

PERSONALITY AND COGNITIVE ABILITY AS PREDICTORS OF THE JOB PERFORMANCE OF INSURANCE SALES PEOPLE

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ABSTRACT

The purpose of this study was to determine whether personality and a measure of cognitive ability ('verbal reasoning ability') would significantly predict the job performance ('managerial ratings') of sales people in a large South African insurance company. The Customer Contact Styles Questionnaire (CCSQ 5.2) and the Verbal Evaluation Test (VCC 3) were administered to 170 broker consultants, and their managers rated their job performance on the Customer Contact Competency Inventory (CCCI). By making use of multiple regression analysis it was found that certain personality dimensions significantly predict job performance, and that 'verbal reasoning ability' did not have any significant predictive power. These findings, the implications thereof and suggestions for possible further research are discussed.

OPSOMMING

Die doel van hierdie studie was om te bepaal of persoonlikheid en 'n meting van kognitiewe vermoë ('verbale redeneervermoë') beduidende voorspellings van die werksprestasie ('bestuursbeoordelings') van verkoopmense in 'n groot Suid-Afrikaanse versekeringsmaatskappy, kan maak. Die 'Customer Contact Styles Questionnaire' (CCSQ 5.2) en die 'Verbal Evaluation Test' (VCC 3) was op 170 makelaarskonsultante afgeneem, en is deur hul bestuurders, met behulp van die 'Customer Contact Competency Inventory' (CCCI), beoordeel. Deur gebruik te maak van meervoudige regressie analises is daar bevind dat werksprestasie beduidend deur sekere persoonlikheidsdimensies voorspel word. Ook is bevind dat 'verbale redeneervermoë' nie werksprestasie beduidend voorspel nie. Hierdie bevindinge, die implikasies daarvan en voorstelle vir moontlike verdere navorsing, word bespreek.

The business environment in which organisations have to operate has become increasingly complex. Business organisations are faced with ever increasing uncertainty, turbulence and changes in the external environment. These changes are due to, amongst others, increased international and local competition, technological advances and increased stakeholder and customer expectations. To survive in this ever-changing external environment management must use its awareness of these forces to improve its internal business operations (De Villiers & Slabbert, 1996).

To provide quality customer service is one way to improve internal business operations. According to Connellan and Zemke (1993) this factor is the only true way that an organisation can differentiate itself from its competition. Product innovations are being duplicated within weeks by competitors' and the margins between the quality and functionality of products, within the same industry, are constantly reducing. Sales people can no longer only focus on selling the product. Over and above delivering reliable, quality-orientated customer service, they also have to ensure a sense of customer satisfaction that gives customers a sense of surprise and delight.

These changes in the roles of sales people reflect the increased importance of customer focused behaviour. By employing the right type of sales person with the necessary skills, behaviours and abilities an organisation can not only increase productivity, and hence its bottom-line, but also maintain a competitive advantage (Connellan & Zemke, 1993; Vinchur, Schippmann, Switzer III & Roth, 1998).

These factors, amongst others, have caused researchers in the past to search for the inherent behaviours and abilities that would be able to be used to predict sales success. According to Vinchur et al. (1998) a wide range of predictors have, in the past, been used for these purposes. Predictors such as bio-data, personality and cognitive abilities, and also more unconventional approaches (e.g. handwriting analysis) have been researched. The focus of this study will be on the more conventional predictors i.e. personality and cognitive abilities. To

the lay person it might appear self-evident that personality factors and a cognitive ability such as verbal reasoning would play an important part in the performance of sales people. However, psychological literature and research findings on these matters are equivocal. In the next section, relevant literature and research findings pertaining to the topics of personality, cognitive abilities and job performance will be discussed.

The aim of this study is to determine whether personality constructs and cognitive ability can be used to predict the job performance of sales people in a large South African insurance company.

Personality

Allport (1937, p.48) defined personality as: 'Personality is the dynamic organisation within the individual of those psychophysical systems that determine his unique adjustment to his environment.'

According to Ivancevich and Matteson (1993), one of the most complex matters to understand in organisational settings, is the relationship between work behaviour and personality. Personality is influenced mainly by cultural, social, family relationship and hereditary forces. They provided the following definition of personality:

An individual's personality is a relatively stable set of characteristics, tendencies, and temperaments that have been significantly formed by inheritance and by social, cultural, and environmental forces. This set of variables determines the commonalities and differences in the behavior of the individual (p. 98).

An issue of interest to behavioural scientists and researchers is whether personality factors such as those measured by questionnaires or inventories can predict behaviour or performance in organisations.

According to Barrick and Mount (1991), and Hogan and Nicholson (1988), researchers in the field of personality have recently advanced more compelling arguments than in the past that (a) personality constructs, while abstractions of behaviour, can be measured with reasonable reliability; (b) there is stability to personality measures over time and occasions; (c)

personality measures are significantly related to some nontest criterion measures of performance; and (d) personality measures are useful in predicting performance of candidate employees in certain settings.

Many other authors have argued that certain personality dimensions, or patterns of dimensions, can be used in the prediction of successful sales people. There are however, differing viewpoints on the role of personality in the prediction of performance, and also on which dimensions of personality can be used for prediction.

Prior to the 1990's most researchers did not view personality as a valid predictor of job performance. Guion and Gottier (1965) concluded that there is no generalisable evidence that personality measures could be recommended, or used, in most situations as a basis for making employment decisions. Churchill, Ford, Hartley and Walker (1985) in their meta-study demonstrated that personality measures only accounted for 4% of the variance in outcome-based sales performance. Another meta-analysis of validation studies of personality measures showed that the average validity coefficient across all situations and studies was a modest $r = 0,21$ for performance rating criteria. The authors commented that while assessment centres, work samples and measures of cognitive ability showed good validity, this could not be said for personality measures. This conclusion was, however, arrived at on aggregated results for all criteria used. They found that personality measures predicted some criteria relatively well (Schmitt, Gooding, Noe & Kirsch, 1984).

Ford, Walker, Churchill and Hartley (1986) conducted an analysis of all studies appearing between 1918 and 1982 in which the relationship between biographical characteristics, psychological characteristics and sales performance were examined. Only a few personality variables were weakly related to success; most showed no relationship. They also found that as a class, personality factors were less predictive of sales performance than were biographical, cognitive or skill factors. Another study by Gomer and Dubinsky (1985) also found that personality characteristics, amongst others, such as experience/background factors and physical characteristics were poor predictors of sales performance.

More recently (post 1990), however, a substantial body of evidence has emerged suggesting that personality traits can be used to predict job performance (Arneson, Milikin-Davies & Hogan, 1993; Barrick & Mount, 1991; Barrick, Mount & Strauss, 1993; Dale, 1995; Hogan, Hogan & Gregory, 1992; Muchinsky, 1993; Nell, 1994; Piedmont & Weinstein, 1994; Robertson & Kinder, 1993; Salgado, 1997; Tett, Jackson & Rothstein, 1991; Verbeke, 1994; Vinchur, et al., 1998).

Barrick and Mount (1991) conducted and published a meta-analysis investigating the relation of the "big five" personality dimensions ('Neuroticism', 'Extraversion', 'Openness to Experience', 'Agreeableness' and 'Conscientiousness') to three job-performance criteria (job proficiency, training proficiency, and personnel data) across five occupational groups, namely professionals, police, managers, sales, and skilled/semi-skilled. A major finding of this study was that one dimension of personality, 'Conscientiousness', proved to be a valid predictor ($r > 0,20$) of all job-related criteria for all occupational groups studied. Additionally, 'Extraversion' was found to be a valid predictor of two occupations (across all criterion types), namely managers and sales. Other results indicate that the validity of conscientiousness as a predictor of sales performance is generalisable across organisations (Barrick et al., 1993).

According to Mount and Barrick (1998) this study was a major shift from the thinking at that time about non-cognitive predictors of performance. They commented that their study grew out of their belief that people have long-term, dispositional traits that influence their behaviour in work settings, even though most studies about the usefulness of

personality measures in personnel selection were quite pessimistic. It was one of the first studies to introduce the "big five" framework of personality (five broad, stable traits that describe normal adult personality) into the field of industrial-organisational psychology. Although this taxonomy was well known in the field of personality psychology, it was not universally accepted at the time of the study.

Another meta-analytic study conducted by Tett et al. (1991) provided some optimism about the use of personality measures for the prediction of performance. They assessed the overall validity of personality measures (eight dimensions, including the "big five") as predictors of job performance and investigated various moderator variables. Among the major findings were that, studies using confirmatory strategies produced a corrected mean personality scale validity (0,29) that was larger than that based on exploratory strategies (0,12). Results for the "big five" predictor constructs revealed corrected mean validities ranging from 0,16 for 'Extraversion' to 0,33 for 'Agreeableness'.

There were, however some inconsistencies between the results of these two studies. In two articles (Ones, Mount, Barrick & Hunter, 1994; Tett, Jackson, Rothstein & Reddon, 1994) the authors tried to explain these discrepant results. According to Mount and Barrick (1998) the result of the above-mentioned debate stimulated additional personality research and contributed to the recent strides made in understanding the role of personality measures in predicting job performance.

A substantial body of research emerged supporting the "big five", and other models of personality, in predicting job performance. Salgado (1997), in a meta-analysis investigating the "big five" model of personality in relation to job performance conducted in the European Community, found that 'Conscientiousness' and 'Emotional Stability' are valid predictors of job performance across all criteria and occupational groups investigated. Additionally, 'Extraversion' predicted job performance in jobs where interpersonal characteristics were likely to be important factors.

By using 20 validation studies involving the Occupational Personality Questionnaire, and employing meta-analytic techniques, Robertson and Kinder (1993) explored the criterion-related validity of some personality variables. On average, results indicated mean sample size-weighted validity coefficients of around 0,20 for personality variables. Higher values (to $r = 0,33$) were found for some criteria, i.e. 'Creativity', 'Judgement' and 'Analysis'. Salgado (1996), after commenting on this study and indicating that some errors were made, reanalysed the same data. These conclusions also confirmed the criterion-related validity of the personality variables analysed.

Barrick and Mount (1993), although investigating the moderating effect of 'Autonomy' between the "big five" personality dimensions and job performance, also found that the dimensions of 'Conscientiousness' ($r = 0,25$) and 'Extraversion' ($r = 0,14$) were significantly related to job performance.

Some researchers have investigated how sales performance could be predicted by making use of personality questionnaires (Arneson et al., 1993; Barrick et al., 1993; Hogan et al., 1992; Piedmont & Weinstein, 1994; Vinchur et al, 1998). Piedmont and Weinstein (1994) used the NEO Personality Inventory, an instrument specifically designed to measure the five-factor model, to evaluate the prediction of supervisors' ratings of performance. The subjects were 52 women and 159 men who were engaged in a wide range of occupations, including customer services, sales, management, and finance. The majority of the sample was drawn from sales and customer services jobs (73%). The results indicated that 'Conscientiousness' predicted high ratings in all the performance areas across all occupational groups used. 'Neuroticism' and high 'Extraversion' scores also predicted high performance. These findings add to the emerging consensus

that personality can make a substantive contribution to the prediction of job success. Considering that the majority of the sample was from the sales and customer services areas, the findings could also indicate sales success.

Other researchers have argued that it is possible to identify one or more underlying personality traits that can predict sales success. Seligman and Schulman (1986) found that a trait they call 'Attributional style' was related to sales performance and turnover in a sample of life insurance agents. According to the model of 'Learned Helplessness' (Abramson, Seligman & Teasdale, 1978; Seligman, Abramson, Semmel & von Baeyer, 1979), individuals with an optimistic 'Attributional Style' are more resilient when confronted with unfavourable events than are individuals with a pessimistic 'Attributional Style'. In a concurrent validation study ($N = 94$) of life insurance agents, those with an optimistic style sold 37% more insurance during the first two years of their careers than those with a more pessimistic style. A second prospective validation study ($N = 104$) showed that newly hired agents with an optimistic style remained in their jobs twice as long, and sold more insurance, than those with a pessimistic style. Corr and Gray (1996) found that, in a sample of 130 experienced sales people, a positive 'Attributional Style' positively correlated with sales (defined in monetary terms) and performance ranking within the sales force.

Research on Type A behaviour indicates that, in a study involving life insurance sales people, various forms of 'Achievement Orientation' predict work performance (number of policies sold) and job satisfaction (Bluen, Barling & Burns, 1990). Researchers investigating 'Locus of Control' have found that this trait has a significant role in the prediction of the work performance of sales people (Bothma & Schepers, 1997, Coetzer & Schepers, 1997). Other authors have proposed that the ability to elicit information from others, to self-monitor during conversations, and to adapt during conversations, are good predictors of sales performance (Verbeke, 1994). Still others have postulated that for sales people to obtain results they need enough empathy, sufficient ego drive, as well as a strong service motivation (Greenberg & Amabile, 1996). Hogan, Hogan and Busch (1984) and Parasuraman, Berry and Zeithaml (1991) emphasize the construct of 'Service Orientation' (attitudes and behaviours that affect the quality of interaction between staff and customers) as one that underpins both sales and customer service roles.

It therefore appears possible to identify one or more dimensions of behaviour that underlie particular types of performance on the job. It seems more likely, though, that different dimensions of underlying behaviour, or personality, will relate to different aspects of job performance. A detailed profile of an individual's personality, with his or her cognitive ability, should provide more detailed information on how well that individual would perform in a sales role.

Cognitive Ability

There is much evidence to indicate that tests of cognitive ability are strong predictors of job performance in virtually every job studied (Wigdor & Garner, 1982; Hunter & Hunter, 1984; Schmidt, Hunter & Outerbridge, 1986; Nathan & Alexander, 1988; Ree & Earles, 1992; McHenry, Hough, Toquam, Hanson & Ashworth, 1990; Ree & Earles, 1994; Robertson & Kinder, 1993; Gottfredson, 1997; Hakstian, Scratchley, Mcleod, Tweed & Siddarth, 1997).

In studies conducted by Hunter and Hunter (1984) and Ree and Earles (1992) the average validity coefficient increased to the $r = 0,50$ level when observed validity coefficients were corrected for measurement artifacts, such as restriction of range and measurement error. According to Wigdor and Garner (1982), the average correlation between cognitive ability tests scores and job performance ranges from $r = 0,20$ to $r = 0,30$.

Thurstone (1938) proposed seven components that comprise intelligence or cognitive ability. These components are the

"primary mental abilities" (see Thurstone, 1938) of an individual, namely 'Verbal Comprehension', 'Verbal Fluency', 'Number Ability', 'Spatial Visualisation', 'Memory', 'Form Perception', and 'Inductive Reasoning'.

There is a major school of thought which supports a view that mental ability tests provide single, global measures of intelligence (Caretta & Ree, 1996, Ree & Earles, 1992). Several recent studies have demonstrated that General Intelligence (psychometric 'g'), which is generally referred to as the common variance in a battery of cognitive ability tests, accounts for the majority of variance in performance prediction. It was also shown that the remaining variance (often referred to as "specific abilities") accounts for little or no additional variance in the criterion (Larson & Wolfe, 1995; Ree, Earles & Teachout, 1994). Furthermore, research by Olea and Ree (1994) and Ree et al. (1994) suggests that specific abilities account for somewhat more variance when the criterion is job performance than when it is training performance.

The "specific abilities" school of thought has been critical of the General Intelligence approach. They are researchers seeking a finer delineation of mental abilities by making use of multiple factor analysis. These individual abilities underlie the more modern multiple factor theory of intelligence (Guion & Gibson, 1988; Landy, Shankster & Kohler, 1994). According to Schepers (1999) the predictive validity of multiple factors is always better than that of 'g' alone. Murphy (1996) argues that it is just as valid to enter specific abilities first and then say psychometric 'g' doesn't contribute beyond the prediction found with "specific abilities" alone. In this regard Muchinsky (1993) found, in a sample of manufacturing jobs, that 'Mechanical Ability' was the single best predictor of job performance, and General Intelligence had no incremental validity beyond the 'Mechanical Ability' test alone.

Job Performance

The domain of job performance is multifaceted and complex in nature. It has also been the most widely used criterion in the field of Applied Psychology (Adler, 1996). Job performance can be measured in many ways, from one-dimensional to multi-dimensional conceptualisations. Wagner (1997) comments that a trend in recent studies has been to use more complex conceptualisations of this criterion.

Campbell (1994) provides a good example of such a multi-dimensional taxonomy of job performance. Performance is divided into eight basic components, namely: 'Job-specific Task Proficiency', 'Non-job-specific Task Proficiency', 'Written and Oral Communication Task Proficiency', 'Demonstration of Effort', 'Maintenance of Personal Discipline', 'Facilitation of Peer and Team Performance', 'Supervision - Leadership' and 'Management - Administration'. Not all jobs would necessarily contain all eight components. In some instances, the number of relevant components could increase depending upon the nature of the job (Wagner, 1997).

The method of assessment of job performance is also an important factor. A particularly salient distinction between criteria is the objective method and the subjective method of measuring job performance (Vinchur et al., 1998). Gottfredson (1991) noted that the vast majority of validation studies for predicting job performance have made use of the more subjective, 'supervisor ratings' rather than more direct, objective measures. The different methods mentioned also result in differences in research results. Barrick and Mount (1991) showed that, on average, personality variables are correlated more strongly with subjective appraisals of job performance (average validity; $r = 0,26$) than with objective criteria (average validity; $r = 0,14$).

For the role of a sales person objective criteria focus more on outcomes-based effectiveness ('sales volumes'), while the subjective ratings focus more on the controllable parts of a sales person's job, such as 'organisational citizenship behaviours' (Campbell, McCloy, Oppler & Sager, 1993). Vinchur et al.

(1998), in conducting a meta-analysis of the predictors of job performance for sales people, found that a very small number of studies used performance criteria other than objective 'sales volume' and 'managerial ratings' of sales person performance.

Studies involving Personality and Cognitive predictors of Job performance in Sales

In a validation study, conducted by Hogan et al. (1992), 127 sales representatives were asked to rate themselves on the Hogan Personality Inventory (HPI). This instrument measures the personal and social competencies shown to be of considerable importance (indicated through job analysis) in the role of a sales person. A second predictor, the Short Employment Test (SET) – a test of 'Verbal Proficiency' (an indicator of 'General Cognitive Ability'), was also used. 'Verbal Proficiency' was hypothesized as being important for predicting those aspects of the sales representative's job that concern maintaining sales knowledge and verbal communication skills. The criterion measures included two subjective ratings ('managerial ratings' and 'categorisation'), and one objective measure ('sales revenue produced').

The results indicated that the test of 'Verbal Proficiency' generally had low correlations with the criterion measures, with only one of 18 correlations being significant at the $p = 0,05$ level. It was found that all correlations of the personality variables with the criteria were significant, ranging from $r = 0,19$ to $r = 0,53$. The strongest correlation found was with the total 'sales revenue produced' criterion.

Another study that used personality and cognitive measures to predict job performance in the insurance industry, is that conducted by Arneson et al. (1993). The sample consisted of 50 insurance claims examiners. Job Analyses suggested that both cognitive and personality measures were necessary for successful performance. Criterion data included 'supervisory ratings', 'employee nominations', 'average percent of performance', 'absences', 'disciplinary actions', and 'sick leave'. This was a concurrent validity study employing two measures of personality and four cognitive ability tests. Scores from the personality measures and three of the four cognitive tests correlated significantly with the average percentage of performance, and six of the 'supervisory ratings'. In addition to the cognitive measures, the personality measures contributed significantly to the prediction of percentage of performance achieved with $r = 0,64$.

In a study by Barrick et al. (1993) results showed that 'Conscientiousness' (one of the "big five" dimensions) is directly related to the criterion of 'supervisor ratings' ($r = 0,23$). 'General Mental Ability' was also related to 'supervisory ratings' ($r = 0,34$) and to a lesser extent to 'sales volumes' ($r = 0,16$).

In a recent meta-analytic review of predictors of job performance for sales people, Vinchur et al. (1998) found that certain personality variables predicted sales performance well. 'Potency' (a sub-dimension of 'Extraversion') predicted 'supervisors' ratings' of performance ($r = 0,28$) and objective measures of 'sales' ($r = 0,26$). 'Achievement' (a component of 'Conscientiousness') predicted 'supervisor's ratings' ($r = 0,25$) and 'sales' ($r = 0,41$). Furthermore, 'General Cognitive Ability' correlated with 'supervisor's ratings' ($r = 0,40$) but only $r = 0,04$ with 'sales' measures.

On the basis of the literature reviewed, the following hypotheses are proposed:

- H1: Personality measures can predict job performance.
- H2: Measures of cognitive ability can predict job performance.

METHOD

Sample

This research, using a concurrent validity strategy, was conducted in a large life insurance company in South Africa. The population consists of 199 broker consultants (third-party

selling) that is geographically spread throughout South Africa representing all major regions. The sample consisted of 170 broker consultants who were available for testing.

The sample consists of 131 (77,1%) males and 39 (22,9%) females. The language spoken most often is more evenly distributed: 96 (56,5%) are Afrikaans speaking, 73 (42,9%) English speaking, and one (0,6%) German Speaking. The level of education ranged from standard eight (grade 10) to post-graduate qualifications, with job experience (within four seniority levels) averaging 50,78 months (roughly speaking, just over 4 years). The ages of the consultants ranged from 23 to 62, with a mean age of 32,61 years. The racial distribution; 92,9% – White, 5,3% – Asian, 0,6% – Coloured, and 1,2% – African, does not represent the cultural diversity of the South African Business community.

There was a form of pre-selection applied to this sample consisting of interviews conducted after passing a subjective, biographically orientated, screening method taking into consideration aspects such as: financial situation, marital status, age, length of tenure in previous job, consequences of failure, financial liabilities, social and sports involvement, etc.

Measuring Instruments

Given the hypotheses the following instruments were chosen for the operationalisation of the variables.

Predictors

The Customer Contact Styles Questionnaire (CCSQ 5.2) of Saville & Holdsworth Limited (SHL) was used as the personality predictor. This questionnaire focuses on 16 dimensions of personality that are considered important for non-supervisory sales or customer services roles. The CCSQ 5.2 version is a normative measurement and therefore lends itself more to correlational studies. This version has 136 questions, and they are answered by making use of a five-point Likert scale, ranging from "strongly agree" to "strongly disagree". In addition, a 'Social Desirability' scale is included as an accuracy check.

The reported reliabilities range from $r = 0,69$ to $r = 0,88$ with a median value of $r = 0,81$. Several validity studies are reported in the User's Manual with positive results (SHL, 1997, chapter 7, pp. 8-9).

The Verbal Evaluation test (VCC3 – SHL), a measure of cognitive ability, was used as the other predictor. This test measures the ability to understand and evaluate the logic of more complex written arguments. It consists of 15 passages, followed by four statements related to the information therein. After reading each passage, individuals are required to evaluate each statement in terms of whether it follows logically from the passage, or not, or whether there is insufficient information to make such a judgement. There is a time limit of 30 minutes to the test. The content of the test reflects a generic customer contact focus. The level of difficulty of the test was suited to the individuals in the sample. Reported reliabilities (Cronbach Alpha) for a sample of 700 are reported in the User's manual as being in the order of 0,85 (SHL, 1997, chapter 7, pp. 6).

Criterion

The Customer Contact Competency Inventory (CCCI – SHL) was used as the criterion measure. The CCCI provides a direct rating of an individual's performance based on 16 customer-orientated competencies (see Table 1). The instrument allows one to make use of 360-degree ratings, but in the current study, only 'managerial ratings' were used as a subjective measure of sales performance.

An electronic version of the CCCI was used to gather criterion ratings. The item format for this instrument is "nipsative" (a combination of normative and ipsative item formats). Respondents completing the questionnaire rate an individual on 32 sets of four statements. Each set of four statements is individually rated by making use of a five-point Likert scale –

ranging from “hardly ever” to “always”. Thereafter, “most” and “least” rankings (ipsative format) are given for each set of four statements. For the purposes of this study, however, only the normative data were used.

TABLE 1

CUSTOMER CONTACT COMPETENCY INVENTORY (CCCI) -COMPETENCIES

Number	Label	Competency
1.	CP_01	Relating to Customers
2.	CP_02	Convincing
3.	CP_03	Communicating Orally
4.	CP_04	Communicating In Writing
5.	CP_05	Team Working
6.	CL01	Fact Finding
7.	CL02	Problem Solving
8.	CL03	Business Awareness
9.	CL04	Specialist Knowledge
10.	CD_01	Quality Orientation
11.	CD_02	Organisation
12.	CD_03	Reliability
13.	CE_01	Customer Focus
14.	CE_02	Resilient
15.	CE_03	Results Driven
16.	CE_04	Using Initiative

Reliabilities reported in the User’s Manual for managers (N = 365) who rated individuals, range from r = 0,76 to r = 0,92 (SHL , 1997, chapter 7, pp. 13).

Procedure

Job analysis was used to identify the competencies required for success as a broker consultant. A countrywide sample, consisting of all levels of consultants and including managers, was used. Four methods of job analysis were used, namely: the Repertory Grid Technique, the Critical Incidents Method, the Work Profiling System (WPS) from SHL, and Visionary Interviews.

From this analysis competencies were developed for the role of a broker consultant. These competencies resemble most of the competencies identified in the CCCI model (Refer to Table 1). The competencies were ranked into groups of differing importance, i.e. Essential, Important, and Relevant. From the job analysis the CCSQ 5.2 was chosen as a predictor for the job competencies. Following the view of differential aptitudes or ‘specific abilities’, rather than that of ‘General Reasoning Ability,’ ‘Verbal Reasoning’ was identified as an essential attribute for this customer contact role. To measure this, VCC3 was chosen as the other predictor.

To administer these instruments SHL accredited test administrators (TA’s) were used. The predictors were administered in controlled test-room conditions using standardised procedures. All respondents completed a biographical questionnaire. All managers and their consultants were briefed about the purpose of the project beforehand and the subsequent involvement of managers in providing ratings of the consultants reporting to them. It was also pointed out that these ratings were to be used solely for research purposes (to validate a test battery), and that it would not have any effect on their remuneration, promotion or careers. Before actually rating their consultants, managers were coached by the TA’s in the use of the electronic version of the CCCI.

The data were gathered from the TA’s, and statistically analysed by researchers at SHL South Africa under a license agreement with the insurance company. The data were then statistically analysed by the Statistical Consultation Service of the Rand Afrikaans University, for the purposes of this study.

RESULTS

In order to determine the structure of the CCCI it was decided to subject the 128 normative items to Factor Analysis. In order to obviate the effects of differential skewness of items, the following procedure was followed: The 128 normative items were

inter-correlated and the eigenvalues of the unreduced inter-correlation matrix were calculated.

Based on the Kaiser (1961) criterion (number of eigenvalues greater than unity), 16 simplified factor scores (SFS) were postulated. Accordingly 16 factors were extracted, using the Principle Axis Factoring technique, and they were rotated to a simple structure by means of the Varimax rotation.

Subsequently, SFS’s were calculated for each of the 16 factors that was extracted by adding the scores of the items with high loadings on each factor. Finally, the 16 factors were inter-correlated, subjected to a Principle Axis Factoring procedure and rotated to a simple structure by means of the Direct Oblimin rotation with the Kaiser Normalisation. Three eigenvalues larger than unity were extracted and were 8,341, 1,772 and 1,438 respectively.

The rotated factor matrix (with descriptions of the 16 SFS’s included) of the factors obtained are shown in Table 2.

TABLE 2
ROTATED FACTOR MATRIX OF THE 3 FACTORS OF THE CCCI
(DIRECT OBLIMIN WITH KAISER NORMALISATION)

Description	I	II	Factor	
			III	
CL04 Specialist Knowledge	0,911	-0,239		
CL01 Fact Finding	0,896		0,162	
CL02 Problem solving	0,875		0,136	
CL03 Business awareness	0,858			
CP02 Convincing	0,752	0,259	-0,342	
CE04 Using initiative	0,739	0,143	0,164	
CE03 Results driven	0,535	0,356	0,160	
CP04 Communicating in writing	0,526			
CP03 Communicating orally	0,515	0,288	-0,329	
CP01 Relating to Customers		0,817		
CP05 Team Working	-0,135	0,760		
CE01 Customer Focus	0,170	0,568	0,220	
CE02 Resilience	0,264	0,378	0,133	
CD03 Reliability		0,375	0,713	
CD02 Organisation	0,380		0,653	
CD01 Quality orientation	0,474	0,234	0,496	

Values smaller than 0,10 were omitted

Table 2 shows that factor I is well determined by the following competencies: ‘Specialist Knowledge’, ‘Fact Finding’, ‘Problem solving’, ‘Business awareness’, ‘Convincing’, ‘Using initiative’, ‘Results driven’, ‘Communicating in writing’, ‘Communicating orally’. This factor is identified as *Business and Sales Acumen*. Factor II, *Relating to Customers*, consists of the competencies of ‘Relating to customers’, ‘Team working’, ‘Customer focus’, and ‘Resilience’. Factor III, consisting of ‘Reliability’, ‘Organisation’ and ‘Quality orientation’, is identified as *Dependability*. The three obtained factors correlate moderately with each other and vary between 0,482 and 0,201.

Reliabilities (Cronbach coefficient alpha) for the three criterion factors are r = 0,977, r = 0,946 and r = 0,950 respectively, with an average reliability of r = 0,957.

The correlation matrix (18X3) below (Table 3) shows the correlations between various predictor dimensions and the three criterion scales. From Table 3 it is evident that the correlations vary between low positive and negative values, with only a few that are statistically significant.

In order to examine the two hypotheses that were postulated earlier, a Stepwise Linear Regression Analysis was conducted. First, Factor I (Business and Sales Acumen) was included as the dependant variable with the 16 personality dimensions of the Customer Contact Styles questionnaire and ‘Verbal Reasoning Ability’ as independent variables.

From an inspection of Table 4, it is evident that three dimensions of the Customer Contact Styles Questionnaire 5.2 (CCSQ 5.2), namely ‘Competitive’, ‘Sociable’ and ‘Participative’, explain 12,7 % of the variance of Factor I (‘Business and Sales Acumen’) of the Customer Contact Competency Inventory

TABLE 3
CORRELATION MATRIX (18X3) OF PREDICTOR DIMENSIONS
(CCSQ 5.2 AND VCC3) WITH THE CRITERIA
(3 FACTORS OF THE CCCI)

	Factor 1	Factor 2	Factor 3
1. Persuasive.	0,127	-0,066	-0,237**
2. Self-control.	-0,063	0,015	0,111
3. Empathic	-0,036	0,017	-0,036
4. Modest	-0,071	-0,091	0,139
5. Participative	-0,164*	0,073	-0,063
6. Sociable	0,247**	0,179*	-0,093
7. Analytical	0,124	0,025	0,077
8. Innovative	0,178*	0,064	-0,109
9. Flexible	0,107	0,033	0,015
10. Structured	0,079	0,020	0,130
11. Detail Conscious.	0,034	0,097	0,134
12. Conscientious	0,065	0,099	0,093
13. Resilience	0,081	-0,005	-0,043
14. Competitive	0,257**	0,060	-0,115
15. Results Orientated	0,217**	0,126	-0,086
16. Energetic	0,192*	0,158	-0,025
17. Social Desirability	-0,100	0,045	-0,083
18. VCC 3 – Verbal Evaluation	0,159	0,101	0,114

** Correlation is significant at the 0,01 level (2 tailed).

* Correlation is significant at the 0,05 level (2 tailed).

(CCCI). The multiple correlation of $R = 0,381$ obtained is statistically significant: as shown in the analysis of variance F ($df = 3; 142$) = 8,047; p (F) = 0,000. The three predictors are statistically significant in the regression equation. The following regression equation was computed:

$$Y' = (3,614) \text{ Competitive} + (4,978) \text{ Sociable} + (-3,735) \text{ Participative} + (211,694)$$

The same procedure was carried out for criterion Factors II (*Relating to Customers*) and III (*Dependability*). The results are given in Tables 5 and 6, respectively.

Table 5 indicates that one of the same dimensions used in the above regression, namely 'Sociable' and two other dimensions of the CCSQ 5.2, namely 'Persuasive' and 'Results Orientated' explain 8% of the variance of Factor II ('Relating to Customers') of the CCCI. The multiple correlation of $r = 0,341$ obtained is statistically significant: F ($df = 3; 142$) = 5,195; p (F) < 0,002. The three predictors are statistically significant in the regression equation. The following regression equation was computed:

TABLE 4
REGRESSION OF PERSONALITY AND VERBAL REASONING ABILITY ON FACTOR I – BUSINESS AND SCALES ACUMEN (DEPARTMENT VARIABLE)

Analysis of Variance					
		Source of Variance	Degrees of freedom	Sum of squares	Mean Square
Multiple correlation	0,381	Regression	3	27304,9	9101,628
R square	0,145	Residual	142	160601	1130,994
Adjusted R square	0,127	$F = 8,047; p = 0,000$			
Standard Error of the Estimate	33,630				
Variables in the Equation					
Independent variables	B	Std error of B	Beta	t-value	p
Constant	211,694	14,318		14,785	0,000
Competitive	3,614	1,608	0,182	2,248	0,026
Sociable	4,978	1,654	0,252	3,010	0,003
Participative	-3,735	1,362	-0,220	-2,741	0,007

TABLE 5
REGRESSION OF PERSONALITY AND VERBAL REASONING ABILITY ON FACTOR II – RELATING TO CUSTOMERS (DEPENDENT VARIABLES)

Analysis of Variance					
		Source of Variance	Degrees of freedom	Sum of squares	Mean Square
Multiple correlation	0,341	Regression	3	3691,496	1230,499
R square	0,099	Residual	142	33635,6	236,871
Adjusted R square	0,080	$F = 5,195; p < 0,002$			
Standard Error of the Estimate	15,391				
Variables in the Equation					
Independent variables	B	Std error of B	Beta	t-value	p
Constant	111,670	5,654		19,751	0,000
Sociable	2,315	0,843	0,262	2,747	0,007
Persuasive	-3,296	1,036	-0,349	-3,182	0,002
Results Driven	1,828	0,835	0,228	2,190	0,030

TABLE 6
REGRESSION OF PERSONALITY AND VERBAL REASONING ABILITY ON FACTOR III – DEPENDABILITY (DEPENDENT VARIABLES)

Analysis of Variance					
		Source of Variance	Degrees of freedom	Sum of squares	Mean Square
Multiple correlation	0,303	Regression	2	2606,511	1303,256
R square	0,092	Residual	143	25871,9	180,923
Adjusted R square	0,079	$F = 7,203; p < 0,001$			
Standard Error of the Estimate	13,45				
Variables in the Equation					
Independent variables	B	Std error of B	Beta	t-value	p
Constant	92,503	4,987		18,548	0,000
Persuasive	-2,309	0,674	-0,281	-3,425	0,001
Structured	1,321	0,560	0,193	2,357	0,020

$Y' = (2,315) \text{ Sociable} + (-3,296) \text{ Persuasive} + (1,828) \text{ Results orientated} + (111,67)$

Table 6 shows that 'Persuasive' and 'Structured' (CCSQ 5.2) explain 7,9% of the variance of Factor III (Dependability) of the CCCI. The multiple correlation of 0,303 is also statistically significant: $F (df = 2; 143) = 7,203; p(F) < 0,001$. These three predictors were also statistically significant in the regression equation. The following regression equation was computed:

$Y' = (-2,309) \text{ Persuasive} + (1,321) \text{ Structured} + (92,503)$

One should, however, note that the sample consists of a pre-selected group of sales people, which will have a restrictive effect on the range of obtained scores. Obtained R^2 values would probably be inflated if adjusted for the restriction of range.

DISCUSSION

Based on the results of this study, the first hypothesis, "Personality measures predict job performance", is not rejected.

For the *Business and Sales Acumen* criterion 'Competitive', 'Sociable' and low 'Participative' (negative regression coefficient) personality attributes explain 12,7% of the variance. According to the scale descriptions in the CCSQ 5.2 user's manual, 'Competitive' is concerned with how much individuals feel they need to win at all costs. Individuals may want to seek out competition and may put in much effort to beat others. 'Sociable' describes how confident, extraverted and lively individuals are, and how comfortable they feel in a range of social situations. 'Participative' deals with the degree to which individuals enjoy teamwork and co-operative activities. Typical low scores would indicate that individuals enjoy working alone and that they are very much self-sufficient (SHL, 1997, chapter 2, pp. 17-32).

'Competitiveness' is a personality trait that one would expect to have a prominent influence in sales performance, especially in the area of direct sales. This is confirmed by validity studies referred to in the SHL User's Manual for the Customer Contact series of products. In these studies 'Competitiveness' predicted the competencies of 'Convincing', 'Problem Solving' and 'Results Driven', which are all included in the criterion of Business and Sales Acumen. Inter-correlations between 'Competitiveness' (CCSQ 5.2) and 'Achieving' (Occupational Personality Questionnaire – OPQCM 5.2) are reported to be in the order of $r = 0,38$ (at the $p = 0,05$ level) (SHL, 1997, appendix D, pp. 4). Vinchur et al. (1998) also showed that the "big five" sub-dimension of 'Achievement' ($r = 0,25$) predict managerial ratings of sales success.

The fact that 'Sociable' is significantly related to sales performance is in line with many other findings about the dimension of 'Extraversion' (Barrick & Mount, 1991; Barrick & Mount, 1993; Piedmont & Weinstein, 1994; Salgado, 1997; Tett et al., 1991). In a more recent meta-analytic review, Vinchur et al. (1998) found that 'Extraversion' predicted ratings of sales success ($r = 0,18$). 'Potency' (assertiveness and intensity of interpersonal interactions) was a particularly strong predictor of sales success ($r = 0,28$).

The negative correlation coefficient for 'Participative' (see Table 3) was not expected because job analysis showed that 'Team Working' is an essential competency in the role of a broker consultant. This result shows that the absence of participative behaviour (individualism) predicts job performance. This was confirmed by Vinchur et al. (1998) that 'rugged individualism' could be a predictor of sales success.

The CCSQ 5.2 dimensions 'Sociable', 'Persuasive' and 'Results Orientated' explain 8% of the variance of the Relating to Customers criterion. 'Persuasive' concerns with the extent to which individuals enjoy selling, negotiating, influencing and convincing. 'Results orientated' indicates the extent to which individuals set high personal targets, how much they are sti-

mulated by challenging goals, and how keen they are to improve their performance (SHL, 1997, chapter 2, pp. 17-32).

The fact that 'Sociable' and 'Results Orientated' predicts *Relating to customers*, makes sense. Evidence for the role of 'Sociable' in predicting performance has already been provided (see above). 'Results orientated' has the same meaning as 'Achievement' (Vinchur et al., 1998) or 'Ambition' (Hogan et al., 1992). These studies provide significant validity coefficients – 'Achievement' ($r = 0,25$ and $r = 0,41$) and 'Ambition' ($r = 0,15$ and $r = 0,25$).

The CCSQ 5.2 dimensions 'Persuasive' and 'Structured' explain 7,9% of the variance in the criterion of *Dependability*. 'Structured' refers to the extent to which individuals plan ahead and how far they prepare, prioritise and structure their work (SHL, 1997, chapter 2, pp. 17-32).

The role of 'Persuasive' in the criteria of *Relating to Customers* and *Dependability*, in this study could not be confirmed by the findings of other research. *Relating to Customers* has a small non-significant negative correlation coefficient (see Table 3). In the case of *Dependability* this dimension has a significant (at the 1% level) negative correlation (see Table 3). In both cases, one would have expected significant positive correlations, indicating 'Persuasiveness' to be an important personality trait in the job success of a sales person. A possible explanation, for the *Relating to Customers* criterion, could be that the role of the broker consultant is mainly focussed on third-party selling, as opposed to direct sales. In third-party sales the consultants mainly deal with customers who are well known to them. Also, there is not always a direct link between the actual sales (in monetary terms) and the persuasive efforts of the consultant. Often there are other factors that influence the sales effort. It appears that for a sales consultant to be viewed as *Dependable*, highly 'Persuasive' behaviour is not seen as appropriate.

The fact that 'Structured' behaviour predicts the *Dependability* criterion makes intuitive sense. There is a substantial body of evidence indicating that the "big five" personality dimension of 'Conscientiousness', of which 'Structured' is a construct, predicts job performance (Barrick & Mount, 1991; Barrick et al., 1993; Piedmont & Weinstein, 1994; Salgado, 1997; Tett et al., 1991). Other studies specifically involving sales people confirm the above (Hogan et al., 1992; Vinchur, et al., 1998).

It was expected that Verbal reasoning ability would significantly predict the performance of sales people, as the verbal communication component of a sales role is very important. This was also confirmed in the findings of the Job Analysis performed prior to selecting this performance predictor.

The second hypothesis of this study is, however, rejected based on the results of this study: In other words, measures of cognitive ability do not predict job performance. The cognitive ability predictor ("Verbal Reasoning Ability") did not enter any of the Multiple Regression analyses performed.

This finding stands in contrast to studies discussed earlier (Gottfredson, 1997; Hakstian et al., 1997; Hunter & Hunter, 1984; McHenry et al., 1990; Nathan & Alexander, 1988; Ree & Earles, 1992; Ree & Earles, 1994; Robertson & Kinder, 1993; Schmidt et al., 1986; Vinchur et al., 1998; Wigdor & Garner, 1982).

The rejection of the second hypothesis seems to confirm the results of Sackett, Gruys and Ellingson (1998) and Hogan et al. (1992).

Although the percentage of variance explained by the different personality dimensions in job performance is relatively low, (7-12%), the findings of this study support the general dictum, "Behaviour is a function of the individual and his/her environment". One should therefore bear in mind that numerous contextual factors contribute to variance in job behaviour. In view of the small proportion of variance that is

accounted for, further research is needed to improve both criterion and predictor variables.

There are limitations to this study that should be highlighted. The sample size is relatively small and the study is limited to insurance sales people (broker consultants involved in third-party sales) in one specific organisation. The findings can consequently not be generalised to other industries, or to other types of sales roles, e.g. insurance agents involved in direct sales. Another limitation could be the use of subjective 'anagerial ratings' of sales performance to the exclusion of objective 'sales measures' (actual sales volumes).

Future research should study the differences in performance prediction between sales people in third-party selling roles, and sales people in direct-selling roles. Another area of research that should be considered is the different criteria that one uses to measure sales performance. Currently the criteria seem to be limited to 'managerial ratings' (subjective criteria) and 'sales performance' (objective criteria).

Finally, it has to be borne in mind that attempts should be made to avoid the likely methodological ramifications of monomethod bias in future research in this area. It is obvious that complying with this methodological exigency will involve a larger, more involved, and consequently more expensive, research undertaking.

REFERENCES

- Abramson, L.Y., Seligman, M.E.P. & Teasdale, J. (1978). Learned helplessness in humans: critique and reformulation. *Journal of Abnormal Psychology*, 87, 49-74.
- Adler, S. (1996). Personality and work behaviour: exploring the linkages. *Applied Psychology: An International Review*, 45(3), 207-224.
- Allport, G. W. (1937). *Personality: a psychological interpretation*. New York: Holt.
- Arneson, S., Millikin-Davies, M. & Hogan, J. (1993). Validation of personality and cognitive measures for insurance claims examiners. *Journal of Business and Psychology*, 7(4), 459-473.
- Barrick, M.R. & Mount, M.K. (1991). The big five personality dimensions and job performance: a meta analysis. *Personnel Psychology*, 35, 281-322.
- Barrick, M.R. & Mount, M.K. (1993). Autonomy as a moderator of the relationships between the big five personality dimensions and job performance. *Journal of Applied Psychology*, 78(1), 111-118.
- Barrick, M.R., Mount, M.K. & Strauss, J.P. (1993). Conscientiousness and performance of sales representatives: test of the mediating effects of goal setting. *Journal of Applied Psychology*, 78(5), 715-722.
- Bluen, S.D., Barling, J. & Burns, W. (1990). Predicting sales performance, job satisfaction and depression by using the achievement strivings and impatience-irritability dimensions of type A behaviour. *Journal of Applied Psychology*, 75(2), 212-216.
- Bothma, A.C. & Schepers, J.M. (1997). The role of locus of control and achievement motivation in the work performance of black managers. *Journal of Industrial Psychology*, 23(3), 44-52.
- Campbell, J.P. (1994). Alternative models of job performance and their implications for selection and classification. In M.G. Rumsey, C.B. Walker & J.H. Harris (Eds), *Personnel selection and classification* (pp. 33 - 52). Hillsdale, NJ: Erlbaum.
- Campbell, J.P., McCloy, R.A., Oppler, S.H., & Sager, C.E. (1993). A theory of performance. In N. Schmidt, W.C. Borman, *Personnel selection in organizations* (pp. 35 - 70). San Francisco: Jossey-Bass.
- Caretta, T.R. & Ree, M.J. (1996). US Air Force pilot selection tests: what is measured and what is predictive? *Aviation, Space and Environmental Medicine*, 67(3), 279-283.
- Churchill, G., Ford, N., Hartley, S. & Walker, O. (1985). The determinants of salesperson performance: a meta analysis. *Journal of Marketing Research*, 103-118.
- Coetzer, E.L. & Schepers, J.M. (1997). Die verband tussen lo-
kus van beheer en die werksprestasie van swart bemarkers in die lewensversekeringsbedryf. *Journal of Industrial Psychology*, 23(1), 34-41.
- Connellan, T.K. & Zemke, R. (1993). *Sustaining knock your socks off service*. New York: Amacom.
- Corr, P.J. & Gray, A.G. (1996). Attributional style as a personality factor in insurance sales performance in the UK. *Journal of Occupational and Organisational Psychology*, 69, 83-87.
- Dale, G.J. (1995). *Mental alertness, personality traits and work performance in the selection of supervisors*. Unpublished master's dissertation, University of South Africa, Pretoria.
- De Villiers, A.S. & Slabbert, J.S. (1996). *The South African organisational environment*. Unpublished manuscript, Rand Afrikaans University, Johannesburg.
- Ford, N.M., Walker, O.C., Jr., Churchill, G.A., Jr., & Hartley, S.W. (1986). *Selecting successful salespeople: A meta-analysis of biographical and psychological selection criteria*. Graduate School of Business Working Paper, University of Wisconsin.
- Gomer, J.M., & Dubinsky, A.J. (1985). *Managing the successful sales force*. Lexington, MA: Lexington Books.
- Gottfredson, L.S. (1991). The evaluation of alternative measures of job performance. In A.K. Wigdor & B.F. Green, Jr. (Eds), *Performance assessment in the workplace* (Vol. 1, pp. 75 - 126). Washington, DC: National Academy Press.
- Gottfredson, L.S. (1997). Why g matters: the complexity of everyday life. *Intelligence*, 24(1), 79-132.
- Greenberg, H.M. & Amabile, D.T. (1996). The personality of a top salesperson. *Agency Sales Magazine*, 26(11), 40-41.
- Guion, R. & Gottier, R. (1965). Validity of personality measures in personnel selection. *Personnel Psychology*, 18, 155-164.
- Guion, R.M. & Gibson, W.M. (1988) Personnel selection and placement. *Annual Review of Psychology*, 39, 349-74.
- Hakstian, A.R., Scratchley, L.S., Mcleod, A.A., Tweed, R.G. & Siddarth, S. (1997). Selection of telemarketing employees by standardized assessment procedures. *Psychology and Marketing*, 14(7), 703-726.
- Hogan, J., Hogan, R. & Gregory, S. (1992). Validation of a sales representative selection inventory. *Journal of Business and Psychology*, 6(2), 161-171.
- Hogan, J.C., Hogan, R. & Busch, C.M. (1984). How to measure service orientation. *Journal of Applied Psychology*, 69(1), 167-173.
- Hogan, R. & Nicholson R. (1988). The meaning of personality test scores. *American Psychologist*, 43, 621-626.
- Hunter, J.E. & Hunter, R.F. (1984). Validity and utility of alternative predictors of job performance. *Psychological Bulletin*, 96, 72-98.
- Ivancevich, J.M. & Matteson, M.T. (1993). *Organizational behavior and management*. Homewood, IL: Irwin.
- Kaiser, H.F. (1961). A note on Guttman's lower bound for the number of common factors. *British Journal of Statistical Psychology*, 14(1), 1.
- Landy, F.J., Shankster, L.J. & Kohler, S.S. (1994). Personnel selection and placement. *Annual Review of Psychology*, 45, 261-96.
- Larson, G.E. & Wolfe, J.H. (1995). Validity results for g from an expanded test base. *Intelligence*, 20, 15-25.
- McHenry, J.J., Hough, L.M., Toquam, J.L., Hanson, M.A. & Ashworth, S. (1990). Project A validity results: the relationship between predictor and criterion domains. *Personnel Psychology*, 43, 335-355.
- Mount, M.K. & Barrick, M.R. (1998). Five reasons why the "big five" article has been frequently cited. *Personnel Psychology*, 51(4), 849.
- Muchinsky, P. M. (1993). Validation of intelligence and mechanical aptitude tests in selecting employees for manufacturing jobs. *Journal of Business and Psychology*, 7(4), 373-382.
- Murphy, K.R. (1996) Individual differences and behaviour in organisations: much more than g. In K.R. Murphy (Ed.), *Individual differences and behaviour in organisations* (pp3 - 30). San Francisco: Jossey-Bass.
- Nathan, B.R. & Alexander, R.A. (1988). A comparison of criteria for test validation: a meta-analytic investigation. *Personnel Psychology*, 41, 517-535.
- Nell, T.L. (1994). *Die samestelling van 'n persoonlikheidsprofiel vir die keuring van bewakingsdienspersoneel* (Compiling a personality

- profile for the selection of prison warder personnel). Universiteit van Port Elizabeth.
- Olea, M.M. & Ree, M.J. (1994). Predicting pilot and navigator criteria: not much more than g. *Journal of Applied Psychology*, 79(6), 845-851.
- Ones, D.S., Mount, M.K., Barrick, M.R. & Hunter, J.E. (1994). Personality and job performance: a critique of the Tett, Jackson, and Rothstein (1991) meta-analysis. *Personnel Psychology*, 47(1), 147-156.
- Parasuraman, A., Berry, L.L. & Zeithaml, V.A. (1991). Refinement and reassessment of the servqual scale. *Journal of Retailing*, 67(4), 420-450.
- Piedmont, R.L. & Weinstein, H.P. (1994). Predicting supervisor ratings of job performance using the NEO personality inventory. *The Journal of Psychology*, 128(3), 255-266.
- Ree, M.J. & Earles, J.A. (1992). Intelligence is the best predictor of job performance. *Current Directions in Psychological Science*, 1, 86-89.
- Ree, M.J. & Earles, J.A. (1994). The ubiquitous productiveness of g. In M.G. Rumsey, C.B. Walker, & J.H. Harris (Eds), *Personnel selection and classification* (pp. 127 - 136). Hillsdale, NJ: Erlbaum.
- Ree, M.J., Earles, J.A. & Teachout, M.S. (1994). Predicting job performance: not much more than g. *Journal of Applied Psychology*, 79(4), 518-524.
- Robertson, I.T. & Kinder, A. (1993). Personality and job competencies: the criterion-related validity of some personality variables. *Journal of Occupational and Organizational Psychology*, 66, 225-244.
- Sackett, P.R., Gruys, M.L. & Ellingson, J.E. (1998). Ability-personality interactions when predicting job performance. *Journal of Applied Psychology*, 83(4), 545-556.
- Salgado, J.F. (1996). Personality and job competences: a comment on the Robertson & Kinder (1993) study. *Journal of Occupational and Organisational Psychology*, 69, 373-375.
- Salgado, J.F. (1997). The five factor model of personality and job performance in the European community. *Journal of Applied Psychology*, 82(1), 30-45.
- Saville & Holdsworth Ltd. (1997). *Manual & User's guide for customer contact series*. Thames Ditton.
- Schepers, J.M. (1999). The bell curve revisited: a South African perspective. *Journal of Industrial Psychology*, 25(2), 52-61.
- Schmidt, F.L., Hunter, J.E. & Outerbridge, A.N. (1986). Impact of job experience and ability on job knowledge, work sample, performance, and supervisory ratings of job performance. *Journal of Applied Psychology*, 71, 432-439.
- Schmitt, N., Gooding, R., Noe, R. & Kirsch, M. (1984). Meta analysis of validity studies published between 1964 and 1982 and the investigation of study characteristics. *Personality Psychology*, 37, 407-422.
- Seligman, M.E.P. & Schulman, P. (1986). Explanatory style as a predictor of productivity and quitting among life insurance sales agents. *Journal of Personality and Social Psychology*, 50, 832-838.
- Seligman, M.E.P., Abramson, L.Y., Semmel, A. & von Baeyer, C. (1979). Depressive attributional style. *Journal of Abnormal Psychology*, 88, 242-247.
- Tett, R., Jackson, D. & Rothstein, M. (1991). Personality measures as predictors of job performance: a meta analytic review. *Personnel Psychology*, 44, 703-734.
- Tett, R.P., Jackson, D.N., Rothstein, M. & Reddon, J.R. (1994). Meta-analysis of personality-job performance relations: a reply to Ones, Mount, Barrick, and Hunter (1994). *Personnel Psychology*, 47(1), 157-172.
- Thurstone, L.L. (1938). *Primary mental abilities*. Chicago: University of Chicago Press.
- Verbeke, W. (1994). Personality characteristics that predict effective performance of sales people. *Scandinavian Journal of Management*, 10(1), 49-57.
- Vinchur, A.J., Schippmann, J.S., Switzer, III, F.S. & Roth, P.L. (1998). A meta-analytic review of predictors of job performance for salespeople. *Journal of Applied Psychology*, 68, 587-593.
- Wagner, R.K. (1997). Intelligence, training, and employment. *American Psychologist*, 52(10), 1059-1069.
- Wigdor, A.K. & Garner, W.R. (Eds). (1982). *Ability testing: uses, consequences, and controversies (part 1)*. Washington, DC: National Academy Press.