Five Factor Model
Personality Attributes and Sales Performance in the New Zealand Broadcasting Industry

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Abstract

Meta-analysis on the dimensions and sub-dimensions of the Big Five taxonomy has shown that some are valid predictors of sales performance. This study further investigates these findings in relationship to sales performance within the New Zealand radio broadcasting industry. Whilst it is important to understand the personality attributes operationally associated with successful broadcasting sales performance, it is equally important to understand the attributes that the broadcasting industry experts see as required for success in this position.

Using the Personality-Related Position Requirements Form (PPRF), a job analysis tool, 9 broadcasting sales experts (SMEs) rated the importance of 12 personality constructs for successful broadcast sales performance. Then using the NEO Personality Inventory, 58 New Zealand broadcast sales persons (29 high performers/29 average/low performers) were assessed to determine group differences in personality traits. As with previous studies, the Big Five dimension of Conscientiousness (C) predicted high sales performance (r_{pb} =.38). Two of the top three personality sub-sets of the PPRF also aligned to C.

Two sub-facets of each of C, Extroversion (E) and Neuroticism (N) were also tested. Of these, Achievement Striving (C4) and Activity (E4) had significant positive correlations with high sales performance (r_{pb} =. 41 and r_{pb} = .32 respectively). Results showed that whilst some broad dimensions of the Big Five may have predictive abilities, sub-facets within them vary considerably in their predictive power. Hence, for selection purposes, it is important to ascertain which of these narrower traits are required for the role first, and then use these requirements to guide assessments of individual candidate for future validation studies.

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Table of Contents

List of Tables

List of Figures

CHAPTER I

INTRODUCTION

1.1 Psychological assessment of work performance

Why use psychological assessment? Sullivan (1991) contends that many of the traits that predict successful sales performance (drive, energy and work motivation) are hidden from, or misinterpreted by interviewers. Only objective assessment using a validated psychological test can highlight, without undue bias, the traits required for performance in a particular job.

Most psychological tests for performance can be sorted into three general categories (Murphy & Davidshofer, 1998). Firstly, there are the tests that ask subjects to perform certain tasks, such as answering multi-choice items, writing a report or manipulating images on a computer screen. These task performance tests are perhaps the most popular. They include standardised tests of mental ability, in-basket exercises at assessment centres and psychomotor tests. Secondly, there are the tests that involve observation of the subject's behaviour within a particular context. An example would be the leaderless group discussion as used in assessment centres. Finally, there are the self-report measures where subjects describe feelings, attitudes, beliefs, interests, and the like. This type of testing falls into the domain of personality inventories. It also includes many surveys, questionnaires and polls.

Psychological assessment for work performance is not a new phenomenon. In fact psychological testing for performance may have had its beginning over 3000 years ago (Cook, 1998). The Book of Judges (Chapter 7, Verses 4-7) tells how Gideon raised an army by asking recruits to go and drink from the river, an example of the first behavioural test. Only those recruits who kept guard whilst drinking were selected. Early intelligence tests were developed in 1904 by Binet and Simon, and adapted for use by the US Army to select recruits during the First World War (Cook, 1998). Likewise the

first personality questionnaires were developed for war use to screen out recruits who could not stand stress.

The psychological assessment of work performance has been subjected to intense research over many years. Numerous meta-analytic reviews (Barrick & Mount, 1991; Borman, Hanson, & Hedge, 1997; Salgado, 1999; Schmidt & Hunter, 1998; Tett, Jackson, & Rothstein, 1991) have outlined various methods and the value of one method over another, or several. At the heart of these reviews have been the question of criterion validity of different assessment methods and whether a combination of methods leads to better performance prediction through incremental validity. These assessment methods can be grouped into two basic areas, cognitive and personality measurement.

The debate as to the ideal predictor from these two broad methods has been greatly clarified by the important work of Campbell (1994) and Borman and Motowidlo (1993). These researchers have concentrated on the definition of performance in the workplace. Campbell, McCloy, Oppler, & Sager (1993) proposed a model of performance built around three determinants of individual differences: (a) Declarative Knowledge, that is the knowledge one has about facts and things; (b) Procedural Knowledge and Skill, this relates to one's interpersonal and cognitive skill; and (c) Motivation.

Borman and Motowidlo (1993) defined job performance as two different clusters of behaviour. They suggested job performance involved in-role and extra-role behaviours. In-role behaviours were task orientated, whilst extra-role behaviours were 'contextual' and closely related to the construct of organisational citizenship (Organ, 1988). Borman and Motowidlo also suggested that measures of job performance should include those that predict task and contextual behaviour. Task proficiency should be related to predictors of knowledge and aptitude (e.g. cognitive ability tests and job sample tests) whilst contextual performance should be related to motivational predictors (e.g. personality inventories).

According to Motowidlo, Borman and Schmit (1997) task and contextual performance differs in three ways. First, task activities are more job specific,

whereas contextual activities are more general to all jobs. Second, task activities are defined by the role of the job whereas contextual activities are aligned to extra-role behaviours. Third, cognitive ability is an antecedent of task performance whilst personality and motivation is said to be a predictor of contextual behaviour.

1.2 Sales selection in the broadcasting industry and rationale for the study

Selection of sales people in the broadcasting industry has always been based on the 'classic trio'. Cook (1998) defines these as a written application, letters of reference and the unstructured interview. Is there any reason why this selection process should change? The author argues that it should. Psychological research shows that references and unstructured interviews are inaccurate selection methods (Camp, Vielhaber, & Simonetti, 2001; McDaniel, Whittle, Schmidt, & Maurer, 1994; Reilly & Chao, 1982). The fallacy of this selection method is highlighted by the large turnover of sales staff within the broadcasting industry along with the diminishing mana of the broadcasting sales position as a sound career prospect (author's personal observation). It is not the intention here to investigate and outline a compete selection system for broadcasting sales, but rather to utilise the work of Borman and Motowidlo (1993) and concentrate on the contextual aspects of the sales position. It is intended to draw on the work of Barrick and Mount (1991) who highlight the importance of personality as a predictor of sales performance, in particular the facets of Conscientiousness (C) and Extraversion (E). This study focuses on personality as a predictor of sales performance in the broadcasting industry. Whilst there is a considerable body of work dedicated to personality and sales performance, to the author's knowledge, there are no studies specific to the broadcasting industry.

This study is divided into five chapters. The first chapter introduces the topic and establishes the purpose of the study. Chapter 2 reviews the literature on personality and its relationship to employee selection. Concentration will be on the framework of the five-factor model and its

application as a predictor of sales performance. Chapter 3 describes the methodology associated with the study. Chapter 4 presents the results derived from the study. Finally Chapter 5 discusses the findings and the implications of those findings for the broadcasting industry, those who are responsible for employing sales staff, and those who intend to enter the industry.

CHAPTER 2

LITERATURE REVIEW OF PERSONALITY AS A PREDICTOR OF SALES PERFORMANCE

This chapter reviews the literature on personality as it applies to sales performance. Firstly, it is important to define personality as an overall construct with particular emphasis on personality trait research. This will be followed by an in-depth review of the five-factor model of personality; its relationship to employee selection and measures used. Thirdly, there is an exploration of the relationship between personality attributes and sales, both within the job analysis and the selection framework. Focus will be on the trait facets that predict sales performance. The chapter concludes with the presentation of research questions.

2.1 A brief overview of the theory of personality

There is general agreement that each of us has an individual personality. Most employers would also agree that specific jobs, like sales, require the right personality for acceptable job performance. But what is personality? And are we all so different? To the layperson, personality usually means a social presence (Cook, 1998). For example, "Robert has a lot of personality", or "you need an outward going personality to be a good sales person". Psychology's definition is much broader. Allport (1937, cited in Epstein & O'Brien, 1985) defines personality as "the dynamic organisation within the individual of those psychophysical systems that determine his unique adjustment to his environment". Cantell (1965) has a more simplistic definition: "that which permits a prediction of what a person will do in a given situation.

Cook (1998) has proposes a number of different models of personality. These are:

Trait	A set of five to ten traits
Factor	16 statistical abstractions
Social learning	'Bundles of habits'
Phenomenological	The way the person sees the world
Self	The way one sees oneself
Psycho-analytic	A system of defences
Constitutional	Inherited neuropsychological differences

For the purpose of this thesis the concentration will be on personality traits. Most Industrial/Organisational Psychologists adopt, explicitly or implicitly, the trait or factor model (Cook, 1998). Allport (1937, cited in Epstein & O'Brien, 1985) contends that personality traits are neuropsychic system(s)...with the capacity to render many stimuli functionally equivalent, and to initiate and guide consistent (equivalent) forms of adaptive and expressive behaviour. Allport regarded the trait as a natural unit of description for personality. He examined the English dictionary and found 17,953 words designating personal forms of behaviour. After dropping those words dealing with temporary mood states and those dealing with physical, rather than psychological states, he was left with 4,541 (Lazarus & Monat, 1979). These words framed a starting point to formalise his theory of personality. Allport emphasised the idea that traits are integral properties of a person, not merely part of the beholder's imagination; they can be identified only by observing and separating the person's central and essential qualities from the peripheral and unimportant ones (Lazarus & Monat, 1979). He also emphasised the uniqueness of every person, not only in each trait but also in the organisation of these traits into an integrated whole. If Allport was the dean of trait theory, Raymond Cattell was one of the main architects; he reduced Allport's word list to a manageable size through "factor analysis." Cattell's factor analysis arranged "like words" into 16 sub groups, known as source traits. This was

the basis of his now well used, 16 P.F. Questionnaire (Lazarus & Monat,1979).

There are three different ways of thinking of traits (Murphy & Davidshofer, 1998): (1) traits are causes of behaviour, (2) traits are illusions and exist only in the mind of the beholder, and (3) traits are descriptive summaries. The causal approach uses traits to explain behaviour. As an example, if a person returned a wallet full of money, his behaviour would be explained, "He is an honest person." Murphy & Davidshofer (1998) argue that this approach is circular. A person is labelled honest if he or she does honest things; these same honest behaviours are then explained by the fact that the person is honest.

The second approach - that traits exist in the mind of the beholder rather than in external reality - is based on several lines of social psychological research in the areas of perception, judgement and attribution theories (see Franzio, 1996 for an overview). This research suggests that we perceive, store, and retrieve information about others' behaviour in terms of coherent wholes and units that are very much like traits. Hence some of the coherence we see in others' behaviour is imposed by us, rather than being a reflection of external reality (Murphy & Davidshofer, 1998). These impositions of judgement are organised by observers around three dimensions; *potency*, where judgements are organised around strong - weak or hard - soft dimensions; *evaluation,* where dimensions are good or bad; and *activity*, where the dimension is active - passive or energetic - lazy (Rosenberg & Sedlak, 1972). This research suggests traits are part of how we process information about behaviour, rather than a reflection of the behaviour itself.

The more accepted approach is that there is some consistency or structure to behaviour and that traits are merely descriptions of related behaviour patterns. Thus when a person is described as aggressive, it is equivalent to saying that the person has done many things in the past that indicate aggressiveness and given similar circumstances in the future, similar behaviours will occur (Murphy & Davidshofer, 1998). This descriptive approach has many appealing features. It avoids the circularity inherent in the

causal approach. It is also dynamic in that if a person were aggressive as a child, but mellower as an adult, the causal approach would find it difficult to explain this as an underlying trait. However, if traits are deemed to be merely descriptive, there is no problem in labelling a person aggressive during one phase of life, and mellower during another (Murphy & Davidshofer, 1998).

2.2 The influence of the trait - situation debate

After the initial work on personality traits from the likes of Allport, Cattell and Norman, the continuing develop of a trait taxonomy took a back seat following an influential paper in the latter 60s from Mischel (1968). The earliest view of personality included the assumption that people could be expected to behave consistently from situation to situation and from year to year (Allport, 1931, cited in Epstein & O'Brien, 1985). For example, a grumpy person at home would also be seen as a grumpy person at work. William James (1950, cited in Baron & Burn, 1987) proposed that, by the age of thirty, a person's tendencies were "set like plaster," never to change.

This view lead to the development of many psychological tests, the reasoning being, that if behaviour is determined by personality, the ability to measure personality would allow one to predict behaviour (Kenrick, 1986). Much of these first tests were global measures aimed at assessing as much as possible about the individual's behaviour. Examples of these tests were the Rorschach projective tests and Morgan and Murray's objective tests (Baron & Burn, 1987). These tests were closely aligned with trait theory and during the 40s and 50s these types of assessments were seen as powerful tool for predicting behaviours across situations.

The late 50s and 60s saw a flurry of activity that provided evidence that situation variables were more accountable for behaviour than person variables (Epstein & O'brien, 1985). Sources of evidence were threefold. Firstly, there were consistently low correlations of objective measures (non-self-reporting) of the same trait. Secondly, evidence cast doubt on the validity of self-report measures and clinical assessment procedures because of the failure to take into account method variance, social desirability and construct

validity when devising and validating measures of traits. And finally, the increasing use of situational control of behaviour in assessment and treatment procedures was gaining momentum (Epstein & O'Brien, 1985). All of the above activity culminated in the release of Mischel's (1968) influential book, *Personality and Assessment*.

The book's thesis was largely built around the above three points and utilised meta-analysis from earlier studies to highlight the low correlations between traits, behaviour and situations. Mischel (1968) argued for a social learning approach to personality that recognised that the concept of traits (except for broad screening purposes) had proven to be "untenable," and that behaviour is highly situational specific. Although trait consistency had not been a major focus of trait research, over the years, a number of studies have investigated the topic. These studies formed the bases of Mischel's book. As an example, let's consider the study by Hartshorne and May (1928, cited in Peterson, 1992). This was a cross-situational study of moral conduct in children. In different situations where a child could lie, cheat or steal, is there evidence of a general trait of honesty or dishonesty? Would some children transgress at every opportunity, whilst another group holds back? Or would the conduct in one situation be unrelated to the conduct in another?

Using trait theory, we would expect substantial consistency and therefore evidence for the presumed trait of honesty. What Hartshorne and May found was that moral conduct was not highly consistent. What children did in one situation correlated no higher than $r = .30$ with a similar situation. Further more, as morally based situations became more dissimilar, correlations decreased. Mischel used these findings, along with many others, to argue that the *situation* is of paramount importance. Mischel did note some exceptions. Behaviours reflecting "intelligence" are relatively general across situations and stable across time and achievement striving shows consistency as well, although Mischel contends these are exceptions rather than the rule (Peterson, 1992). So if traits are a useless concept, what has trait research looked at over the last 75 years? And if traits have no basis in people's behaviour, why do so many personality psychologists and lay people believe

they exist?

Mischel (1968) maintained that in many cases consistency appears to be greater than it actually is because our minds act as effective "reducing valves," taking in discrepant information and then condensing it into seemingly consistent phenomena. Chapman and Chapman (1969, cited in Peterson, 1992) termed this phenomena - illusionary correlations. Mischel (1968) argued that illusionary correlations and similar biases are responsible for the widespread belief in traits. He also theorised that consistency, when it does exist, has little to do with personality traits, but rather with the fact that we typically see our acquaintances (and they see us) in the same, or similar contexts. In other words "consistency" exists largely in the eye of the beholder, but if situational forces in these familiar settings (or the settings themselves) change, people's behaviours probably will change too, regardless of any presumed or existing personality traits. Mischel's extreme environmental stance towards situational variables evoked a renewed interest in personality psychology. But had Mischel started skating on thin ice?

Unfortunately, Mischel went too far in concluding that the concept of traits had been proven to be "untenable" (Epstein & O'Brien, 1985). His interpretations and methods are certainly open to criticism, and others have argued convincingly that the studies he reviewed, in fact do indicate behavioural stability (Lazarus & Monat, 1979). Pervis (1975) contended that his artificial separation of cognitive and intellectual behaviours from those related to personality, is suspect. Cognitive factors are intimate aspects of personality and cannot be separated from it. Further more, the "either-or" nature of Mischel's argument overlooks several important possibilities, namely that stability could vary for individuals, traits or situations. Or as Bem and Allen (1974) argued, some people show more behavioural stability than others. Certain traits in an individual could show more stability than others, or some situations could create more specificity than others.

Mischel's criticisms set about a new flurry of interest in the trait-situation debate. Perhaps one of the most impressive counter arguments for the stability of traits was advanced by Jack Block (1971, cited in Peterson, 1992).

His ingenious longitudinal research on 170 individuals (spanning 30 years) added great weight to the stability of traits. Block concluded:

> The unity and consistency of personality traits is compellingly apparent...and is manifested in so many and diverse ways as to perhaps establish the unity principle once and for all...I (he) view the set of empirical relationships...as sufficient proof for the principle of personality consistency. (p.337).

Although the attack by Mischel concentrated on the generality of behaviour and the existence of traits, others carried the attack further. Allen and Potkay (1973, cited in Epstein & O'Brien, 1985), argued that behaviour was not lacking in cross-situational generality, but in temporal stability as well. Whilst Shweder (1975 cited by Epstein & O'Brien, 1985), concluded that the "individual differences theory of personality" was no longer viable. It is interesting that the arguments for trait heritability and behaviour genetics (Rowe, 1987), have not had much prominence in the general debate, possibly because they are viewed as culturally insensitive, or unsavoury. Rowe advances behavioural situations as an area that deserves closer scrutiny. In any case, the significance of Michel's criticisms, despite their shortcomings, did contribute greatly to the debate.

Mischel's strong situational stance has served to remind us of the vital and often-ignored source the environment has in determining our behaviour. Mischel's views offer an optimistic balance to the often-pessimistic outlook on human nature adopted by some personality theorists (e.g. Freud). By emphasising behavioural flexibility, Mischel has reminded us that behaviour, including maladaptive behaviour, is capable of change if we become aware of its maintaining condition and then make the appropriate environmental alterations (Lazarus & Monat, 1979). However, one must conclude that Mischel's extreme environmentalistic position seems to be as sterile as the one he attacks. One is reminded of Kurt Lewin's (1935, cited in Lazarus & Monat, 1979) dictum that behaviour is a function of the person *and* the environment. To minimise the criticality of either variable is just not good business (or theory!).

2.3 Mischel gives way to interactionalism

Fortunately, many personality psychologists have now given up on the idea of choosing the "either-or" path of the person-situation debate. Even Mischel and Bandura have softened their hard-line approach. As Pervin (1975) noted:

"In arguing for both consistency and variability in behaviour, for both internal and external determinants, for both organism and environmental variables, Mischel seeks to end a controversy that pits person against situations to see which is more important." (p.501). This "taming of the waters" led both sides of the debate to explore the part traits *and* situations can play in determining behaviour, leading to the birth of interactionalism.

Probably the most reasonable conclusion about the trait-situation controversy is that both sides were partially correct. The best prediction of behaviour would be expected to occur when we pay attention to both influences and their interaction simultaneously (Feshbach, 1984, cited in Baron & Byrne, 1987). Malloy and Kenny (1986) indicated how this can be done when one wishes to include traits in their conceptualisations: 1) The more narrow and limited the trait, the better behaviour predictor it is likely to be. 2) People differ with respect to the traits on which they are consistent. 3) The less powerful the situation, the greater the role of the trait. 4) People may choose to be in kinds of situations that best fit their personality. Interactionalism, of course, had major influences on test methodologies.

Trait research was reliant on test construction procedures, whereas situational behaviours were advanced through experimental-behaviour procedures (Cronbach, 1957, cited in Epstein & O'Brien, 1985). To accommodate an interactionalist perspective, measurements needed to include both research methodologies. Malloy and Kenny (1986) concluded that when personality test items include a situational context, they are more likely to predict behaviour in specific situations. For example, how would one respond to a test item, "I am an angry person"- agree or disagree? The answer obviously would be greatly influenced by any specific situation that

made you angry. To measure a trait, it is necessary to establish both temporal reliability, or stability, and generality. Temporal reliability, or stability can be accomplished by averaging behaviour over sufficient occasions and the latter by averaging behaviour over appropriate situations. These are commonly referred to as aggregations (Epstein & O'Brien, 1985).

2.4 The aggregation approach to personality measurement

The aggregation approach became a major utility for test design. Another outcome of the person-situation debate was the introduction of *states*. Here measurements were designed to record *general* traits as well as traits specific to a behavioural situations. These are termed *state-traits*. A good example of a personality measurement that combines the interaction of trait and situation is that of the State-Trait Anxiety Inventory (Spielberger, 1985, cited in Anastasi & Urbina, 1997). In this inventory, Spielberger's 20 items measure the trait of anxiety by how one generally feels (T-Anxiety) and the situational anxiety by (S-Anxiety), or the state one feels when in a specific situation, like before boarding an aircraft or sitting an exam. Individuals high in T-Anxiety tend to exhibit S-Anxiety elevations more often than do individuals low in T-Anxiety, because they react to a wider range of situations as threatening or dangerous (Anastasi & Urbina, 1997). Other practical lessons have emerged from the person-situation controversy and these have influenced the ongoing development of psychological assessment.

Research by Kenrick and Funder (1988) clearly indicates that predictive validity from trait ratings can be better gained through the use of (a) raters who are thoroughly familiar with the person being rated; (b) the use of multiple behavioural observations and observers; (c) dimensions that are publicly observable; and (d) behaviours that are relevant to the dimension in question. On the other hand, one should not expect great accuracy from trait ratings when predicting behaviour in "powerful" and clearly normative scripted situations, or from single behavioural instances from another single behavioural instance (Kenrick & Funder, 1988). Researchers must move beyond the questionnaires typically used to measure traits of personality.

By going out into the world and observing what people actually do and the circumstances in which they do them, issues of stability, change, consistency, and person-environment fit can be studied definitively with respect to behaviour (Peterson, 1992). Rowe (1987) contends the best research within the trait paradigm (e.g. that on achievement motivation, androgyny, anxiety) has always supplemented questionnaires with other assessment procedures and has always studied behaviour in settings where the relevant individual difference is highly pertinent. This is particularly evident in the selection process where the personality attribute is supplemented by measures of knowledge, skills and cognitive abilities.

The influence this debate has had on the on-going development of psychological assessment has been positive. It has forced researchers and test developers to move away from the reliance of pure self-report ratings and popular methodologies such as ANOVA designs and traditional correlation techniques. Good personality researchers now design tests (or partake in participant observations) that take account of the current state or specific situation. This is achieved through the theory of interactionalism, psychometrics, such as Bem's (1979) Q-sort and Kahle and Berman's (1979) cross-lagged panel correlation and the goodness-of-fit models.

By way of summary, 1968 monograph, *Personality and Assessment*, Mischel argued that trait conceptions of personality are of little use, because people do not behave consistently across situations. This strong criticism stimulated studies of trait stability over *time* as well as issues of behavioural consistency that led to the theory of interactionalism. Here was seen the mellowing of Mischel and Bandura's social learning stance and an agreement that both traits *and* situation must be accounted for in determining behaviour. This interactional approach also had implications on psychological assessment; methodologies had to be adjusted to accommodate the complexity of person-situation variables and their relationship to specific behaviours.

The bottom line garnered from this debate: traits as broad dispositions cannot be good predictors of individual acts, but this is not sufficient reason to deny their utility. Their major value lies not in their usefulness of predicting specific behaviours, but in their value as predictors of aggregated behaviour, that is, behaviour averaged over many situations, occasions and responses (Epstein & O'Brien, 1985). The author concludes that consistency does exist, but it is subject to a variety of factors, the main one being, the nature of the situation where behaviour occurs, i.e., the starting point of Gordon Allport and other theorists within the trait paradigm (Peterson, 1992).

2.5 Developing a taxonomy of personality - the Five Factor Model (FFM)

The above review of the development of personality traits demonstrates the acceptance of the trait model, and alerts us to its usefulness in the field of Industrial and Organisational Psychology. Unfortunately, the number of personality traits, and scales to measure them has escalated without an end in sight (Goldberg, 1971). Despite this observation being made 30 years ago, the escalation has continued. To add to the confusion, scales with the same name often measure concepts that are not the same, and scales with different names often measure concepts that are very similar (John & Srivastava, 1993). This had large ramifications for Occupational Psychology, as it was not possible to determine whether there were consistent, meaningful relationships between particular personality constructs and performance criteria in different occupations (Barrick & Mount, 1991).

What Personality Psychology needed was a descriptive model, or taxonomy of traits. After decades of research, the discipline is now approaching a consensus on a general taxonomy of personality traits, the "Big Five" personality dimensions; also know as the Five Factor Model (FFM, the author's preferred term). Rather than replacing all previous systems, the Big Five taxonomy serves as an integrative function because it can represent diverse systems of personality description in a common framework. John and Srivastava (1993) are quick to point out that these dimensions do not represent a particular theoretical perspective, but were derived from analyses

of the natural language terms people use to describe themselves and others, the lexical approach. This type of approach is ideally suited for the exploration of personality structure; the model they led to could then be confirmed, enlarged, or quantified by studies of questionnaires (McCrae & John, 1992).

2.5.01 The rise of the Big Five

The historical roots of the FFM can be traced back to the early lexical model of William McDougall (1932, cited in Digman, 1990) who discussed at length, in the original Journal of Personality, the special meaning of "character" and "personality". In his writing for the journal's first issue, he offered an interesting conjecture: "Personality may to advantage be broadly analysed into five distinguishable but separable factors, namely, intellect, character, temperament, disposition, and temper...each of these is highly complex and comprises many variables".

During the 40s, Cattell, as discussed above, developed his 16-factor model with eight second order factors; this model was later refined by Fisk (1949) who, using 21 of Cattell's bipolar scales, was unable to find evidence for anything more complex than a five-factor solution. Towards the end of the 1950s, Tupes (1957) was attempting to predict officer effectiveness for the American Air Force. By the early 1960s, Tupes and Christal (1961) reanalysed Cattell's and Fisk's earlier work, based on published correlations, and found agreement for a five factor model. They labelled the factors: *Surgency, Agreeableness, Dependability, Emotional Stability,* and *Culture.* Numerous confirmatory studies by Norman (1963), Borgatta (1964), Smith (1967), and Goldberg (1981) confirmed the robustness of the FFM. It should be pointed out that some researchers still had reservations, notably John (1989), Briggs (1992), and Block (1995).

2.5.02 Interpretations of the "Big Five"

Whilst there is reasonable agreement as to the broad number of personality dimensions, Hogan (1986) being an exception, there is still great debate over their meanings; this is particularly evident with Norman's

Conscientiousness and cultural factors (Barrick & Mount, 1991). Appendix 1 demonstrates this point.

Perhaps the dimension with the most agreement is Eysenck's (1947, cited in Digman, 1990) Extraversion/Introversion; commonly referred to as Dimension 1. This dimension has most frequently been labelled Extraversion (E) or Surgency (Costa & McCrae, 1985; Digman & Takemoto-Chock, 1981; Hogan, 1983). The traits that are most frequently associated with this dimension include being talkative, assertive, gregariousness, active and excitement seeking (Barrick & Mount, 1991; McCrae & Johns, 1992). The lexical literature suggests that individuals low in E can be described as quiet, reserved, retiring, shy, silent and withdrawn, whilst Q-sort correlates point to emotional blandness and over-control of impulses as additional attributes (John, 1990). These are the facets of Eysenck's Introversion dimension (Dimension II) and have been generally labelled under the FFM as Neuroticism (N). As mentioned, Hogan (1986) has argued for a six-model taxonomy. He contends the dimension of E is too wide. Hogan has split E into two components, Ambition (initiative, surgency, ambition, and impetuosity) and Sociability (sociability, exhibitionism, and expressiveness).

Dimension III has generally been interpreted as Agreeableness (A), or likeability (Costa & McCrae, 1985; Goldberg, 1981; Norman, 1963). Traits associated with this dimension include being courteous, flexible, trusting, good-natured, cooperative, forgiving, softhearted and tolerant (Barrick & Mount, 1991). However, Digman (1990) notes that "Agreeableness...seems tepid for a dimension that appears to involve the more humane aspects of humanity...characteristics such as altruism, nurturance, caring, and emotional support at one end of the dimension, and hostility, indifference to others, self-centeredness, spitefulness, and jealousy at the other" (pp. 422-424). Digman proposes, "Friendly compliance verses Hostile non-compliance" as an alternative.

Dimension IV has been no less difficult to capture. Like A, Conscientiousness (C) has been highly evaluated as dimension. McCrae and John (1991) contend that A and C are the classic dimensions of character,

describing "good" verses "evil" and "strong-willed" verses "weak-willed" individuals. C has also been referred to as Conformity or Dependability (Fisk, 1943; Hogan, 1983). This dimension has been closely associated with educational achievement (Smith, 1967) and work (Peabody & Goldberg, 1989). For this reason Digman & Takemoto-Chock (1981) argue for the term "Will to Achieve", or simply "Will" as a better term. There is also some argument about the essence of the Conscientiousness dimension. Hogan (1983) and John (1989) have suggested C reflects dependability; that is being careful, responsible, organised and planned. Others (Hogan, 1983) also include the volitional aspects of hardworking, achievement-oriented and persevering.

Dimension V holds the most controversy. Digman & Tiakemoto-Chock (1981) and Hogan (1983) use the term, Intellect or intellectence. However, McCrae & Costa (1985) argue for Openness to Experience (O). As mentioned earlier, Norman (1963) originally used the term - Culture. Digman (1990) points out that it is mostly likely all of these; that is, the factor dimension has pointed to a *domain* of trait characteristics that are more or less related. Perhaps the root of disparity lies in the difference between the use of natural language and questionnaire studies (McCrae & John, 1991). Studies of trait adjectives typically show a factor defined in such terms as intelligent, imaginative and perceptive. However, in traits related to O, McCrae (1990) points out that it is difficult to find an English adjective that means "sensitive to art and beauty". Through the use of questionnaire research, broader factors have been found in addition to intellectual interest and creativity. These include; unconventional values, differentiated emotions, the need for variety and aesthetic sensitivity. In other words, O can be seen in the depth, scope and permeability of consciousness, and motivationally in the need for variety and experience (McCrae & John, 1991). Ideas form an important aspect of consciousness, but fantasies, feelings, sensations and values are experiences to which individuals can be more or less open. It must also be stressed that neither Openness nor Intellect is equivalent to a measurement of *g*. O is a dimension of personality and as such an individual who scores

high in O may not have a high IQ.

The above five dimensions can be defined in the following table:

Table 1

The Five-Factor Model of Personality

Factor	Definition
Extroversion	People high on this dimension are sociable, gregarious, assertive, talkative, active, (reserved), (shy), (quiet), (unassertive), (withdrawn)
Neuroticism (Emotional Stability)	People high on this dimension are anxious, depressed, angry, emotional, embarrassed, insecure, (moody), (nervous), (self-doubting).
Agreeableness	People high on this dimension are courteous, flexible, trusting, good-natured, co-operative, tolerant, sympathetic, warm, tactful, (rude), (unkind), (independent), (hostile), (unsociability).
Conscientiousness	People high on this dimension are dependable, careful, thorough, responsible, hardworking, persevering (careless), (inefficient), (sloppy), (impulsive), (irresponsible).
Openness to experience	People high on this dimension are imaginative, cultured, curious, original, artistically sensitive, (unimaginative), (conventional), (simple), (dull).

Adapted from Murphy & Davidshofer (1998)

Note: opposite constructs are shown in brackets.

2.5.03 Other Criticisms Of The Big Five

In a contrary view of the FFM, Block (1995) attacked the model from several positions. He concurred that because the FFM formulation was entirely atheoretical, usage of the term *model* maybe premature. Because previous historical accounts of the FFM have come only from supporters of the model, little counter opinion has been explored to support the historical foundations, therefore he suggested that..."if the footings of the FFM are less than secure, the structure subsequently erected may not be a house all will wish to enter" (p191)

The FFM was also based only on the relationships among a set of variables across individuals. Block argues there are other important ways of looking at personality and that no matter how satisfying, on descriptive or other grounds, the variable-centred factor structure of the FFM may be, it cannot represent a personality structure..."No functioning psychological system with its rules and bounds is designated or implied by the "Big Five" formulation; it does not offer a sense of what goes on within the structured, motivation processing, system-maintaining individual" (p188).

In keeping with this theme, Block was also critical of the lexical approach on which the model had its beginnings. Describing personality through the use of single adjectives in laypersons language was just not "scientific". These sets of adjectives were initially filtered by a sample group of undergraduates. Block poses the question..."why undergraduates? Why not 12 year-olds? Why not 5 year-olds? Why not 45 year-old psychological clinicians?" (p196).

The use of factor analysis was another criticism. Whilst he agrees that the use of factor analysis has its place, the sole use of this statistical analysis to formulate a theory is dangerous..."one must be mindful of the ways the method may suggest more than is supportable" (p189).

In reply to Block's criticisms, Costa and McCrae (1995) labelled Block as being "religious about details" and guilty of sins of omissions. In particular, they reject his criticism on the basis that he has neglected to cite empirical evidence relevant to the questions he raised. Many researchers and clinicians

have had first hand experience using the concept and measures of the FFM. These people can well judge the benefits of the model irrespective of Block's or Costa & McCrae's arguments. In brief, Costa and McCrae argued that..."Block's (1995) critique completely misses the intent of the research on the FFM and the implications of the findings to date...the literature on the FFM is a constructive step forward in the development of personality psychology that Block should welcome" (p216).

Goldberg and Saucier (1995) were equally scathing of Block's (1995) criticisms. "A brilliant critique, terribly biased, much like a legal brief that presents only one side...it does not distinguish between the Big Five Model of phenotypic personality attributes from alternative models of the causal underpinnings of personality differences" (p221).

2.5.04 The FFM in summary

In summary, the "Big" in "Big-Five" does not reflect the greatness of the model, but emphasises that each of these factors are extremely broad. John and Srivastava (1999) rather neatly put the FFM into perspective by explaining:

> "The structure does not imply that personality differences can be reduced to only five traits. Rather these five dimensions represent personality at its broadest level of abstraction, and each dimension summarises a large number of distinct, more specific personality characteristics." (p.105).

However, owing to this broadness, the FFM also misses numerous salient aspects of personality that maybe at least as broad as the several specific components within each of the Big Five factors. Of these, the author highlights anti-minority attitudes, or prejudice aspects of our personality.

2.6 The FFM as a predictor of job performance

The usage of the FFM as a predictor of job performance has gained a lot of attention over the last decade. Barrick and Mount (1991) lead the way with a very influential, large-sample meta-analysis of the Big Five dimensions. This included 231 studies testing the relationship between various Big Five

personality dimensions and job performance. 114 studies were discarded for technical reasons. Their studs differentiated between three kinds of performance measures: (1) job proficiency measures, examples being, productivity indices and performance ratings; (2) training proficiency measures, examples being - post-training work samples and duration of time to complete training; (3) personnel data, examples being - salary levels, tenure and promotions. Apart from performance they also differentiated their study by five job levels, from semi-skilled through to professional. This allowed them to compare the Big Five dimensions across many performance levels to test the generalisability of the dimensions across all jobs. Barrick and Mount (1991) also emphasised: "that the reader of the results should focus on understanding which dimensions are best predictors of specific occupations and criterion types, rather than the magnitude of the validities because they are underestimates. Table 2 is an example of job types and there correlations with the Big Five.

Regardless of the performance measure used, or the level of job involvement, C significantly predicts performance. The most accepted true correlation is estimated at around .22 (Barrick & Mount, 1991). Barrick and Mount (1995) later suggested that their previous 1991 meta-analysis might have underestimated the true validity. They revised the above correlation to .32 (corrected for criterion reliability, range restriction and imperfect construct measurement) for overall job proficiency and .30 (corrected for criterion reliability, range restriction and imperfect construct measurement) for training proficiency criterion.

Other meta-analyses also confirm the usefulness of C at predicting job performance, however validity results vary greatly from .15 (corrected) at the lowest end (Salgado, 1997), to .41 at the high end (Ones, Viswesvaran, & Schmidt, 1993). This demonstrated that people who were seen as conscientious by themselves and/or others were more trainable and more effective workers and they exhibited traits aligned with a strong sense of purpose, obligation and persistence (Goodstein & Lanyon, 1999).

Table 2

Meta-Analysis Results of Personality Dimensions-Occupational Combinations

Occupation	Total N	Number of *r*'s	Estimated True Correlation
Extraversion (E)			
Professional	476	4	-.09
Police	1,496	16	.09
Managers	11,335	59	.18
Sales	2,316	22	.15
Skilled/Semi Skilled	3,888	23	.01
Mean of E			.13
Neuroticism (N)			
Professional	518	5	-.13
Police	1,697	18	.10
Managers	10,324	55	.08
Sales	2,486	19	.07
Skilled/Semi Skilled	3,694	26	.12
Mean of N			.08
Agreeableness (A)			
Professional	557	7	.02
Police	1,437	14	.10
Managers	8,597	47	.10
Sales	2,344	16	.00
Skilled/Semi Skilled	4,585	28	.06
Mean of A			.07
Conscientiousness (C)			
Professional	767	6	.20
Police	2,045	19	.22
Managers	10,058	52	.22
Sales	2,263	21	.23
Skilled/Semi Skilled	4,588	25	.21
Mean of C			.22
Openness (O)			
Professional	476	4	-.08
Police	1,364	13	.00
Managers	7,611	37	.08
Sales	1,566	12	-.02
Skilled/Semi Skilled	3,219	16	.01
Mean of O			.04

[a] An unbiased estimate of mean % of variance accounted for across meta-analyses, calculated by taking the reciprocal of the average of reciprocals of individual predicted observed variance ratios (Hunter & Schmidt, 1990).
Source: Adapted from Barrick & Mount (1991).

In non-work related studies (Digman & Takemoto-Chock, 1981; Takemoto, 1979), C was also a valid predictor of educational performance and vocational achievement. It must be noted that Barrick and Mount's study only analysed American data, and the study looked at a broad range of occupational roles. However, Salgado (1997) performed a similar analysis involving the European Community. There were some differences, but they clearly confirmed Barrick and Mount's findings that C is a critical predictor of performance across a wide range of jobs.

In a study conducted by Jonathan Black (2000) for the New Zealand Police Force, the broad higher-order trait of C possessed the strongest relationship with performance (significant at .27). E and N were also predictive of performance outcomes in the direction expected (E, significant at .15 and N significant at -.17). A number of sub-facets of *each* of the Big Five dimensions were also significant indicating the dangers of accepting any of the five broad dimensions as a useful measure of job performance (Black, 2000).

Within some studies, E, A and O were also found to be reasonable predictors. Because E is supported by sociable, gregarious, talkative, assertive, and active traits, Barrick and Mount (1991) hypothesised that this dimension would be a valid predictor of managers and sales, across all criterion types; this was indeed the case. However, true score correlations were estimated at less than .20. E was also found to correlate well (.26) with success in training. However, this correlation maybe subject to criterion contamination. That is, an employee with the attributes to be successful on the job will more than likely be successful in training. This prompted Anastasi and Urbina (1997) to question whether E is a predictor of training success, or an extension of a predictor of job performance in general? Tett, Jackson and Rothstien (1991) also confirmed Barrick and Mount's findings; however, they found stronger acceptance for O and A, .27 and .33 (corrected) respectively. This may have been due to the studies being weighted towards customer service personnel. Agreeableness correlates strongly (.70) with performance

in this job group (Ones & Viswesvaran, 1996). In respect to O, this correlated well (.25) with training success, but was not a predictive factor for either job proficiency or personnel data. The predictive success of E and O in the training setting maybe due to the fact that people who are active, sociable and gregarious approach training with a positive attitude (Lanyon & Goodstien, 1997).

The dimension of N has demonstrated a predictable result in all analyses investigated. This dimension has shown low, insignificant correlations with all criteria ranging from .08 (Barrick & Mount, 1991) to -.22 (Tett et al,1991). Researchers logically expect that individuals truly high in N will be poor performers in *any* job (e.g. due to serious emotional problems, or not being present in the workplace at regular intervals). However, the author contends that scores of N gained within the work environment are likely to present within a restricted range, limiting the size of r's. This is due to unsuccessful candidates, who may be high in N, not being included in any investigative sample.

Most of the meta-analyses on personality test validity are now over ten years old. To get a fresher picture on the FFM, Anderson and Viswesvaran (1998) conducted another meta-analysis of studies published in America between 1992-1997. Anderson and Viswesvaran's results suggest that C, A and N were valid predictors of job performance, although their relative importance may differ depending on what gets measured, for example the type of job or the type of behaviour required for adequate performance. Table 3 demonstrates the difference between the 1991 studies using samples from the 70s and 80s and the 1998 study using fresh samples from studies conducted during the 90s.

Table 3

A Comparison of Corrected Validities of the NEO-FFM

Study	N	E	O	A	C
Barrick & Mount (1991)	-0.07	0.10	-0.03	0.06	0.23
Tett et al (1991)	-0.22	0.16	0.27	0.33	0.18
Anderson (1998)	0.15	0.07	0.08	0.11	0.20

Anderson and Viswesvaran (1998) were surprised at the difference in results for the N dimension. Their explanation is threefold:

(1) The different methods used to establish both the predictive and criterion validity.

(2) Due to the Americans with Disabilities Act (ADA) of 1991, many items with reference to "mental health" were deleted from questionnaires during the 90s. These were very context specific, such as "I am troubled by attacks of nausea and vomiting", or, "I have never done any heavy drinking", their deletion weakened the total context of the N measurement allowing an increase in validity.

(3) Publication bias, maybe research studies that already show the predictive power of C are not being accepted by publishers due to "topic fatigue". (a problematic consequence of using published data as a primary data source for meta-analyses).

Likewise, Anderson and Viswesvaran have also questioned their C result, also sighting the ADA as an influence. Someone who engages in heavy drinking is probably a person low on conscientiousness, and eliminating such items may adversely affects the validity of the conscientiousness measures (Gough & Bradley, 1996). There is also some support for Hogan's proposal that E should be split into two factors, Sociability and Ambition, and O should be divided into Intellectance and School Success. (Specifically, the dimensions of E and O had the highest residual standard deviations, which suggests that these two dimensions are more heterogeneous than the other three dimensions).

2.7 The FFM as a framework for predicting sales performance

Over the years a wide range of predictors have been used to select sales persons. These have ranged from cognitive ability tests, personality inventories and bio data forms. Unconventional predictors like handwriting analysis are still popular with French businesses despite the lack of validity (Cook, 1998). Early narrative reviews assessing the validity of predictors of sales success were generally inconclusive, rather mixed, and or contradictory. However, given the problems with traditional narrative reviews (Hunter & Schmidt, 1990), this was not unexpected. One of these early reviews (Guion, 1965) did draw one strong conclusion, that cognitive ability tests were poor predictors of sales performance, surprising in the light of Schmidt and Hunter's (1981) findings that cognitive ability tests had substantial validity across *all* jobs.

In their 1998 meta-analytic review of sales predictors, Vinchur, Schippmann, Switzer and Roth confirmed the earlier findings on cognitive ability predictors, but only in respect of objective measures (ie dollar amount of sales confirmed). The range-restricted-corrected validity was a weak .04. What is interesting is that cognitive ability measures did correlate with supervisor ratings, a validity coefficient of .40. One could conclude that sales persons with more intellectual ability are able to influence their rater's perception of them despite a lack of objective sales performance. This is confusing, as one would assume that objective ratings would be a major consideration in assessing a sales person's performance.

In a meta-analysis of objective and subjective measures of employee performance, Bommer, Johnson, Rich, Podsakoff and MacKenzie (1995) hypothesised that the relationship between the two should be stronger for sales than non-sales jobs. They assert this was not supported. The average *r* was .41. They concluded, "subjective measures should not be used as proxies for objective measures..." (p.599).

Vinchur et al. (1998) meta-analysis of sales performance was valuable because it highlighted two facets within the FFM that were promising

predictors of both subjective and objective sales success. These were the personality dimensions of Potency (a sub dimension of E) and Achievement Striving (a sub-dimension of C).

As mentioned previously, Hogan (1992) argued that the FFM was too broad. She advanced an alternative model comprising nine dimensions. The FFM dimensions of N, A and O were retained. Hogan split E into two sub-dimensions of Affiliation (sociability) and Potency (impact, influence and energy). C was subdivided into achievement (striving for competence in one's work) and dependability (reliability, organisation, respect for authority). Table 4 presents the uncorrected correlations between the above two personality facets and a variety of measures.

Table 4

Uncorrected Correlations Between Measures of Sales Performance and the Attributes of Potency and Achievement

Measures	Potency		Achievement	
	r	No of *rs*	*r*	No of *rs*
Ratings	.15	25	.14	8
Sales	.15	14	.23	10
Sales ability	.42	2	.60	*
Potency	—	—	.39	—

* Indicates mean correlation taken from Schmitt et al. (1997)

Table adapted from Vinchur et al. (1998).

It is apparent that the dimensions of C and E have predictive power for sales performance. Barrack and Mount (2000) contend (although not specific to sales performance) that applicants who have more C and E will result in employees who are predisposed to exert greater effort at work, who persist at it for longer periods of time, are able to more effectively cope with stress, and are more committed to work. This becomes stronger when specific facets are studied within these dimensions (Vinchur et al. 1998). The same applies to the criterion to be used, for example success in sales training (Barrick &

Mount, 1991). There is also the question of incremental validity. Schippmann (cited in Vinchur et al. 1998) reported *r*s between a proprietary sales ability test and Potency of .44 (*N*=214) and between sales ability and Achievement of .60 (*N*=215). This supports the early contention that job performance is contingent on task and contextual behaviour (Motowidlo et al, 1997). In other words, sales knowledge and sales skills predict sales success, so do specific traits; assessing both adds incremental validity. Therefore, any selection process must include both a measure of an applicant's knowledge, skills and abilities (KSAs) to assess job skills, and an assessment of their personality attributes, to predict organisational citizenship, or contextual performance. Looking at these results in the aggregate suggests that the FFM can be reasonably used as a framework for building a sales selection system. In fact many of today's personnel selection tools arguably owe their birth to the FFM.

2.8 Selection measures built on the FFM

The FFM as a taxonomy of personality has been further enhanced through the factor analysis of many established questionnaires. The notion that the Big Five, as a model for the organisation of traits, may be found in questionnaires was suggested by Digman (cited in Digman 1990) over two decades ago. Goldberg (1981) also postulated that many well-known self-report inventories might reflect various aspects of the FFM. An important European study by Amelang and Borkenau (1982, cited in Digman, 1990) confirmed the presents of the FFM within the well-accepted inventories of Cattell (16PF), Guilford and Eysenck (EPQ). Likewise, Birenbaum and Montag (1986, cited in Digman, 1990) also confirmed the FFM as a framework for the 16PF and the Zuckerman Sensation Seeking Scales. Table 5, adapted from John (1990) highlights the similarities of the Big Five dimensions within the inventories mentioned above, plus other well used questionnaires.

Table 5.

A Comparison of the Major Theories with the NEO-FFM

Theorist/ Inventory	Surgency	Agreeableness	Conscientiousness	Emotional Stability	Intellect/ Openess to Experience
Cattell 16PF	Exvia (Vs Invia)	Pathemia (Vs Cortertia)	Super Ego Strenght	Adjustment (Vs Anxiety)	Independence's Subduedness
Comrey CPS	Extraversion & Activity	Femininity	Orderliness & Social Conformity	Emotional Stability	Rebelliousness
Costa/ McCrae NEO-PI	Extraversion	Agreeableness	Conscientiousness	Neuroticism (r)	Openness
Eysenck EPQ	Extraversion	Psychoticism (r)	Psychoticism (r)	Neuroticism (r)	
Goldberg FFI	Extraversion	Agreeableness	Conscientiousness	Emotional Stability	Openness
Gough CPI	Extraversion	Consensuality	Control		Flexibility
Guilford	Social Activity	Paranoid Disposition (r)	Thinking Introversion	Emotional Stability	
Hogan HPI	Ambition & Sociability	Likeability	Prudence	Adjustment	Intellectance
Jackson PRF	Outgoing, Social Leadership	Self Protective Orientation (r)	Work Orientation	Dependence (r)	Aesthetic-Intellectual
Myers/ Briggs	Extraversion Vs Introversion	Feeling Vs Thinking	Judging Vs Perception		Intuition Vs Sensing

Adapted and extended from John (1990), Table 3.4: The Big 5 and dimensions of similar breadths in questionnaires and in models of personality and interpersonal behaviour.

Costa and McCrae (1985) are credited with developing the first and most used inventory that was directly based on the FFM. They used the original "Big Two" from Eysenck's EPQ scales, Extraversion and Neuroticism. These two dimensions were also mirrored in Cantell's 16PF along with a third set of scales suggesting, "open Vs closed experience". The three scales of E, N, O were joined by scales A (agreeableness) and C (conscientiousness). Using their inventory, the NEO-PI, Costa and McCrae (1985, 1988) and Costa,

Busch, Zonderman, & McCrae (1986) were able to demonstrate the FFM in the Eysenck Personality Inventory, the Jackson Personality Research Form, the Californian Q-Set and the Myers Briggs Type Indicator. Of interest was the lack of confirmation of the Conscientiousness dimension in the latter inventory. However, more recent research by Furnham (1996) examined the relationship between the Myers-Briggs Type Indicator-Form G (MBTI) scores and the NEO Personality Inventory Form S (NEO-PI) subscale scores specifically in a sample of 160 working adults. Zero-order and partial correlations indicate that the NEO-PI Conscientiousness score was correlated with both "thinking feeling" and "judging-perceiving" dimensions.

Two other well-accepted commercial inventories are the Hogan Personality Inventory (HPI) (Hogan, 1986) and of British origin, the Occupational Personality Questionnaire (OPQ) (Saville & Holdsworth,1984). The publishers of the OPQ report that it has a hierarchical factor structure that encompasses the FFM. As discussed early, the HPI has seven scales; Extraversion is broken down into Ambition and Sociability, whilst Openness is divided into Intellectance and School Success.

2.9 The NEO-PI and the NEO-FFM

The NEO-PI is the most researched personality inventory of the 1990s (Kaplan & Saccuzzo, 1997). The NEO-PI assesses 30 traits and five domains (The Big Five). The inventory consists of 240 statements. 48 statements represent each dimension of "The Big Five". These 48 statements then form 6 facets, 8 questions support each facet. Table 6 demonstrates the “Big Five” and the facets representing each of the five domains.

Costa and McCrae (1992) designed a shortened version of the NEO-PI, the NEO-FFI. This comprised five 12-item scales covering the five dimensions. The shortened scales are somewhat less reliable than the full NEO PI domain scales (Costa & McCrae1992). The NEO-FFI constructed as intended for use when time available for testing is limited, and global information on personality is considered sufficient.

Table 6.

The NEO-PI Five Main Dimensions and Representing Facets.

Neuroticism	Openness	Extraversion	Agreeableness	Conscientiousness
Anxiety	Fantasy	Warmth	Trust	Competence
Hostility	Aesthetics	Gregariousness	Straightforwardness	Order
Depression	Feelings	Assertiveness	Altruism	Dutifulness
Self-consciousness	Actions	Activity	Compliance	Achievement Striving
Impulsiveness	Ideas	Excitement-seeking	Modesty	Self-discipline
Vulnerability	Values	Positive emotions	Tender-mindedness	Deliberation

Source: Costa & McCrae NEO Professional Manual (1992)

2.10 Faking and Social Desirability

The instruments mentioned above obviously suffer from varying degrees of "sensibility to faking". This has always been a criticism of personality assessments. The paradox is in the desire of item writers trying to achieve face validity. In attempting to deliver face validity, the questions usually become transparent (whilst items designed to mollify faking and social desirability tend to lose face validity, as well as suffering reductions in item-total correlation). Many items in empirically keyed measures, such as the CPI and MMPI, are not so transparent and therefore tend to be hard to fake (Hogan, Hogan, & Roberts, 1996).

Ones, Viswesvaran and Reiss (1996) studied the issue of faking and social desirability through a meta-analysis of research studies and, with some controversy, concluded that faking does not have a significant influence on the validity of personality testing for personnel selection. Their logic apparently suggests that if a candidate has the ability to manage their self-impressions on a personality assessment, they will also manage their impressions in the "workplace". This may indicate that impression management may be a causal mediator because "performance-personality predictor" relations reflect supervisor/co-worker/employee/customer-held impressions by the testee. Likewise, in a meta-analytic study by Moorman and Podsakoff (1992) on a wide range of organisational variables, the notion that social desirability responding has very little effect on most organisational

behaviour research was considerably supported.

In a research study (two applicant samples of long-haul semi truck drivers, n=147 and n=139) by Barrack and Mount (1996) an examination was made to determine whether two types of response distortion (self-deception and impression management) affected the predictive validity of two of the Big Five dimensions, conscientiousness and emotional stability. Results from structural equations modelling indicated that applicants did distort their scores on both personality dimensions and the distortion occurred through both self-deception and impression management; however, neither type of distortion attenuated the predictive validities of either personality construct. This research supports a notion that part of successful performance within an organisation depends on one's innate talent for impression management.

2.11 Improving the Predictive Validity (Job Analysis & The PPRF)

Personality tests are often used with little consideration of the specific job role the candidate is being assessed for. Hesketh and Robertson (1993) criticised earlier studies and meta-analyses on the grounds that many tests, covering a wide range of jobs were grouped together to assess many different traits. Tett et al. (1991) showed that, when studies used a priori hypotheses and job analyses to identify personality characteristics, validity coefficients were much better than when these steps were not taken.

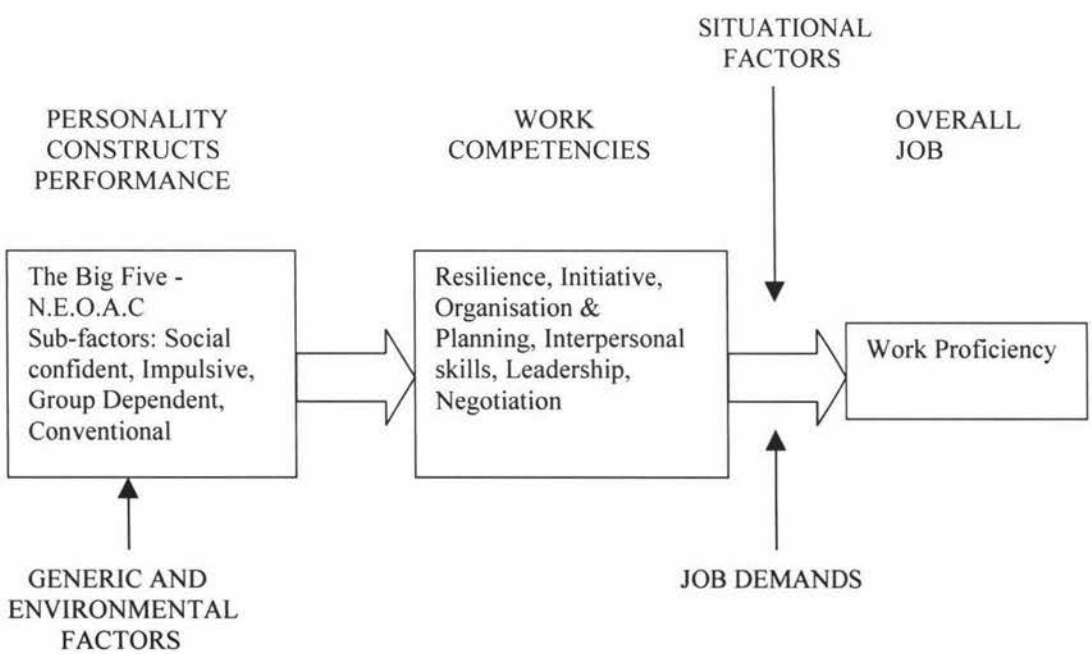
A great number of previous validation studies were centred on the sales role. The predominant question asked was, "What are the attributes that are required for high sales performance?" Assessing against a broad sales occupation is dangerous. In a study conducted by Santo (1997) predictive validity greatly improved when personality attributes were aligned to the competencies required for top performance in a specific sales role. Santo delineated between entrepreneurial sales roles (commodity items, short selling cycle, lower cost, lesser relationship building) and systematic sales roles (high ticket items, usually very technical with a long selling cycle). Santo concurred that there were common traits required for success in all sales roles, however, there were specific traits that discriminated against success

between entrepreneurial and systematic sales roles (Santo, personal communication, May 2001). This reinforces the findings of Schneider, Hough and Dunnette (1996) who argued for narrower personality traits that matched a narrow group of job constructs (performance measures).

Studies by Robertson (1993,1994) demonstrated the need for personality constructs to be linked to specific job competencies that in themselves have been linked to job performance. Cooper and Robertson (1995) give, as an example the personality dimension of C. C is related to a tendency to set goals (job competency) that is linked to greater productivity (job performance) in jobs where the incumbent has discretion about his or her activities. Figure 1, below, demonstrates this link.

Figure 1.

Relationships Between Personality, Competencies and Performance.



Source: Adapted from Cooper & Robertson (1995)

It is evident from the above that the predictive validity of personality tests not only relies on the tests themselves, but also on the job analysis. Typical

measurements of job roles fail to include items that would allow the generation of hypotheses concerning personality variables relevant to the job being analysed. Two advances have been made in this area over the last five years; both have been based on the FFM. The first is the Description in Five Dimensions (D5D) system. This is a computerised job analysis system based on the FFM. Designed in France by Rolland and Mogenet (1994), the D5D provides a personality-related job profile based on ipsative scores. The second is the Personality-Related Position Requirements Form (PPRF); also a job analysis questionnaire designed to identify the relevant personality traits required for a specific job role (Raymark, Schmit, & Guion, 1997).

2.11.01 The development of the PPRF

Initially, 185 item statements were generated that might be used in the analysis of personality traits as appropriate for predicting job performance. These were sorted into six groups, five representing the FFM and the sixth being classified as "other". Only those items place in the same group in 80%, or more of the sorts were retained. This reduced the number to 92 items. At this stage, Raymark et al. (1997) found that the items within the five factors were too diverse to describe work related employee characteristics, so items were subdivided within the major factor groups (the Big Five) into 12 smaller, homogeneous groups. Each cluster was named on the basis of the items contributing to it and on the Big Five factors to which it had been assigned (see Table 7). To balance clusters that had fewer items, 44 new ones were written taking the item count to 136.

Forty-four eminent personality psychologists were then asked to judge whether each item was relevant to each subdivision within each of the Big Five factors. Twenty-four items were dropped. Then a new questionnaire was developed. 100 psychologists (including the original 44) ranked the importance of each item as it related to each of the three subsets within each of the Big Five dimensions. This finalised the questionnaire to 107 items.

Table 7.

The FFM and the 12 PPRF Subdivisions Representing Each Factor.

I.	Surgency/Extraversion
	1. General Leadership
	2. Interest in negotiation
	3. Achievement Striving
II	Agreeableness
	4. Friendly Disposition
	5. Sensitivity to others
	6. Cooperative or Collaborative Work Tendency
III	Conscientiousness
	7. Trustworthiness
	8. Adherence to Work Ethic
	9. Thoroughness and Attentiveness to detail
IV	Emotional Stability
	10. Emotional Stability
V	Intellectance
	11. Desire to generate ideas
	12. Tendency to think things through

Source: Raymark et al, 1997

2.11.02 The PPRF in Practice

Raymark et al conducted an initial test of usefulness: does the PPRF differentiate jobs on personality-related dimensions? Reliable differentiation of jobs is a requirement of sound job analysis. 260 job roles were surveyed. Using the *Dictionary of Occupational Titles* (U.S. Department of Labor, 1991), the research group clustered the 260 jobs into 12 job groups. Raymark et al demonstrated that these 12 groups were useful in differentiating among jobs in logical ways. For example, general leadership scores were highest in management, education and fire-fighting occupations, and lowest for janitorial, customer service and cashier occupation groups. Personnel administration, management and accounting occupation groups scored high in the dimension of thoroughness and attentiveness to detail and the "tendency to think things through". General trustworthiness scores were highest for cashiers and tellers.

Raymark et al also pointed to the lack of differentiation for some dimensions across occupational groups. This is consistent with the findings that C is important across many jobs. At least two of the three C dimensions in the PPRF model (general trustworthiness, adherence to work ethic and thoroughness and attentiveness to detail) had mean scores greater than 1 for each of the occupational groups (0=not required in this job, 1=helpful in this job, and 2=essential for this job).

Raymark et al. have found that the PPRF has dimensions of important work behaviours that were internally consistent and not redundant. The 12 sets (see table 7) appeared to be effective in the differentiation of occupational categories. Using four or five raters, or subject matter experts, to describe a job with the PPRF, the instrument demonstrated traditionally acceptable intrarater reliability suggesting that it can be useful in the development of related hypotheses (e.g. about the relationship between personality predictors and performance criteria). However, Raymark et al. caution that reliance on the Big Five taxonomy may limit the coverage of work related traits. They suggest that further refinements of the PPRF should consider additional higher order constructs and sub-dimensions, particularly in reference to work styles as opposed to personality.

Additionally, the process of rating jobs through the PPRF brings into question the validity of job ratings (particularly when using estimates by other than professional job analysts with subject matter expertise) even more so when these estimates are based on a small number of behaviourally abstract categories that may be required for job success. Harvey (1991) defines this procedure as *holistic job rating*. He contends, given that a large amount of recall and subsequent information is required to make holistic ratings, such ratings may be significantly less valid than those requiring less integration or recall (for example, behaviourally specific task or activity ratings). He also points to the verity that simply finding agreement amongst respondents, when making holistic ratings, offers no evidence that the ratings are valid (or other common or shared motives for distortion) as all raters may share stereotypical prototypes of the job being rated.

2.12 Research Hypotheses

The main aim of this study was to evaluate the essential, helpful/relevant, and largely irrelevant personality attributes applicable to Radio Broadcasting sales (via the PPRF). Also to investigate whether particular personality attributes as defined in the Big Five taxonomy, and selected facets of the Big Five, could discriminate between high and average sales performers. To examine this, the following research questions were postulated. Based on prior published research in this field...

1. It is expected the PPRF facets of: - Interest in Negotiation, General Leadership, Ambition, Friendly Disposition, General Trustworthiness, Adherence to Work Ethic, , Emotional Stability, will be rated as more important/relevant to Broadcasting Sales than:- Cooperative or Collaborative Work Tendency, Sensitivity to Others, Tendency to Think Things Through, Thoroughness and Attentiveness to Details.

2. That the estimated levels (for our sample of salespeople) on the Big Five dimensions of C and E will be strongly and positively related to broadcasting sales performance, and the dimension N, moderately and negatively related (to broadcast sales performance).

3. At a more detailed level, we expect that within the broad factor C, sub-factor Achievement Striving (C4), will be more predictive of performance group membership than sub-factor Deliberation, "tendency to think things through" (C6); and that within broad factor E, sub-factor Activity (E4) will be more predictive than sub-factor Excitement Seeking (E5); and in the broad factor N, sub factor depression (N3) will be less predictive of performance than Impulsiveness (N5). In other words, within each broad higher-order factor, there are specific lower order factors that will differ from each other (quite substantially) in their predictive power (regarding broadcast sales performance)

CHAPTER 3

METHODS

3.1 Participants

3.1.01 PPRF

In the first section of the study, some of the New Zealand broadcasting industries most experienced advertising sales experts (n=10) were asked to complete the Personality - Related Position Requirements Form (PPRF) Appendix 2 (Raymark et al, 1997). These subject matter experts (SMEs) are all currently employed within the broadcasting industry in positions of General Manager, Sales Manager and Sales Consultants. Thompson and Thompson (1982) define SMEs as persons with direct, up to date experience with the job for a long enough time to be familiar with all its tasks.

Selection of the SMEs was based on the researcher's twenty years experience working full-time within the upper echelons of the industry. Whilst the researcher personally knew these SMEs, responses were filed anonymously and within the stated guidelines of the Massey University's ethics committee. No additional specific demographic information was requested. Respondents were contacted by phone and invited to participate. All those contacted agreed to participate. One participant's submission was deleted as their responses were deemed to be acquiescence. Acquiescence is conceptualised as a continuous variable; at one end of the scale are the consistent "Yessayers" and at the other end, the consistent "Naysayers" (Couch & Keniston, 1960, cited in Anastasi & Urbina, 1997). Six of the nine SMEs were male. Experience within the commercial broadcasting industry varied between ten and twenty-five years.

3.1.02 The NEO-FFI

In the second section of the study, sales persons from New Zealand commercial broadcasting stations (n= 59) who have been employed for a minimum of nine months, at the station being sampled, were used for this

study. Of these participants, 50% were male. 18% were under 29 years old, 45% between 30 and 39 years old, 30% between 40 and 49 years old and 7% were over 50 years old. The mean number of years total selling experience was 8.6 years. The mean number of years broadcasting sales experience was 5.8 years. The group under study had qualifications ranging from 3 to 7 years in high school. The mean number of years at high school was 4.2. No tertiary qualifications were recorded.

Response rate was 41% (specifically, 60 respondents out of 146 contacted. Note: 2 sets of data were disregarded for the same reasons as detailed above). Babbie (1973) rates this as an adequate response. Heberlein and Baumgartner (1978) in a meta-analysis of response rates in published studies found an average response rate of 46% for single-mail surveys, rising to 61% for surveys with one follow-up. However, Church (1993), in another meta-analysis found an average response rate of 49% for surveys using incentives and 36% for surveys that did not use incentives. These results indicate the response rate for the current study (no incentives were used) was slightly above average (but the former results suggest our response rate was below average). Generally, it was felt the response rate was not so low as to raise catastrophic concerns of respondent peculiarity, or eccentricity.

3.2 Procedure

At the time of this research, the New Zealand broadcasting industry was in the control of three companies: The Radio Network (TRN), The More FM Group and RadioWorks. The consolidation of the industry has been progressive over the last five years and follows the deregulation of the industry in the early 1990s. However, the intense competition between these three radio groups may have hindered the response rate of this study, as many Sales Managers were reluctant to part with sensitive "inside information", despite assurances of anonymity.

As of April 2001, there were 156 commercial radio stations in New Zealand's 13 survey markets. As the radio surveys only include persons ten years and older, any demographic statistics on the industry are ten plus

driven. There are 2,007,300 listeners to commercial radio, making New Zealand one of the most competitive commercial broadcasting environments in the world (Research International, personal communication, April 2001).

Managers at every New Zealand commercial radio station were contacted by phone, fax, or e-mail and asked to supply the names of their sales persons. These sales persons were contacted via mail and asked to participate (Appendix 3). They were also asked to give their consent for the researcher to contact their respective sales managers to establish an objective performance ranking. Individual sales persons were ranked into two performance groups, low to average and high. This objective ranking was based on the advertising revenues written over the previous nine months. Muchinsky (2000) contends that there is always some judgemental or contextual component to appraising performance and that the sole reliance on objective numbers can be misleading. For this reason, sales revenue was the guiding criteria for performance, but subjective judgement was also applied in the following manner.

Whilst the managers we contacted were willing to assist, they were reluctant to provide detailed assessments, or rank orders of their sales staff. Most, however, were willing to identify their top most performers - as long as this could be done in a way that would protect sensitive, or valuable company information whilst at the same time avoiding unforeseen revelations that might disenfranchise, or excessively discourage those not identified as top performers. Accordingly, these managers mutually agreed to identify sales people falling into the top quintile (i.e. top 20%) as regards sales performance.

Sales managers were instructed to first delete the names of any persons who have been employed for less than nine months. This helps eliminate the performance distortions associated with fresh recruits lacking; for example, an established account list, product knowledge, or being designated a territory where the city's business communities may not be the strongest. At this point, the top 20% of the remaining team were allocated to the high performance group, providing their combined revenues equated to around 80% of the

qualified group. The remaining persons were allocated to the average/low group.

All sales participants were personally mailed a *revised* version of the NEO-FFI (Costa & McCrae, 1992), together with instruction sheet (Appendix 4). Whilst it would have been ideal to use the full NEO, the researcher felt a questionnaire comprising 240 items would greatly damage the response rate. For this reason, the shorter NEO-FFI was used including added questions to enable six sub-facets of the Big Five to be evaluated. These included: N3 (depression), N5 (Impulsiveness), E4 (Activity), E5 (Excitement Seeking), C4 (Achievement Striving) and C6 (Deliberation). The reason to include the above was investigate whether any significant differences occurred within sub-facets. This would indicate weaknesses in basing definitive differences on work performance using the short NEO-FFI. Sub-facets were chosen to represent Big Five dimensions hypothesised in the research questions. In each dimension, the researcher used sub-facets that matched attributes that may be positively, or negatively aligned with job performance as detailed in the Raymark et al original research.

Demographic information sort was: Number of years total selling experience, number of years in broadcasting sales, age, gender, education status.

Questionnaires for the high performers were printed on green paper, average to low performers on yellow paper. Reply post-paid envelopes were included. A reminder letter was sent two weeks after initial mailing. Some reminder phone calls were also made. Participants were invited to include a password should they wish feedback on their individual results. Only 8% of respondents sought feedback.

3.3 Measures

3.3.01 The PPRF

The PPRF is a job analysis inventory (Appendix 2) designed for use in making hypotheses about personality predictors of job performance. The Big Five provided the organising framework for the PPRF. Initial research by Raymark et al. (1997) resulted in identifying 12 specific sets of items (107 items in total) that represented the facets of each of the Big Five dimensions (see table 7). Responses to the 107 items were on a three-point scale: 0, *not a requirement*, 1, *helpful* and 2, *essential* for this role.

To test the reliability of the PPRF, responses from raters in the same job in the same organisation were analysed. An intraclass correlation of the average ratings was computed for each of the 12 sets for each of the four jobs. The overall intraclass correlation was then derived for each job by calculating the mean of the 12 coefficients. The average intraclass correlations were .97 for Brewery Supervisors (N=7), .89 for Production-Line Managers (N=5), .90 for Sales Representative jobs (N=5), and .85 for the Computer Programmer job (N=4). Raymark et al. suggest that these findings indicate incumbents can consistently agree on the importance of the PPRF's behavioural clusters for a job. Table 7 presents the correlations among the 12 sets and the internal consistency reliability (i.e. alpha) of each set.

As mentioned the PPRF was designed around the Big Five Taxonomy. Raymark et al. attempted to align their 12 subsets with one of the original and best-known measurements of the Big Five, the NEO PR-I (Costa & McCrae, 1992). However, correlations were not supplied in the original research article. Subsequent personal correspondence with the authors revealed that there were no correlations of the PPRF with the NEO subsets. "The correlations as outlined in Appendix 5 were based on logical arguments, and these still need to be validated." (P.H. Raymark, personal communication, May 16, 2000).

Table 8.

Correlations and Internal Consistency Reliabilities of the 12 Subsets of the PPRF (N=260)

	Sets and # of items											
	1(9)	2(11)	3(8)	4(7)	5(8)	6(9)	7(10)	8(9)	9(10)	10(9)	11(10)	12(7)
1	(.85)											
2	.65	(.84)										
3	.29	.37	(.83)									
4	.24	.42	.25	(.72)								
5	.48	.52	.18	.38	(.76)							
6	.28	.33	.41	.13	.36	(.78)						
7	.22	.32	.25	.46	.35	.19	(.72)					
8	.24	.29	.44	.19	.21	.38	.33	(.60)				
9	.23	.37	.58	.14	.20	.36	.24	.49	(.92)			
10	.34	.38	.19	.38	.56	.26	.41	.32	.17	(.78)		
11	.45	.54	.56	.29	.33	.39	. 21	.40	.50	.24	(.90)	
12	.39	.53	.59	.26	.32	.39	.22	.43	.70	.29	.68	(.88)

Note: Numbers on the diagonal are alpha coefficients; all correlations are significant at $p<.05$.
Subset Identification: 1=General Leadership. 2=Interest in Negotiation. 3=Achievement Striving. 4=Friendly Disposition. 5=Sensitivity to Others. 6=Cooperative Work Tendency. 7=Trustworthiness. 8=Work Ethic. 9=Attentiveness to Detail. 10=Emotional Stability. 11=Desire to Generate Ideas. 12=Tendency to Think Things Through
Source: Raymark et al. (1997).

3.3.02 NEO – FFI

The full NEO PI-R inventory comprises 240 items, representing 5 dimensions (the Big Five). These comprise 6 sub-facets in each dimension. Each sub-facet has 8 items. Responses to these items were on a five-point scale; 0, *strongly disagree*, 1, *disagree*, 2, *neutral*, 3, *agree*, and 4, *strongly agree*. Several of the items were reversed scored.

To minimise response burden (that may have contributed to a lack of response) the researcher used the shortened version, NEO-FFI. The NEO – FFI is a 60-item version of the main inventory, the NEO PI-R, Form S. It provides a brief and comprehensive measure of the five domains of personality. It consists of five 12-item scales that measure each of the Big

Five domains. These 12 items selected to represent each dimension of the Big Five had the highest positive or negative loading on the corresponding dimension. Correlations of .92, .90, .91, .77, and .87 for N, E, O, A, C domains respectively, compare reasonably with the full NEO PI-R. Coefficient alphas (from an employment sample, N = 1,539) were .86, .77, .73, .68, and .81 for N, E, O, A, and C respectively (Costa & McCrae, 1992).

To measure 6 of the sub-facets in full (N3 & 5, E4 & 5, C4 & 6) additional items from the NEO PI-R were added to those existing in the NEO-FFI. This lengthened the short form NEO-FFI to 98 items. In addition, to check the consistency of response behaviours within subjects, the researcher repeated two questions: item 5 was repeated as item 46 and item 69 was repeated as item 100 (refer to questionnaire, Appendix 4).

3.3.03 Data analysis

The following statistics were performed: To analyse the data of the PPRF research the researcher used a Chi-square goodness of fit test along with estimates of the within- group interrater reliability (IRR) as suggested by James et al. (1984). Descriptive statistics on the PPRF results would give little insight as this data is based on 9 SMEs rating 107 questions on a 3 point nominal scale. However, descriptive statistics are provided for the NEO data. In addition, inferential statistics on the NEO data comprised Point-Biserial and Biserial correlations in order to draw conclusions about the data and the population from which it was taken. In addition, a Point-Biserial test of significance (against zero) was conducted as suggested by Bobko (2001).

CHAPTER 4

RESULTS

4. 1 Introduction

Prior to conducting any analysis the data was checked for input errors. With the NEO-FFI data, ten percent of the respondents (n=6) were randomly selected and checked for possible input errors. Each of the six respondents answers to the NEO-FFI and demographic questions (106 in total) were re-checked against original questionnaires. Two incorrect data entries were found and corrected. Where there were missing values, on the original questionnaires, these were substituted with averages. This is acceptable practice where one, or two values are missing (Tabachnick & Fidell, 1991).

The main aim of this study was to evaluate the essential, helpful/relevant, and largely irrelevant personality attributes applicable to Radio Broadcasting Sales (via the PPRF). Also, to investigate if particular personality attributes as defined in the Big Five taxonomy, and selected facets of the Big Five, could discriminate between high and average sales performers. To examine this, three sets of analyses were conducted.

In the first set, Analysis One, data from the job analysis inventory, the PPRF was examined through an interrater reliability test (IRR), a χ^2 Goodness of Fit and scores compiled from the PPRF utilising calculations suggested by Raymark (1997). The second set of reported results, Analysis Two, was designed to test the relationship between broadcast sales performance and the Big Five dimensions of C, E and N as measured by the NEO-FFI Revised. Point-biserial and biserial correlations were used. Finally, Analysis Three tested the relationship between sub-facets of the Big Five as measured by the NEO-FFI Revised. Again, point-biserial and biserial correlations were used in addition to the Hotelling-Williams test (applied to test differences between doubly-dependent correlations).

4.2 Analysis One, The Job Analysis as Measured by the PPRF

As stated in Chapter 2, we expect the PPRF facets of: - Interest in Negotiation, General Leadership, Ambition, Friendly Disposition, General Trustworthiness, Adherence to Work Ethic and Tendency to Think Things Through, will be rated as more important/relevant to Broadcasting Sales than: -Cooperative or Collaborative Work Tendency, Sensitivity to Others, Emotional Stability, Thoroughness and Attentiveness to Details.

4.2.01 Descriptive Statistics

Table 9 show the 12 sub-scales of the PPRF together with the responses given by the SMEs. These have been categorised into those dimensions relevant and those unrelated to broadcast sales as hypothesised by the researcher.

Table 9

Results of the SMEs Job Analysis on Sub-Facets of the PPRF, Grouped as Hypothesised by the Researcher

	PPRF Dimensions Hypothesised to be Relevant to High Sales Performance							PPRF Dimensions Hypothesised to be Less Important to High Sales Performance				
	1	2	3	4	7	8	12	5	6	9	10	11
Essential for Sales	36	40	53	38	52	49	27	19	22	33	41	25
Desirable for Sales	33	44	19	24	20	25	32	38	40	44	26	59
Not Required for Sales	12	15	0	1	18	7	4	14	19	13	13	6

Subset Identification: 1=General Leadership. 2=Interest in Negotiation. 3=Ambition. 4=Friendly Disposition. 5=Sensitivity to Others. 6=Cooperative Work Tendency. 7=Trustworthiness. 8=Work Ethic. 9=Attentiveness to Detail. 10=Emotional Stability. 11=Desire to Generate Ideas. 12=Tendency to Think Things Through

4.2.02 Inferential Statistics of the PPRF

Firstly, as the PPRF was completed by nine SMEs who are purported to have in-depth knowledge of broadcasting sales, it was important to test the agreement between each in relation to the performance dimensions measured by the instrument (as the target occupation was the same for all nine SMEs). To this extent, methods were used as suggested by James, Demaree and Wolf (1984). It should be noted that IRR correlations of SMEs might be inflated under certain conditions. When comparing ratings between SMEs, their responses would be expected to have greater correlation than say the ratings of a general work force conducting a job analysis on a specific job within the said work force's organisation (Harvey, 1991). However the researcher argues that job analysis based on personality (as in the PPRF) may be more susceptible to distortion (across organisations, or radio stations), as opposed to basic knowledge and skills. In other words, rater perceptions of relevancy for particular personality dimensions would conceivably differ more across raters (compared to more concrete job requirements). Table 9 reflects the IRR for each of the 12 constructs on the PPRF job analysis instrument.

To obtain the IRR values the procedure begins with the estimator for SMEs judgements on a single PPRF item and proceeds to that for mean judgements on items contained in each set. The SMEs are viewed as a group in the statistical sense and thus the estimators are referred to as "within-group interrater reliability coefficients," or simply, IRR. For each single item, designated X_j, IRR was viewed as a function of two variances. These were (a) the observed variance of the score furnished by the SMEs on X_j, or s_{Xj}^2, and (b) the variance on X_j that would be expected in a condition of an IRR of zero. James et al. (1981) assumed that an IRR of zero would occur when all judgements on X_j were due exclusively to random measurement errors. Consequently, James et al. proposed that the variance expected on X_j when judgements are theoretically due exclusively to random measurement errors could be calculated using the equation for the variance of a rectangular or uniform distribution. This equation, $\sigma_{EU}^2 = (A^2 - 1)/12$ (Moody, Graybill, &

Boes, 1974). Note: *EU* refers to an expected error (*E)* variance based on a uniform (*U)* distribution, and *A* is the number of alternatives in the response scale (3). Thus the IRR correlation is the within-group interrater reliability for the SMEs on a single PPRF item X_j, s_{Xj}^2 is the observed variance on X_j, and σ_{EU}^2 is the variance on X_j that would be expected if all judgements were due exclusively to random measurement error (James et al., 1984).

Once the observed and error variance was calculated, this was applied to a larger formula to gain an IRR of each set of dimensions as scored by the SMEs (see James et al., 1984. p88). This multiple item estimate can only be applied if all items are "essentially parallel" indicators of the same construct as was the case within each of the 12 job analysis "dimensions" of the PPRF. Applying this method, an IRR range from .83 to .99, on the PPRF, denotes an acceptable level of agreement among the SMEs (James et al., 1984).

Table 10

Interrater Reliability of SMEs Within the Twelve PPRF Dimensions

PPRF Dimensions	IRR
Leadership	.86
Negotiation	.88
Ambition	.96
Friendliness	.88
Sensitivity/Interest to Others	.87
Cooperative Work	.91
Trust	.91
Work Ethic	.99
Attention to Detail	.83
Emotional Stability	.89
Ideas Generation	.95
Tendency to Think	.88

The SME weighted scores were calculated on a suggested formula as proposed by Raymark (Personal communication, November, 2000). Items on the PPRF were coded as follows, "Not Required" = 0; "Helpful" = 1; "Essential" = 2. 32 for the 107 items were weighted by multiplying the score

by 2. Scores were then added within each sub-set and divided by the number of items in each set, plus the number of items in the set with a scale score of 2." For example, in Set 1 (General Leadership) the sum of the scores were divided by 11 (9 items plus the 2 items that were weighted a "2"); in Set 2 (Interest in Negotiation) the sum of the scores were divided by 14 (11 items plus 3 items that were weighted a "2"). These results are shown in Table 10.

Raymark suggests accepting only those dimensions that exceeded a score of 1 as applicable to the job role. Another approach might be to limit dimensions to those significantly greater than .99, or not significantly different from 2.0. The researcher has taken the former approach. Table 11 ranks in order of importance, the dimensions of the PPRF as rated by the SMEs (using Raymark's above scoring methodology).

Table 11

Dimensions, as measured by the PPRF, Required For High Performance in Broadcasting Sales, Ranked in Order of Importance

PPRF Dimensions	SMEs Weighted Scores
1. Ambition	1.75
2. Friendly Disposition	1.60
3. Adherence to Work Ethic	1.56
4. General Trust	1.38
4 Emotional Stability	1.38
4 Tendency to think things through	1.38
5 Interest in Negotiation	1.25
5 Desire to Generate Ideas	1.25
6 Leadership	1.23
7 Attention to Detail	1.22
8 Sensitivity/Interest in Others	1.02
9 Cooperative Work	1.00

To test research hypothesis one, a χ^2 goodness of fit test was conducted against the SMEs data gathered by the PPRF. Table 12 details the obtained

and expected frequencies (i.e. frequencies that would be expected given no substantive relationship between our theoretical expectations and the ratings of the SMEs). The $\chi^2 = 102.08$, $p < .001$ indicating significant deviations between observed and expected frequencies - with the deviations from the random/normal (i.e., margin-driven) expected frequencies being in the hypothesized direction.

Table 12

Obtained and Expected Frequencies for χ^2 Goodness-of Fit

Measures	PPRF Dimensions Hypothesized to be Relevant To High Sales Performance	PPRF Dimensions Hypothesized to be Less Important to High Sales Performance	Total Responses
Essential For High Sales Performance	E = 272 O = 332	E = 128 O = 67	399
Desirable For High Sales Performance	E = 244 O = 218	E = 115 O = 141	359
Not Required For High Sales Performance	E = 67 O = 34	E = 31 O = 64	98
Total Responses	584	272	856
% of Total Responses	68%	32%	

E = Expected Frequency, O = Observed Frequency.

$\chi^2 = 102.08$***

*** $p < .001$

4.3 Analysis Two - NEO Big Five Dimensions

As mentioned in Chapter 2, we expected the estimated levels (for our sample of salespeople) on the Big Five dimensions of C and E would be positively related to membership in the high performing Broadcasting Sales group, and the dimension of N, largely unrelated to such membership.

4.3.01 Descriptive Statistics

Table 13 presents the means and standard deviations of sales persons for all of the subjects on the variables assessed within the predictor, the NEO FFI - Revised. Note, the respondent numbers in the performance groups were equally balanced, 29 in each group. This indicates that the response rate for

the high performance group was close to 100%, whilst the average to low group was around 25%. This makes sense, as the high performance group would be more conscientious.

It could be argued that sales experience may also impact on performance variables; hence the descriptive statistics for total sales and broadcast sales experience are also included.

Table 13

Means and Standard Deviations of the NEO-FFI by Variables and Performance Groups

Group	N	Maximum	Minimum	Mean	Std Deviation
High Performers					
Neuroticism (N)	29	30	6	16.10	7.57
Extraversion (E)	29	45	27	34.59	4.87
Openness (O)	29	39	17	28.97	6.06
Agreeableness (A)	29	43	19	31.03	6.07
Conscientiousness (C)	29	46	25	38.34	6.38
Avg/Low Performers					
Neuroticism (N)	29	32	4	17.52	7.66
Extraversion (E)	29	43	26	33.55	4.39
Openness (O)	29	42	12	29.28	6.37
Agreeableness (A)	29	43	17	31.93	5.78
Conscientiousness (C)	29	47	25	35.03	4.98
Total Sample					
Neuroticism (N)	58	32	4	16.81	7.58
Extraversion (E)	58	45	26	34.07	4.63
Openness (O)	58	42	12	29.12	6.16
Agreeableness (A)	58	43	17	31.48	5.89
Conscientiousness (C)	58	47	25	36.69	5.91

Obviously it was not possible to perform test/retest reliability on the data gathered. However, to test for consistency of individual responses, two of the questions in the NEO-FFI were repeated at balanced positions within the inventory. Pearson product moment correlations were then conducted. Both

of the repeated questions positively and strongly correlated; in each case, $r=.93$, $p<0.01$ and $r=.83$, $p<0.01$.

Although no hypothesis was proposed regarding the effect of general and broadcast sales experience, as it relates to sales performance, demographic data on this variable was collected as a potential contaminating co-variate. The sales experience of each of the performance groups and the total sample is shown in table 14a, 14b and 14c. Comments of how this experience may impact (if at all) on sales ability will be discussed in Chapter 5.

Table 14a

Sales Experience of High Sales Performers

	n	Maximum	Minimum	Mean	Std Deviation
General Sales Experience	28	28	1	10.79	6.88
Broadcast Sales Experience	28	28	1	7.28	5.76

Table 14b

Sales Experience of Average/Low Sales Performers

	n	Maximum	Minimum	Mean	Std Deviation
General Sales Experience	28	20	1	6.66	4.98
Broadcast Sales Experience	28	16	1	4.38	3.56

Table 14c

Total Sales Experience of Respondents

	n	Maximum	Minimum	Mean	Std Deviation
General Sales Experience	28	28	1	8.68	6.29
Broadcast Sales Experience	28	28	1	5.83	4.97

4.3.02 Inferential Statistics of The NEO-FFI

To test research hypothesis 2, that the levels (for our sample of sales people) on the Big Five dimensions of C and E would be strongly and positively related to sales performance (and the dimension of N moderately and negatively related) point-biserial correlations were calculated as suggested by Bobko (2001). Bobko states that point-biserial correlations are suitable for situations when one of the two variables is scored dichotomously (e.g., in this study, high and average/low performance groups). However, Bobko cautions that a problem arises if the dichotomous variable is actually a continuous variable that has been scored dichotomously for convenience. In the researcher's case, sales persons were classed in to the high performing group if they sold the most amount of advertising over the last 12 months, providing this put them in the top 20% of their sales team in revenue generated (although to protect employee privacy and radio station business interests, the researcher was not allowed to verify these group assignments, raising the question that these may amount to supervisor judgements). Therefore one could argue that the performance variable, as defined by dollars sold, was dichotomised by the Sales Managers, but really represents a continuous variable. As such, the researcher has calculated point-biserial and biserial calculations (where the latter estimates what the correlation would be without the artificial dichotomy) as suggested by Bobko (2001). Table 15 demonstrates these results.

Table 15

Point-Biserial and Biserial Correlations

Variable	Point-Biserial r	Biserial r
Neuroticism (N)	-.10	-.12
Extraversion (E)	.11	.15
Openness (O)	-.03	-.04
Agreeableness (A)	-.08	-.11
Conscientiousness (C)	.28*	.38**

* $p < 0.05$ (2-tailed)

** $p < 0.01$ (2-tailed)

Of the Big-Five dimensions, C had a significant positive correlation with high sales performance in both point-biserial and biserial calculations. One should note here that biserial calculations would always be greater than the corresponding value of point-biserial. This makes sense, given that artificial dichotomization implies loss of information and a reduction in the value of the point-biserial correlation (Bobko, 2001).

4.4 Analysis Three - Results of the Selected Sub-Facets of the NEO-FFI

As stated in Chapter 3, at a more detailed level, we expect that within the broad factor C, the sub-factor C4 (Achievement Striving) will be more predictive of performance group membership than sub-factor C6 (Deliberation); and that within broad factor E, sub-factor E4 (Activity) will be more predictive than sub-factor E5 (Excitement Seeking); and that within the broad factor of N, sub-factor N5 (Impulsiveness) will be more predictive than sub-factor N3 (Depression). In other words, within each broad higher order factor, there are specific lower order factors that will differ from each other - quite substantially - in their predictive power (regarding sales performance).

4.4.01 Descriptive Statistics

Table16 contains the descriptive statistics of the selected sub-facets of the NEO-FFI, categorised by high and average/low performance groups for broadcasting sales.

Table 16

Means and Standard Deviations of Selected Sub-Facets of the NEO-FFI and Sales Experience by Performance Groups and total sample

Group	N	Maximum	Minimum	Mean	Std Deviation
High Performers					
Activity (E4)	29	30	21	25.03	2.46
Excitement Seeking (E5)	29	30	11	20.34	4.73
Depression (N3)	29	20	1	7.14	3.51
Impulsiveness(N5)	29	22	12	16.79	2.87
Achievement Striving (C4)	29	24	15	20.21	2.24
Deliberation (C6)	29	26	9	16.38	3.40
Avg/Low Performers					
Activity (E4)	29	27	20	23.97	2.03
Excitement Seeking (E5)	29	29	13	20.21	4.30
Depression (N3)	29	13	1	7.00	3.36
Impulsiveness (N5)	29	23	5	17.17	4.01
Achievement Striving (C4)	29	23	14	18.76	2.44
Deliberation (C6)	29	24	8	15.90	4.25
Total Sample					
Activity (E4)	58	30	20	24.50	2.30
Excitement Seeking (E5)	58	30	11	20.28	4.48
Depression (N3)	58	20	1	7.00	3.36
Impulsiveness (N5)	58	23	5	16.98	3.46
Achievement Striving (C4)	58	24	14	19.48	2.44
Deliberation (C6)	58	26	8	16.14	3.82

4.4.02 Inferential Statistics of Selected NEO-FFI Sub-Facets

The third research hypothesis was introduced to test the researcher's expectation that sales performance correlations using the broadly defined (i.e. less distinct) Big-Five summary scores might grossly mis-represent the performance predicting power of sub-factors supposedly contained within them. Thus some specific sub-factors were measured and predictions made. Response burden concerns and negotiations with our SMEs/Supervisors led to the researcher opting against using the full long-form NEO; opting instead,

to focus on sub-factors of the Big Five likely to show substantial differences in relative predictive power (despite being within the same higher-order factor). Table 17 outlines these sub-facets and results.

Table 17.

Point-Biserial and Biserial Correlations of Selected Sub-Facets of the NEO

Variable	Point-Biserial r	Biserial r
Activity (E4)	.23	.32**
Excitement Seeking (E5)	.01	.01
Depression (N3)	.04	.06
Impulsiveness(N5)	-.05	-.07
Achievement Striving (C4)	.30*	.41**
Deliberation (C6)	.06	.08

* $p < 0.05$ (2-tailed)

** $p < 0.01$ (2-tailed)

Within the selected sub-facets of the Big-Five, Achievement Striving (C4) correlated significantly with high broadcasting sales performance. However, when tested against the less stringent biserial correlation, the sub-facet associated with E, Activity (E4), also significantly correlated. However, in the above summations the correlations have a built-in dependence because they are computed applying the same instrument across the same sample of individuals. Plus, the correlations of these sub-facets are not independent because they are computed using a common variable, sales performance (Bobko, 2001). This makes the sampling distribution needed for significance tests of these comparisons more difficult to derive. Given the built-in double dependence, the researcher could not assume the covariance term is zero. To correct for this dependence, Bobko recommends conducting the Hotelling-Williams test (Hotelling, 1940; Williams, 1959 both cited in Bobko, 2001). The statistical outcomes of this test on the three sub-facet correlations were:

E4&5: $t = 3.666$

C6&4: $t = 2.508$

N5&3: $t = 0.100$

The critical *t* value at $p = .01$ is approximately 2.660, at $p = .05$ it is approximately 2.000. Therefore it can be confidently accepted that the sub-facet C4 (Achievement Striving) is a better predictor of broadcast sales performance than C6 (Deliberation), significant at $p = .05$: and that E4 (Activity) is a better predictor of broadcast sales performance than E5 (Excitement seeking), significant at $p = .01$.

CHAPTER 5

DISCUSSION

5.1 The PPRF

The researcher hypothesised that a number of PPRF sub-sets would be more predictive of sales performance than others, namely, Interest in Negotiation, General Leadership, Ambition, Friendly Disposition, General Trustworthiness, Adherence to work Ethic and Emotional Stability. The descriptive statistics (Table 9) must be read with caution as these are un-weighted. Per the PPRF developers, the weighted scores (Table 11) are more appropriate for discussion purposes.

Within the frame-work of the PPRF dimensions, the sub-sets of Ambition, Friendly Disposition, and Adherence to Work Ethic were clearly defined by the SMEs, and the researcher, as the most important personality dimensions required for high performance in broadcasting sales. Although not validated, Raymark et al. (1997), using professional judgement, postulated that two of the above PPRF sub-sets (Ambition, and Adherence to Work Ethic) correlate with the Big Five dimension of C (see appendix 5). Where as, Friendly Disposition fits more with the Big Five sub-facet of A. Given that this studies data strongly and positively correlates C with high sales performance, helps to validate the PPRF as an instrument that may be helpful in measuring job related personality traits in relationship to broadcasting sales.

General Trust and Emotional Stability were ranked next in importance. Once again, referring to Appendix 3, General Trust is related to C, in particular C6 that was also significantly correlated with sales performance. whilst Emotional Stability was associated with N. Note that the label for this PPRF sub-set is also used to describe N by some FFM theorists (Digman, 1990). As with C above, although not significant, N was, as expected, negatively correlated to broadcast sales (-.12). This adds further weight to the beneficial usage of the PPRF as a job analysis tool.

In line with the researcher's prediction, the χ^2 goodness of fit test (See Table 12) supported the first hypothesis: specifically, in the "Effectively Unrelated to Sales" category, the number of "Not Required" ratings was more than double what was expected, had the ratings had no relationship to the "Sales Relatedness" of the job analysis items (or, specifically, what would have been expected had the ratings had no relation to the "Sales Relatedness" of the associated portion of the job content domain targeted by the job analysis items). Conversely, in the "Sales Related" category, observed "Not Required" ratings were about half of what would be expected given the sort of nil effect just mentioned. Likewise, in the "Sales Related" category, those PPRF sub-sets hypothesised as essential to broadcasting sales performance were about a third more than what was expected given nil effect (i.e., no relation).

In summary, the researcher's hypothesis and the ratings of the SMEs were in agreement with the exception of Tendency to Work Things Through, a personality trait indicated by the SMEs as essential, or at least desirable.

As Bolton (1985) states, it is reasonable to expect that different personality traits are important within different occupational contexts. The current study's findings, in respect of broadcasting sales, suggests that the PPRF is an effective instrument for isolating specific personality traits for the purposes of job selection. The strong agreement of desirable personality traits applicable to broadcasting sales among SMEs (see results of IRR, Table 10) and the χ^2 goodness of fit test adds weight to Tett et al's. (1991) contention that personality testing for job selection is valid if one first identifies the personality traits required for superior job performance.

5.1.01 Limitation of the PPRF

The PPRF was designed as a guide to help develop hypotheses. The results of the instrument require professional judgment in order to get the most out of it -- i.e., its developers suggest that the numbers that result from the PPRF should not be taken literally (as precise concrete objective measures of job requirements). The PPRF's product is intended to be a set of

hypotheses for validation work (Raymark, personal communication, February, 2001).

Raymark also notes that the resulting set scores only provide very rough estimates of the importance of each dimension; for example, "Adherence to Work Ethic" had a slightly higher score than "General Trust", this does not necessarily mean that "Adherence to Work Ethic" is more important for performing the job; the better way to phrase the issue is whether both or neither of these are supportable hypotheses. The same issue applies when discussing the reasons for weighting specific questions within each sub-set. They are merely included in order to enhance the quality of the estimates - not necessarily to provide fine discriminations about which personality variables are *most* important (Raymark, personal communication, February 20, 2001).

Raymark highlights an additional problem (that again requires some professional judgment): specifically, care should be exercised when selecting the PPRF dimension(s) with the lowest rating(s) (for validation purposes). It is possible that a very low score could indicate a negative predictor. For example, Cooperative Work may not be considered important for performing the job of a computer programmer (and hence, it may have a low score), but this same sub-set may have a significant negative relationship with performance on that job (the best computer programmers may be low in Cooperative Work). In short, before selecting a low scoring dimension for comparison purposes, one should give some thought to making sure the dimension does not have a negative relationship with performance.

The above can be related to this current study. The PPRF dimensions of Sensitivity to Others and Cooperative Work ranked as *not required* for sales performance. However it may be that these dimensions have a negative relationship, in that sales people who are too cooperative (or sensitive to others' feelings) may have difficulty in "closing" a sale, or adhering to an advertised cost of the service/product. Future research should investigate the possibility that high applicant or incumbent scores on these aspects of

personality predict costly financial compromises in sales closures for these salespeople.

Finally, Robinson (1993) has drawn attention to the possibility of complex rather than linear relationships between personality and job performance. For example, the influence personality has on job performance at entry-level may change as the incumbent's career progresses either horizontally or vertically.

5.2 The NEO-FFM - The Broad Big Five Dimensions

The results of this study are in line with numerous other studies of the job performance validity of the FFM (Anderson & Viswesvaran, 1998; Barrick & Mount, 1991; Ones et al., 1993; Salado, 1997; Tett et al., 1991). The current study significantly correlated the broad dimension of C with broadcast sales performance. The point-biserial and biserial correlations mirror those of other studies, namely Barrick and Mount (1995) who revised their original correlation of C to job performance (.32). The average significant correlation that was found in this current study was .33. This partially supports the researcher's second hypothesis that C is a valid predictor of job performance, specifically broadcasting sales performance. This is in concert with other studies, namely Vinchur et al. (1998), were C (and some of its sub-facets) were positively correlated to sales performance and ability.

However, whilst E was positively correlated at .15, identical to Black's (2000) study and not dissimilar to Barrick and Mount's (1991) meta-analysis (.20), it was not statistically significant. Likewise, the current study found that N negatively correlated to broadcast sales performance at -.12, but again this was not statistically significant (possibly for want of a larger sample). It is of note that this correlation mirrored the results of sales performance in the meta-analysis by Vinchur et al. (1998) and was similar to Black's (2000) results of .-17.

5.2.01 Limitations for using the NEO-FFM

Black's (2000) study into the utility of the FFM for police recruitment highlighted the danger of relying on (for selection) the broad five NEO

dimensions, or combinations of them. Whilst C (.27), E (.15) and N (-.17) were significantly correlated (in the directions expected) in Black's study, selected sub-facets within *all* five dimensions had some very significant predictive power. This same notion was supported in the current study. Despite the strong support for the dimension of C and to a lesser and non-significant degree, E and N, reliance on these broad dimensions for predicting job performance is probably ill-advised. Certain roles may require (or not require) acceptable scores in specific sub-dimensions of *all* of the NEOs broad five dimensions. Hiring managers, aiming to align applicants to specific job roles, will need to be cognisant of the narrower personality attributes required as they relate to high performance. The researcher preliminarily tested this assumption in the third research hypothesis.

5.3 Selected Sub-Facets of the NEO-FFM

The third research hypothesis rested on the premise (Malloy & Kenny, 1986) that the more narrow and limited the trait, the better behaviour predictor it is likely to be. In other words, the third research hypothesis rested on the premise that the broadly defined (i.e. less distinct) Big Five summary scores would be relatively weak predictors; hence the researcher choose to measure and make predictions on some specific sub-facets (6). If would have been ideal to test all the sub-facets using the full NEO PI-R. However, this instrument contains 240 questions. As mentioned earlier, It was felt the response burden created by the length of this instrument would have had a catastrophic effect on response rate.

The results supported the researcher's third hypothesis in two of the three dimensions tested. This was strengthened by the results of the Hotelling-Williams test. Firstly, within the broad dimension of E, the sub-facet, Activity (E4) was found to positively and significantly correlate (.32) with broadcast sales performance as opposed to the sub-facet of Excitement Seeking (E5) .01. This is understandable when one looks at the NEO definitions for Excitement Seeking (pleasure seeking, handsome, spunky and clever); it is

difficult to accept how this sub-facet would differentiate sales performance. Indeed, it didn't.

On the other hand, Activity (E4), defined by the NEO as energetic, determined, enthusiastic, and aggressive are attributes that can be linked to the PPRF sub-set of Ambition. This trait is already supported as necessary (by the SMEs) for sales performance. Likewise, Hogan (1992) and Vinchur et al. (1998) also found support for sales performance prediction within the dimension of Potency (a sub-dimension of E and defined as energy/impact). This is closely correlated with Activity and adds support to this sub-facet's importance to broadcast sales performance.

Secondly, within the broad dimension of C, Achievement Striving (C4) was hypothesised to positively predict sales performance stronger than Deliberation (C6). This was supported with a significant correlation of .41, whilst the later was not significant at .08. This is in line with Vinchur et al's. (1998) meta-analysis of sales performance where they found the trait of Achievement a promising predictor of both subjective and objective sales performance. Once again it makes sense that sales people who continually strive to achieve will be successful, however those who have a deliberate nature may miss opportunities through being too slow and indecisive.

Finally, the third pair of sub-facets selected from the broad dimension of N was not supported as a predictor of sales success. The researcher's hypothesis that Depression (N3) would be more negatively correlated to sales performance than Impulsiveness (N5). The findings in this current study were effectively nil. Related findings from Barrick and Mount (1991) were similarly small (i.e., on the order of .08). More disturbingly, the current findings were vastly different from Tett et al. (1991) finding a negative correlation of -.22 for depression in relation to general job performance. It must be pointed out that their meta-analysis covered a mixture of occupations.

In summary, the current research adds weight to the argument that reliance on broad dimensions is dangerous. Whilst including all sub-facets may have highlighted other significant predictive sub-facets, as was the case with Black's (2000) research, the three pairs of sub-facets from the three

higher-order dimensions demonstrated the need to take in account all sub-facets. It is also important to align these, prior to testing, with the respective job role. The current research suggests the PPRF may be of benefit here.

5.4 Experience Verses Ability

Whilst no specific hypothesis was made, data was collected on the number of total and broadcast sales experience years each respondent had. Table 13a and b demonstrate than high performers have more sales experience in total (close to 11 years on average, verses about 6.5 for average to low performers) with high performers having around 68% (3 years) more broadcast sales experience that average to low performers. The researcher argues that the correlation of experience and performance could lead to a dangerous selection criterion.

In the broadcasting industry as with most, sales positions, salespersons have set account lists or territories. This list, or territory, is usually built from a small base and established over time. This process is a combination of a base set of accounts, given at commencement of employment, combined with prospecting and relationship building. It goes without saying that the longer serving may have a better and more stable base of clients than a newer recruit and therefore a lesser need of "salesmanship" to maintain targets. In other words, the established salesperson may in fact become an account manager as opposed to an aggressive seeker of new business. This may have ramifications on the objective criteria for rating sales performance, i.e. a new recruit may have the attributes of high performance, but due to the lack of opportunities (i.e., enough marketing spending among businesses, or size of initial account list) may be perceived as an average or low performer in the first instance.

5.5 Limitations and Cautions

In retrospect there are several areas were the research would benefit from a revision of the methodology and instruments used. These are detailed below, although not necessarily in order of importance.

1. The analysis of personality as it relates to specific job roles has been given considerable voice. However, instruments (job analysis tools) to measure these traits are few (the researcher found only two, the PPRF and D5D) and it appears these are still in their infancy. As Raymark conveyed (Personal communication, February, 2001) -- the PPRF, as a job analysis instrument, is best used for helping to develop hypotheses. This is supported by the fact that no validation studies have been done on the correlations between the PPRF sub-sets and the 30 sub-facets of the Big Five. Raymark used professional judgement in aligning these constructs. As stated above, the literature (Motowidlo et al., 1997) substantiates the use of personality as a predictor of contextual performance; it is considerably more controversial to apply personality tests in selection decisions -- especially as the principal selection hurdle. The hiring manager must validate the specific personality traits applicable to the job role in question and subsequently validate the appropriate measurement and selection system (Robertson, 1993).
2. The criteria for allocating salespersons into high and average/low performance groups could also be open to conjecture. Whilst the researcher attempted to use an objective measure, this lacked scrutiny due to ethical constraints and one could construe or conclude that the allocation was largely subjective. There is also the debate as to whether performance would differentiate between market size (i.e. would an archetypal high performer in the Auckland market have the same personality traits as an archetypal high performer in Nelson?) A half dozen protocols (for this performance categorisation) might need to be applied in future research -- rater or supervisor consistencies across these protocols might suggest the path to a more refined criterion DV (while still accommodating managements' desire for employee privacy, ego protection and the guarding of "business secrets").

3. Using the shortened version of the NEO also placed constraints on the research outcomes. It would have been ideal to understand if any other NEO sub-facets were predictive of performance as Black (2000) found in his study of New Zealand Police recruits. In the end the shortened version was used to avoid extremely low response rates. Using the six sub-facets of the NEO served to demonstrate that there are significant differences *within* each broad dimension of the NEO. For example, whilst C, E and N may be reasonable predictors of overall job performance, facets within each would be more predictive of performance than others within specific job roles (e.g., whilst C was a significant predictor of broadcast sales performance, the sub-facet of C6 has no significant correlation with Sales Performance but C4 did. Also, these distinctions were supported by Hotelling-Williams test outcomes).
4. In hindsight, the researcher felt a more contemporary personality instrument with attributes specifically designed for workplace selection may have been more helpful. For example, the Rembrandt Portrait (Santo, 1997). Having the NEO instrument computer based would have also assisted the respondents as well as the researcher with respect to compiling scores. However, as a compromise, it was important to at least have a job analysis tool (PPRF) and a personality assessment inventory that had "linking" attributes (NEO). Although, once again this "link" between the PPRF and the NEO has not been validated and relies on the professional judgement of the PPRF developers.
5. The results could have been influenced by restriction of range (Cook, 1998) in that poor performers may last in the job for say three to six months. This may mean, that by default, the definition of high performance may have been different than say the recognised "80/20" distribution of work performance (Zwell, 2000). In other words, our average/low performers may have had more in common with the high performance group than these category labels suggest. This may

have impacted on the current studies results in respect of the dimension N and it two sub-facets, Depression and Impulsiveness. However, some of the significant findings in our study (which is largely in concert with the literature) would seem to cast doubt on this.

5.6 Further Research Considerations

The researcher suggests further research is needed into the development of the PPRF. It has some sound foundations, but lacks a validated link to a personality instrument that can define the required personality attributes of the candidate as they relate to a specific job role. Raymark et al. (1997) based the PPRF sub-set on the FFM taxonomy and as such they suggested the instrument most closely relate to it -- and thus, the NEO, could conceivably be used to assess and select upon job applicant personalities.

If one is to accept the Big Five taxonomy (as conveyed by the NEO) as the most currently efficacious model of personality, then one is tempted to accept that there are approximately 30 facets to a person's personality make-up. This begs the question whether the twelve personality sub-sets in the PPRF are enough to sufficiently (yet efficaciously) cover all personality-driven worker job-fit considerations? Borman, McKee and Schneider (1995) have provided a similar taxomony of 7 (not 5) higher-order constructs divided into a further 17 lower-order constructs. Raymark et al. (1997) have suggested that their taxonomy may offer additional dimensions beyond the 12 currently outlined in the PPRF.

5.7 Conclusion

In its infancy, this research project set out to identify the personality attributes that discriminate between high and average/low broadcasting sales representatives. However, it soon became apparent that it was also necessary to attempt to identify, through a job analysis instrument, what the industry experts believed the appropriate personality requirements were for sales success. The outcomes of these two approaches have important advantages to the selection process. That is, 1) identify the personality traits

needed in the role, then 2) measure candidates for a potential fit. The problem with this scenario is that this process would not necessarily predict high sales performance. Hence the need to also identify the personality attributes of successful (high performers) sales persons. If there is a match between the personality attributes of the high performers and the personality attributes required for the roll the hiring manager can be confident of the job analysis tool and the personality instrument (If performance in the workplace is later validated).

In this current study there was some support to indicate the benefit of the PPRF as a job analysis tool to identify a personality fit with the broadcasting sales role. Coupled with this, the personality attributes of high sales performers were in agreement with past studies. There was also support, once again aligned with past studies, that the Big Five dimensions are too broad for valid sales performance predictions. This indicates a need to identify narrower personality traits (through job analysis and psychometric modelling of job incumbents) to further increase the predictive powers of personality assessments. It would also add further support for the use of personality as a beneficial selection tool, thus giving incremental validity to the classic selection trio of CVs, structured interviews and referencing.

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Appendix 1

The five robust dimensions of personality from Fiske (1949) to the present

Author	Factor I	factor II	Factor III	Factor IV	Factor V
Fiske (1949)	social adaptability	conformity	will to achieve*	emotional control	inquiring intellect
Eyserick (1970)	extraversion	----------P s y c h o t i c i s m----------		neuroticism	
Tupes & Christal (1961)	surgency	agreeableness	dependability	emotionality	culture
Norman (1963)	surgency	agreeableness	conscientiousness	emotional	culture
Borgatta (1964)	assertiveness	likeability	task interest	emotionality	intelligence
Cattell (1957)	exvia	corterlia	superego strength	anxiety	intelligence
Guilford (1975)	social activity	paranoid disposition	thinking introversion	emotional stability	
Digman (1988)	extraversion	friendly compliance	will to achieve	neuroticism	intellect
Hogan (1986)	sociability & ambition	likeability	prudence	adjustment	intellectance
Costa & McCrae (1985)	extraversion	agreeableness	conscientiousness	neuroticism	openness
Peabody & Goldberg (1989)	power	love	work	affect	intellect
Buss & Plomin (1984)	activity	sociability	impulsivity	emotionality	
Tellegen (1985)	positive emotionality		constraint	negative emotionality	
Lorr (1986)	interpersonal involvement	level of socialization	self-control	emotional stability	independent

*Not in the original analysis but noted in a re-analysis by Digman & Takemoto-Chock (1981).

Source: Digman, 1990

PERSONALITY - RELATED POSITION REQUIREMENTS FORM: AN INVENTORY OF GENERAL POSITIONS REQUIREMENTS

Job or position_____ Date_____

Was this form completed by the incumbent whose position is described, by the incumbent's supervisor, or by a panel of incumbents? [check and give name(s)]:

- (Supervisor)_____
- (Incumbent)_____
- (Panel) _____ _____

_____ _____

_____ _____

This inventory is a list of statements used to describe jobs or individual positions. It is intended to be a supplement to more detailed and specific job analysis. It is an inventory of "general" position requirements. These positions requirements are general in that they are things most people can do; most of them can be done without special training or unique abilities. Even so, some of them are things that can, if done well, add to success or effectiveness in the position or job. Some of them may be things that should be left for others to do - not part of this position's requirements.

Each item in this inventory begins with the words, "Effective performance in this position requires the person in it to...." Each item is one way to finish the sentence. The finished sentences describe things some people, on some jobs, should do. An item may be true for the position or job being described, or it may not be.

There are 19 sets of items. The items included in a set are intended to describe somewhat similar positions requirements.

For each item, decide which of these statements best describes the accuracy of the item for the position being analyzed:

- Doing this is *not a requirement* for this position (Not Required)
- Doing his *helps* one perform successfully in this position (Helpful)
- Doing this is *essential* for successful performance in this position (Essential)

Show which of these describes the importance of the statement for your position by placing a check mark in the box under "Not Required," "Helpful," or "Essential."

[Go to next page]

EFFECTIVE PERFORMANCE IN THIS POSITION REQUIRES THE PERSON TO:		Not Required	Helpful	Essential
	Set 1			
1.	lead group activities through exercise of power or authority.	☐	☐	☐
2.	take control in group situations.	☐	☐	☐
3.	initiate change within the person's work group or areas to enhance productivity or performance.	☐	☐	☐
4.	motivate people to accept change.	☐	☐	☐
5.	motivate others to perform effectively.	☐	☐	☐
6.	persuade co-workers or subordinates to take actions (that at first they may not want to take) to maintain work effectiveness.	☐	☐	☐
7.	take charge in unusual or emergency situations.	☐	☐	☐
8.	delegate to others the authority to get something done.	☐	☐	☐
9.	make decisions when needed.	☐	☐	☐
	Set 2			
10.	negotiate on behalf of the work unit for a fair share of organizational resources.	☐	☐	☐
11.	help people in work groups settle interpersonal conflicts that interfere with group functioning.	☐	☐	☐
12.	help settle work-related problems, complaints, or disputes among employees or organizational units.	☐	☐	☐
13.	mediate and resolve disputes at individual, group, or organizational levels.	☐	☐	☐
14.	negotiate with people within the organization to achieve a consensus on a proposed action.	☐	☐	☐
15.	mediate conflict situations without taking sides.	☐	☐	☐
16.	compromise to achieve organizational goals, even at a cost of personal or work unit advantage.	☐	☐	☐
17.	settle disputes among subordinates or coworkers through negotiations and compromise.	☐	☐	☐

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EFFECTIVE PERFORMANCE IN THIS POSITION REQUIRES THE PERSON TO:		Not Required	Helpful	Essential
18.	work with dissatisfied customers or clients to achieve a mutually agreeable solution.	☐	☐	☐
19.	negotiate with people outside the organization to gain something of value to the organization.	☐	☐	☐
20.	negotiate with people outside the organization to settle conflict on behalf of the organization through agreement, synthesis, or compromise.	☐	☐	☐
	Set 3			
21.	work beyond established or ordinary work period to perfect services or products.	☐	☐	☐
22.	work to excel rather than work to perform assigned tasks.	☐	☐	☐
23.	try always to do the best possible work, not settling for work that is merely "good enough."	☐	☐	☐
24.	find ways to excel by improving the way work is done.	☐	☐	☐
25.	improve one's performance beyond that of the competition by analyzing prior mistakes or problems.	☐	☐	☐
26.	persevere in the pursuit of his or her own work goals even when unsuccessful.	☐	☐	☐
27.	establish and meet challenging personal deadlines for reports or other work products.	☐	☐	☐
28.	seek challenging tasks.	☐	☐	☐
	Set 4			
29.	interact with others in social situations where the person is representing the organization.	☐	☐	☐
30.	represent and promote the organization in social contacts away from work.	☐	☐	☐
31.	arrange and host work-related social activities.	☐	☐	☐
32.	attract new clients or customers through friendly interactions.	☐	☐	☐

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EFFECTIVE PERFORMANCE IN THIS POSITION REQUIRES THE PERSON TO:		Not Required	Helpful	Essential
33.	interact with clients, customers, or other employees.	☐	☐	☐
34.	start conversations with strangers easily.	☐	☐	☐
35.	interact with others in a courteous, friendly manner.	☐	☐	☐
	Set 5			
36.	listen attentively to the work-related problems of others.	☐	☐	☐
37.	give constructive criticisms tactfully.	☐	☐	☐
38.	deal gently with the feelings of others.	☐	☐	☐
39.	work with dissatisfied customers or clients.	☐	☐	☐
40.	help, advise, and encourage people who are new to the organization or to a particular position in it.	☐	☐	☐
41.	be considerate when duties lead to physical or emotional pain or discomfort of others (e.g., during physical therapy, giving shots, giving notice of termination, etc.).	☐	☐	☐
42.	listen attentively to the family or emotional problems of people seen in the course of one's work (e.g., clients, institutional residents, etc.).	☐	☐	☐
43.	take the time needed to provide tender loving care for children, nursing home residents, or others who cannot help themselves.	☐	☐	☐
	Set 6			
44.	work in pairs or small groups where each person's work is dependent on or influenced by the work of others.	☐	☐	☐
45.	work as part of an interacting work group.	☐	☐	☐
46.	work with one or more co-workers to complete assigned tasks.	☐	☐	☐
47.	collaborate with other employees to achieve goals as a group.	☐	☐	☐

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EFFECTIVE PERFORMANCE IN THIS POSITION REQUIRES THE PERSON TO:		Not Required	Helpful	Essential
48.	help co-workers solve work-related problems or reach common goals.	☐	☐	☐
49.	provide assistance to clients or customers throughout the work day.	☐	☐	☐
50.	assist others when needed, even when some personal sacrifice is involved.	☐	☐	☐
51.	help find solutions for the work-related problems of other employees or clients.	☐	☐	☐
52.	voluntarily assist co-workers with their work when the person's own workload permits.	☐	☐	☐
	Set 7			
53.	avoid temptations inherent in the job for behavior that breaches ethical standards of the organization and/or industry.	☐	☐	☐
54.	refuse to share or release confidential information.	☐	☐	☐
55.	make commitments and follow through on them.	☐	☐	☐
56.	keep one's word about doing things, even when it is inconvenient or unpleasant to do so.	☐	☐	☐
57.	have access to confidential information.	☐	☐	☐
58.	deal honestly with customers, patients, clients, etc.	☐	☐	☐
59.	inventory, store, or otherwise safeguard the property of others.	☐	☐	☐
60.	manage large sums of money on behalf of the organization.	☐	☐	☐
61.	have access to merchandise in storeroom or warehouse.	☐	☐	☐
62.	receive or disburse funds in cash or by check.	☐	☐	☐

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EFFECTIVE PERFORMANCE IN THIS POSITION REQUIRES THE PERSON TO:		Not Required	Helpful	Essential
	Set 8			
63.	see things that need to be done and do them without waiting for instructions.	☐	☐	☐
64.	work until task is done rather than stopping at quitting time.	☐	☐	☐
65.	meet specified deadlines.	☐	☐	☐
66.	arrive at appointment on time or ahead of time.	☐	☐	☐
67.	work effectively and consistently, with little or no supervision.	☐	☐	☐
68.	follow instructions or orders even when disagreeing with them.	☐	☐	☐
69.	work in personal isolation for long periods of time.	☐	☐	☐
70.	follow established work schedules and procedures.	☐	☐	☐
71.	work under conditions that may be physically uncomfortable.	☐	☐	☐
	Set 9			
72.	examine all aspects of written reports to be sure that nothing has been omitted.	☐	☐	☐
73.	inspect his or her own work (or the work of coworkers or subordinates) carefully and in detail.	☐	☐	☐
74.	be a stickler for detail in graphics, proofreading, planning, or other job activities.	☐	☐	☐
75.	remain attentive to details over extended periods of time.	☐	☐	☐
76.	attend to details in working, or in planning work, to minimize glitches.	☐	☐	☐
77.	study all detailed aspects of projects to understand them fully.	☐	☐	☐
78.	pay close attention to detailed specifications.	☐	☐	☐
79.	attend to all aspects of projects to be sure they are completed.	☐	☐	☐
80.	review all relevant information about previous projects to be sure that planning for new ones considers important prior experiences.	☐	☐	☐
81.	give close attention to every facet of duties of the position.	☐	☐	☐

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EFFECTIVE PERFORMANCE IN THIS POSITION REQUIRES THE PERSON TO:		Not Required	Helpful	Essential
	Set 10			
82.	adapt easily to changes in work procedures.	☐	☐	☐
83.	keep cool when confronted with conflicts.	☐	☐	☐
84.	accept unplanned changes to work schedules or priorities.	☐	☐	☐
85.	work in potentially stressful situations without feeling stressed.	☐	☐	☐
86.	remain calm when questioned, criticized, or confronted by clients, customers, coworkers, or others in the organization.	☐	☐	☐
87.	work under conditions that are potentially emotionally stressful.	☐	☐	☐
88.	stay cool in responding to potentially dangerous situations.	☐	☐	☐
89.	work in environments where people are capable of violence, where even violent deaths may be anticipated.	☐	☐	☐
90.	remain calm in a crisis situation.	☐	☐	☐
	Set 11			
91.	present unconventional ways to do things that decrease costs or improve work effectiveness.	☐	☐	☐
92.	help find solutions for the work problems of other employees or clients.	☐	☐	☐
93.	develop innovative approaches to old everyday problems.	☐	☐	☐
94.	suggest alternative conclusions when presented with results that seem to suggest only one possible conclusion.	☐	☐	☐
95.	develop unusual or unique approaches to working with others.	☐	☐	☐
96.	develop new ideas.	☐	☐	☐
97.	suggest new areas of expansion of the organization's products or services.	☐	☐	☐
98.	suggest new products, product lines, or new types of services.	☐	☐	☐
99.	find ways to improve the way work is done.	☐	☐	☐
100.	suggest creative or original ideas.	☐	☐	☐

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EFFECTIVE PERFORMANCE IN THIS POSITION REQUIRES THE PERSON TO:		Not Required	Helpful	Essential
	Set 12			
101.	solve complex problems one step at a time.	☐	☐	☐
102.	analyze past mistakes when faced with similar problems.	☐	☐	☐
103.	critically evaluate information presented to support a proposed decision or course of action.	☐	☐	☐
104.	identify and evaluate options before taking action.	☐	☐	☐
105.	solicit and consider differing options or points of view before making a decision.	☐	☐	☐
106.	make decisions or take actions only after considering their long term implications.	☐	☐	☐
107.	base decisions on facts, logic, experience, and/or intuition.	☐	☐	☐

Appendix 3

INFORMATION SHEET

My name is Rob McKay. I am a post-graduate student at the School of Psychology, Massey University, Albany Campus. As part of my thesis to complete my Masters Degree, I am seeking your help and would like to invite your sales team to partake in my research project. I am researching the personality attributes of broadcasting sales executives in relation to overall sales performance. This information will contribute a radio perspective to the large scientific base that links individual personality to job performance.
The research is in two parts: firstly, a group of the industries top sales personnel (management, consultants, clients and sales executives) completed a questionnaire to highlight what personality attributes they considered were needed to succeed in broadcasting sales. Secondly, current sales personnel, in your team, will be invited to complete a *confidential* personality profile. This will highlight any differences between what the industry perceives as required personality traits to succeed in sales, and those of actual sales executives. It will also assess whether personality traits can discriminate between levels of sales performance and clarify the value of using personality profiling within the employment selection process.

I would like to ask you to supply me with the names of your sales people. I will then mail them a short questionnaire. To make this research meaningful, can I ask you to grade the team into two groups based on the total dollar sales written over the last 9-12 months (not your personal rating), this is VERY IMPORTANT.
***Group one**: Please list the top 20% of your team, those who have billed the most of the last 9-12 months. These people are considered to be your top performers.*
***Group two**: Please list the average/low performers (probably about half of the team), base on billings over the last 9-12 months.*
***Please note**: Exclude any person who has not been employed for more 9 months,*

A questionnaire, printed on the colour matching one of the two groups will be sent to each sales person, along with return post-paid envelop. No other person will be privy to the status of each colour. Completion of this questionnaire will take approximately 25 minutes. No names will appear on the questionnaire, so there will be *complete anonymity as to station and salesperson's identity* when it is returned to me. However, should staff be interested in personal feedback at the completion of the research, they can include a "password" in the space at the bottom of the questionnaire. Questionnaires will be kept until 30th January. If I have no contact for feedback within that time frame, questionnaires will be destroyed.

- Participation in the research is voluntary.
- There's the right to withdraw at anytime up until mailing of questionnaire.
- One may decline from answering any of the questions.
- Participants may ask questions about the research at any time.
- Participants have the right to seek any information concerning the results of the research.

Now the pay-off - At completion of the research, a summary of the overall findings will be available to you. I'm sure you will find the results indispensable for your future selection process. Completed results will appear in a published thesis and follow-up academic papers, also it will form part of my presentation on employment selection at the next RBA conference. **I repeat, no individual station or person's results will be reported. All person's & stations are anonymous. Each person will receive full instructions like the above.** If you have any questions please do not hesitate to contact me on 09 489 7029 (home), or 09 414 6030 (office). Can you please email me the two groups of names at mckay@voyager.co.nz I will then mail out individual questionnaires. I look forward to your input and thank-you for giving my project consideration. I appreciate it.

Appendix 4

NEO

Five-Factor Inventory

Form S

Paul T. Costa, Jr., Ph.D., and Robert R. McCrae, Ph.D.

Instructions

Write only where indicated. Carefully read all of the instructions before beginning. This questionnaire contains 100 statements (And 5 demographic question). Read each statement carefully. For each statement *circle* the response that *best* represents *your* opinion. Please answer all questions

Circle **SD** if ***you strongly disagree*** or the statement is definitely false.

Circle **D** if ***you disagree*** or the statement is mostly false.

Circle **N** if ***you are neutral*** on the statement, you cannot decide, or the statement is about equally true and false.

Circle **A** if ***you agree*** or the statement is mostly true.

Circle **SA** if ***you strongly agree*** or the statement is definitely true.

For example, if *you strongly disagree* or believe that a statement is definitely false, you would circle **SD** for that statement.

Example	**SD**	**D**	**N**	**A**	**SA**

Fill in only *one* response for each statement. Respond to all of the statements, making sure that you fill in the correct response. DO NOT ERASE! If you need to change an answer, make an "X" through the incorrect response and then circle the correct response.

TURN OVER THIS PAGE TO BEGIN

The NEO Five-Factor Inventory Profile: Form S (Revised Short Form)

1. I am not a worrier. SD D N A SA
2. I like to have a lot of people around me. SD D N A SA
3. I don't like to waste my time daydreaming. SD D N A SA
4. I try to be courteous to everyone 1 meet. SD D N A SA
5. I keep my belongings clean and neat. SD D N A SA

6. I often feel inferior to others. SD D N A SA
7. I laugh easily. SD D N A SA
8. Once I find the right way to do something, I stick to it. SD D N A SA
9. I often get into arguments with my family and co-workers. SD D N A SA
10. I'm pretty good about pacing myself so as to get things done on time. SD D N A SA

11. When I'm under a great deal of stress, sometimes I feel like I'm going to pieces. SD D N A SA
12. I don't consider myself especially "light-hearted" SD D N A SA
13. I am intrigued by the patterns 1 find in art and nature. SD D N A SA
14. Some people think I'm selfish and egotistical. SD D N A SA
15. I am not a very methodical person. SD D N A SA

16. I rarely feel lonely or blue. SD D N A SA
17. I really enjoy talking to people. SD D N A SA
18. I believe letting students hear controversial speakers can only confuse and mislead them. SD D N A SA
19. I would rather co-operate with others than compete with them. SD D N A SA
20. I try to perform all the tasks assigned to me conscientiously. SD D N A SA

21. I often feel tense and jittery. SD D N A SA
22. I like to be where the action is. SD D N A SA
23. Poetry has little or no effect on me. SD D N A SA
24. I tend to be cynical and sceptical of others' intentions. SD D N A SA
25. I have a clear set of goals and work toward them in an orderly fashion. SD D N A SA

26. Sometimes I feel completely worthless. SD D N A SA
27. I usually prefer to do things alone. SD D N A SA
28. I often try new and foreign foods. SD D N A SA
29. I believe that most people will take advantage of you if you let them. SD D N A SA
30. I waste a lot of time before settling down to work. SD D N A SA

31. I rarely feel fearful or anxious. SD D N A SA
32. I often feel as if I'm -bursting with energy. SD D N A SA
33. I seldom notice the moods or feelings that different environments produce. SD D N A SA
34. Most people I know like me. SD D N A SA
35. I work hard to accomplish my goals. SD D N A SA

36. I often get angry at the way people treat me. SD D N A SA
37. I am a cheerful, high-spirited person. SD D N A SA
38. I believe we should look to our religious authorities for decisions on moral issues. SD D N A SA
39. Some people think of me as cold and calculating. SD D N A SA
40. When I make a commitment, I can always be counted on to follow through. SD D N A SA

41. Too often, when things go wrong, I get discouraged and feel like giving up. SD D N A SA
42. I am not a cheerful optimist. SD D N A SA
43. Sometimes when I am reading poetry or looking at a work of art, I feel a chill or wave of excitement. SD D N A SA
44. I'm hard-headed and tough-minded in my attitudes. SD D N A SA
45. Sometimes I'm not as dependable or reliable, as I should be. SD D N A SA
46 I keep my belongings clean and neat SD D N A SA

CONTINUE ON THE NEXT PAGE

47. I am seldom sad or depressed. SD D N A SA
48. My life is fast-paced. SD D N A SA
49. I have little interest in speculating on the nature of the universe or the human condition. SD D N A SA
50. I generally try to be thoughtful and considerate. SD D N A SA
51 I am a productive person who always gets the job done. SD D N A SA

52. I often feel helpless and want someone else to solve my problems. SD D N A SA
53. I am a very active person. SD D N A SA
54. I have a lot of intellectual curiosity. SD D N A SA
55. If I don't like people, I let them know it. SD D N A SA
56. I never seem to be able to get organised. SD D N A SA

57. At times I have been so ashamed I just wanted to hide. SD D N A SA
58. I would rather go my own way than be a leader of others. SD D N A SA
59. I often enjoy playing with theories or abstract ideas. SD D N A SA
60. If necessary, I am willing to manipulate people to get what I want. SD D N A SA
61. I strive for excellence in everything I do. SD D N A SA
62 I like to be where the action is. SD D N A SA

63 I have sometimes experienced a deep sense of guilt or sinfulness SD D N A SA
64 I have a leisurly style in work and play. SD D N A SA
65 I am easy-going and lackadasical. SD D N A SA
66 I tend to blame myself when anything goes wrong. SD D N A SA
67 When I do things, I do them vigorously. SD D N A SA

68 When I start a self-improvement programme, I usually let it slide after a few days. SD D N A SA
69 I have a low opinion of myself. SD D N A SA
70 When I work, I am usually slow, but steady. SD D N A SA
71 I don't feel like I am driven to get ahead. SD D N A SA
72 Sometimes things look pretty bleak and hopeless to me. SD D N A SA

73 I'm not as quick and lively as other people. SD D N A SA
74 I strive to achieve all I can. SD D N A SA
75 I usually seem to be in a hurry. SD D N A SA
76 I am something of a "workaholic". SD D N A SA
77 I rarely overindulge in anything. SD D N A SA

78 I often crave excitement. SD D N A SA
79 Over the years I have done some pretty stupid things. SD D N A SA
80 I have trouble resisting my cravings. SD D N A SA
81 I wouldn't enjoy a holiday in Las Vegas. SD D N A SA
82 I think things through a lot before coming to a decision. SD D N A SA

83 I have little difficulty resisting temptation. SD D N A SA
84 I have sometimes done things just for kicks. SD D N A SA
85 Occasionally I act first and think later. SD D N A SA
86 When I am having my favourite food, I tend to eat too much. SD D N A SA
87 I tend to avoid movies that are shocking or scary . SD D N A SA

88 I always consider the consequences before I take action. SD D N A SA
89 I seldom give into my impulses. SD D N A SA
90 I love the excitement of roller coasters. SD D N A SA
91 I often do things on the spur of the moment. SD D N A SA
92 I sometimes eat myself sick. SD D N A SA

93 I am attracted to bright colours and flashy styles. SD D N A SA
94 I rarely make hasty decisions. SD D N A SA
95 Sometimes I do things on impulse I later regret SD D N A SA
96 I like being part of the crowd at sporting event. SD D N A SA
97 I plan ahead carefully when I go on trips. SD D N A SA

CONTINUE OVER THIS PAGE

98 I am always able to keep my feelings under control. SD D N A SA
99 I think twice before answering a question. SD D N A SA
100 I have a low opinion of myself. SD D N A SA

Demographic Questions

a). I am in the following age group (circle one) 20-29 30-39 40-49 50-59 60 plus
b). How many total years have you worked as a sales person in any industry?.....
c) How many years have worked in broadcasting sales?.....
d) Gender (circle) Male Female
e) How many years were you at High School?.....
f) What level of qualification did you achieve?.....

Have you responded to all the questions? Tick ____Yes _____No
Have you entered your response in the correct boxes? Tick ____Yes _____No
Have you responded accurately and honestly? Tick ____Yes _____No

If you desire feedback at the completion of this project on your personal profile, please write a password (mother's maiden name, birth date etc) here. _____ Make a diary note to call me, or email me after September 30th on, 09 489 7029/ 09 414 6030, mckay@voyager.co.nz **for results.**

PLEASE ENCLOSE THESE TWO QUESTION PAGES *ONLY* IN THE POST FREE ENVELOPE PROVIDED AND MAIL ASAP. THANK-YOU FOR YOUR PARTICIPATION

The 12 Sub-Sets of the PPRF and there Relationship with the Sub-Facets of the NEO

	E 1	E 2	E 3	E 4	E 5	E 6	A 1	A 2	A 3	A 4	A 5	A 6	C 1	C 2	C 3	C 4	C 5	C 6	N 1	N 2	N 3	N 4	N 5	N 6	O 1	O 2	O 3	O 4	O 5	O 6
1. General Leadership	X	X	X	X				O	O										O	O				O					X	
2. Interest in Negotiation	X	X	X	X	X		O	O	O			O							O	O				O					X	X
3. Ambition			X	X	O								O	O		X	X												O	
4. Friendly Disposition	O	O	O				X	X	X	X	X									O										
5. Sensitivity to Others	O	O				O	X	X	X		X	X							O											
6. Cooperative Work Tendency	O	O					X		X	X	X	X	X		X	X		X		O		O							O	
7. Trust		O	O												X		X	X						O						
8. Adherence to Work Ethic														X	X	O	X	X	X		X			X						
9. Attentiveness to Detail													X	X	X	O		X											O	
10. Emotional Stability					O														X	X				X						
11. Desire to Generate Ideas																		O										X	X	X
12. Think Things Through																		O										X	X	X

Note: Primary predictors are reflected by X and secondary predictors are reflected by O. E1: Warmth, E2: Gregariousness, E3: Assertiveness, E4: Activity, E5: Excitement Seeking, E6: Positive Emotions, A1: Trust, A2: Straightforwardness, A3: Altruism, A4: Compliance, A5: Modesty, A6: Tender-mindedness, C1: Competence, C2: Order, C3: Dutifulness, C4: Achievement Striving, C5: Self-discipline, C6: Deliberation, N1: Anxiety, N2: Angry Hostility, N3: Depression, N4: Self-consciousness, N5: Impulsiveness, N6: Vulnerability, O1: Fantasy, O2: Aesthetics, O3: Feelings, O4: Actions, O5: Ideas, O6: Values.

Source: Raymark et al (1997)