQStress	656	107.62	10.12	65	132
		EQAdapt	EQAdapt	656	108.10	9.79	79	131
		EQMood	EQMood	656	105.66	8.99	65	125
EP	168	EQTot	EQTot	168	103.20	8.10	85	124
		EQIntra	EQIntra	168	104.11	9.63	79	124
		EQInter	EQInter	168	102.07	10.09	73	121
		EQStress	EQStress	168	102.41	10.79	66	125
		EQAdapt	EQAdapt	168	102.56	11.50	76	131
		EQMood	EQMood	168	104.85	8.57	82	124

5.3 UNIVARIATE PRESENTATION OF VARIABLES

The descriptive data for the study variables and their subscales are depicted in table 5.13 below, together with a discussion of these results in the sections that follow.

Table 5.13: Descriptive analysis of data (N = 1121)

Variable	N	Mean	Std Dev	Median	Minimum	Maximum
IE	1121	2.65388	1.39505	2	1	6
JP	1121	4.65388	1.37182	5	1	6
NS & TF	1121	2.74755	1.41028	4	1	4
EI & JP	1121	2.82426	0.75260	3	1	4
EQTot	1121	104.00714	8.57675	104	69	125
EQIntra	1121	103.95986	9.77858	105	63	126
EQInter	1121	102.55665	11.15638	103	55	127
EQStress	1121	105.58252	10.92297	106	63	132
EQAdapt	1121	105.63961	10.69823	106	76	131
EQMood	1121	103.31401	10.11141	104	60	125

The various EQ scores across all composite scales fall into the range of 55 and 132. Stress and adaptability mean scores are the largest at approximately 106; with interpersonal scores the lowest at approximately 103. The mean EQ scores across all composite scales (ranging from 102–105) indicate that, on average, the participants in this study display average EQ, with average emotional functioning. The standard deviations are also acceptable, that is, within 10% of the sample size.

5.4 TESTING OF THE STUDY HYPOTHESES

In this section, the results of the statistical techniques used to test the hypotheses of the study are presented and interpreted. To interpret the practical significance of the statistical results, the guidelines suggested by Tredoux and Durrheim (2002) in chapter 4 will be used. As such, where statistically significant relationships were found through correlation coefficients, *r*-values were interpreted according to the following guidelines:

Value of $r < 0,2$: slight, almost no relationship
Value of $r < 0,2 – 0,4$: low correlation, definite but small relationship
Value of $r < 0,4 – 0,7$: moderate correlation, substantial relationship
Value of $r < 0,7 – 0,9$: high correlation, strong relationship
Value of $r < 0,9 – 1,0$: very high correlation, very dependable relationship

A statistically significant level of 0,05 was employed.

5.4.1 Hypotheses relating to EQ and personality preference groupings

The research results of Pearson's product-moment correlation coefficients and associated significance between the total EQ score and the five EQ composite scores are presented in table 5.14. Table 5.15 shows the results of Spearman's correlation coefficients and the associated significance between the four personality preference groupings. These correlations are then discussed according to the hypotheses statements in section 4.5.1.

Table 5.14: Correlations between the six EQ component scores

Pearson Correlation Coefficients, N = 1121 **Prob > |r| under H0: Rho = 0**						
	EQTot	**EQIntra**	**EQInter**	**EQStress**	**EQAdapt**	**EQMood**
EQTot EQTot	1	0.90497 <.0001	0.69926 <.0001	0.75323 <.0001	0.87029 <.0001	0.80823 <.0001
EQIntra EQIntra		1	0.46762 <.0001	0.60734 <.0001	0.76632 <.0001	0.69210 <.0001
EQInter EQInter			1	0.34850 <.0001	0.45024 <.0001	0.56396 <.0001
EQStress EQStress				1	0.70566 <.0001	0.54060 <.0001
EQAdapt EQAdapt					1	0.59156 <.0001
EQMood EQMood						1
Level of significance: $p \leq 0.05$						

Note:

Blue: significant results
Green: strongest correlations
Red: weakest correlations

Significant positive correlations at the 0,05% level of significance between all pairs of EQ scores are indicated in the correlation table above, allowing us to accept Hypothesis 1.

The strongest positive correlation of 0,91 is reported for the EQ total and EQ intrapersonal scales. Though significant at the 0,05% level of significance, somewhat weaker correlations are reported between EQ interpersonal s≤≤cores

and intrapersonal scores, stress scores and adaptability scores (0,47, 0,35 and 0,45 respectively).

Table 5.15: Correlations between the four personality preference groupings

Spearman Correlation Coefficients Prob > |r| under H0: Rho=0 Number of Observations				
	I/E	**J/P**	**N/S and T/F**	**I/E and J/P**
I/E	1 1121	-0.02355 0.4308 1121	0.03928 0.1887 1121	-0.65762 <.0001 1121
J/P		1 1121	0.24083 <.0001 1121	-0.26774 <.0001 1121
N/S and T/F			1 1121	-0.06821 0.0224 1121
I/E and J/P				1 1121

Level of significance:

P ≤ 0.05

Note:

Blue: significant results
Green: strongest correlations
Red: weakest correlations

The "I/E and J/P" personality preference grouping is significantly negatively correlated with all three of the other preference groupings, namely, I/E, J/P and "N/S and T/F". A significant positive correlation is found between the two preference groupings of "J/P" and "N/S and T/F". Since a statistically significant

positive relationship exists between some personality preference groupings, Hypothesis 2 is not rejected.

5.4.2 Hypotheses relating to the relationship between EQ and Personality preference groupings

The research results of Spearman's product-moment correlation coefficients and associated significance between the six EQ scores and the four personality preference groupings are presented in table 5.16, and thereafter discussed according to the hypotheses statements in section 4.5.2.

Table 5.16 Correlations between EQ and personality preference groupings

Spearman Correlation Coefficients Prob > |r| under H0: Rho=0 Number of Observations						
	EQTot	**EQIntra**	**EQInter**	**EQStress**	**EQAdapt**	**EQMood**
IE	-0.38902 <.0001 1121	-0.37988 <.0001 1121	-0.35126 <.0001 1121	-0.17135 <.0001 1121	-0.27279 <.0001 1121	-0.37427 <.0001 1121
JP	0.18055 <.0001 1121	0.12916 <.0001 1121	0.10585 0.0004 1121	0.24197 <.0001 1121	0.24128 <.0001 1121	0.03662 0.2205 1121
N/S and T/F		-0.02447 0.4131 1121	-0.03184 0.2867 1121	0.04562 0.1269 1121	0.02534 0.3967 1121	-0.02141 0.4739 1121
I/E and J/P	0.22604 <.0001 1121	0.24237 <.0001 1121	0.21979 <.0001 1121	0.05119 0.0867 1121	0.10210 0.0006 1121	0.27600 <.0001 1121
Level of significance: $p \leq 0.05$						

Note:

Blue: significant results
Green: strongest correlations
Red: weakest correlations

From the above it can be seen that three personality preference groupings in particular, namely I/E, J/P, and "I/E and J/P" groupings, correlate significantly (either positively or negatively) with all/some EQ components. These correlations vary in strength from r = –0,4 (substantial relationship between I/E and EQ total) to r = 0,13 (slight relationship between J/P and EQ intrapersonal). Analysis of variance was conducted on the above factors in order to interpret the results further and to understand the direction of the relationships. This will then allow for the acceptance or rejection of Hypotheses 3, 4 and 6.

No statistically significant correlations were found between the "N/S and T/F" personality preference groupings with any EQ components, thus rejecting Hypothesis 5.

5.4.3 Hypotheses relating to individual demographic characteristics and EQ

Spearman's correlation coefficients and associated significance for biographical indicators on the six EQ components are presented in table 5.17 and thereafter discussed according to the hypotheses statements in section 4.5.3.

The biographical variables of race and age correlate significantly with various EQ components, with race correlating significantly with five of the six EQ scales. This lends support to the possible acceptance of Hypotheses 7 and 8, with African and older respondents expected to be positively related to higher EQ.
The results above relating to race are congruent with the literature in that Triandis (1994) states that collectivist cultures (greater emotional dependence on one another) are more likely than individualist cultures (autonomy over action is afforded to the individual) to empathise with others and to restrain their emotional

displays so as not to impose on others within the group. These differing value systems are also said to lead to specific emotional response behaviour based on beliefs of racial appropriateness (Hewitt, 2002).

Table 5.17: Correlations between individual demographic characteristics and EQ

Spearman Correlation Coefficients Prob > |r| under H0: Rho=0 Number of Observations						
	EQTot	**EQIntra**	**EQInter**	**EQStress**	**EQAdapt**	**EQMood**
Race	-0.11480 0.0003 1010	-0.17533 <.0001 1010	0.10298 0.0010 1010	-0.18142 <.0001 1010	-0.15825 <.0001 1010	-0.03389 0.2819 1010
Level	-0.03202 0.3643 805	0.00371 0.9163 805	-0.03253 0.3567 805	-0.03129 0.3753 805	-0.04444 0.2078 805	-0.02480 0.4823 805
Age	-0.11230 0.2518 106	-0.04985 0.6118 106	-0.04749 0.6288 106	-0.20561 0.0345 106	-0.25093 0.0095 106	-0.00363 0.9705 106
Gender	-0.01316 0.6597 1121	-0.00587 0.8442 1121	0.01084 0.7170 1121	-0.02669 0.3719 1121	-0.01902 0.5246 1121	-0.01744 0.5598 1121

Level of Significance:

$p \leq 0.05$

Note:

Blue: significant results
Green: strongest correlations
Red: weakest correlations

In terms of age, there is strong consensus in the literature that EQ is a developable competency (Goleman, 1996; Cooper, 1997; Steiner, 1997) and that individual differences in emotional experience and regulation may change over

time as a function of maturation, changing goals and experiences (Carstensen, 1992; Eisenberg et al., 2000). Research specifically suggests that while frequency and intensity of emotions may decrease (Diener et al., 1985), emotion regulation and control increases with age (Lawton et al., 1992).
Although significant correlations are found between age and two EQ components, a lack of further significant correlations could be due to the overwhelming majority of the sample being between the ages of 21 and 40 years. This could have impacted on the lack of differentiation of EQ between participants of different ages.

These two biographical variables were further analysed through the application of an Analysis of Variance (ANOVA), allowing for the acceptance or rejection of Hypotheses 7 and 8. The results are discussed in section 5.4.5 below.

Neither occupational level nor gender was found to correlate significantly with the components of EQ, resulting in Hypotheses 9 and 10 being rejected. This is congruent with Pugh's (2002) findings that males and females do not differ in terms of emotional experience. Bar-On (1997) and Fatt and Howe (2003) state that whilst both men and women generally have the same level of EQ, there are shared, gender-specific strong and weak points; for example, men are generally more self-confident, optimistic and better able to manage stress whilst women are more aware of emotions, show more empathy and fare better interpersonally.

The fact that occupational level did not correlate with EQ components could be explained by the almost equal split between men and women in the sample. If we assume that men and women are proportionally represented across levels within the organisation, with gender having no significance for EQ, this would play a part in the results reported above.

5.4.4 Hypotheses relating to individual demographic characteristics and personality preference groupings

Spearman's correlation coefficients and associated significance for biographical indicators on the four personality preference groupings are presented in table 5.18 and thereafter discussed according to the hypotheses statements in section 4.5.4.

Table 5.18: Correlations between individual demographic characteristics and personality preference groupings

Spearman Correlation Coefficients Prob > |r| under H0: Rho=0 Number of Observations				
	IE	**JP**	**N/S and T/F**	**I/E and J/P**
Race	0.03380 0.2832 1010	-0.09581 0.0023 1010	-0.04186 0.1837 1010	0.00661 0.8338 1010
Level	0.02795 0.4284 805	-0.01711 0.6279 805	0.00389 0.9122 805	0.02092 0.5534 805
Age	0.12778 0.1918 106	-0.21580 0.0263 106	-0.08564 0.3827 106	0.02402 0.8069 106
Gender	0.02700 0.3664 1121	0.01651 0.5809 1121	0.03498 0.2419 1121	0.00981 0.7428 1121

Level of Significance:

$p \leq 0.05$

Note:

Blue: significant results
Green: strongest correlations
Red: weakest correlations

Table 5.18 indicates that the demographics of race and age correlate significantly with the J/P personality preference grouping, leading to the possible acceptance of Hypotheses 11 and 12.

De Beer's (1997) analysis of type preference in South Africa states that experts share a common assumption that indigenous African people are more Feeling than Thinking oriented, based on the ubuntu values of togetherness of African, South African culture. Results from the current study do not support this assumption, as the most common personality types for African South Africans, as well as for whites, were ESTJ and ISTJ. These results are more in line with Myers and Myers's (1980) study, where they assert that Western-based civilisations socialise men towards the personality preference of Thinking, women towards Feeling and both genders towards Extraversion, Sensing and Judging.

Although the major variables that appear to influence the expression of personality preferences are environmental and cultural influences (Myers et al., 1998), age was found to be significant in this study. Type theory, however, assumes that type does not change over the life span but rather that the expression of type may vary according to different life stages and circumstances (Myers et al., 1998) which could account for the results being seen in this study. The statistical significance of race with the mental function of J/P reported on in this study also seems to provide new insights into the field.

The significantly correlated biographical variables of race and age were further analysed through the application of an ANOVA, the results of which are discussed in section 5.4.5 below.

5.4.5 ANOVA on EQ component scores to identify MBTI personality preference grouping categories and biographical indicators that significantly affect aspects of EQ

Summary ANOVA tables are presented below. Each table reflects the results of ANOVAs run on the six EQ scores to investigate the significance of the following on an aspect of EQ:

- one of the four personality preference grouping categories
- race (a biographical indicator)

The EQ component analysed, the effects included in the ANOVA-model, the general significance associated with the analysis (F-probability), the significance associated with the effect of personality preference grouping and race (F-probabilities) and the EQ score means for significant effects are presented in the body of the table. Bonferroni's multiple comparison of means test results are indicated in the respective means cells.

Each row in the table presents the results of a separate analysis of variance and the Bonferroni test on score means for the relevant EQ component.

The significance of the effect of age on EQ and of age on personality was investigated through preliminary analyses of variance but proved to be insignificant. This could be due to the relatively homogenous age of the sample group, with 86% being between the ages of 21 and 40. These are therefore not reported on, and Hypotheses 8 and 12 are rejected.

Table 5.19 shows that the tables of EQ mean scores for all emotional components indicate that the I/E personality preference grouping affects EQ, with the extreme E-type associated with higher EQ component scores gradually

declining to the extreme I-types with low EQ component scores. This allows for the acceptance of Hypothesis 3.

This finding is congruent with findings in the literature, with Higgs (2001) and Torrington (2001) reporting a positive relationship between extraversion and higher levels of EQ, with individuals who had a preference for E on the MBTI having a greater likelihood of scoring higher on almost all of the Bar-On EQ-i subscales than those who had a preference for I.

Table 5.19 Effect of the I/E personality preference grouping and race on the six EQ component scores

Summary analysis of variance table :

EQ component	General sign.: F-prob	Effects included in the analysis of variance model			
		MBTI IE-Preference grouping F-prob.		Race	F Prob.
EQTot	<0.0001***	a 107.963 E++ ab 105.870 E+ bc 103.280 E cd 100.597 I de 97.865 I+ e 95.049 I++	<0.0001***	a 105.437 I ab 104.889 B ab 102.722 W b 102.611 C	0.0024**
EQIntra	<0.0001***	a 108.604 E++ ab 106.069 E+ bc 103.271 E cd 100.050 I d 97.541 I+ e 93.317 I++	<0.0001***	a 105.906 B ab 104.681 I ab 102.122 W b 101.111 C	<0.0001***
EQInter	<0.0001***	a 106.931 E++ ab 104.433 E+ bc 102.145 E cd 98.730 I d 95.149 I+	<0.0001***	a 105.659 I ab 103.131 W ab 103.111 C b 100.569 B	<0.0001***

		e 90.634 I++			
EQStress	<0.0001***	a 107.735 E++ a 106.700 E+ ab 105.103 E ab 104.415 I++ ab 103.465 I b 101.446 I+	<0.0001***	a 107.713 B ab 107.044 I ab 105.056 C b 103.256 W	<0.0001***
EQAdapt	<0.0001***	a 109.065 E++ ab 107.495 E+ bc 103.939 E cd 103.170 I cd 100.595 I+ d 99.463 I++	<0.0001***	a 107.369 B ab 106.852 I ab 103.701 W b 102.611 C	<0.0001***
EQMood	<0.0001***	a 107.576 E++ ab 105.473 E+ b 103.182 E c 98.881 I c 96.122 I+ d 91.244 I++	<0.0001***	a 104.622 I a 103.778 C a 103.328 B a 102.615 W	0.7105

Significance levels:
***: Prob(F) < 0.0001
** : Prob(F) < 0.01
* : Prob(F) < 0.05

Bonferroni multiple comparison of means tests: means within the same cell with different small letters next to them differ significantly

One approach to developing a better understanding of these patterns is to examine the underlying constructs measured by each instrument. Bar-On (1998) describes emotional intelligence as noncognitive skills that influence one's ability to succeed in coping with demands and pressures from the external world. Myers (1993a) describes a preference for E on the MBTI as being characteristic of individuals who tend to focus outwardly rather than inwardly and who are in tune with their external environments. Given these descriptions, it seems logical that individuals with an E preference on the MBTI would be more likely to cope well

with demands and pressures from the environment than individuals with a preference for I, who are described by Myers (1993a) as being drawn to their inner world.

However, Farnsworth and Gilbert (2002) suggest that one must be careful not to interpret this to mean that E on the MBTI is synonymous with EQ, but that a more reasonable interpretation would be that those who have a preference for E on the MBTI are more naturally drawn to focusing on the external environment and, thus, may tend to develop skills that enable them to cope with that environment more readily than those with a preference for I. Torrington (2001) further cautions that the EQ-i may simply be tapping the outward, behavioural manifestations and expressions of emotions, feelings and thoughts; not the inner thoughts, feelings and emotions which introverts might have developed.

The significance of race on EQ was also established. The nature of the relationship expressed by the EQ score means indicate that different aspects of EQ affect different races in different ways. African and Indian people responded more highly and more similarly (both scoring highest on the stress EQ scales) and Coloured and White people responded similarly (both scoring highest on the EQ adaptability scale).

Table 5.20 shows that the tables of EQ mean scores for all emotional components indicate that the J/P preference grouping affects EQ, with the extreme J associated with higher EQ component scores, gradually declining to the more (approximately) extreme P-types with low EQ component scores. This allows for the acceptance of Hypothesis 4.

Table 5.20: Effect of the J/P personality preference grouping and race on the six EQ component scores

EQ component	General sign.: F- prob	Effects included in the analysis of variance model			
		MBTI JP Preference grouping	F - prob	Race	F Prob.
EQTot	<0.0001***	a 105.592 J++ ab 103.907 J+ ab 103.766 J abc 102.066 P bc 101.643 P++ c 99.483 P+	<0.0001***	a 105.437 I ab 104.889 B ab 102.722 W b 102.611 C	0.0027**
EQIntra	<0.0001***	a 105.273 J++ a 104.205 J+ a 103.659 J ab 103.107 P++ ab 102.746 P b 98.879 P+	0.0011***	a 105.906 B ab 104.681 I ab 102.122 W b 101.111 C	<0.0001***
EQInter	<0.0001***	a 103.554 J++ a 103.311 J ab 101.891 J+ ab 100.690 P+ ab 100.582 P	0.0055**	a 105.659 I ab 103.131 W ab 103.111 C b 100.569 B	<0.0001***

		b 98.143 P++			
EQStress	<0.0001***	a 108.50 J++ ab 105.73 J+ abc 104.26 J abc 103.75 P++ bc 101.25 P c 100.57 P+	<0.0001***	a 107.713 B ab 107.044 I ab 105.056 C b 103.256 W	<0.0001***
EQAdapt	<0.0001***	a 108.342 J++ ab 105.628 J+ ab 104.784 J b 102.992 P bc 101.214 P++ c 97.776 P+	<0.0001***	a 107.369 B ab 106.852 I ab 103.701 W b 102.611 C	<0.0001***
EQMood	<0.0001***	a 104.018 J++ a 103.52 J+ a 103.093 J a 102.750 P a 102.623 P++ a 100.621 P+	0.4376	a 104.6229 I a 103.778 C a 103.328 B a 102.615 W	0.3336

Significance levels:
***: Prob(F) < 0.0001
** : Prob(F) < 0.01
* : Prob(f) < 0.05

Bonferroni multiple comparison of means tests: means within the same cell with different small letters next to them differ significantly

Previous research has postulated a relationship between the emotional competency element of change resilience (implying flexibility and openness to new ideas) and the personality preference of perception, since people with a perceptive orientation to the world enjoy being curious and open to changes (Myers et al., 1998). The present research has found, however, that higher EQ scores are in fact positively correlated to judgement orientation as people with a judgement orientation towards the world enjoy moving quickly towards decisions and enjoy organising, planning and structuring. Higher EQ scores for judgement types could be attributed to their decisiveness and confidence, which in turn may have led to greater problem-solving and general adaptability, as measured by the Bar-On EQ-i (Farnsworth & Gilbert, 2002). A similar pattern was observed between the J/P scale of the MBTI and the Bar-On EQ-i in Farnsworth and Gilbert's (2002) study.

The significance of race on EQ was also established, and the nature of the relationship expressed by the J/P score means indicate that different aspects of EQ affect different races in different ways. Indications seem to point to African and Indian participants responding with higher scores and more similarly, and Coloured and White participants responding more or less the same. African and Coloured participants score highest on the EQ stress scale (for both attitudes) whilst White and Indian participants score highest on the adaptability scale.

Although Spearman's correlation coefficients did not show significant results with EQ, the tables of EQ mean scores for all emotional components, as per table 5.21, indicate that the "N/S and T/F" personality preference grouping affects EQ, with the S/F category generally reacting differently to the other categories with a significantly smaller EQ mean score value. The only difference to this trend was the S/F mean scores on the EQ Interpersonal relations scale.

Table 5.21: Effect of the "N/S and T/F" personality preference grouping and race on the six EQ component scores

EQ component	General sign.: F - prob	Effects included in the analysis of variance model			
		MBTI "N/S and T/F" Preference grouping	F-prob.	Race	F Prob.
EQTot	<0.0001***	a 104.525 NT a 104.149 NF a 104.055 ST b 99.096 SF	0.0021**	a 105.437 I ab 104.889 B ab 102.722 W b 102.611 C	0.0019***
EQIntra	<0.0001***	a 105.085 NT a 104.163 ST a 102.617 NF b 95.962 SF	<0.0001***	a 105.906 B ab 104.681 I ab 102.122 W b 101.111 C	<0.0001***
EQInter	<0.0001***	a 109.191 NF ab 105.308 SF b 102.390 NT b 101.576 ST	0.0001***	a 105.659 I ab 103.131 W ab 103.111 C b 100.569 B	<0.0001***
EQStress	<0.0001***	a 106.349 ST a 105.613 NT ab 103.660 NF b 99.885 SF	0.0080**	a 107.713 B ab 107.044 I ab 105.056 C b 103.256 W	<0.0001***
EQAdapt	<0.0001***	a 106.183 ST a 106.025 NT a 103.447 NF b 98.635 SF	0.0002***	a 107.369 B ab 106.852 I ab 103.701 W b 102.611 C	<0.0001***

EQMood	0.0135	a 103.978 NT a 103.150 ST a 102.830 NF b 98.558 SF	0.0079**	a 104.622 I a 103.778 C a 103.328 B a 102.615 W	0.3762

Significance levels:
***: Prob(F) < 0.0001
** : Prob(F) < 0.01
* : Prob(f) < 0.05

Bonferroni multiple comparison of means tests:
means within the same cell with different small letters next to them differ significantly

Overall, EQ mean scores in this personality grouping were found to decrease according to the following preference combinations: N/T, S/T, N/F and S/F.

Little research exists on the preference combinations of the N/S and T/F mental functions. Quenk (1996) states that this is because the psychic energy available for these does not go anywhere unless pushed by the E/I attitudes. Farnsworth and Gilbert (2002) go so far as to say that the most interesting finding is indeed the absence of any predictable pattern.

Dulewicz and Higgs (1999), however, found N to be positively correlated with overall EQ, as supported by the current study. Torrington (2001) reports only one significant relationship, which was between a preference for N and the Intrapersonal EQ subscale of Self-Actualisation. Higgs (2001), too, reported a strong negative relationship between S and higher levels of EQ. Upon closer examination of the constructs involved, it seems logical that S/N would not necessarily be associated with EQ since S/N deals with the way individuals prefer to take in information without considering, for example, their preferences for making decisions.

When considering the T/F category, Dulewicz and Higgs (2000), in a study of middle and senior managers, demonstrated positive relationships between T and the Intrapersonal EQ subscale of Self-Awareness. Conversely, both theory and the data suggest that individuals with a preference for F have a greater likelihood of scoring higher on the Interpersonal EQ subscale than those with a preference for T (Torrington, 2001; Farnsworth & Gilbert, 2002). It is logical that individuals with an F preference, who are described by Myers (1993b) as making decisions based on what is important to them and other people would be more likely to score high on the interpersonal scale than would those with a T preference, who are described as tough-minded and as seeking impersonal truth in their decisions. These results are similarly found in this study.

The results found in the present study indicate that the majority of the highest EQ scores were correlated, though not significantly, to the personality preference combinations containing the T preference style, that is, N/T and S/T. The significance of race on EQ was also established and the nature of the relationship expressed by the EQ score means indicate that different aspects of EQ affect different races in different ways.

African, Indian and Coloured participants scored highest on the stress EQ scales. African and Indian participants scored lowest on the interpersonal and mood EQ scales. White participants fared best on the adaptability EQ scale, whilst both White and Coloured participants fared least well on the Intrapersonal EQ scale.

Table 5.22: Effect of the "I/E and J/P" personality preference grouping and race on the six EQ component scores

EQ component	General sign.: F- prob	Effects included in the analysis of variance model					
		MBTI "I/E and J/P" Preference grouping		F-prob.	Race		F Prob.
EQTot	<0.0001***	a	106.4281	EJ	<0.0001***	a 105.437 I ab 104.889 B ab 102.722 W b 102.611 C	0.0040**
		b	103.3103	EP			
		c	99.7441	IJ			
		d	96.6349	IP			
EQIntra	<0.0001***	a	106.541	EJ	<0.0001***	a 105.906 B ab 104.681 I ab 102.122 W b 101.111 C	<0.0001***
		a	104.297	EP			
		b	99.137	IJ			
		c	95.778	IP			
EQInter	<0.0001***	a	105.242	EJ	<0.0001***	a 105.659 I ab 103.131 W ab 103.111 C b 100.569 B	<0.0001***
		a	101.979	EP			
		b	96.602	IJ			
		b	96.381	IP			
EQStress	<0.0001***	a	107.511	EJ	<0.0001***	a 107.713 B ab 107.044 I ab 105.056 C b 103.256 W	<0.0001***
		ab	104.517	IJ			
		b	102.786	EP			
		c	98.190	IP			
EQAdapt	<0.0001***	a	108.054	EJ	<0.0001***	a 107.369 B ab 106.852 I ab 103.701 W b 102.611 C	<0.0001***
		a	103.014	IJ			
		b	102.621	EP			
		c	98.254	IP			
EQMood	<0.0001***	a	105.663	EJ	<0.0001***	a 104.622 I a 103.778 C a 103.328 B a 102.615 W	0.5897
		a	104.869	EP			
		b	97.389	IJ			
		b	95.667	IP			

Significance levels:
***: Prob(F) < 0.0001
** : Prob(F) < 0.01
* : Prob(f) < 0.05

Bonferroni multiple comparison of means tests:
means within the same cell with different small letters next to them differ significantly

Table 5.22 shows that the table of EQ mean scores for all emotional components indicate that the "I/E and J/P" personality preference grouping affects EQ, with the E/J category associated with higher EQ component scores, followed by categories E/P, I/J and then I/P with the lowest EQ component mean scores. This allows for the acceptance of Hypothesis 6. An exception to this are the EQ stress and adaptability scales where the order of E/P and I/J are reversed, thus indicating that these two components react differently to the "N/S and T/F" grouping.

The mean score for the E/J category, however, is always the greatest and differs significantly from the I/P category mean score which is always the smallest for all EQ components. This was to be expected since both E/I and J/P personality preference groupings demonstrated the same result independently.

Berthon et al. (1994) state that most of the occupational research to date has focused on the four basic Jungian mental functions (N/S and T/F), although a number of studies have found the I/E and J/P dichotomies to be the strongest area of correlation between the MBTI and other measures of personality (Pinder & Herriot, 1990). Myers et al. (1998) provide some background on the various categories within the I/E and J/P grouping.

E/J combinations are seen by others as natural leaders. They are fast-moving, decisive and confident and enjoy making things happen. E/P combinations are active, energetic and social and often seek new experiences and adapt easily to new outer conditions (Myers et al., 1998).

I/J combinations are decisive introverts. They are introspective, persevering and hard to convince or change unless given a compelling reason. I/P combinations are adaptable introverts. They are introspective, adaptable in the little things and firm on important issues because their dominant judging function is central to their personality (Myers et al., 1998).

With this is mind, it can be seen how elements measured in each of Bar-On EQ-i's five EQ subscales, such as assertiveness, self-regard, independence, relationships, problem solving and impulse control, will be more closely linked to the E/J personality preference category.

The significance of race on EQ was also established. The nature of the relationship expressed by the EQ score means indicates that different aspects of EQ affect different races in different ways. Indications point to African and Indian participants responding more similarly and Coloured and White participants responding more or less the same. The Indian–African classification report the higher mean EQ score values and the Coloured–White classification report the lower mean score values in all instances except for the interrelations aspect of EQ.

5.5 SUMMARY AND INTEGRATION OF RESULTS

This chapter depicted the outcomes of the study. Biographical data was presented, indicating that the majority of respondents were male (60%), with the greatest portion being between the ages of 21 and 40 (86%) and applying for managerial level posts. Most of the candidates were nonwhite (56%) in terms of race. Descriptive statistics, including frequencies, were provided for each research instrument used.

Pearson's product moment correlation coefficients indicated the following:

- Statistically significant positive correlations between total EQ scores and EQ composite scale scores.

Spearman's correlation coefficient indicated the following:

- Statistically significant negative correlations between the "I/E and J/P" personality preference grouping and the three personality preference groupings of "I/E", "J/P" and "N/S and T/F".
- Statistically significant positive correlations between the "J/P" personality preference grouping and the "N/S and T/F" personality preference grouping.
- Statistically significant positive and negative correlations between the three personality preference groupings of "I/E", "J/P", and "I/E and J/P" with various EQ components.
- Statistically significant positive and negative correlations between age and EQ components as well as between race and EQ components.
- Statistically significant negative correlations between age and J/P personality preference grouping as well as between race and J/P personality preference grouping.

Based on the proven significances mentioned above, ANOVA were conducted to identify specific categories within personality preference groupings and biographical indicators, which significantly affect EQ component scores.

The ANOVAs demonstrated the following results:

- The effect of age on emotional intelligence and personality was found to be insignificant.
- The I/E personality preference grouping significantly affects EQ with E-types associated with higher EQ.
- The J/P personality preference grouping significantly affects EQ with J-types associated with higher EQ.
- The E/J combination pair from the "I/E and J/P" personality preference grouping significantly affects EQ and is associated with higher EQ.

- EQ mean scores within the “N/S and T/F” personality preference group were found to decrease according to the following combination pairs: N/T, S/T, N/F and S/F.
- Race was significantly related to EQ with different race groups demonstrating different aspects of EQ in different ways.

5.6 CHAPTER SUMMARY

This chapter presents the reporting and the interpretation of the study’s results. The presentation of the biographical data was followed by on overview of the descriptive statistics for the study variables. The results of the research hypotheses were been presented. The chapter concluded with a summary and an integration of the results. Herewith the empirical aim of the research has been accomplished.

In chapter 6, the conclusions, limitations and recommendations of this study are discussed.

CHAPTER 6: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

The aim of this chapter is to focus on step 8 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 in industrial and organisational practice will be made.

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

The general aim of this research was to investigate, analyse and evaluate whether a relationship exists between personality preference groupings and EQ. This was achieved by addressing and achieving the specific aims of the research. Conclusions are drawn on each specific aim in terms of the relationship between personality preferences and EQ, with specific reference to the contextual framework of the research and the literature reviewed.

6.1.1.1 First aim: conceptualisation of research variables and their measurement

The first aim was to conceptualise the constructs and measurements of personality preferences and EQ from a theoretical perspective; this was achieved in chapters 2 (personality preferences) and 3 (EQ).

(a) *Conclusions on personality preference groupings and their measurement*

Personality preferences, as defined by Jung's (1921; 1959; 1990) psychological types and the MBTI theory of personality types, provided a theoretical understanding of individual differences in emotional response to behaviour.

According to Jung (1921), individual differences can be accounted for by the preferred models of emotional expression and interactions with the external environment. This includes individuals having different ways of using psychological energy, gathering information, coming to conclusions, relating to the outside world and conducting self-regulation/evaluation. Type theory also allows for the postulation that individual preferences for a pair of opposite mental functions are natural, inborn preferences (Jung, 1921). Furthermore, overuse of one preferred mental function and attitude is said to lead to the neglect of nonpreferred functions and attitudes, leading to one-sided development and rigidity of behaviour (Jung, 1990).

An understanding of personality preferences, however, is said to aid individuals' personality development, with personality type theory providing a structured self-regulation and development framework (Jung, 1959). This framework allows for the conscious development and use of an individual's preferred functions and attitudes in service of their preferred functions and attitudes, leading to experiences of deep authenticity and positive self-esteem (Jung, 1921). Jung (1990) further states that knowledge and understanding of one's personality preferences will enhance individual self-awareness, which in turn will enable individuals to develop a strong inner sense of the authentic self, helping individuals become more creative, flexible and receptive to adaptive and self-regulatory behaviour.

Jung's premises, as stated above, led to the development of the MBTI, which has become the most widely used instrument for understanding normal personality

differences (Kennedy & Kennedy, 2004). Multiple studies have documented the MBTI's utility as a measure of personality in research and practice (Salter et al., 2005) particularly as it assesses normal variations in personality (Vacha-Haase & Thompson, 2002).

(b) Conclusions on the EQ construct and its measurement

The conclusion can be made that the conceptualisation of EQ is subject to some debate, possibly as a result of its relatively recent emergence. From the literature, it can be said that two main streams of EQ conceptualisation exist. The first was the original ability approach that defined EQ as an ability or competence involving the appraisal, expression, regulation and utilisation of emotion. The second was the mixed model approach that blended EQ with other skills and characteristics (such as self-motivation and effective social skills).

For the purpose of this study, the mixed model approach to defining EQ was adopted, primarily because the instruments that form the subject of this research study were developed and based on this approach. According to the Bar-On EQ-i framework, EQ can be conceptualised relative to an overall EQ score as well as to five composite scale scores for interpersonal, intrapersonal, adaptability, stress management and general mood EQ, which are formed from fifteen subscales (Frye et al., 2006). It was concluded that the debate, especially between ability and mixed model definitions of EQ, was not unusual for a relatively new concept which had been underexposed to empirical investigation, especially since Psychology already had some understanding of both intelligence and personality linked to emotional functioning (Matthews et al., 2003).

Chapter 3 provided an overview of the key issues in the measurement of EQ. It can be concluded that the debate around the contextualisation of the concept extends to its measurement. Two issues arise from the measurement of EQ, that is, those of self-report measures and performance measures. 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 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).

6.1.1.2 Second aim: Conceptualisation of the theoretical relationship between personality preference groupings and EQ

The second aim was to conceptualise the relationship between personality preferences and EQ, which was achieved at the end of chapter 3.

Individuals are found to differ in the demonstration of emotional competence to the degree that they have learnt to consciously apply and use all four of their mental functions (dominant and auxiliary functions). Individuals with a preferred preference for the use of a particular dominant mental function and preferred attitude may only be able to demonstrate a competence in some but not all of the behaviours related to EQ. Knowledge of one's personality preferences will assist one to develop EQ; on the other hand, the development of EQ will aid personality development by enabling the differentiation and balancing of the use of all four mental functions and attitudes, thus allowing for authentic self-expression.

6.1.2 Conclusions regarding the empirical study

The central hypotheses tested throughout this study were that personality preference groupings are related to EQ and that the demographic variables of age, gender, race and occupational level were related to personality preference groupings and EQ. The first central hypotheses is accepted and due to partial correlations, the second central hypothesis is not rejected.

Conclusions about these central hypotheses are drawn together with specific reference to the results of the empirical investigation that was conducted.

6.1.2.1 First aim: Personality and emotional intelligence

The statistical analysis demonstrated the following:

- The stronger one's preference towards the MBTI attitude Extraversion (E), the greater one's EQ
- The stronger one's preference towards the MBTI dimension of Judgement (J), the greater one's EQ
- The stronger one's preference towards the E/J MBTI pairing, the greater one's EQ
- No statistically significant relationship was found between the categories N/T, S/T, N/F, S/F and EQ, although the F function scored consistently lowest in relation to EQ scores.

6.1.2.2 Second aim: Personality and individual/organisational variables

The statistical analysis demonstrated the following:

- The demographics of race and age correlate significantly with the J/P personality preference grouping

6.1.2.3 Emotional Intelligence and individual/organisational variables

The statistical analysis demonstrated the following:

- The biographical variables of race and age correlate significantly with various EQ components, with race correlating significantly with five of the six aspects of EQ.

6.2 LIMITATIONS OF THE RESEARCH

The limitations of the literature review and the empirical investigation are outlined below.

6.2.1 Limitations of the literature review

Various limitations were encountered with the literature review, the first being that there is no generally accepted definition of EQ and there appears to be limited agreement on how it should be observed and measured, nor is there agreement on the breadth of the topic. The model of EQ selected will thus have a definitive effect on the results found in a research study. In this research study, the mixed EQ model was selected over ability EQ models, which comes with its own set of strengths and weaknesses.

The theory of personality preferences is complex and characterised by a large variety of concepts. The theory postulates dichotomies and has unusual psychometric properties. Studies using the MBTI therefore do not always confirm the validity of the underlying theory.

6.2.2 Limitations of the empirical investigation

The limitations encountered are outlined below.

6.2.2.1 Sample

A haphazard sampling method was used, with only individuals who had successfully passed through the first round of interviews at the investment bank being considered for inclusion in the sample. No random sampling thus occurred. Furthermore, although all MBTI preferences were represented in the sample, there were very few individuals with the personality preference containing the F-

function. The N/F and S/F combinations made up only 10% of the total “N/S and T/F” personality preference group. Furthermore, 80% of the sample preferred the E attitude, resulting in a low representation of the “I” attitude preference. This could have had an impact on the results of the statistical analysis.

6.2.2.2 Limitations of the measuring instruments

A potential limitation of the study is that all of the EQ measures in this study were collected through self-report. Although current evidence supports the use of the MBTI in most multicultural settings, Myers et al. (1998) state that cultures with collectivist value systems may not find the MBTI appropriate. This is because collectivist values may make it difficult for individuals to respond owing to difficulty in separating own preferences from those of the group or because the way type preferences are expressed in these cultures could differ significantly. This could present a potential limitation to the research, since South African culture is based on the collectivist ubuntu values of togetherness (De Beer, 1997).

6.2.2.3 Limitations of the statistical analysis

The internal reliability of the MBTI and Bar-On EQ-i was not calculated, nor was a power analysis of the study conducted. Mean EQ scores for race were not compared to the personality type combination of J/P. A possible statistical limitation includes the fact that personality preference groupings were only compared to the Bar-On EQ-i composite scales and not to the Bar-On EQ-i subscales.

6.3 RECOMMENDATIONS

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

6.3.1 Recommendations for industrial psychologists working in the field of personality and EQ

The conclusions of the research tend to indicate that practitioners should be mindful of the different approaches to the definitions of personality and EQ when working in the field and take cognisance of the strengths and weaknesses of various types of assessment. In this regard, they should be cautioned to take into account the purpose of the assessment when selecting an instrument for workforce application. Understanding the way in which the results of the assessments will be used is critical since this will in turn inform the test takers' approach to completing the instrument. It will also affect the integrity of potential decisions made on the basis of the test results.

The MBTI and the EQ-i, however, make an important contribution to personal, professional and career development. A major difference between them both is that the MBTI describes innate preferences, and makes no evaluative judgement about a particular type being good or bad (Bar-On, 1997), while the EQ-i claims to measure abilities that have been developed in the individual and evaluates the skill level as above or below average (Bar-On, 1997). Knowledge of the similarities and differences of these instruments, as well as the correlations between the two, will enable the practitioner to use them in a complementary fashion, contributing to a more sophisticated and effective approach to professional development.

As an example, a person with a preference for introversion on the MBTI may not be inclined to develop interpersonal relationships, as measured by the EQ-i, and consequently may have a low score on this scale. When debriefing a client with a low EQ-i, an understanding of how innate preferences could influence the development of EQ may lessen the judgemental nature of the feedback and, in turn, make the client more receptive. Furthermore, when debriefing an EQ-i client the use of personality type can help the facilitator communicate in a manner and language that is most acceptable to the client. Similarly, an understanding of type would greatly enhance the effectiveness of a development plan focusing on improving EQ-i results.

6.3.2 Recommendations for further research

These recommendations are based on the research findings obtained from the empirical study, and are intended for populations working with individuals in organisational settings, such as industrial and organisational psychology practitioners and employee wellness practitioners.

It is recommended that future research expand this study by conducting broader randomised studies across industries and cultures in an attempt to generalise the findings and learn more about the dynamics of the underlying constructs.

An important next step for researchers is to explore further the dynamics of other MBTI preference combinations with EQ. An example would be to compare extroverts with a preference for thinking versus extroverts with a preference for feeling with EQ. Studying these combinations would provide a better understanding of the relationship between psychological type and emotional intelligence than simply studying the relationships between individual dimensions of the MBTI and the EQ-i.

It is recommended that this study be replicated by substituting the MBTI type-personality measure with other personality inventories in order to increase the knowledge on the effect of personality variables on EQ. Adding to this, the addition of other variables/intelligences to the existing study would be beneficial in considering their possible impact and influence on the results, for example, spiritual intelligence, self-esteem and locus of control.

Finally, it is recommended that future researchers conduct longitudinal studies to test the consistency of personality preferences and EQ from early to middle and late-life adulthood in order for psychologists to accurately interpret information.

6.4 INTEGRATION OF THE RESEARCH

This research focuses on the relationship between personality preference groupings and EQ. The literature review provided evidence of the recognised reciprocal influence of personality on EQ, as did some of the statistical analysis.

The acknowledgement that emotions play a vital role in organisational life in general, and business success in particular, has played a pivotal role in the enormous growth of interest in the concept over the last decade (Higgs & Dulewicz, 1999). The first line of inquiry pertained to the influence of personality preferences on the self-report of EQ. Research indicates that particular personality types potentially associate with particular aspects of EQ. With this in mind, the conscious, balanced use of the four mental functions and attitudes may potentially aid in the development of emotional competence, and vice versa.

This research project may have achieved some modest, though useful, intermediate objectives such as legitimising the search for theoretical commonalities and relationships between both constructs and by identifying several personality preferences/pairings which could serve as a springboard for

future inquiry into the relationship between the MBTI personality preferences and EQ.

In conclusion, the research has provided some encouraging support for the relationship between personality preferences and EQ, using a sample from a South African investment bank. There were several limitations to this study, including the sample, statistical analysis and debate around the approaches to the definition and measurement of the constructs. However, the relationships revealed may provide additional insights into potential relationships. Recommendations have been made for further research, and this should therefore be seen as the beginning of a stream of research to make significant contributions to the interaction of personality preferences and EQ in South Africa.

6.5 CHAPTER SUMMARY

In this chapter, the conclusions, limitations and recommendations of the study were discussed. To conclude, an integration of the research was presented, emphasising the extent to which the results of the study provide support for the relationship between personality preferences and EQ.

REFERENCES

Abraham, R. (1999). Emotional intelligence in organizations: A conceptualization. *Genetic, Social and General Psychology Monographs*, *125*(2), 209–224.

Anastasi, A. & Urbina, S. (1997). *Psychological testing* (7th ed.). New Jersey: Prentice Hall.

Austin, E. J., Saklofske, D. H., Huang, S. H. S., & McKenny, D. (2004). Measurement of trait emotional intelligence: Testing and cross-validating of a modified version of Schutte et al.'s (1998) measure. *Personality and Individual Differences*, *36*(3), 555–562.

Bar-On, R. (1997). *BarOn Emotional Quotient Inventory: Facilitator's resource manual*. Toronto: Multi-Health Systems.

Bar-On, R. (1998). *BarOn Emotional Quotient Inventory: Facilitator's resource manual.* Toronto: Multi-Health Systems.

Bar-On, R. (2002). *BarOn Emotional Quotient Inventory Development Report.* Toronto: Multi-Health Systems.

Bastian, V. A., Burns, N. R., & Nettlebeck, T. (2005). Emotional intelligence predicts life skills but not as well as personality and cognitive abilities. *Personality and Individual Differences*, *39*(6), 1135–1145.

Bayne, R. (1995). *The Myers-Briggs Type Indicator*. London: Chapman and Hall.

Berthon, P., Pitt, L., & Money, A. (1994). Corollaries of the collective: Culture, the individual and perceptions of decision-making context. *Henley Management College Working Paper Series*, HWP 9502.

Blaikie, N. (1993). *Approaches to social enquiry*. Cambridge: Polity Press.

Boyle, G. J., Matthews, G., & Saklofske, D. H. (2008). *The Sage handbook of personality theory and assessment*. London: Sage Publications

Brody, N. (2000). History of theories and measurements of intelligence. In R. J. Sternberg (Ed.). *Handbook of intelligence* (pp. 16–33). New York: Cambridge University Press.

Carlson, J. G. (1985). Recent assessments of the Myers-Briggs Type Indicator. *Journal of Personality Assessment, 49*, 356–365.

Carlson, J. G. (1989). Testing the test affirmative: In support of researching the Myers-Briggs Type Indicator. *Journal of Counseling Development, 67*, 484–486.

Carskadon, T. G. (1975). Myers-Briggs Type Indicator characterization: A Jungian horoscope? *Research in Psychological Type, 1*, 88–89.

Carskadon, T. G. (1979). Clinical and counseling aspects of the Myers-Briggs Type Indicator: A research review. *Research in Psychological Type, 2,* 83–84.

Carstensen, L. L. (1992). Social and emotional patterns in adulthood: Support for socioemotional selectivity theory. *Psychology and Aging, 7*, 331–338.

Caruso, D. R., Mayer, J. D., & Salovey, P. (2002). Relation of an ability measure of emotional intelligence to personality. *Journal of Personality Assessment*, *79*(2), 306–320.

Cattell, R. B. (1965). *The scientific analysis of personality*. Chicago: Aldine.

Cattell, R. B. (1979). *Personality and learning theory: Vol I. The structure of personality and its environment.* New York: Springer.

Ciarrochi, J. V., Chan, A. Y. C., & Bajgar, J. (2001). Measuring emotional intelligence in adolescents. *Personality and Individual Differences, 31*, 1105–1119.

Ciarrochi, J. V., Chan, A. Y. C., & Caputi, P. (2000). A critical evaluation of the emotional intelligence construct. *Personality and Individual Differences, 28*(3), 539–561.

Cohen, B. H. (2008). *Explaining psychological statistics* (3rd ed.). New Jersey: John Wiley & Sons.

Cooper, R. K. (1997). Applying emotional intelligence in the workplace. *Training & Development, 51*(12), 31–38.

Dainty, P., & Anderson, M. (2000). Mindsets for managers. In S. Chowdhury (Ed.). *Management 21C: Someday we'll all manage this way.* London: Pearson Education.

Davies, S. (2004). Personality traits. *Personnel Psychology, 57*(4), 1084–1087.

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

De Beer, J. (1997). Dealing with personal and cultural transitions. Paper presented at APT XII, Association for Psychological Type International Conference, Boston, MA

De Fruyt, F., & Salgado, J. F. (2003). Applied personality psychology: lessons learned from the IWO field. *European Journal of Personality, 17*, 123-131.

Derlega, V. J., Winstead, B. A., & Jones, W. H. (2005). *Personality: Contemporary theory and research* (3rd ed.). Canada: Wadsworth.

DiCaprio, N. S. (1974). *Personality theories: Guides to living.* Philadelphia: Saunders.

DiCaprio, N. S. (1983). *Personality theories: a guide to human nature*. New York: Holt, Rinehart and Winston.

Diener, E., Sandvik, E., & Larsen, R. J. (1985). Age and sex effects for emotional intensity. *Development Psychology, 21*, 542–546.

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

Dulewicz, V., & Higgs, M. (2000). Emotional intelligence: A review and evaluation study. *Journal of Managerial Psychology, 15*(4), 341–372.

Dulewicz, V., Higgs, M., & Slaski, M. (2000). Emotional intelligence: A review and evaluation study. *Journal of Managerial Psychology*, *15*(4), 341–364.

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

Eisenberg, N., Fabes, R. A., Gutrie, I. K., & Reiser, M. (2000). Dispositional emotionality and regulation: Their role in predicting quality of social functioning. *Journal of Personality and Social Psychology, 78*, 136–157.

Ewen, R. B. (1988). *An introduction to theories of personality* (3rd ed.). New Jersey: Lawrence Erlbaum.

Farnsworth, R., & Gilbert, A. (2002). *Exploring the relationship between the Myers-Briggs Type Indicator and the BarOn Emotional Quotient Inventory: Applications for professional development practices.* Faculty of Business: University of New Brunswick Saint John.

Fatt, J. P. T., & Howe, I. C. K. (2003). Emotional intelligence of foreign and local university students in Singapore: Implications for managers. *Journal of Business and Psychology, 17*(3), 345–367.

Feist, J. (1994). *Theories of personality* (3rd ed.). Fort Worth, TX: Harcourt Brace College Publishers.

Feist, J., & Feist, G. J. (2002). *Theories of personality*. New York: McGraw-Hill.

Feshbach, S., Weiner, B., & Bohart, A. (1996). *Personality* (4th ed.). Massachusetts: D.C. Heath.

Fordham, F. (1966). *An introduction to Jung's psychology* (3rd ed.). Suffolk, UK: Penguin Books.

Foxcroft, C., & Roodt, G. (2001). *An introduction to psychological assessment in the South African context*. Southern Africa: Oxford University Press.

Frye, C. M., Bennett, R., & Caldwell, S. (2006). Team emotional intelligence and team interpersonal process effectiveness. *American Journal of Business*, *21*(1), 49–57.

Furnham, A. (1992). *Personality at work*. New York: Routledge.

Gannon, N., & Ranzijn, R. (2005). Does emotional intelligence predict unique variance in life satisfaction beyond IQ and personality? *Personality and Individual Differences, 38*, 1353–1364.

Gardner, H. (1983). *Frames of the mind: The theory of multiple intelligence*. New York: Basic Books.

Gardner, H. (1993). *Multiple intelligences: The theory in practice*. New York: Basic Books.

George, J. M. (2000). Emotions and leadership: The role of emotional intelligence. *Human Relations, 53*, 1027–1041.

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

Goleman, D. (1996). *Emotional intelligence: Why it can matter more than IQ*. London: Bloomsbury.

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

Graziano, A. M., & Raulin, M. L. (2000). *A process of inquiry: Research methods.* London: Allyn & Bacon.

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

Guba, E. G. (1990). *The paradigm dialog*. Newbury Park, CA: Sage Publications.

Harvey, R. J. (1996). Reliability and validity. In A. L. Hammer (Ed.). *MBTI applications: A decade of research on the Myers-Briggs Type Indicator* (pp. 5–29). California: Consulting Psychologists Press.

Hergenhahn, B. R. (1994). *An introduction to theories of personality* (4th ed.). New Jersey: Prentice Hall.

Hewitt, J. P. (2002). The social construction of self-esteem. In C. R. Snyder & S. J. Lopez (Eds.). *Handbook of positive psychology* (pp. 135–147). New York: Oxford 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.

Hirsch, S. (1985). *Using the Myers-Briggs Type Indicator in Organizations*. Palo Alto: Consulting Psychologists Press.

Hofstede, G. (1980). *Culture's consequences: International differences in work-related values*. California: Sage.

Howell, D. C. (1999). *Fundamental statistics for the behavioral sciences* (3rd ed.). California: Duxbury Press.

Jaccard, J., & Becker, M. A. (2002). *Statistics for the behavioral sciences.* California: Wadsworth Thomson Learning.

Jung, C. (1921). *Psychological types*. New Jersey: Princeton University Press.

Jung, C. (1959). *The basic writings of C. C. Jung* (V. De Laszlo, Ed.). New York: The modern library

Jung, C. G. (1969). *The collected works of C.G. Jung, Vol 9*. New Jersey: Princeton University Press.

Jung, C. G. (1969a). *The structure and dynamics of the psyche*. New Jersey: Princeton University Press.

Jung, C. (1990), *Minner, Drommer, Tanker (Erinnerungen, Traume, Gedanken von C. G. Jung, Rascher Verlag, Zurich, 1963)*, (translated from German). Glydendal, Oslo.

Keirsey, D., & Bates, M. (1984). *Please understand me*. California: Prometheus Remesis.

Kennedy R. B., & Kennedy, D. A. (2004). Using the Myers-Briggs typed indicator in career counseling. *Journal of Employment Counseling*, *41*(1), 38–45.

Kihlstrom, J. F., & Cantor, N. (2000). Social intelligence. In R. J. Sternberg, (Ed.). *Handbook of intelligence* (pp. 359–377). Cambridge: Cambridge University Press.

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.

Lawton, M. P., Kleban, M. H., Rajagopal, D., & Dean, J. (1992). Dimensions of affective experience in three age groups. *Psychology and Aging, 7*, 171–184.

Leible, T. L., & Snell Jr, W. E. (2004). Borderline personality disorder and multiple aspects of emotional intelligence. *Personality and Individual Differences*, *37*(2), 393–404.

Lopes, P. N., Salovey, P., & Straus, R. (2003). Emotional intelligence, personality and the perceived quality of social relationships. *Personality and Individual Differences*, *35*(3), 641–658.

Maddocks, J., Cooper, J., & Sparrow, T. (January 2005). Emotional intelligence is not personality. *The Psychologist*, 18(1), 11

Mandell, B., & Pherwani, S. (2003). Relationship between emotional intelligence and transformational leadership style: A gender comparison. *Journal of Business and Psychology, 17*(3), 387–404.

Martinez-Pons, M. (1997). The relation of emotional intelligence with selected areas of personal functioning. *Imagination, Cognition and Personality, 17*(1), 3–13.

Matthews, G., Zeidner, M., & Roberts, R. D. (2003). *Emotional intelligence: Science and myth*. Cambridge, MA: MIT Press.

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, PA: 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., & Geher, G. (1996). Emotional intelligence and the identification of emotion. *Intelligence, 27*, 89–114.

Mayer, J. D., & Salovey, P. (1997). What is emotional intelligence: Implications for educators. In P. Salovey & D. Sluyter (Eds.). *Emotional development, emotional literacy and emotional intelligence: Educational implications* (pp. 3–31). New York: Basic Books.

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

McClelland, D. C. (1999). Identifying competencies with behavioral-event interviews. *Psychological Science*, *9*(5), 331–339.

McCrae, R. R., & Costa, P. T. (1987). Validation of the five factor model of personality across instruments and raters. *Journal of Personality and Social Psychology, 1987*(1), 81–90.

McCrae, R., & Costa, P. (1989). Re-interpreting the Myers-Briggs Type Indicator from the perspective of the five-factor model of personality. *Journal of Personality, 57*, 17–40.

Moller, A. (1995). *Perspectives on personality*. Cape Town: Butterworths.

Moore, L. S., Dettlaff, A. J., & Dietz, T. J. (2004). Using the Myers-Briggs indicator in field education supervision. *Journal of Social Work Education*, *40*(2), 337–350.

Morgan, G. (1983). *Beyond method: Strategies for social research*. California: Sage.

Mouton, J., & Marais, H. C. (1992). *Basic concepts: Methodology of the behavioural sciences*. Pretoria: HSRC.

Mouton, J., & Marais, H. C. (1994). *Basic concepts in the methodology of the social science.* Pretoria: Human Sciences Research Council.

Myers, I. B. (1962). *Myers-Briggs Type Indicator*. California: Consulting Psychologists Press.

Myers, I. B. (1980). *Gifts differing*. California: Consulting Psychologists Press.

Myers, I. B. (1993). *Introduction to type* (5th ed.). Palo Alto: Consulting Psychological Press.

Myers, K. (1993a). Isabel Briggs Myers and type development. *Bulletin of Psychological Type, 26*(4), 6–8.

Myers, D.G. (2004). Motivation and work. *Psychology*. New York, NY: Worth Publishers

Myers, I. B., & McCaulley, M. H. (1985). *Manual: A guide to the development and use of the Myers-Briggs Type Indicator.* California: Consulting Psychologist Press.

Myers, I. B., & McCaulley, M. H. (1992). *Manual: A guide to the development and use of the Myers-Briggs Type Indicator*. California: Consulting Psychologists Press.

Myers, I. B., & McCaulley, M. H. (1998). *A guide to the development and use of the Myers-Briggs Type Indicator*. California: Consulting Psychologists Press.

Myers, I., McCaulley, M. H., Quenk, N. L., & Hammer, A. L. (1998). *MBTI manual: A guide to the development and use of the Myers-Briggs Type Indicator* (3rd ed.). California: Consulting Psychologists Press.

Myers, I. B., & Myers, P. B. (1980). *Gifts differing: Understanding personality type*. California: Consulting Psychologists Press.

Nikolaou, I., & Tsaousis, I. (2002). Emotional intelligence in the workplace: exploring its effects on occupational stress and organizational commitment. *International Journal of Organizational Analysis, 10*(4), 327-343

Opt, S. K., & Loffredo, D. A. (2000). Rethinking communication apprehension: A Myers-Briggs perspective. *Journal of Psychology*, *134*(5), 556–571.

Opt, S. K., & Loffredo, D. A. (2003). Communicator image and Myers-Briggs type indicator extraversion-introversion. *Journal of Psychology*, *137*(6), 560–569.

Palmer, B. R., Donaldson, C., & Stough, C. (2002). Emotional intelligence and life satisfaction. *Personality and Individual Differences, 33*(7), 1091–1100.

Pervin, L. A. (1989). *Goal concepts in personality and social psychology*. New Jersey: Hillsdale.

Pesuric, A., & Byham, W. (1996). The new look in behavior modeling. *Training and Developmen*t, 25–33.

Petrides, K.V., & Furnham, A. (2003). Trait emotional intelligence: Behavioral validations in two studies of emotion, recognition and reactivity to mood induction. *European journal of Personality, 17*, 39-57

Petrides, K. V., Furnham, A., & Frederickson, N. (2004). Emotional intelligence. *Psychologist*, *17*(10), 574–578.

Pinder, R., & Herriot, P. (1990). Assessment centre dimensions, personality and aptitudes. *Journal of Occupational Psychology, 63*, 211–216.

Pugh, S. D. (2002). Emotional regulation in individuals and dyads: Causes, costs and consequences. In R. G. Lord, R. J. Klimoski & R. Kanfer (Eds). *Emotions in the workplace: Understanding the structure and role of emotions in organisational behaviour* (pp. 147–182). New York: Jossey-Bass.

Quenk, N. L. (1996). *In the grip: Our hidden personality*. California: Consulting Psychologists Press.

Roberts, R. D., Zeidner, M., & Matthews, G. (2001). Does emotional intelligence meet traditional standards for an intelligence? Some new data and conclusions. *Emotion, 1*, 196–231.

Robertson, R. (1987). *C. G. Jung and the archetypes of the collective unconscious*. New York: Peter Lang.

Rosnow, R. L., & Rosenthal, R. (1996). *Beginning behavioral research* (2nd ed.). New Jersey: Prentice Hall.

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

Salovey, P., Mayer, J. D., Goldman, S. L., Turvey, C., & Palfai, T. P. (1995). Emotional attention, clarity and repair: Exploring emotional intelligence using the Meta-Mood scale. In J. W. Pennebaker (Ed.). *Emotion, disclosure & health* (pp. 125–154). Washington, DC: American Psychological Association.

Salter, D. W., Forney, D. S., & Evans, N. J. (2005). Two approaches to examining the stability of Myers-Briggs type indicator scores. *Measurement in Counseling and Development*, *37*(4), 208–220.

Saville, P., & Holdsworth, R. Ltd. (1999). *Occupational Personality Questionnaires course notes.* Pretoria: SHL Group Plc.

Schriver, J. M. (1995). *Human behaviour and the social environment*. Boston: Allyn and Bacon.

Schutte, N. S., & Malouff, J. M. (1999). *Measuring emotional intelligence and related constructs*. New York: Edwin Mellen.

Schutte, N. S., Malouff, J. M., Hall, L. E., Haggerty, D. E., Cooper, J. T., Golden, C. J., & Dornheim, L. (1998). Development and validation of a measure of emotional intelligence. *Personality and Individual Differences, 25*, 167–177.

Scroggs, J. R. (1985). *Key ideas in personality theory*. St. Paul, MN: West.

Spiegl, M. R. (1972). *Schaum's outline of theory and problems of statistics in SI units*. New York: McGraw-Hill.

Spoto, A. J. (1995). *Jung's typology in perspective* (2nd ed). Boston, MA: Sigo.

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

Sternberg, R. J. (1988). *The triarchic mind: A new theory of human intelligence*. New York: Viking.

Sternberg, R. J. (1994). Allowing for thinking styles. *Educational Leadership, 52*, 36–40.

Sternberg, R. J. (1997). Managerial intelligence: Why IQ isn't enough. *Journal of Management, 23*(3), 475–493.

Sternberg, R. J. (2003). A broad view of intelligence: The theory of successful intelligence. *Consulting Psychology Journal: Practice and Research, 55*(3), 139–154.

Sternberg, R. J. (2004). The CAPS model: Assessing psychology performance using the theory of successful intelligence. In D. S. Dunn, C. M. Mehrotra & J. S. Halonen (Eds.). *Measuring up: Educational assessment challenges and practices for psychology* (pp. 111–124). Washington, DC: American Psychological Association.

Thompson, B., & Borello, G. M. (1986). Construct validity of the Myers-Briggs Type Indicator. *Educational and Psychological Measurement, 46*, 745–752.

Torrington, A. (2001). *Relationship between the Bar-On Emotional Quotient Inventory and the Myers-Briggs Type Indicator: Technical Report #0018.* Toronto: Multi-Health Systems.

Tredoux, C., & Durrheim, K. (2002). *Numbers, hypotheses & conclusions: A course in statistics for the social sciences.* Cape Town: UCT Press.

Triandis, H. C. (1994). Major cultural syndromes and emotion. In S. Kitayama & H. Markus (Eds.), *Emotion and culture: Empirical studies of mutual influence* (pp. 133–196). Washington: American Psychological Association.

Vacha-Haase, T., & Thompson, B. (2002). Alternative ways of measuring counselees' Jungian psychological-type preferences. *Journal of Counseling and Development*, *80*(2), 173–180.

Vakola, M., Tsacuisi, I., & Nikolaou, I. (2004). The role of emotional intelligence and personality variable on attributes toward organisational change. *Journal of Managerial Psychology*, *19*(2), 88–110.

Van Rooy, D. L., & Viswesvaran, C. (2004). Emotional intelligence: A meta-analytic investigation of predictive validity and nomological net. *Journal of Vocational Behavior, 65*(1), 71–95.

Wheelwright, J. B., Wheelwright, J. H., & Buehler, A. (1964). *Jungian-type survey: The Grey-Wheelwright test manual*. San Francisco, CA: Society of Jungian Analysts of Northern California.

Woodd, M. (1997). Human resource specialists: Guardians of ethical conduct? *Journal of European Industrial Training*, *21*(3), 110–123.