

THE VALIDITY OF THE SELF-DIRECTED SEARCH QUESTIONNAIRE (SDS) FOR WORK  
SUCCESS

by

SVEN HEUSSEN

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SUPERVISOR: PROFESSOR A.M.G. SCHREUDER

CO-SUPERVISOR: MR. H. VON DER OHE

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Student number: 3244 711 6

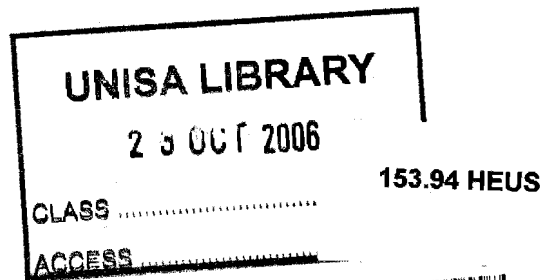
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S. Nussler

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**DEGREE** : MASTER OF ARTS  
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**CO-SUPERVISOR** : MR. H. VON DER OHE

## KEYWORDS

occupational choice, hexagonal model, congruence, differentiation, consistency, work success, job satisfaction, work stress, job stability, academic achievement, concurrent validity.

## SUMMARY

The study was designed to provide evidence for the validity of the Self-Directed Search questionnaire (SDS) for work success in the context of a developing country, in this case Namibia.

In this study, 142 clerical and professional employees at Namibian governmental and para-statal institutions completed questionnaires determining the congruence, differentiation, and consistency levels of their occupational choice and questionnaires determining job satisfaction, experienced work stress, job stability, and work related academic achievement as indicators of subjective and objective dimensions of work success. A correlational and multiple regression analysis revealed only one significant relation, namely the one between congruence and job satisfaction. Differentiation and consistency had no significant effect on the observed dimensions of work success.

#### IV

In conclusion it is suggested that counselors should refrain from predictive decision-making based on the results of the SDS alone. The SDS can, however, be used for self-exploration purposes, owing to acceptable levels of reliability and construct validity.

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## **CHAPTER 1: BACKGROUND AND MOTIVATION**

This dissertation focuses on the relation between occupational choice, as operationalised by means of the constructs of congruence, differentiation and consistency (Holland, 1985) and work success, as operationalised by means of job satisfaction, work stress, job stability, and formal academic achievement (Crites, 1969). On grounds of these associations the validity of the Self-Directed Search questionnaire (SDS) for work success can be investigated.

### **1.1 INTRODUCTION**

Career development is a life-long process involving preparation to choose, choosing, and, very often continuing to choose from among many occupations (Brown & Brooks, 1990). An occupation can be regarded as a group of similar jobs found across different organisations (Greenhaus & Callanan, 1994). A differentiation can, therefore, be made between a certain job in a particular organisation, for example cost accountant at organisation A, and the broader notion of occupation, for example the career field of accounting. Owing to the centrality of work in modern society the initial step of choosing an occupation to the benefit of oneself, as well as larger society, is an extremely important one (Greenhaus & Callanan, 1994).

One important aspect of sound occupational decision-making is the development of self-awareness pertaining to one's own talents, interest, values and preferred life-style (Greenhaus & Callanan, 1994). Self-awareness can, therefore, be regarded as an initial precondition of sound occupational decision-making. A deep awareness of self and environment is essential for the setting of appropriate career goals and development of appropriate career strategies. Without an accurate view of self and work it would indeed be quite impossible to set realistic goals and achieve success (Greenhaus & Callanan, 1994).

Rapid and dramatic changes in the modern world of work necessitate sound and informed choices from career entrants and career changers. Southern Africa in general, and Namibia in particular, has undergone tremendous change on the social, cultural, political, and economic front in the last decade of the twentieth century. The socio-economic conditions in many developing countries, such as Namibia, are particularly unrelenting to those with inadequate resources and inadequate decision-making capacities. The following socio-economic features are complicating the occupational decision-making exercise in developing countries (Ministry of Labour, 1998):

1. High unemployment rates, such as in Namibia where the unemployment rate stands at 35 percent.
2. Population growth rates exceeding economic growth rates.
3. Relatively young populations, such as in Namibia where more than half of the population is younger than 15 years of age.
4. Low average formal qualifications of populations, such as in Namibia where 54 percent of the population has no education beyond primary education.
5. Tight and supply-driven labour markets.

Compounding the above pressures are the unrealistic expectations of many disadvantaged individuals whose expectations are poorly matched to own capacity and labour market trends (Stead & Watson, 1998). One response to this crisis could be the vigorous institution of proper career education and counselling programmes in order to channel career aspirations into the right direction through the promotion of self-awareness and realistic environmental exploration (Stead & Watson, 1998).

John Holland (1966, 1973, 1985) proposes a theory of careers which takes into account both self-awareness and environmental exploration. Holland's (1966, 1973, 1985) theory of careers and occupational choice is based on the central tenet that environments are characterised by the people who occupy them. This assumption leads to a few basic propositions (Holland, 1985):



1. Most people can be categorised as one of six types: realistic, investigative, artistic, social, enterprising, conventional.
2. For each personality type there are six kinds of corresponding environments: realistic, investigative, artistic, social, enterprising, conventional.
3. People search for environments that will let them exercise their skills and abilities, express their attitude and values, and let them take on agreeable problems and roles.
4. Behaviour is determined by an interaction between personality and environment.

The focus of this dissertation lies on the testing and validation of, especially, the fourth proposition (4.) of Holland's (1985) theory of careers and occupational choice within the context of an employed sample in Namibia (a sample of Namibian public servants).

Stead & Watson (1998) warn against the practice in South African occupational psychology to readily adopt European and American theories, constructs and instruments in counselling processes without the prior examination of the appropriateness of these theories in the South African context. Although South African researchers have focused on the construct validity of Holland's model and the Self-Directed Search Questionnaire (SDS) in particular (for structural construct validity from the environment side of the model see Van der Merwe & Van der Walt, 1989; for research on the construct validity from the person side of the model see Brand, Noordwyk & Hanekom, 1994; De Bruin & Du Toit, 1995; Van der Walt & Els, 1991), not much research has been published pertaining to the criterion related validity of the SDS. Evidently this lack of evidence of criterion related validity concerning the model and the SDS can have severe implications for the theoretical soundness and practical applicability of Holland's propositions in Southern Africa, and Namibia in particular. In the light of questions regarding the validity of the SDS as concerns employed samples in the Southern African context, a number of researchers in South Africa have called for

further investigations on this topic (Brand, Noordwyk & Hanekom, 1994; Gevers, Du Toit & Harilall, 1992).

## **1.2 PROBLEM FORMULATION**

The general research problem can be postulated as follows:

Is it possible to predict dimensions of work success (job satisfaction, work stress, job stability, academic achievement) through the established SDS indices (congruence, differentiation, consistency) as proposed by Holland (1985) ?

The following specific research questions pertaining to the literature review and the empirical study can be formulated:

Research questions pertaining to the literature review:

1. What is occupational choice and what is its relevance in determining work success?
2. What is work success and what are the individual and organisational implications of work success?
3. How can the two constructs, occupational choice and work success, be integrated towards building a theoretical model to be tested in an empirical study?

Research questions pertaining to the empirical study:

4. Does occupational choice predict work success?
5. What can be recommended from the results towards more effective occupational guidance and career counseling?

## **1.3 RESEARCH OBJECTIVES**

On grounds of the above-mentioned problem formulation the following general and specific research objectives can be expressed.

### **1.3.1 General research objective**

The general objective of this research is to determine the validity of the Self-Directed Search questionnaire (SDS) for predicting work success.

### **1.3.2 Specific research objectives**

Research objectives pertaining to the literature review:

1. To define occupational choice and ascertain its relevance in determining work success.
2. To define work success and its dimensions and identify the individual and organisational implications of work success.
3. To integrate the two constructs, occupational choice and work success, towards building a theoretical model to be tested in the following empirical study.

Research objectives pertaining to the empirical study:

4. To test the above theoretical model determining whether occupational choice predicts work success.
5. To formulate recommendations towards more effective occupational guidance and career counselling.

## **1.4 PARADIGM PERSPECTIVE**

Mouton and Marais (1990) refer to paradigms as research traditions within which researchers subscribe to certain commitments. These commitments centre around theoretical aspects (where a particular theory may form the centre of a paradigm), methodological and technical commitments and ontological commitments (which stipulate the research domain / object).

In a disciplinary context the research focuses on industrial psychology as a discipline within the behavioural sciences and on occupational psychology as sub-discipline. Differential psychology, which is the study of individual differences in traits and factors, is the sub-discipline within occupational psychology that bears the most direct relevance to the research (Crites, 1969).

As relevant concepts in this research, meta-theoretical statements on personality, occupational choice and work success are made. Personality (of which vocational interests are an integral part) can be reduced to basic elements or types. The choice of an occupation is not a random event, but an expression of personality. Occupational choice and work success are aspects of human behaviour that can be objectively observed and measured. Behaviour is determined by an interaction between personality and environment (Holland, 1966, 1973, 1985).

These statements offer a blend of the behaviouristic or deterministic perspective (as proposed by, *inter alia*, Watson and Skinner), trait personality theory (as proposed by, *inter alia*, Allport, Eysenck, Cattell), and humanistic personality theory, in as far as Holland (1985) does not discount subjective experiences, e.g. the need for self-actualisation (as proposed by, *inter alia*, Maslow) (Louw & Edwards, 1993).

A model does not only perform a classifying function, but also suggests relationships between data. On grounds of the nature and objectives of this research, the following models and theories are of importance:

1. In his structural-interactive theory of occupational choice Holland (1966, 1973, 1985) maintains that people can be categorised on grounds of their resemblance to each of six personality types: realistic, investigative, artistic, social, enterprising, conventional. The more closely an individual resembles a particular type, the more likely he / she is to demonstrate the personal traits and behaviour of the specific type. Work environments can also be

characterised on grounds of their resemblance to six model environments: realistic, investigative, artistic, social, enterprising, conventional. Finally, Holland (1985, p. 2) maintains that "the pairing of persons and environments leads to outcomes that we can predict and understand from our knowledge of the personality types and the environmental models."

2. Hall's (1976, 1990) model of the psychological success cycle is adapted slightly to facilitate the theoretical integration of occupational choice and work success. This model sets out the relationships between an initial motivation or goal with effort, performance, psychological success and self-esteem.

## **1.5 RESEARCH DESIGN**

This study employs a correlational research design with work success being the dependent variable and occupational choice being the independent variable. The research design is thus a non-experimental design where the relationship between the dependent and independent variables is established for a single group of subjects whilst no planned intervention occurs (Huysamen, 1994).

The research effort is an explanatory one, as it is attempted to determine not only the relationship between the variables, but also the direction thereof (negative or positive) (Mouton & Marais, 1990). The research is theory driven, hypothesis testing and quantitative as theoretical assumptions of Holland's model are tested through the deduction of research hypotheses and subsequent statistical analysis (Huysamen, 1994).

The unit of analysis in this research is on group level. The specific kind of group that is of interest in this research is Namibian public servants (Mouton & Marais, 1990).

Internal validity, which refers to the question whether changes in the independent variable are indeed related to changes in the dependent variable, can be threatened by extrinsic and intrinsic factors (Campbell & Stanley, 1963). In this

research the extrinsic factors, which account for possible biases resulting from the differential recruitment of research participants, are countered by employing a strategy of random probability sampling as far as possible (Frankfort-Nachmias & Nachmias, 1992).

Intrinsic factors, such as history, maturation, experimental mortality, testing, instrumentation, regression artifact, selection interactions, pose no threat as the research design is not an experimental design and does not employ pre- and post-testing and experimental and control groups (Campbell & Stanley, 1963). Threats to the internal validity of the study can arise from misleading causation (for example a reversed causal chain) and from misleading extraneous variable correlation. It is attempted to statistically control for some of these factors by means of the multivariate method of stepwise regression analysis (Frankfort-Nachmias & Nachmias, 1992). The variables that are controlled for are the following: age, gender and race.

External validity, or the generalisability of research results, is affected by the representativeness of the sample and reactive arrangements, which occur in highly artificial, controlled laboratory settings (Campbell & Stanley, 1963). Owing to the employment of a correlational design, the study is carried out in a natural setting (the Namibian Public Service). This "allows statistical inferences to be made to a broader population and permits generalisation of real-life situations, thereby increasing the external validity of the study" (Frankfort-Nachmias & Nachmias, 1992, p. 128).

## **1.6 RESEARCH METHODOLOGY**

The two phases of this research consist of a literature overview (a conceptual analysis of applicable theories, concepts, constructs), and the collection, analysis and interpretation of empirical evidence.

### 1.6.1 Phase 1: Literature review

The literature review consists of three steps, namely:

- Step 1 : A broad overview of relevant theories of occupational choice (trait and factor theory, personality development and occupational choice, psychodynamic approaches, sociological approaches, developmental approaches) is provided. In Holland's structural-interactive theory (1985) occupational choice is conceptualised as an interaction between personal orientation and the environment. The dynamics of major aspects of occupational choice, namely personal orientation, environmental dynamics, congruence, differentiation, and consistency are explained and summarised in terms of the RIASEC model.
- Step 2 : Work success, as a favourable work outcome, can be analysed on three interrelated levels: performance level (earnings, output), objective level (advancement and stability), and subjective level (individual feelings and perceptions about work) (Super & Bohn, 1971). These levels of analysis, in turn, are related to a vast number of dimensions of the complex and diffuse concept of work success. The dimensions of work success which are addressed in this research are the following: job satisfaction and work stress (subjective level of analysis), job stability and academic achievement (objective level of analysis). Verified relations between these dimensions and the performance level of analysis are be quoted from the literature.
- Step3 : The integration of occupational choice and work success is established by means of Hall's (1976, 1990) model of psychological success.

### **1.6.2 Phase 2: Empirical study**

The empirical investigation consists of 11 steps, namely:

- Step 1: Formulation of the research hypotheses.
- Step 2: Determination and description of the sample population.
- Step 3: The psychometric battery.
- Step 4: Administration of the psychometric battery.
- Step 5: Scoring of the psychometric battery.
- Step 6: Statistical processing of the data.
- Step 7: Reporting and interpretation of results.
- Step 8: Integration of research findings.
- Step 9: Discussion on the limitations of the research.
- Step 10: Conclusions of the research.
- Step 11: Formulation of recommendations.

### **1.7 CHAPTER CLASSIFICATION**

- Chapter 1: Background and motivation to the research
- Chapter 2: Occupational choice
- Chapter 3: Work success
- Chapter 4: Integration of literature review
- Chapter 5: Empirical study
- Chapter 6: Results
- Chapter 7: Conclusion, limits of the research and recommendations

### **1.8 SUMMARY**

This chapter discussed the background and motivation to the research and presented the problem statement, research objectives, paradigm perspective, research methodology and chapter division. Chapter two presents the literature



review of occupational choice and Holland's (1966, 1973, 1988) theory of careers.

## CHAPTER 2: OCCUPATIONAL CHOICE

In the literature occupational choice is regarded as a decision-making event at a given point in time on the one hand and as a subsequent process that entails a series of decisions spanning over a period of time on the other hand. Although this initial 'event and process' view of occupational choice has been dismissed as being too simplified it has, nevertheless, served as an initial premise to many of the contemporary theories of occupational choice (Crites, 1969). Schreuder and Theron (1997) differentiate between content and process approaches to theorise about occupational choice. Content theories focus on specific factors, such as psychological characteristics and individual traits, in an attempt to explain and predict occupational choice. Process theories focus on the dynamic nature of careers as a developmental process that can be differentiated into stages over the life-span of an individual.

Occupational choice is summarised by Hall (1976, p.38) as follows: "occupational choice boils down to one simple operation: the attempt by the person to obtain a good fit between himself and his career work." Occupational choice also refers to the choice of specific jobs, occupations and positions that are the building blocks of an individual's lifelong career. This view is reflected in the proposition that "occupational choice is a lifelong process of decision making for those who seek major satisfactions from their work. This leads them to reassess repeatedly how they can improve the fit between their changing career goals and the realities of the world of work" (Brown & Brooks, 1990 p.4).

As a uniform all-encompassing definition of occupational choice has proved to be very complex, different perspectives on occupational choice have been forwarded from diverse theoretical angles. Osipow (1983) identifies the following distinct approaches to thinking about occupational choice: trait and factor theory, personality theories of occupational choice, sociological perspectives of occupational choice, developmental perspectives of occupational choice, and behavioural approaches to occupational choice. These approaches, with their respective prominent proponents, will be briefly outlined, alongside some more recent theories on occupational choice as proposed by Brown & Brooks (1990). Holland's (1966, 1973, 1985) theory of occupational choice will come under closer scrutiny and relevant research findings will be reported upon.

## 2.1 TRAIT AND FACTOR THEORY

Frank Parson's (1909) early views on occupational choice make up the essence of what is known today as trait and factor theory. Parsons (1909) outlines the following three factors as the basis of occupational choice: self-understanding of one's aptitudes, abilities, interests, and ambitions (individual exploration); understanding of environmental dynamics, as pertains to prospects in different lines of work and organisations (environmental exploration); intelligent reasoning on the relations and interactions of these phenomena.

On grounds of these convictions Parsons (1909) describes a three-part model of career guidance to facilitate occupational choice, focusing on personal analysis, job analysis, and the scientific matching of the data obtained from these analyses. Parson's ideas were substantiated by the rise of differential psychology. The identification of traits through scientific measurement and subsequent development of psychometric tests (such as aptitude-, personality-, interest tests) and psychographs provided even greater impetus to Parson's initial ideas (Brown & Brooks, 1990).

Brown & Brooks (1990, p.17) summarise the assumptions underlying trait and factor theory as follows:

- (1) "Each individual has a unique set of traits that can be measured reliably and validly.
- (2) Occupations require that workers possess certain very special traits for success, although a worker with a rather wide range of characteristics can still be successful in a given job.
- (3) The choice of an occupation is a rather straightforward process, and matching is possible.
- (4) The closer the match between personal characteristics and job requirements, the greater the likelihood of success (productivity and satisfaction)."

The trait and factor theory (also called the 'matching men and jobs approach') therefore postulates that individuals differ in their psychological traits, that jobs and occupations differ in their requirements, and that realistic occupational choice and vocational adjustment are consequences of the correspondence or agreeableness between traits and requirements (Crites, 1969). In an effort to find a proper match between an individual and an occupation, the following individual characteristics (traits and factors) are often assessed by means of psychological tests: mental abilities (intelligence, aptitude), personality characteristics, interests and values (general and work-related) (Schreuder & Theron, 1997).

The work adjustment theory of Dawis and Lofquist (1969), as a prominent variation of the trait-factor orientated theme, is based on the notion that people are motivated to fulfil their personal needs through work, whilst meeting the demands of the work situation. Job satisfaction is regarded as a key indicator of work adjustment and is a direct consequence of a harmonious relationship between an individual and work. Individuals will always strive towards achieving correspondence between themselves and their (work) environments. If a condition of co-responsiveness between individual needs and work environment is met, the individual job holder is said to be successful in maintaining correspondence, or work adjustment (Dawis & Lofquist, 1969). Work adjustment, in turn, has profound implications for job tenure, employee withdrawal behaviours, job involvement, morale, performance and productivity. Changes in individual needs and / or job requirements disrupt correspondence, which has negative consequences for job satisfaction and may lead to termination of services (Dawis & Lofquist, 1984).

Trait and factor theory, as the first structural theory of occupational choice, provides relatively sound definitions of psychological traits and processes underlying occupational choice. The theory also had a significant impact in the development of psychometric assessment tools (Osipow, 1983). One major shortcoming of this approach is its mechanistic, static nature where occupational choice is regarded as a passive process that can easily be analysed and reduced to some quantitative variables. The complexities of active human behaviour and developmental career dynamics are often disregarded in the trait and factor approach (Schreuder & Theron, 1997). Deficiencies in the consideration of a broader range of environmental variables (such as socio-economic

status) that impinge on the occupational choice-making process, and a lack of propositions on the interrelationships that exist among traits such as values, needs, aptitudes and interests make up the bulk of criticism forwarded against trait and factor theory (Brown & Brooks, 1990). It is accepted that trait and factor theory has been absorbed into most of the other theories of occupational choice and has therefore proven itself to be highly influential, although it is acknowledged that 'pure' trait and factor theoretical thought cannot explain the phenomenon of occupational choice in isolation (Van der Walt & Els, 1991).

## **2.2 PERSONALITY AND OCCUPATIONAL CHOICE**

The general hypothesis underlying the personality approach to the study of occupational choice is that employees choose their jobs because they anticipate the potential for the satisfaction of their needs (Osipow, 1983). Osipow (1983, p.10) further suggests a related central hypothesis "that exposure to a certain job gradually modifies the personality characteristics of the worker, so that, for example, accountants eventually become like one another if indeed they were not similar in personality to begin with."

Roe and Lunneborg's (1990) theory and psychoanalytical perspectives on occupational choice focus on intrinsic personality needs as the primary determinants of occupational choice, whereas John Holland offers a trait-orientated approach where observable personality characteristics interact with aspects of the work environment (Brown & Brooks, 1990). These personality perspectives of occupational choice will be discussed below.

- (1) Roe and Lunneborg's (1990) theory of personality development stipulates that an individual's genetic background, as the determinant of abilities and interests, and psychological energy expenditure are related to occupational choice. Need primacies, which are based on childhood satisfactions and frustrations, play a crucial role in the selection of an occupation. The interaction between genetic background, need gratification and frustration, and childhood experiences therefore form the basis of behaviour in general and occupational choice in particular (Roe & Lunneborg, 1990). Genetic inheritance sets limits on the potential development of individual

characteristics. The direction of development of inherited characteristics is determined by individual experience, socio-economic status, the family and cultural background. Development direction is also profoundly influenced by the pattern of early needs and their frustration or satisfaction. The different degrees of need satisfaction, or frustrations, become motivators; psychological energy is expended on need satisfaction and determines an individual's interests, motivation and desire for accomplishment (Roe & Lunneborg, 1990). Work can be viewed as a means of satisfaction of individual needs. The satisfaction of physiological needs, safety needs, affiliation and social needs, ego needs, aesthetic needs, information needs and self-actualisation needs is regarded as being of prime motivational value when it comes to occupational choice and career development (Schreuder & Theron, 1997).

Roe and Lunneborg (1990) provide a classification system of eight occupational groups, based on various factor analyses conducted on interests and corresponding occupations. These eight occupational groups are: service, business contact, organisation, technology, outdoor, service, general culture, arts and entertainment. Roe additionally provides a continuum on which range and level of responsibility in occupations can be depicted. The following responsibility dimensions are indicated: professional and managerial 1 (independent responsibility); professional and managerial 2; semiprofessional and small business; skilled; semiskilled; unskilled (Roe & Lunneborg, 1990).

Roe and Lunneborg's classification system is regarded as a major contribution to occupational psychology, and the scope (genetic inheritance, childhood experience, need development, personality, job choice) of the theory is very broad. The theoretical propositions are, however, difficult to investigate and most of the studies conducted have failed to prove validation. The proposed interaction between needs satisfaction during early childhood and resulting needs structure (as manifested in interpersonal orientations in particular), and its subsequent influence on occupational choice have proven to be very difficult to validate (Osipow, 1997). The practical value of Roe's theory for occupational counselling purposes has also proven to be very limited (Ellison, 1997).

(2) General psychoanalytical theory of occupational and career choice maintains that work provides an opportunity to individuals to combine the pleasure and reality principle (Osipow, 1983). Immediate satisfaction of prestige, status, and power needs, as well as future security and stability, can be achieved through occupational choice. The role of impulses is highlighted in the psychodynamic approach, where unconscious motives and impulses, such as sadism, can be satisfied through the choice of the right occupation. Writers such as Hendrick (in Osipow, 1983) also refer to the 'work principle', the drive to master one's environment, which is directly related to the biological survival instinct.

Bordin's (1990) psychodynamic model of occupational choice is largely based on the concept of identification. A prime force in personality development is a child's identification with both parents. The quality of the parent-child relationship determines the level of identification (adoption of parental values and norms) and mutuality (co-responsiveness). High levels of identification and mutuality place the individual in a better position to positively deal with external challenges, such as a job choice. In such a case job choice becomes fused with a desire to attain satisfaction through play, and work can become a happy experience. Low identification and mutuality can lead to self-doubt and lack of clarity of needs, which lead to career indecision and negative, oppressive perceptions of work and subsequent lack of work success (Bordin, 1990). The urge to play, where play is regarded as an intrinsically satisfying experience, providing a sense of wholeness and joy, functions as a guiding principle in occupational choice. For work to become a self-satisfying and successful activity, the urge to play must be gratified through the choice of the right occupation (Schreuder & Theron, 1997).

The definition of terms and interrelationship between constructs in psychodynamic perspectives on occupational choice lacks conciseness and clarity, thereby hampering validation attempts. In practical terms the psychodynamic approaches have not contributed significantly to practical occupational counselling efforts (Brown & Brooks, 1990).

(3) Holland's structural-interactive theory is a trait-based approach to occupational choice and focuses on the study of types. Individuals essentially resemble one of six personality types. Environments can also be classified into six categories. Individuals will then seek out those environments that resemble their types (Holland, 1966, 1973, 1985).

This theory will be outlined in more detail in section 2.7.

### **2.3 SOCIOLOGICAL PERSPECTIVES OF OCCUPATIONAL CHOICE**

The central tenet of this approach revolves around the notion that determinants of occupational choice are beyond the control of individuals and that the development of techniques to cope with environmental changes is the main challenge that individuals are faced with (Osipow, 1983). In this regard the sociological approach deviates from the more psychological perspectives as it negates, to a large extent, individual control over occupational choice and selection. Occupational choice is not an isolated incident, but rather a function of an individual's interaction with various social systems, for example family, peer groups, school (Osipow, 1983).

Institutional forces and impersonal market place realities, therefore, play an overriding role in occupational choice as these determine the demand and supply, desirability, and accessibility of a wide range of occupational categories. Economic conditions and social class are also closely related to the career options available to individuals, and subsequently counteract the principle of perfect freedom of choice. For example, lack of financial support often leads to drastically reduced educational options (Van der Walt & Els, 1991).

The sociological perspective is rated as comprehensive and methodologically sound. Its main drawbacks are the lack of integration and recognition of psychological processes present in occupational choice and career development (Brown & Brooks, 1990).



## 2.4 DEVELOPMENTAL THEORIES OF OCCUPATIONAL CHOICE

The proponents of this approach maintain that occupational choice is not a one-off event, taking place at a single point in time. Occupational choice, according to this view, is a developmental process that evolves over time, entailing a series of decisions to be taken over a significant span of one's life. Occupational choice is therefore viewed as a gradual, unfolding process, as opposed to a fixed, isolated event (Greenhaus & Callanan, 1994). The views of Super and Bohn (1971), Ginzberg (in Yost & Corbishley, 1987), Miller-Tiedeman and Tiedeman (1990), Schein (1978) and Levinson (1984) will be briefly outlined below.

- (1) Super and Bohn (1971) maintain that the essence of occupational psychology is to be traced to developmental psychology. Whilst acknowledging the importance of individual differences (which are the focal point of differential psychology), Super and Bohn (1971, p.1) suggest "that the study of the processes of developing occupational and vocational preferences, choosing an occupation, entering it, succeeding, obtaining satisfaction in it, and moving from one position to another as the career unfolds" should be regarded as the main focal point of occupational psychology. The formation and implementation of self-concepts in occupational contexts and subsequent synthesis between individual self-concepts and environmental realities (social, economic, cultural) are regarded as major aspects of the career development process. Career adjustment, which refers to the outcomes of behaviour in career development, and career maturity, which refers to general types of behaviour in different life stages, are results of effective synthesis and contribute to personal and work success (Super & Bohn, 1971).

Super and Bohn's (1971) approach is founded on the following propositions:

- a) People differ in abilities, personalities, needs, values, interests.
- b) Because of these differences individuals are equipped for a number of occupations.
- c) Occupations require a characteristic pattern of abilities and personality traits, within the scope of certain tolerances.
- d) Vocational preferences, competencies, and self-concepts change over time, only attaining a measure of stability from late adolescence onwards.

- e) This process of change can be classified into a series of life stages: growth, exploration, establishment, maintenance, and decline.
- f) Parental socio-economic level, mental ability, education, personality and career maturity determine the nature of career pattern.
- g) Career maturity, as individual readiness to cope with the demand of physical, psychological, and social changes, determines the success of an individual in any life-career stage.
- h) The process of career development is essentially a process of implementation and development of self-concepts.
- i) Development through life-career stages can be guided through the facilitation of self-concept development in individuals.
- j) Work and life satisfaction essentially depends on the degree to which an individual has opportunities to implement self-concepts in occupational and social settings as well as chosen life-style.
- k) Work and occupation can provide a focus for personality organisation. This focus can, however, become peripheral or incidental as other activities such as leisure or homemaking become more prominent and important in personal orientation and personality organisation.

The theory is regarded as very comprehensive, in that it encompasses ideas from differential (traits), developmental (life-career stages), and phenomenological (self-concept) psychology (Brown & Brooks, 1990). The greatest critique levelled against this approach concerns the lack of integration of the different aspects of the model into a unified statement (Van der Walt & Els, 1991).

- (2) According to Ginzberg (in Yost & Corbishley, 1987) occupational choice is an outflow of a developmental process that can be differentiated into three periods, each with separate substages.

The first period (up to the age of 11) is called the fantasy period, where vocational interests are unrealistic and shallow. The second period (from age 11 to age 17) is called the tentative period, where definition of work-related interests, values, aptitudes, abilities, and skills are defined and awareness about the necessity of an

occupational choice is heightened. This period can be sub-divided into four stages: interest, capacity, values, transition. The third period (from age 17 until late adolescence) consists of three substages: exploration, crystallisation, and specification. These substages refer to the initial narrowing of choices, which might still be ambivalent at the exploration phase, the subsequent selection of a career field and opting for a specific job or training opportunity leading to a particular job choice (Yost & Corbishley, 1987). The process of occupational choice normally culminates in a compromise, where career alternatives are chosen that conform as far as possible to the individual's expectations, interests, abilities, and values (Schreuder & Theron, 1997).

Main points of criticism regarding this approach revolve around the failure to explain the developmental dynamics within each stage, and, on an empirical level, the use of small unrepresentative samples in the original validation of the theory (Brown & Brooks, 1990).

- (3) Miller-Tiedeman and Tiedeman's (1990) theory of occupational choice focuses on the role of self-concept development as the prime determinant of occupational choice and career development. Self-concept development is based on the mechanisms of differentiation and reintegration. The awareness of differences between self and environment and the distinguishing of individual facets of self and environment constitute differentiation. Re-integration occurs when individual aspects of self and environment are ordered into a meaningful whole, for example relating one's own attributes to the requirements of a certain occupation (Miller-Tiedeman & Tiedeman, 1990). Occupational choice can be outlined as a sequence of events where the outset is characterised by confusion about occupational fields, followed by a clearer awareness and evaluation of occupational fields (exploration and crystallisation). On the basis of this evaluation a preliminary choice is made, which is followed by a period of doubt or confirmation (clarification). Following this, the individual becomes a member of an occupational group (induction) and begins to identify with the purposes of the group. The individual may, however, try to challenge the group and its purposes at a later stage as he / she becomes more proficient in the job (reformation). Re-integration occurs when the individual integrates individuality and

group demands, thereby successfully resolving possible conflicts between individuality and group demands (Miller-Tiedeman & Tiedeman, 1990).

Exploration, crystallisation, choice, and clarification make up the anticipation phase of the individual decision-making process. Induction, reformation, and re-integration constitute the implementation phase of the individual decision-making process (Miller-Tiedeman & Tiedeman 1990).

These decision-making dynamics are an integral part of the development process of any individual as "the self is seen an entity which is always either expanding or contracting and for which crucial decisions occur at points of discontinuity with the past, for example graduation from high school and/or college, marriage, taking one's first full-time position" (Osipow, 1983, p. 207). Self-development, thus, is a function of individual reaction to the occurrence of external events throughout the life-span.

Miller-Tiedeman and Tiedeman's (1990) phenomenological perspective is regarded as a holistic view on individual perception and reaction to life events (such as occupational choice). The theory is commonly criticised for its generality, which makes it very difficult to apply in a practical setting (Brown & Brooks, 1990). Research and validation efforts are furthermore hampered by the complexity of the theory's constructs and their respective interactions (Brown & Brooks, 1990).

- (4) Schein's (1978) career development perspective focuses on the interaction between individuals and organisations over time. Schein (1978) also provides a perspective on stages and tasks with which an individual is faced as he / she progresses through life. Three distinct aspects of an individual's life cycle are highlighted: the bio-social life cycle, the career cycle, the family cycle. In each of these cycles the individual is confronted with issues and specific tasks, depending on the stage of the life cycle the individual finds him / herself in. In the bio-social cycle emphasis is placed on age-related biological changes, individual expectations and cultural norms. In the career cycle the emphasis is on occupational choice, hierarchical career progression, and occupational membership. In the family cycle the focus is on family-work interaction and potential conflict between these spheres (Schein, 1978).

The interaction between individual and organisation is profoundly influenced by the match between these two entities. Organisational choice, therefore, can be regarded as a function of the various demands placed on the individual as he / she progresses through the different stages of the bio-social lifecycle, career cycle, family cycle, each of which place unique, and sometimes conflicting challenges on the individual.

As a career evolves, an individual develops a better understanding of his / her talents, values and motives. This increased self-insight, brought about by increased experience, leads to the formation of individual career anchors. Career anchors, as an outflow of developing self-concept combine an individual's self-perception of talents, values, needs, experiences and career preferences. The development of career anchors, therefore, has a profound influence on occupational choice throughout an individual's career and its subsequent success (Schein, 1978). The following career anchors are identified by Schein (1978): technical / functional competence, general managerial competence, autonomy / independence, security / stability, entrepreneurial activity, service / dedication to a cause, pure challenge and life style.

Schein (1978) does not directly address occupational choice per se, he rather offers a comprehensive, developmental perspective on the interaction between individual and organisational needs. In this sense though the theory is not regarded as fundamental to the study of occupational choice, valuable insight into career dynamics (of which occupational choice is an integral part) can nevertheless be gained from this perspective.

- (5) Levinson (1984) offers a view on developmental periods over the life-span of an individual. The following periods / changes, with unique challenges and tasks, are identified: early adult transition (ages 17 to 22), entry life structure for early adulthood (ages 22 to 28), the age 30 transition (ages 28 to 33), the culminating life structure for early adulthood (ages 33 to 40), the mid-life transition (ages 40 to 45), the entry life structure for middle adulthood (ages 45 to 50), the age 50 transition (ages 50 to 55), the culminating life structure for middle adulthood (ages 55 to 60), the late adult transition (ages 60 to 65), late adulthood (age 65 +). Occupational choice is mainly a

reaction to the demands set by the first three periods of early adulthood. Career reassessment takes place on a continuous basis throughout the development periods of an individual (Levinson, 1984).

## **2.5 BEHAVIOURAL APPROACHES TO OCCUPATIONAL CHOICE**

Mitchell and Krumboltz (1990) present a social learning theory of career-decision making which is a variation of the general social learning theory of behaviour and reinforcement theory of classical behaviourism. Learning experiences, and not innate psychological or developmental processes, form the core of this perspective. The theory proposes a number of factors that impact on the occupational choice and career decision-making path of any individual. Genetic endowment and special abilities, such as intelligence, muscular co-ordination, artistic ability etc., form the basis of occupational choice as they may set limits on the attainment of certain educational and occupational skills (Mitchell & Krumboltz, 1990). Environmental conditions and events, which are outside of individual control, also affect occupational choice. Such events may include: number and nature of job and training opportunities, policies and procedures for selecting trainees and workers, labour legislation, remuneration levels for various occupations, technological influences, family influences, physical events and changes in social organisation. The development of career preferences and the choice of a specific occupation are functions of the above-mentioned factors as linked with an individual's past learning experiences (Mitchell & Krumboltz, 1990).

Occupational choice can be a reaction to environmental changes (instrumental learning experience), or a reaction to the observation of a real or fictitious role model (vicarious learning as a form of associative learning experience) (Mitchell & Krumboltz, 1990). Instrumental learning is based on reinforcement, where individuals emit behavioural and emotional responses in order to generate favourable consequences for themselves (Mitchell & Krumboltz, 1984). Positive reinforcement of job performance, such as praise or financial rewards, can therefore contribute significantly to an individual's development in a chosen occupation. Associative learning is analogous with classical conditioning where a neutral stimulus, such as wealth, status, prestige, may be associated with a certain occupation. The impetus to choose a specific occupation may therefore not be

the job content itself, but rather the sought-after neutral stimulus, such as an occupational stereotype (Mitchell & Krumboltz, 1984).

The interaction between genetic endowment, special abilities, environmental conditions and events and learning experiences result in specific task approach skills, or "the cognitive and performance abilities and emotional predispositions for effectively coping with the environment" (Mitchell & Krumboltz, 1984, p. 244).

The social learning theory of occupational choice is regarded as well defined and parsimonious. Interactions between constructs are clearly outlined. The theory also succeeds in successfully integrating propositions of other theories, for example Roe (genetic factors) and the sociological perspective (environmental factors). Weaknesses are discernable in the theory's lack of focus on the developmental tasks faced by individuals in terms of job change and career progression (Brown & Brooks, 1990).

## **2.6 CONTEMPORARY THEORIES OF OCCUPATIONAL CHOICE**

While the theories in the previous sections must be regarded as fairly well established, with a more or less extensive track record, some more contemporary developments can also be identified.

(1) Hackett and Betz's (1981) self-efficacy theory proposes that a lack in expectations of personal efficacy in one or more occupation-related domains (e.g. job skills) impacts negatively on sound occupational choice and career management competencies may be undermined resulting in unfavourable work outcomes. Hackett and Betz (1981) maintain that it is precisely this lack of strong career-related efficacy and women's failure to utilise their talents, capabilities, and interests that undermines women's positions in the labour market. Lack of access to roles where performance can be accomplished and is valued, a lack of exposure of women to successful female career role-models (seriously impacting on vicarious learning experiences for women), high anxiety levels, and lack of verbal encouragement and persuasion to engage in career pursuits are some of the main reasons that restrict and impart negatively on occupational choice and career development of women (Hackett &

Betz, 1981) Considerable empirical support has been reported on the relationship between self-efficacy and work behaviour. Generalisation issues (external validity), however, demand more investigation (Brown & Brooks, 1990).

- (2) Gottfredson's (1985) model of occupational aspirations proposes that people, as they progress through the developmental stages of life, tend to choose occupations that are consistent with their changing self-concept. People therefore view jobs as suitable for themselves on grounds of self-concept. Under conditions of non-availability of preferred jobs people must compromise. The pattern of self-concept compromise is as follows: firstly interest is sacrificed, then prestige, finally social group and / or gender identification. Gottfredson's (1985) model points toward the persistence of one-sided gender stigmatisation concerning certain occupational categories (e.g. nursing). This approach successfully integrates developmental and decision-making aspects of career behaviour; criticism on the conceptualisation of constructs has, however, been prominent (Brown & Brooks, 1990).
- (3) Astin's (1984) need-based socio-psychological model focuses on the interaction between motivation, sex-role socialisation, structure of opportunity, and work expectations. Work motivation is assumed to be the same for women as for men. Work expectations, and therefore occupational choice, tend to differ, however, due to sex-role socialisation and because of differing structure opportunities for men and women. Social changes are gradually, however, equalising structure opportunity for individuals, increasing occupational options and therefore choice (Astin, 1984). The theory particularly focuses on the changes that modify women's expectations, moving away from the prominent role of sex-role socialisation in past opportunity structures. Inadequate definitions and the absence of formulated hypotheses make empirical tests of this model very difficult (Brown & Brooks, 1990).



## 2.7 HOLLAND'S THEORY OF OCCUPATIONAL CHOICE

Holland's (1985) theory of occupational choice is built on the central tenet that occupational choice is one of many expressions of personality. Vocational interests, similarly, are an expression of personality. The description of an individual's vocational interests is also a description of aspects of personality.

People, furthermore, can be categorised and characterised according to their resemblance to one or more personality type. The closer a person resembles a particular type, the more probable it is that he / she will exhibit the behaviours and traits associated with that particular type. Environments in which people live and work can also be classified along the lines of one or more model environments. The pairing or matching of people and environments leads to behavioural outcomes that can be understood and predicted.

Holland's (1985) theory is structural-interactive because it outlines the relationship between specific personality characteristics and work environments (often operationalised in terms of specific job titles). Brown and Brook's (1990, p.40) summary of structural-interactive approaches to occupational choice, therefore, also summarises Holland's theoretical vantage point:

" The choice of an occupation is an expression of personality and not a random event, although chance may play a role. The members of an occupational group have similar personalities and similar histories of personal development . Because people in an occupational group have similar personalities, they will respond to many situations and problems in similar ways. Occupational achievement, stability, and satisfaction depend on congruence between one's personality and job environment."

Holland (1985) proposes a personality typology of six types, six corresponding model environments, and suggests a framework for predicting and understanding certain facets of occupational behaviour (such as job stability, vocational and

academic achievement, job satisfaction, work adjustment), based on the interaction between personality type and occupational environments.

Secondary concepts, such as congruence, consistency, and differentiation, are part of the theory to increase the explanatory power of the main concepts - personality types and model environments. These main and secondary concepts will be outlined below, alongside an overview of research findings concerning Holland's propositions.

### 2.7.1 The Personality Types

Holland (1966, 1973, 1985) maintains that most persons can be characterised as one of the following six types: realistic (R), investigative (I), artistic (A), social (S), enterprising (E), conventional (C). While one of these types normally dominates in people, there are also subtypes. These subtypes provide a more complete description of personality patterns and are usually expressed in terms of a three-letter code (e.g. CES for conventional-enterprising-social type). The first letter of such a code represents the most prominent and dominating characteristic of an individual. The development of type is a function of the interaction between personal characteristics (hereditary factors, dispositions, competencies, self-concept, perception, values, etc.) and environments (such as home, school, work) which function as differential reinforcers of type (Holland, 1985).

Holland (1985) offers the following formulations of type:

- (1) The realistic type (R) is masculine, aggressive, physically orientated, and practical. This type lacks interpersonal and verbal skills but excels in motor co-ordination and skill. The realistic type prefers concrete, practical problem-solving strategies as opposed to more abstract, academic problem resolution strategies. Activities which involve the systematic manipulation of objects, tools, machines are preferred.

The following characteristics are commonly associated with realistic types: asocial, conforming, frank, genuine, straight-forward, hard-headed,

materialistic, thrifty. Persons choosing the following sample occupations often resemble this type: electricians, plumbers, builders, automotive mechanics, butchers (Holland, 1985).

(2) The investigative type (I) is scientifically, academically orientated with a preference for activities that entail the systematic and creative investigation of physical, biological, and cultural phenomena. This type is task-orientated and introspective, enjoys ambiguous work tasks and prefers abstract to concrete problems. Investigative types value science and perceive themselves as intellectual and scholarly. The following characteristics are commonly associated with investigative types: analytical, curious, critical, complex, independent, intellectual, pessimistic, precise, rational, unassuming, unpopular. Persons choosing the following sample occupations often resemble this type: research scientists, such as anthropologists, biologists, geologists, as well as computer scientists, medical doctors, engineers (Holland, 1985).

(3) The artistic type (A) prefers creative, free, ambiguous, unsystematic activities that lead to the creation of art forms or products. Language, music, drama, painting, writing are some of the interest areas of this type. A dislike for ordered, structured, conventional activities is also very apparent. Highly structured problems and activities demanding high physical input are usually avoided. The following characteristics are commonly associated with artistic types: complicated, disorderly, emotional, expressive, idealistic, imaginative, impulsive, impractical, independent, intuitive, non-conforming, open, sensitive. Persons choosing the following sample occupations often resemble this type: artists (actors, musicians, painters), creative writers, journalists (Holland, 1985).

(4) The social type (S) prefers activities which entail working with people, caring for the sick, doing community work, helping others and advising them to help meet their personal needs. The social type has verbal and interpersonal skills, and perceives him / herself as having teaching ability and the ability to help

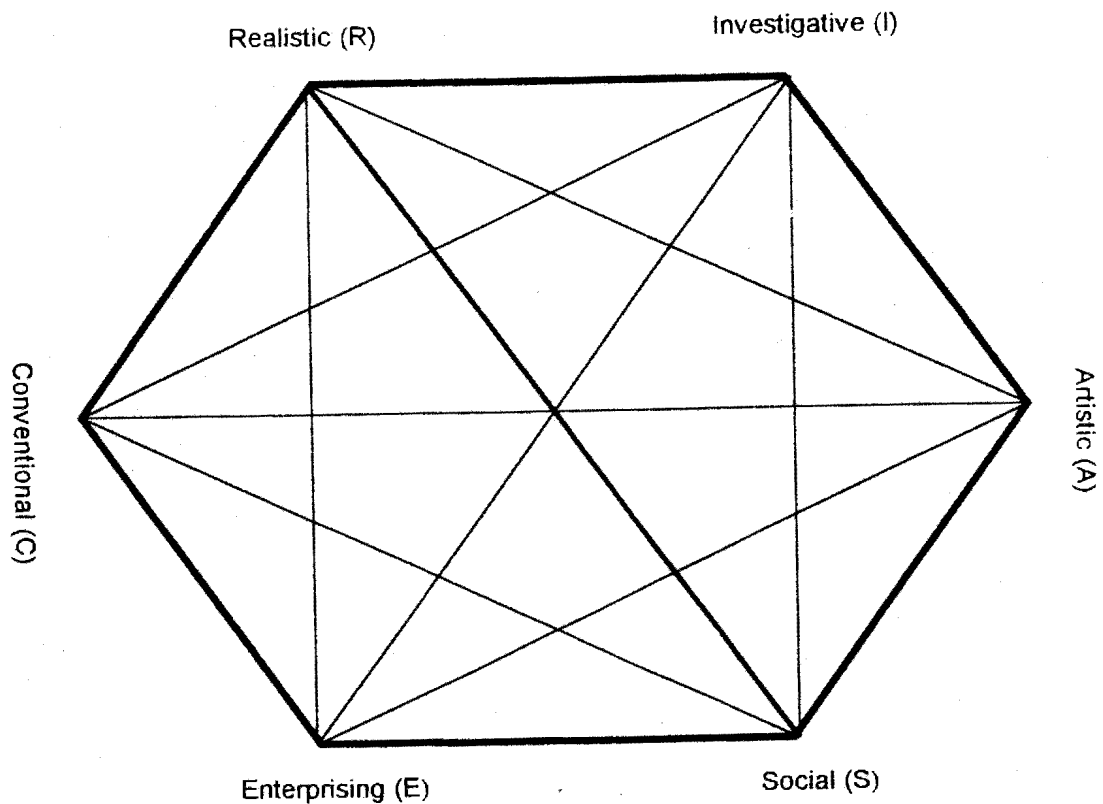
and understand others. The following characteristics are commonly associated with social types: cooperative, patient, friendly, generous, helpful, idealistic, emphatic, kind, persuasive, responsible, warm, tactful, understanding, sociable. Persons choosing the following sample occupations often resemble this type: teachers, social workers, nurses, air hostesses (Holland, 1985).

- (5) The enterprising type (E) likes to meet and deal with people, to persuade and influence others, to make decisions that affect others, to manipulate others for economic gain or organisational goals. This type is extraverted, prefers verbal activities, and has a concern for power, status, and leadership. The enterprising type sees him / herself as aggressive, popular, sociable, self - confident, with leadership and communication skills. Highly structured activities are avoided. The following characteristics are commonly associated with enterprising types: acquisitive, adventurous, materialistic, ambitious, domineering, energetic, exhibitionistic, sociable, talkative. Persons choosing the following sample occupations often resemble this type: estate agents, sales representatives, lawyers, politicians, shopkeepers (Holland, 1985).
- (6) The conventional type (C) prefers working on problems and tasks that require systematic and ordered processing of information. This type gravitates toward office and secretarial work, where work processes are clearly outlined and precision and accuracy are important work aspects. The conventional type perceives him / herself as conforming, orderly, and as having clerical and numerical skills. Business and economic achievements are valued. Ambiguous, unstructured situations are avoided. The following characteristics are commonly associated with conventional types: careful, conforming, conscientious, inflexible, methodical, obedient, orderly, persistent, practical, unimaginative. Persons choosing the following sample occupations often resemble this type: accountants, clerks, secretaries, administrative officers (Holland, 1985).

Table 2.1 offers a brief descriptive summary of this personality typology (Holland, 1996).

The relationships between types are illustrated by Holland's hexagonal model of the psychological resemblances among types (Holland, 1966, 1973, 1985). The shorter the distance between any two types, the greater the psychological similarity and vice versa. For example, enterprising types and social types are closely related, whereas enterprising and investigative types must be regarded as polar opposites. Enterprising and realistic types share an intermediate degree of resemblance. Figure 2.1 illustrates the model of interclass relationship of type (Holland, 1985).

**Figure 2.1 :** Holland's hexagonal model of psychological resemblances of type



Personality type						
Attribute	Realistic	Investigative	Artistic	Social	Enterprising	Conventional
Preferences for activities and occupations	Manipulation of machines, tools and things	Exploration, understanding and prediction of natural and social phenomena	Literary, musical, artistic activities	Helping, teaching, treating, counselling, serving others	Persuading, manipulating, directing others	Maintaining orderly routines, application of standards
Values	Material rewards for tangible achievements	Development or acquisition of knowledge	Creative expression of ideas, emotions	Welfare of others, social service	Material accomplishment, social status	Material, financial accomplishment, authority
Sees self as	Practical, conservative, having manual mechanical skills	Analytical, intelligent, having academic talent	Open, innovative, intelligent, creative	Empathetic, patient, having interpersonal skills	Having sales and persuasive ability	Having technical skills in business
Others see as	Normal, frank	Asocial, intellectual	Unconventional, disorderly	Agreeable, extroverted	Energetic, gregarious	Careful, conforming
Avoids	Interaction with people	Persuasion, sales activities	Routine and conformity	Mechanical, technical activity	Scientific, puzzling topics	Ambiguous activities

Table 2.1: A description of the personality typology

### 2.7.2 The environmental models

Holland's (1985) structural-interactive theory stipulates that behaviour depends both on personality and environment. Holland, therefore, proposes six model environments that correspond directly to the personality types outlined in the previous section. These environmental models are characterised by the people who occupy them. For example, an investigative environment (such as an university) would be dominated by investigative personality types (academics).

A brief description of the six environmental models, as proposed by Holland (1985), follows below:

- (1) The realistic environments attracts people in realistic occupations, stimulates the use of machines and tools, promotes technical and mechanical competencies, and fosters a value system based on traditionalism, pragmatism and materialism (Holland, 1985).
- (2) The investigative environment attracts people in investigative occupations, stimulates abstract, theoretical, analytical problem solving and scientific endeavours, and fosters a value system based on scholarly and scientific norms (Holland, 1985).
- (3) The artistic environment attracts people in artistic occupations, stimulates expressive, creative, original and intuitive activities, and fosters a value system based on art, unconventionality, and nonconformism (Holland, 1985).
- (4) The social environment attracts people in helping, caring, social occupations, stimulates activities that revolve around the manipulation of others for caring helping, advisory and training purposes, and fosters a value system based on humanitarianism (Holland, 1985).

- (5) The enterprising environment attracts people in enterprising occupations, stimulates activities that revolve around the manipulation of others for self-interest or the attainment of organisational goals, and fosters a value system based on materialism, status, and power (Holland, 1985).
- (6) The conventional environment attracts people in conventional occupations, stimulates routine, orderly, clerical activities, and fosters a value system based on conformity, pragmatism, and materialism (Holland, 1985).

Table 2.2 offers a brief descriptive summary of this environmental typology (Holland, 1996).

### **2.7.3 Consistency**

Consistency relates to the degree to which a personality pattern (subtype) consists of elements that share common characteristics. Consistency is determined according to the closeness or adjacency of types in an individual's personality pattern as related to the order in which types are arranged on the hexagon (Healy & Mourton, 1983 ; Holland, 1973). For example, a social type with interest in artistic and enterprising activities (SAE) is considered to be more consistent than a social type with interest in realistic and investigative activities (SRI). Consistency is thus based on the intercorrelations of the six personality types. A high level of consistency indicates that there is a logical relation between an individual's expressed interests, competencies, and values. This, in turn, facilitates the prediction of occupational choice and the attainment of positive work outcomes (such as increased job satisfaction, job stability, vocational and academic achievement, work adjustment) due to increased individual focus and compatibility of self-perceived interests and competencies (Van der Walt & Els, 1991).



**Table 2.2: A description of the environmental typology**

Environmental type						
Attribute	Realistic	Investigative	Artistic	Social	Enterprising	Conventional
Requires	Manual and mechanical competencies, interaction with machines, tools	Analytical, technical, scientific, and verbal competencies	Innovation, creative ability, emotional expression	Interpersonal competencies, skill in mentoring, healing, teaching	Skills in persuasion and manipulation of others	Clerical skills, skills in meeting precise standards of performance
Demands and rewards the display of	Conforming behaviour, practical accomplishment	Scepticism, documentation of new knowledge	Imagination in artistic accomplishment	Empathy, humanitarianism, sociability	Pursuit of financial accomplishment, dominance	Organisational ability, conformity, dependability
Values or personal styles allowed expression	Practical, productive and concrete values, robust, adventurous style	Acquisition of knowledge through scholarship and investigation	Unconventional ideas, aesthetic values	Concern for the welfare of others	Acquisitive, power-orientated styles, responsibility	Conventional outlook, concern for orderliness
Occupations involve	Concrete, practical activities	Analytical, intellectual activity	Creative work	Helping, assisting others	Selling, leading, influencing	Working with numbers
Sample occupations	Carpenter, truck operator	Psychologist, microbiologist	Musician, interior designer	Counsellor, clergy member	Lawyer, retail store manager	Bookkeeper, controller

Consistency is expressed in terms of three levels: high consistency, medium consistency, low consistency (Holland, 1985).

Personality patterns which display a combination of adjoining fields on the hexagon, therefore sharing common characteristics, have the greatest consistency. The following personality patterns are regarded as being highly consistent: RI, RC, IR, IA, AI, AS, SA, SE, ES, EC, CE, CR (Holland, 1985).

Personality patterns with medium level consistency are characterised by two codes which are separated by a third one, i.e. the codes are not next to each other on the hexagon, but separated by another code, which does not appear in the personality pattern. The following personality patterns are regarded as medium consistent: RA, RE, IS, IC, AE, AR, SC, SI, ER, EA, CI, CS (Holland, 1985).

Inconsistent personality patterns are characterised by combinations of codes that are regarded as polar opposites on the hexagon, these combinations are: RS, IE, AC, SR, EI, CA (Holland, 1985).

Higher consistency is related to higher levels of achievement and predictability in educational and vocational behaviour (Holland, 1966, 1973, 1985).

#### **2.7.4 Differentiation**

Differentiation refers to 'purity' or 'clarity' of type, the resemblance of a personality pattern to a single type and not to others (Holland, 1985; Furnham & Schaeffer, 1984). Differentiated personality pattern profiles have high peaks and low valleys, as opposed to undifferentiated patterns that are relatively flat (high or low). A differentiated personality pattern is thus one where only one or two types dominate, whilst the remaining four or five types play a relatively minor role.

A differentiated profile can be generally regarded as an affirmation of who one is over a range of activities and preferences (Healy & Mouton, 1983).

Differentiation has important implications for occupational choice and work-related behaviour in that people with well-differentiated personality patterns display higher levels of career readiness and vocational focus. These attributes, in turn, lead to higher levels of achievement and predictability in educational and vocational behaviour (Holland, 1985).

The most common way to operationalise differentiation is to subtract the lowest from the highest score of an individual's measurement on all six types. Differentiation is also reflected by the standard deviations of the scores obtained on the six scales of the Self-Directed Search (SDS) (Healy & Mouton, 1983).

### **2.7.5 Congruence**

Whilst consistency and differentiation refer to the internal dynamics of personality type, congruence expressly focuses on personality-environment interaction.

Congruence occurs when people live and work in an environment, which is similar or identical to their personality type (Gottfredson & Holland, 1990). An artistic type, for example, will flourish in an artistic environment, as such an environment provides the challenges and rewards that an artistic individual requires to perform effectively, and that are suited to his / her coping skills. A conventional environment with its focus on structure, order, and routine, would not accommodate the needs of an artistic person, leading to negative work outcomes (Holland, 1985). The concept of congruence (the matching of personality type with occupation) is therefore closely related to trait-and-factor ideas and Holland (1966) stipulates that congruent person-environment interactions are conducive to the following occupational performance areas: more stable vocational choice, higher vocational achievement, higher academic achievement, better maintenance of personal stability, and greater satisfaction.

The impact of congruence on work success is summarised as follows by Gottfredson and Holland (1990, p.389): "... if a person has the abilities, interests, and personal traits that match the requirements, rewards, and interpersonal relations in a given work environment, the person will be satisfied and successful."

Several indices have been proposed to operationalise congruence, of which the Lachan (1984) index is one of the most prominent and widely accepted ones. Congruence has proven itself to be one of the most resolute constructs in Holland's theory and a formidable amount of research results attest to its predictive power as concerns work-related outcomes (Spokane, 1985).

Holland (1966, 1973, 1985) maintains that the combination of higher levels of congruence of occupation with personality, differentiation of personality, and consistency of personality will intensify and make more predictable work outcomes such as job satisfaction, job stability, academic achievement and work related adjustment.

#### **2.7.6 Empirical research findings on Holland's theory**

Holland's propositions have attracted a massive amount of research from 1959 onwards, particularly due to the fact that the theory is relatively simple in conception and easy to operationalise (Osipow, 1983). Significant numbers of studies have been performed in the following areas: personality types, congruence, consistency, differentiation, the applicability of the theory across race, gender, age and social status. Positive empirical evidence seems to outweigh negative findings in the case of Holland's theory (Brown & Brooks, 1990). Although a lot of studies have been carried out in academic settings (schools, colleges, universities) there is also a sizeable amount of research that has been generated in the context of employed samples. The main focus of this synopsis of relevant research findings will relate to employed samples.

The SDS, as operator of Holland's primary and secondary constructs, was utilised in most of the studies quoted below. These results, therefore, also have a direct bearing on the effectiveness and psychometric soundness (which will be discussed at a later stage) of the SDS.

### 2.7.6.1 Empirical evidence pertaining to the construct validity of Holland's theory

Considerable empirical support has been gathered on the construct validity of Holland's propositions on personality type. Using self-descriptive checklists and adjective lists initially, and established personality tests like the 16-Personality Factor or Myers-Briggs Type Indicator at a later stage, evidence has been gathered in support of the construct validity of the Holland codes (Bachtold, 1976; Bolton, 1985; Catell, Eber & Tatsuoka, 1970; Gottfredson, Holland & Ogawa, 1982; Williamson, 1972; in Brown & Brooks, 1990). Tokar and Swanson (1995) find substantive relations between Holland's vocational personality model and the five factor model of personality (the 'big-five' model). In a further review of personality and vocational behaviour Tokar, Fischer and Subich (1998) report on the following overlap of the so-called 'big-five' personality dimensions with Holland's constructs: extraversion is substantially and positively related to enterprising and social interest, openness is positively related to artistic and investigative interests, conscientiousness is positively associated with conventional interests.

Nafziger and Helms (1974), through a correlational analysis of a selection of interest inventories producing internally consistent groupings of occupations in line with Holland's classification, provide support for the construct validity of Holland's personality typology. Gaffey and Walsh (1974), in a study of 153 male workers in eight different occupations, find that Holland's theory discriminates successfully between the personality types dominant in each occupational group. Mount and Muchinsky (1978a) present evidence on the construct validity of Holland's personality typology in an occupational setting. Personality type and job classifications of 362 workers are investigated by means of frequency and chi-square analysis. The findings point toward a confirmation of Holland's classification system, in that most workers did indeed function in environments that were hypothesised as being related to their personality type. De Bruin and Du Toit (1995), through a factor analysis of the 19 fields of the 19-Field Interest

Inventory (19-FII), furnish formal support for all six (especially for E, A, R) types of the Holland typology through the ensuing factor structure of the 19-FII.

Structural validity from the environmental side of the model has also been investigated by numerous researchers. In an extensive study comparing Holland's occupational classification to other descriptions of occupations (such as the Dictionary of Occupational Titles), Gottfredson (1980) finds significant evidence that Holland's occupational environment types can clearly be differentiated from each other on grounds of work requirements, activities and rewards. Van der Merwe and Van der Walt (1989), in a South African study encompassing 60 different occupations, find that Holland's occupational classification can be directly linked to observed Position Analysis Questionnaire (PAQ) job dimensions. Put differently: external job analysis data differentiates effectively between occupational environments as proposed by Holland. Hyland and Muchinsky (1991) assess the structural validity of Holland's environmental classification by means of job analysis (PAQ) information, coming to the conclusion that mean differences do exist across the six occupational environment types in terms of the nature of the work activities performed within each environmental type.

#### **2.7.6.2 Empirical evidence pertaining to congruence, consistency and differentiation**

Congruence has been subjected to a large number of investigations, and considerable evidence exists pertaining to the validity of this construct (Greenhaus & Callanan, 1994; Spokane, 1985). Mount and Muchinsky (1978b) find positive support for the hypothesis that overall job satisfaction is significantly higher for congruent subjects than for incongruent subjects (total  $n = 362$ ). A clear, significant positive relationship between person-environment congruence and job satisfaction (0,37), as well as a significant negative relationship between congruence and psychophysical symptoms of stress (-0,24) is reported by Furnham and Schaeffer (1984) in a correlational study entailing the testing of 82 full-time working adults. Smart, Elton and McLaughlin (1986) provide general

support for the premise that congruence and job satisfaction are related. A multiple analysis of co-variance (MANCOVA) indicates that significant differences between job satisfaction levels for males and females (10326 subjects) are based on the level of congruence between personality type and current occupation. A correlation of 0,36 between congruence and job satisfaction is established by Gottfredson and Holland (1990) in a longitudinal study involving 345 bank tellers. In a similar longitudinal study of the congruence hypothesis involving 95 bank tellers Meir and Navon (1992) confirm a positive significant correlation of 0,52 between congruence and job satisfaction. Lent and Lopez (1996) provide evidence on the relationship between person-environment congruence and job satisfaction, utilising three different congruence indices (calculation methods).

Tokar and Subich (1997), whilst acknowledging the general support that Holland's postulated relation between congruence and job satisfaction has received, point to the fact that the correlations between these constructs seldom surpass 0,30. In this particular study no relation between congruence and job satisfaction could be determined. This result is in line with an earlier finding from Tranberg, Slane and Ekberg (1993), where, in a meta-analysis of 27 studies on the relation between interest congruence and satisfaction (occupational and academic), no significant overall mean correlation could be established. Congruence was, however, related to occupational satisfaction in 17 of the studies scrutinised by Tranberg et al. (1993) (correlations ranging from 0,09 to 0,40).

Villwock, Schnitzen and Carbonari (1976) examine the relation between congruence, consistency and differentiation as predictor of stability of occupational choice and find that congruence has the strongest predictive power (0,35). The practical relevance of consistency and differentiation is questioned, due to a minimal contribution of the latter constructs to the explained variance after semipartialing out congruence in the multiple regression analysis. Meir and Hasson (1982) provide evidence on the relation between congruence and staying in an environment (in this case a Jewish settlement). A correlation of

0,44 was found between personality-environment congruence and intention to stay in a settlement (which also functions as a work environment). Gottfredson (1977) reports on a relationship between congruence and job stability for bank tellers. A relationship of 0,43 for males and a relationship of 0,23 for females is observed.

Evidence on the relationship between congruence and job stability is presented by Oleski and Subich (1996), confirming the hypothesis that employed adults in the process of career change would move in a direction of congruence (i.e. choosing work environments that are in line with personality types). In a meta-analysis of the relationship between congruence and well-being measures (operationalised in terms of job satisfaction, stability and academic achievement), on the other hand, only relatively low correlations between congruence and job stability (0,15) and academic achievement (0,06) are reported (Assouline & Meir, 1987).

Research evidence on differentiation and consistency has been less conclusive and Holland (1985) maintains that there is a balance between positive and negative results.

Positive results on the relationship between consistency (operationalised in terms of grade point averages) and academic achievement are obtained by Foster and Gade (1973), whilst other studies (O'Neil, 1977) report on a weak or non-existent relationship between consistency levels and academic achievement. Wiley and Magoon (1982) find that consistency is positively related to academic achievement, as well as persistence in college (stability of choice). Gottfredson (1977) reports a moderate positive relationship between consistency and job stability. Furnham and Schaeffer (1984) find no significant relationship between either consistency and job stability, or consistency and work stress. The relationship between consistency and work related outcomes, therefore, does not seem to be a very well established one.

A significant correlation of 0,38 for differentiation and job satisfaction is reported by Wiggins (1982) in a study involving a sample of 123 school counsellors. Furnham and Schaeffer (1984) report that the degree of differentiation of the



personality profile of an individual is directly related to the occupation of a job that is suitable for such a person. In terms of Holland's propositions, no significant relationship between differentiation and job satisfaction and work stress could be established. An hypothesised interaction effect of differentiation with congruence in the prediction of work related outcomes, such as job satisfaction and job stability, is rejected by Gottfredson and Holland (1990).

### **2.7.6.3 Empirical evidence pertaining to the applicability of Holland's theory across culture and gender**

The applicability of Holland's theory across different cultural domains has been investigated by a number of researchers. Aranya, Amernic and Barak (1981) report on evidence pertaining to the applicability of Holland's propositions in a Canadian setting, employing a group of Canadian and American accountants as the research population.

Van der Walt and Els (1991) confirm the applicability of Holland's occupational codes in the South African setting. Brand, Noordwyk and Hanekom (1994) investigate the applicability of Holland's theory, as operationalised by the SDS, in a non-western environment, represented by a sample of black South African adolescents, and obtain supporting results. The applicability of Holland's theory in the South African context is, however, questioned by Stead and Watson (1998), who maintain that the structure of the hexagon was found to be flawed in a study involving Grade 10 and Grade 12 black adolescents.

Cross-cultural validity of Holland's model in Hong Kong is investigated by Farth, Leong and Law (1998) and a considerable degree of external validity of the model is demonstrated.

The applicability of Holland's theory across gender is also confirmed to a large extent. Villwock et al. (1976) find no significant contribution of gender to the explained variance of the relationship between congruence, differentiation, consistency and stability of choice. Anderson, Tracey and Rounds (1997) find no evidence of differential fit of Holland's model across gender. A study conducted on the relevance of Holland's propositions for lesbian women and gay men

demonstrates the relevance of central constructs, such as congruence, for these groups (Mobley & Slaney, 1996).

#### **2.7.6.4 Evaluation and critique of Holland's theory**

Of all the theories on occupational choice, Brown and Brooks (1990) consider Holland's theory to be superior in terms of construction, parsimony, definition of constructs, and interrelationship among principles. The practical applicability of the theory is also regarded as a major asset. Critics of the theory claim that the hypothesized personality characteristics of individuals occupying the six types of environmental models have not been as homogenous as suggested by Holland (Turner & Horn, 1977). The lack of explanation as concerns the dynamics of personality development (in this case type development) is one of the main points of criticism forwarded against the theory. The theory therefore falls short of explaining why people develop into certain types (Van der Walt & Els, 1991). The theory also fails to take career development issues, such as environmental, sociological, and economic constraints that impact on the process of occupational choice and change, into account (Brown & Brooks, 1990 ; Ellison, 1997). The constructs of differentiation and consistency have not been uniformly confirmed in past research efforts and serious doubts, pertaining specifically to their predictive power, do exist (Villwock et al., 1976, Brown & Brooks, 1990). An additional construct, identity, is generally regarded as being poorly defined and has proven to be of very limited empirical value (Brown & Brooks, 1990). Osipow (1983) maintains that, while the theory accounts for a good deal of vocational behaviour, it neglects suggestions on the treatment of problems in career choice.

## **2.8 SUMMARY**

This chapter presents a discussion of the construct of occupational choice and major theoretical approaches related to it. The following five approaches to the study of occupational choice are highlighted: trait and factor theory, personality theories of occupational choice, sociological perspectives of occupational choice

and developmental theories of occupational choice. The most prominent characteristics of each approach are indicated and critically discussed.

The trait and factor school is represented by Parson's (1909) matching men and jobs approach and Lofquist' and Dawis' (1984) work adjustment theory.

Roe and Lunneborg's (1990) personality theory, Bordin's (1990) psychodynamic approach, and Holland's (1966, 1973, 1985) theory of occupational choice present personality approaches of occupational choice. Super and Bohn (1971), Ginzberg (in Yost & Corbishley, 1987), Tiedeman (in Osipow, 1983), Schein (1978), Levinson (1984) are discussed as proponents of the developmental approach of occupational choice. Mitchell and Krumboltz's (1990) social learning theory of occupational choice is highlighted as part of the discussion of the behavioural approach of occupational choice. Some recent theories are also touched upon. These diverse theoretical approaches provide a fairly integrated picture on the nature of occupational choice and its outcomes in terms of personal and occupational success.

Holland's (1966, 1973, 1985) personality theory of occupational choice is discussed in detail, and important facets of the theory (personality types, environmental models, differentiation, consistency, congruence) are discussed. An overview of relevant research findings on the construct validity of the theory and the relationship between some of Holland's constructs with some dimensions of work success is provided.

The first objective of the literature review, namely to define occupational choice and ascertain its relevance in determining work success, has therefore been achieved.

In chapter 3 the work success concept and relevant dimensions thereof are discussed, as well as an integrated model of occupational choice and work success.

## **CHAPTER 3: WORK SUCCESS**

Chapter 3 provides an overview of the concept of work success. Subjective and objective measures of work success are indicated and a definition is given. The following dimensions of work success are defined and elaborated upon: job satisfaction, job stability, work stress and academic achievement. Individual and organisational dimensions of these constructs are indicated. Finally, an integration of the concepts of occupational choice and work success is engaged upon in terms of Hall's (1976, 1990) model of psychological success.

Chapter 3 therefore corresponds with objectives 2 and 3, as set out in chapter 1, namely to define work success and some of its relevant dimensions and to integrate the two constructs, occupational choice and work success, with the aim of building a theoretical model to be tested in the following empirical study.

### **3.1 INTRODUCTION**

The concept of work success is a multi-dimensional one. Owing to the multifarious meaning of work success, its definition, measures, and criteria are difficult to express in concrete and general terms (Crites, 1969). Because of this ambiguity and the extreme subjectivity of the concept work success there are relatively few aspects of this concept that are comparatively clear cut, precisely because work success "has different meanings for different people " (Schreuder & Theron, 1997, p. 16). For some individuals success may lie in the level of their earnings and progression in terms of rank, others may value freedom and creativity as major work successes, yet others may attest to their length of stay in a certain occupation or organisation as valued work success. The perplexing nature of work success, therefore, stems from general confusion about the achievements and successes within certain occupations, successes between certain occupations (where order and structure may represent success to the bureaucrat, but failure to the creative artist) and confusion about success within an individual person (Super & Bohn, 1971).

Success also assumes different meanings when approached from either the individual or organisational perspective. Relevant dimensions or measures of work success are,

therefore, indexed much more often in the literature than work success per se (Crites, 1969 ; Maier & Verser, 1982).

In an overview of 14 factor analytical studies which have been conducted on work success, Crites (1969) identifies a vast array of factors that are associated with work success, some of these factors are: conscientiousness, ability to do the job, job-related knowledge, versatility, accuracy, health, economic security, learning aptitude, job performance, relations to others, interest, morale, drive, initiative, social intelligence, personal appearance, reputation, company loyalty (organisational commitment), social maladjustment and successful school work.

Crites (1969) differentiates between objective and subjective measures of work success. Objective measures of work success revolve mainly around individual earnings and output, as well as advancement and occupational stability. Subjective measures of work success pertain to the feelings and perceptions of individual jobholders relating to their work. These subjective measures are also referred to as psychological success. This differentiation is in line with Hall's (1976) two faceted view of careers. The objective career is manifested in positions and offices ('statuses') occupied by an individual. The objective career is, therefore, easily discernible to outside observers. The subjective career refers to an individual's own perception of work-related interactions and entails individual self-estimation of success. The initial conceptualisation of work success in terms of work performance, efficiency and productivity (objective measures) has, therefore, evolved into a broader perspective of work success containing additional dimensions such as work adjustment, work morale and satisfaction, and health issues.

Schreuder and Theron (1997, p. 17) underline this view by stating: "In the light of current business trends, it is essential that the meaning of success be reflected more by the individual's perception of his / her internal career rather than that it should be dependent on the traditional characteristics of success - namely promotion, salary increases, perks."

Success and failure are often viewed as a form of punishment and reward because they have a crucial impact on the satisfaction or denial of individual ego needs. The degree of punishment or reward experienced by a person is directly linked to the individual's self-imposed criterion of ability to achieve success. Whether a particular action or

achievement is regarded as a success therefore depends on an individual's level of aspiration (Maier & Verser, 1982). The achievement of a grade B in mathematics might be regarded as a failure by the mathematically gifted student, whereas such a grade would be experienced as a huge success by a less numerically orientated class mate. Success, to make matters even more complicated, can not only be differentiated according to nature (subjective or objective), but along the lines of the intensity experienced in accordance with self-perceived ability and self-efficacy (level of aspiration). It is, therefore, highly unlikely that success can be experienced in the same way by two different persons. A very positive characteristic of success is its tendency to raise an individual's level of aspirations; it therefore acts as an extremely important motivator (Maier & Verser, 1982).

The following definitions can be regarded as important antecedents of more recent notions of work success as outlined above:

"Occupational success is measured in terms of the occupational level attained, self-estimated occupational success, and the individual's perceptions of how well his assets are used and of the quality of his opportunities for self-expression" (Super & Bohn, 1971, p. 72). "Vocational success can be defined as the probability that a worker's behaviour will achieve a particular goal in a given work environment" (Crites, 1969, p. 414).

Work success, as a synopsis of occupational success (entailing the well-being and achievement of a person at a particular time in a particular occupation) and career success (entailing the progress of an individual over an extended time span), is therefore a multifaceted, highly subjective construct with an enormous amount of related factors (Crites, 1969).

The following sections will deal with four established dimensions of work success. Job satisfaction and experienced work stress are examples of subjective measures of work success, and pertain more specifically to occupational success. Job stability and work-related educational achievement / attainment are examples of objective measures of work success, and pertain more specifically to career or vocational success.

### 3.2 JOB SATISFACTION

Satisfaction is essentially an attitudinal response towards a certain object. In this sense satisfaction is a predisposition, or attitude, that can lead to specific behavioural consequences. An attitude consists of three components: affective, cognitive, behavioural (Gibson, Ivancevich & Donnelly, 1994). Job satisfaction, as an attitude, consists of an emotional (affective) response toward work, and of perceptions, opinions, and evaluative beliefs (cognitive component) that an individual holds toward a work situation. Job satisfaction manifests itself eventually in a behavioural component which determines the actions an individual is prone to take in the job situation (Gibson, Ivancevich & Donnelly, 1994). The behavioural component of job satisfaction is also often referred to as work motivation (McCormick & Ilgen, 1985). Job satisfaction is thus related to the cognitive (intellectual), affective (emotional), and conative (volition) functions of employees, playing an important part in an incumbent's inclination to perform (Gerber, Nel & Van Dyk, 1995).

Job satisfaction, as a construct in this research, is primarily concerned with the feelings an individual holds toward his / her job. Stated another way it is an individual's hedonistic response of liking or disliking his / her work or occupation (McCormick & Ilgen, 1985). Job satisfaction can, therefore, be defined and summarised as "the attitude that workers have about their jobs, which results from their perceptions of their jobs" (Gibson, Ivancevich & Donnelly, 1994, p. 121).

Job satisfaction is based on the perceptions workers have about certain factors of their work environment. These factors are called events, conditions and agents of job satisfaction (Locke, 1976). Events and conditions are directly responsible for feelings of satisfaction or dissatisfaction and agents are responsible for events and conditions. The first three points in the list below describe typical events and conditions of job satisfaction, whilst the last three points describe typical agents of job satisfaction (Locke, 1976):

- (1) The work itself, entailing the incumbent's intrinsic interest in the job tasks, opportunity for learning and development and challenge, responsibility, control over work.

- (2) Rewards (pay, promotions, recognition), entailing amount of rewards, as well as perceived equity and fairness thereof.
- (3) The work context (working conditions, benefits), entailing working hours, ergonomics in the work place, occupational health and safety, pension, insurance and leave arrangements.
- (4) The self, entailing perceptions of own values, skills, abilities and utilisation of these.
- (5) Other people within the company (supervision, co-workers) entailing supervisory style and competence, friendliness, support and technical proficiency.
- (6) Other people outside of the company (customers, family members), entailing friendliness and support and demands for time.

It is, therefore, apparent that job satisfaction is a multi-dimensional or multi-faceted construct. This multi-dimensionality poses a serious predicament as concerns the adequate operationalisation of job satisfaction. Composite satisfaction measures, which focus on individual facets of job satisfaction, have contributed to a lot of the inconsistency regarding the research on job satisfaction. A global, or overall, measure of job satisfaction, yielding a comparable measure across different studies, is therefore advocated by many researchers (Saal & Knight, 1995).

A further distinction can be drawn between intrinsic and extrinsic job satisfaction, where intrinsic job satisfaction refers to perceptions of the job content per se, such as autonomy and responsibility. Extrinsic job satisfaction refers to contextual dimensions of the job, such as pay and working conditions (Saal & Knight, 1995). A truly global measure of job satisfaction should address both intrinsic and extrinsic aspects of job satisfaction.

The impact of dispositional (trait) factors on job satisfaction is another issue that makes the understanding and prediction of job satisfaction difficult. Whilst most researchers agree that environmental factors (such as job design) play an important role in the determination of job satisfaction, the role of specific traits (such as personality, vocational interests, intelligence) has been more difficult to establish (Gerhart, 1987). Arvey, Bouchard, Segal and Abraham (1989) maintain that approximately 70 percent of the variance in job satisfaction measures can be explained by environment and other (error



variance) factors, whilst approximately 30 percent of variance in job satisfaction measures can be associated with dispositional, trait-based factors.

### **3.2.1 Theoretical perspectives of job satisfaction**

A number of different theoretical views of job satisfaction can be distinguished, the most prominent being the following: discrepancy theory of job satisfaction, instrumentality theory, social influence theory, equity theory and two-factor theory. These theoretical approaches are addressed below.

#### **3.2.1.1 Discrepancy theory of job satisfaction**

The basic assumption of this approach is that job satisfaction is caused by the degree to which discrepancies between the nature of the job and some other state are perceived. The fewer the discrepancies, the more job satisfaction of employees can be expected. Other states can be the following: needs, desires, interests, values and beliefs (Beehr, 1996). Job satisfaction, therefore, is the experienced affect resulting from a set standard of an individual in comparison to the individual's perception of the extent to which the set standard has been achieved (McCormick & Ilgen, 1985). For example, an individual with a high need for power will experience a low level of job satisfaction, when operating in an work environment demanding obedience and subordination.

The discrepancy approach directly reflects the basic assumption of employee-environment congruence that the functioning of an individual in a work environment that is in agreement with his / her occupational interests (as other state) will experience a lower level of discrepancy and therefore higher level of job satisfaction. Congruence can therefore be regarded as a measure of low discrepancy (Beehr, 1996).

The discrepancy theory is one of the most common approaches to the study of job satisfaction. No agreement, however, exists on the relative impact of different standards (e.g. needs, values, interests) according to which discrepancy should be established. Studies indicate that values and frames of references serve as standards more often than do other states (Beehr, 1996).

### **3.2.1.2 Instrumentality theory**

Instrumentality theory of job satisfaction is based on the assumption that high instrumentality expectations regarding the degree to which a job will meet existence, relatedness, and growth needs are positively related to subsequent job satisfaction (Pulakos & Schmitt, 1983). Instrumentality, which also functions as a central concept in the expectancy theory of motivation (Vroom, 1964) refers to an individual's perceived association between the job and different work-related outcomes, such as pay, security, working conditions, interpersonal relations, challenge and responsibility. Outcomes may vary in attractiveness (valence), preferred outcomes are positively valent and the attainment of such a preference leads to job satisfaction. Outcomes perceived as negatively valent are avoided, whilst a valence of zero leads to indifference towards such an outcome (Vroom, 1964). The valence of a certain outcome is normally based on individual judgement and different outcomes are compared and weighted against each other. In instrumentality theory the focus therefore lies on the predictability of job satisfaction through the outcomes an individual believes to obtain from work (Pulakos & Schmitt, 1983).

### **3.2.1.3 Social influence theory of job satisfaction**

The social influence perspective of job satisfaction argues that job satisfaction is not only derived through the evaluation of one's own job situation and objective task requirements, but also through the observation and an awareness of the positive attitudes of other workers (Weiss & Shaw, 1979). Satisfaction or dissatisfaction can therefore be derived from the mere observation of satisfaction or dissatisfaction of other individuals in similar job situations. Social learning theory, demonstrating that learning often occurs through imitation or modelling, is therefore central to the social influence theory of job satisfaction (Weiss, 1978).

Two interpretations of social influence theory can be differentiated: the strong interpretation and the weak interpretation. The strong interpretation postulates that social cues, observation and perception of other's level of job satisfaction provide the only basis

for job satisfaction. The weak interpretation acknowledges the role played by social forces in the attainment of job satisfaction, but ascribes a major part of job satisfaction to other factors as well. These factors include individual perceptions of discrepancies and instrumentalities. The weak interpretation of the social influence theory seems to be the more supportable and accepted exposition (McCormick & Ilgen, 1985).

#### **3.2.1.4 Equity theory**

Equity theory, as a theory of work motivation, forms an important part in the thinking about job satisfaction. This approach essentially combines the most important elements of the discrepancy theory of job satisfaction and the social influence theory of job satisfaction. The essence of equity theory revolves around the comparison of the efforts and rewards received by an employee to those of others in similar work situations. If one's outcome / input ratio (reward /effort ratio) is perceived to be lower than that of a reference person (e.g. a co-worker) a feeling of inequity and dissatisfaction can persist (Adams, 1963). The same outcome is predicted for the opposite situation, where receiving more than equitable can also result in feelings of dissatisfaction (McCormick & Ilgen, 1985). If a feeling of inequity and dissatisfaction is experienced an individual tends to engage in change procedures to restore equity, some of these procedures are: changing inputs (putting less or more effort into the job), changing outcomes (demanding more pay), changing attitudes (rationalisation of poor performance), changing the reference person (comparing self with another person), changing inputs or outcomes of the reference person (asking reference person to reduce output) and changing the situation (quitting) (Gibson et al., 1994).

Whilst the role of perceived equity as a determinant of job satisfaction has been accepted by most theorists, equity theory remains primarily a theory of work motivation. McCormick and Ilgen (1985) maintain that the equity framework does not seem to explain a major portion of job satisfaction variance.

### 3.2.1.5 Two-factor theory

This approach, as proposed by Herzberg (Herzberg, Mausner & Snyderman, 1959) views job satisfaction as a consequence of the presence of intrinsic motivators and that job dissatisfaction stems from the absence of extrinsic motivators, or hygiene factors.

Extrinsic conditions, or hygiene factors, refer to the job context and include: pay, job security, working conditions, status, company procedures, quality of supervision and sound interpersonal relations. The presence of these factors does not guarantee job satisfaction per se, but it prevents job dissatisfaction (Herzberg et al., 1959). Intrinsic conditions, or motivators, pertain to the job content and include: achievement, recognition, responsibility, advancement, the work itself and the possibility of growth. The presence of these factors causes job satisfaction, while an absence does not prove to be highly dissatisfying (Herzberg et al., 1959). Motivators, or job content related factors, only affect job satisfaction, whilst hygiene factors, or job context related factors, only affect job dissatisfaction.

House and Wigdor (1967) maintain that this two factor view of job satisfaction has been negated to a large extent as both motivators (satisfiers) and hygiene factors (dissatisfiers) contribute to job satisfaction and dissatisfaction. A given factor can cause job satisfaction for one individual and job dissatisfaction for another person, depending on an individual's occupational level, age, gender, formal education, and culture. The satisfier-dissatisfier dichotomy is thus regarded as a gross oversimplification of the sources of job satisfaction and job dissatisfaction. Motivators do, however, seem to explain more variance in job satisfaction and dissatisfaction than hygiene factors (House & Wigdor, 1967).

Alongside these major theories of job satisfaction a number of alternative views of job satisfaction can be distinguished. Hackman and Oldham (1980), for example, propose that job satisfaction, as a favourable work outcome, is largely induced by core job characteristics (skill variety, task identity, task significance, autonomy and feedback) giving rise to critical psychological states (experienced meaningfulness of work, experienced responsibility for work outcomes and knowledge of results of work). The

relation between core job dimensions and outcomes is moderated by an employee's knowledge and skills, need for growth, and organisational context satisfactions.

All of the above mentioned theories offer propositions about processes by which job satisfaction is determined by individuals. Job satisfaction, as the focus of these theories, has important implications for organisational and individual functioning, some of which are reviewed below.

### **3.2.2 Outcomes of job satisfaction**

The relation between job satisfaction and organisational and individual functioning has been the focus of much research. For many years following the famous Hawthorne studies the beneficial effect of job satisfaction has been taken for granted (Saal & Knight, 1995). Some of the more recent evidence on the interaction between job satisfaction and organisational and individual consequences is examined below.

#### **3.2.2.1 Organisational outcomes of job satisfaction**

"Organisations can expect employees to be attached to them and less prone to withdrawal if the employee experiences job satisfaction" (Gerber et al., 1995).

Withdrawal refers to the self-initiated removal of a worker from his / her work place. Two forms of removal are absenteeism (temporary withdrawal) and turnover (permanent withdrawal) (Cascio, 1991). Employee withdrawal is regarded as a major issue by most organisations due to the loss of productivity and high direct and indirect costs involved. Cascio (1991) provides a detailed analysis of the huge financial implications of employee turnover. Turnover costs for an organisation consist of separation costs (entailing the costs of the exit interview, administrative costs related to terminations, separation pay and social security payments), replacement costs (entailing costs of advertising, pre-employment administrative functions, candidate assessment and eventual travel expenses), training costs (entailing fees for induction and development programmes, instructional materials, pay rate of trainer instructor and proportional reduction in productivity due to training). Similarly absenteeism bears considerable financial implications for the organisation. Cascio (1991) differentiates between the

following major financial burdens that are associated with absenteeism: lost compensation to absent employees, supervisory hours lost to employee absence, production losses, overtime payments to replacements, inefficient materials usage and loss in quality. The effect job satisfaction can have on employee withdrawal, in that satisfied workers are less likely to leave or stay away from the job, therefore has considerable financial implications for the organisation.

Other findings, however, point to the fact that the relationship between job satisfaction and employee withdrawal might not be as substantial as had been previously assumed (Hackett, 1989). Job satisfaction, rather than being the direct cause of employee attendance, is regarded as one among a number of factors that determines employee attendance. Whilst job satisfaction is still regarded as an important factor accounting for employee absenteeism, a number of moderators, such as external pressures (for example, economic conditions), inability to attend (for example, illness), opportunities for off-the-job satisfaction, organisational control policies and workgroup norms weaken the effect of job satisfaction on absenteeism (Hackett, 1989). The initiation of absence from work is regarded as being directly related to the job satisfaction experienced by an employee, whereas duration of absence seems to be more associated with positive aspects of non-work activities (Landy, 1989). Turnover, similarly, seems not to be directly related to job satisfaction. Job satisfaction is, however, closely related to employee intention to quit. Intention to quit in conjunction with availability of alternative job opportunities, again, substantially correlates with actual turnover (Steers & Mowday, 1981). Research on absenteeism and turnover generally supports the negative link between job satisfaction and employee withdrawal. The relationship, however, is not a direct one and non-work influences, for example family considerations, have an important impact on employee withdrawal as well (Steers & Mowday, 1981).

Job satisfaction, alongside production, efficiency, flexibility, and quality, is regarded as one of the main criteria for organisational competitiveness, development, and survival. Job satisfaction is, therefore, linked with organisational performance (Gibson et al., 1994). Saal and Knight (1995) maintain that job-work role satisfaction has a major effect on psychological job withdrawal, which, in turn, impacts negatively on job performance. Some performance-related consequences of psychological job withdrawal are the

following: absentmindedness on the job, alcohol and drug misuse, work avoidance, work simulation and misuse of work breaks.

Iaffaldano and Muchinsky (1985) maintain that there is no strong pervasive relation between job satisfaction and performance, as the mean correlation of 217 studies examining the relationship between satisfaction and performance measures only amounted to 0,14. Whilst the relationship between job satisfaction and performance does not seem to be a direct one, it seems possible that moderators, such as rewards, job pressure and degree of job fit, enhance the strength of positive satisfaction-performance correlation (Iaffaldano & Muchinsky, 1985). Ostroff (1992), on the other hand, maintains that an organisational level approach to the study of the satisfaction-performance relationship clearly confirms that considerable links between job satisfaction and organisational achievement and productivity do exist.

### **3.2.2.2 Individual outcomes of job satisfaction**

The impact of job satisfaction on non-work satisfaction is not very clear cut, as there is positive and negative evidence of such a relationship. Whilst some evidence does exist that job satisfaction leads to increased benefits in non-work areas (operationalised in terms of pleasure, freedom, and relaxation derived from non-work activities), conflicting results point toward an inconsistent or weak relationship (Kabanoff & O'Brien, 1980 ; Landy, 1989). Judge and Watanabe (1993), in an overview of studies conducted on the job satisfaction-life satisfaction relationship, admit that no conclusive evidence does exist, but that a large number of results actually confirm that job satisfaction and life satisfaction are positively and reciprocally related. The effect of life satisfaction on job satisfaction does, however, seem to be significantly stronger than the effect of job satisfaction on life satisfaction. Life satisfaction can be regarded as an individual's perception of how miserable or enjoyable, useless or worthwhile, discouraging or hopeful his / her daily life is (Judge & Watanabe, 1993). Positive mental health is another individual outcome that is positively associated with job satisfaction (Pulakos & Schmitt, 1983). Gerber et al. (1995) maintain that job satisfaction is an essential precondition for physical health and prolonged life expectancy.

### **3.3 WORK STRESS**

The study of work stress is essentially a multidisciplinary one. Four distinct approaches to the study of work stress in the workplace can be distinguished: medical, clinical / counselling psychology, engineering psychology and organisational psychology (Beehr, 1996). Work stress is studied in terms of three major dimensions, namely typical stressors (physical or psychological), typical outcome (physical strain, psychological strain, job performance) and primary target of treatment (individual, organisational). The focal point of each approach rests on specific aspects of these dimensions of stress. Organizational psychology, for example, focuses on psychological stressors, psychological strains as stress outcomes and the organisational context as primary target of treatment (Beehr, 1996). Notwithstanding these different approaches to work stress, the underlying theme is one where "stress is produced by an interaction between a person and the environment which is perceived to be so trying or burdensome that it exceeds one's coping resources" (Greenhaus & Callanan, 1994, p. 222). Stress is, therefore, regarded as a demand placed on an individual requiring coping behaviour.

Two different kinds of stress can be distinguished: eustress and distress (Quick & Quick, 1984). Eustress refers to an adaptive, constructive, healthy response to a stressful situation and is accompanied by a feeling of achievement and exhilaration. Eustress can be regarded as a beneficial motivational force and as a significant contributor to the achievement of individual goals. Distress, on the other hand, refers to a maladaptive, dysfunctional, detrimental response to a stressful situation and often leads to feelings of inadequacy and loss of control. Distress is harmful and impacts negatively on individual and organisational functioning and performance (Quick & Quick, 1984). The sources and consequences of work-related distress (work stress) are addressed below. A response based model of work stress, as employed by Greenhaus and Callanan (1994), Handy (1995), Quick and Quick (1979), is utilised as frame of reference.

#### **3.3.1 Sources of work stress**

Work stress can be triggered by a particular work-related situation that is interpreted as threatening, as well as by a personal tendency to perceive work circumstances as



stressful (Greenhaus & Callanan, 1994). Such a work-related or personal trigger of work stress is called a job stressor. For the purposes of this discussion a job stressor will be defined as "a stimulus or any environmental event in the workplace requiring some type of adaptive response" (Jex, Beehr & Roberts, 1992, p. 623). Stress can be caused by a large array of environmental stressors, the most prominent of which are set out below (Greenhaus & Callanan, 1994 ; Quick & Quick, 1979):

- (1) Organisational characteristics, including centralisation, low participation in decision-making, inadequate communication, pay inequities and unfair performance evaluation.
- (2) Job demands, including time pressures and deadlines, repetitive work, boredom, excessive responsibility and inefficient job design.
- (3) Role characteristics, including role ambiguity (lack of clarity about expectations or performance) role conflict (conflicting expectations regarding appropriate role behaviour) and role overload / underload ( too much or too little work).
- (4) Interpersonal relationships, including conflict between work groups, excessive competition, inequitable or inconsiderate supervision, group and peer pressure and personality conflicts.
- (5) Working conditions, including crowding, noise, excessive temperature levels and vibrations.
- (6) Career concerns, including loss of employment, retirement, obsolescence and job / employer change.
- (7) Non-work pressures, including family disputes and life transitions (divorce, illness, death, birth of child).

Sherman & Bohlander (1992) explicitly refer to person-environment incongruence as a major work stressor, as role conflict and lack of coping with job demands are a direct consequence of an individual feeling trapped in a job for which he / she is ill-suited.

When confronted with a stressor the initial individual resistance is one of shock, which is followed by the so-called flight-or-fight syndrome (Quick & Quick, 1984). This fight-or-flight reaction, during the alarm stage of stress, heightens resistance ability to the stressor well beyond the normal level of resistance. A considerable physiological and

psychological resistance to the stressor can be maintained for some time (resistance stage of stress reaction) leading to increased performance and culminating in a performance plateau. When the alarm reaction is prompted too often and too intensely, individual coping resources become depleted, initiating a third stage of stress reaction, namely exhaustion or collapse. Individual strains and symptoms of distress are a consequence of this stage of exhaustion or collapse (Louw & Edwards, 1993).

The mere presence of environmental stressors does not necessarily invoke stress. The appraisal or interpretation of the situation as posing a real threat plays an important part in the origination of perceived stress. The immediate relevance and importance of an environmental stressor, therefore, has a distinctly moderating effect on the level of perceived stress (Greenhaus & Callanan, 1994). Personal characteristics may produce stress over and above the effects environmental stressors may have. Feelings and perceptions of stress can be heightened by personal characteristics, such as high anxiety levels, Type A personality characteristics, intolerance of ambiguity and neuroticism (Handy, 1995).

A summary on the nature and dynamics of work stress is offered by Levi (1990, p. 1143): "... in general, it can be concluded that if a mismatch exists between the worker and the job, if the worker is (or feels) unable to control his or her work conditions, or if he or she copes ineffectively or lacks social support, then potentially pathogenic reactions can occur. These reactions can be emotional, cognitive, behavioural and physiological."

### **3.3.2 Outcomes of work stress**

Perceived stress leads to job-related strains, which refer to an individual's response to the conditions evoked by the presence of stressors (Jex, Beehr & Roberts, 1992).

The degree to which job-related stressors lead to strains is dependent on the intensity of stress experienced by the job holder. Extreme levels of stress, either high or low, are regarded as sources of strains due to overstimulation or understimulation. Optimal or moderate levels of stress, can be challenging to employees producing increased

performance through eustress (Quick & Quick, 1984). Distress-related individual strains and their implication for organisational outcomes are outlined below.

### **3.3.2.1 Individual outcomes of work stress**

Work-related stressors affect human functioning through psychological processes and influence individual health, productivity, performance through three types of interrelated mechanisms - physical, emotional and behavioural (Levi, 1990). Handy (1995) and Quick and Quick (1984) illustrate some of the physical, psychological, and behavioural changes that go hand in hand with strain symptoms:

- (1) Physiological: increased heart rate, increased galvanic skin response, increased respiration, increased adrenaline production, increased gastric acid production, increased cholesterol levels leading to long term ailments such as ulcers, increased blood pressure and heart attacks.
- (2) Psychological: boredom, apathy, inattentiveness, psychogenic disability, irritability, negativism, depression, reduced aspiration and burnout syndrome.
- (3) Behavioural: escapist drinking, sudden change in smoking habits, drug abuse, accident proneness and violence.

Levi (1990) maintains that all of the 10 leading work diseases, such as cardiovascular diseases, occupational cancers, occupational traumatic injuries and neurotoxic disorders, are to some degree related to work stress. Tetrick and LaRocco (1987) confirm this view that stress-induced individual strains lead to a marked weakening of the body's immune system leading to physical illness and, possibly, to death. These medical conditions often serve to aggravate already present psychological conditions of nervous tension and feelings of depression, having a detrimental negative effect on the overall quality of life experienced by an individual (Quick & Quick, 1984).

The most severe stage of distress is called burnout. Career burnout is associated with lack of personal fulfillment and a lack of positive feedback about performance. Disillusionment about personal values and aspirations, perceptions of the uselessness and ineffectiveness of one's contributions in the work place, and poor opportunities for

promotion or reward are associated with burnout. Decline in efficiency, dampened initiative, exhaustion, fatigue, irritability, pessimism, mood swings and feelings of helplessness are symptoms of the burnout syndrome (Quick & Quick, 1984).

### **3.3.2.2 Organisational outcomes of work stress**

Physical, emotional, and behavioural strains have a direct impact on work-related outcomes such as job dissatisfaction, reduced job involvement, absenteeism, turnover, and work ineffectiveness. Distress, therefore, poses not only a threat to individual physical and emotional well-being, but may also produce gross organisational dysfunctionality (Greenhaus & Callanan, 1994). The effects of job dissatisfaction, absenteeism and turnover on organisational functioning have been addressed in section 3.2.2.1. Stress-induced work ineffectiveness is often associated with the following symptoms: predictable absenteeism patterns, tardiness and early departures from work, increased arguments with fellow workers, causing injuries to other employees through negligence, poor judgements and bad decisions, unusual work related accidents, increased spoilage and breaking of equipment (Cascio, 1991). High levels of work stress are also associated with industrial relations problems and individual worker's propensity to go on strike (Handy, 1995).

According to Sherman and Bohlander (1992) a sizeable amount of occupational disease claims can be traced back to stress-related ailments. This, obviously, has a direct financial impact on organisational health care benefits, such as medical aid schemes.

Cascio (1991) outlines the costs of organisational employee assistance and wellness programmes and identifies the following direct costs: enlisting of professional health care service organisations, construction of adequate on-site facilities, promotional materials and eventual incentive payment to employees for participation. Cascio (1991) furthermore provides staggering evidence on the financial implications incurred by organisations due to stress-induced productivity losses in terms of annual earnings of employees, expense of supervisor's time and earnings due to the handling of employee problems, costs of individual stress-related work accidents and costs incurred due to training and replacement of employees on grounds of increased personnel turnover. Ostroff (1992) substantiates the notion that work stress, owing to its relation to lower

productivity, higher medical costs and absenteeism, has an eroding effect on a company's bottom line.

Organisational efforts to reduce employee stress are not only restricted to employee assistance and wellness programmes. The redesigning of jobs, elimination of racial / gender stereotypes, initiation of goal-setting programmes, building of supportive work groups, elimination of harmful elements of physical working conditions and development of flexible work schedules as organisational attempts to reduce stressors in the workplace place additional burdens on the financial, physical, and human resource capacities of an organisation (Greenhaus & Callanan, 1994).

### **3.4 JOB STABILITY**

Job stability is not a subjective psychological construct, such as a work attitude like job satisfaction. Job stability is directly observable and can be regarded as an objective outcome of occupational behaviour. Job stability can be defined and operationalised in many ways and is also directly associated with a multitude of psychological constructs and other work-related outcomes.

Job stability is often regarded as organisational tenure or professional tenure. Organisational tenure pertains to the time span that an individual works for a certain organization, whereas professional tenure refers to the time span that an individual works in a particular occupational or professional field (Lease, 1998). Stout, Slogum and Cron (1987) describe career transitions in terms of frequency of occupational change and length of tenure between positions.

Three types of transitions can be differentiated (Stout et al., 1987):

- (1) Intraorganisational transitions: such a transition occurs when an employee moves from one division to another in the same organisation; the employee must cope with changes in tasks requirements, physical settings, co-workers and formal and informal procedures.

- (2) Interorganisational transitions: such a transition occurs when an employee moves from one company to another; the employee must cope with the challenges posed by intraorganisational change in addition to changes pertaining to organisational culture, work groups and industry demands,
- (3) Interprofessional transitions: such a transition occurs when an individual changes occupation or profession for example, an accountant becoming a lawyer; the employee must cope with differences in professional terminology, norms, professional self identity and societal response to professional identity.

These career transitions involve movement across some organizational boundaries, which can be called functional, hierarchical, and inclusionary (Schein, 1978). Lateral movement in an organisation, along technical or functional dimensions, is referred to as a lateral or functional career movement. A series of raises and promotions is normally associated with vertical or hierarchical career movement. An inclusionary career movement refers to a movement toward increased responsibility and enhanced trust. The employee becomes part of an inner circle where he / she is more frequently consulted on important organisational issues (Schein, 1978).

Intensity of change in a career decision is determined by job change accompanied by a change in one or more of the following: organizational level (promotion, demotion), function and occupational field. A change in job alone is viewed as the least intense. A job change in conjunction with changes in level, function, and occupational field is viewed as the most intense (Stout et al., 1987).

Stability of occupational choice is another important indicator of job stability, and can be operationalised in terms of actual changes in vocational plans over a certain period of time (Villwock et al., 1976). This measure of job stability is related to professional tenure and interprofessional career decisions.

Holland (1985, p. 112) defines job stability as career continuity, where "continuity means moving between jobs that belong to the same occupational category, in theoretical terms this means moving between jobs that belong to the same or a theoretically related occupational category following the hexagon."

Job stability has some important individual and organisational implications, some of which are addressed below.

### **3.4.1 Individual implications of job stability**

Stout et al. (1987) maintain that the magnitude and intensity of career transition is directly related to work stress, where distress sets in when the magnitude of the career transition exceeds the individual's coping resources. Frequent job changers often lack accurate historical data (gathered through prolonged job experience) and therefore lack a contextual frame of reference when it comes to moving into new positions. Interpretational errors and inappropriate behaviour are a direct consequence of this lack of integrated interpretational schemes and lead to job dissatisfaction and perceived work stress (Stout et al., 1987). A frequent transitioner may not develop fruitful interpersonal relations with co-workers, necessary for the testing and verification of behavioural modes conducive to career development. Job dissatisfaction, a higher propensity to leave, and reduced organisational commitment are often the result (Stout et al., 1987).

Job stability, or continuity, can contribute to a clearer individual awareness of vocational interests, needs, values and expectations. Continuity can, therefore, enhance individual career identity. An individual needs to view his / her life as consistent and must regard current achievements as extensions of the personal past. Career identity, or career perspective, is generally associated with favourable career outcomes such as satisfaction, productivity, and personal fulfillment (Gibson et al., 1994).

An excessive level of career discontinuity is associated with grave deficits in career decision-making skills. Some career indecision is regarded as natural and forms part of the developmental process of an individual; chronic indecision, however, is often an indication of a high level of neuroticism. Tokar et al. (1998) maintain that four major components of neuroticism: fear of commitment, trait anxiety, low self-esteem, and low hardiness, are positively associated with career indecisiveness and inversely related with career decision-making progress. High positive affectivity, on the other hand, seems to contribute significantly to goal stability and career decisiveness (Tokar et al., 1998).

Continuity can, however, contain a backlash as it may impact negatively on career adaptability. Globalisation and its economic and technological implications, have a severe effect on organisational tenure, as company restructuring and downsizing exercises are conducted on an ever more frequent basis. Thus career adaptability, which implies the application of the latest knowledge, skills, and technology in a career, might become problematic for employees 'trapped' in a certain job or organisation for too long (Gibson et al., 1994).

### **3.4.2 Organisational implications of job stability.**

Empirical evidence on the relation between professional tenure (time working in a particular professional field) and turnover intentions, intrinsic and extrinsic job satisfaction, and organisational commitment is fairly well established (Lease, 1998).

Greater continuity and professional tenure can impact on an employee's readiness to quit, or turnover intention. Turnover intention, in turn, is the most significant predictor of actual turnover behaviour (Steers & Mowday, 1981). In terms of dysfunctional turnover, where turnover refers to a situation where an individual wants to leave an organisation, but the organisation prefers to retain the individual, higher levels of continuity and professional tenure might mean a reduction in the costs of replacing employees (Dalton, Krackhardt & Porter, 1981). New, inexperienced employees might be prone to more work accidents, cause more waste and breakage, so that replacement cost often exceeds direct hiring costs. Turnover can also have a negative societal implication in that an organisation with a high turnover rate might be regarded by employees and society as an unstable, unpopular employer (Maier & Verser, 1982). Continuity and professional tenure can therefore provide relief for an organisation as concerns the adverse impact dysfunctional turnover can have on organisational functioning (see also section 3.2.2.1).

Turnover can also be beneficial for an organisation. This occurs when an employee wants to leave the organisation, and the organisation is unconcerned owing to a negative evaluation of the employee. Such a situation is called functional turnover (Dalton et al., 1981). A certain, controlled rate of turnover can, therefore, be beneficial to an organisation as substandard performers are replaced and an influx of new ideas, new



initiative, and state of the art knowledge takes place. This is especially important in a constantly changing, technology-orientated global economic setting (Gibson et al., 1994).

Organisational commitment is closely associated with professional and organisational tenure (Lease, 1998). Organisational commitment is a work attitude that can be defined as "a bond or linking of the individual to the organisation which makes it difficult to leave" (Lease, 1998, p. 155). Four dimensions of organisational commitment can be differentiated. Affective commitment refers to an individual's acceptance of the goals and values of the organisation, as well as the desire to maintain membership in the organisation. Calculative commitment is an individual's attachment to an organisation by means of investments, such as a pension plan or service benefits. A sense of loyalty and obligation toward the organisation is referred to as normative commitment (Lease, 1998). Organisational commitment is regarded as being negatively related to turnover and it is predictive of intent to stay. A modest relationship between organisational commitment and absenteeism, has also been established (Lease, 1998). Job involvement, as demonstrated in interest and dedication concerning the particular responsibilities and tasks of a certain post, is regarded as being closely associated with organisational commitment (Gibson et al., 1994).

Organisational commitment is an important moderator of the effect of stress on job dissatisfaction, meaning that the impact of work stress on job dissatisfaction is increased when organisational commitment is low (Begley & Czajka, 1993). Organisational commitment seems to be related to less negative affectivity (neuroticism) and greater positive affectivity (extraversion), which have important implications for individual functioning in the organisational context (Tokar et al., 1998).

Supervisory capacity might be undermined by frequent job changes, as personal and work stress associated with major career transitions undermines the principle of individual employee guidance and nurturing, and subsequently the potential organisational benefits of good supervision, such as performance and effectiveness (Stout et al., 1987).

### 3.5 ACADEMIC ACHIEVEMENT

"The achievement motive is the need to master difficult challenges, to outperform others, and to meet high standards of excellence" (Weiten, 1992, p. 358). Achievement motivation, therefore, consists of three separate, but interrelated aspects (Louw & Edwards, 1993):

- (1) Work motivation, which is a desire to work hard and obtain a fruitful, worthwhile result as a consequence of the work effort.
- (2) Mastery, which is a desire to improve on past performance and the acceptance and enjoyment of new challenges.
- (3) Competitiveness, which is a desire to match performance and accomplishment with that of others.

The achievement motive, or need for achievement, is a consequence of social learning. The pursuit of achievement, on the other hand, is not only a product of an individual's need for achievement, but also of task-related factors. One's estimate of the probability of success (or skill), as well as the perceived incentive value (valence) of success plays a significant role in the determination of pursuit of achievement (McClelland, 1985). Other significant causes of achievement motivation are the following: the motive to avoid shame and failure and emotions such as fear, jealousy and joy (Weiten, 1992).

Achievement motivation can have different focuses, such as economic, political, or educational opportunity. Educational achievement can, therefore, be regarded as a consequence of achievement motivation geared toward or focussed on attaining a formal educational qualification (Louw & Edwards, 1993). One popular measure of academic achievement as a criterion in vocational research is an individual's college or university grade point average (GPA), or mark aggregate (Assouline & Meir, 1987). Educational aspiration, culminating in the acquiring of a formal educational qualification, is also regarded as an important indicator of academic achievement (Holland, 1985). Academic potential, or academic aptitude, as a related measure, is often employed as a predictor of academic achievement (O'Neil, 1977).

Apart from achievement motivation, locus of control seems to have an important effect on educational achievement. Individuals who are less influenced by external forces seem to perform better academically. Individuals with an internal locus of control perceive reinforcement as contingent on their own actions and not external factors. Internality is related in a positive way to academic achievement (Foster & Gade, 1973). Goal orientation, manifested in learning goals and future consequences such as occupational entry and self perceived abilities, also plays an important role in academic performance and achievement (Greene & Miller, 1996). Stress is also related to academic performance, where high levels of perceived stress impact negatively on academic performance and achievement (Weiten, 1992). Intelligence seems to play a positive role in achievement motivation and academic achievement (Super & Bohn, 1971).

### **3.5.1 Implications of achievement motivation and academic achievement**

Achievement motivation correlates positively with individual progress and productivity. An individual with a high need for achievement tends to work harder and more purposefully on tasks than a person with low achievement motivation. It is, therefore, not surprising that such an individual normally seeks out competitive occupations of an entrepreneurial nature that allow him or her to excel and to obtain a high level of career success (McClelland, 1963). Super and Bohn (1971, p. 31) maintain that achievement is not just a consequence, but also a cause: "differences in the past tend to be related to differences in achievement in the future. It is an accepted conclusion, well supported by many studies of success in school, in college, in civic life, and in work, that what and how well a person will do in the future can be predicted by examination of what and how well he has done in the past".

Ross (1996), however, advocates that no relationship between academic achievement (aggregate marks obtained at degree level) and subsequent career advancement and performance seems to exist. Perspectives on the relationship between academic achievement and subsequent career success, therefore, seem to differ.

Continuous learning in these times of rapid change and technological evolution necessitates a high achievement motivation. As lower level jobs are normally reduced

and support services, occupied by well-qualified specialists, are usually increased, a certain level of academic achievement becomes imperative. Competency might, however, outweigh education for career success in future (Schreuder & Theron, 1997).

In developing nations, with extremely high rates of illiteracy and semi-literacy, an appropriate level of academic achievement can contribute significantly to job security. This fact is illustrated by a recent labour force survey in Namibia. Only a tiny portion (less than one percent) of people with a post-secondary education (teacher training, technicon, university) can be regarded as unemployed (Ministry of Labour, 1998). Higher levels of education do indeed seem to provide a shield against unemployment in Namibia, where the overall unemployment rate is 35 percent. Of all demographic characteristics of the Namibian population the most conspicuous difference relates to the unemployment rates of those with and those without higher education (Ministry of Labour, 1998). Vertical advancement in larger organisational settings, private and public sector, is very often dependent on the attainment of a formal educational qualification as well. Most managerial jobs, for example, are occupied by individuals with some sort of postgraduate qualification (Ministry of Labour, 1998).

The downside of academic achievement is overqualification, where an individual with a high level of education and an outstanding mark aggregate can be prone to understimulation, frustration and boredom in work situations that require lower levels of sophistication. Work performance, job satisfaction, and commitment naturally decline in such a situation (Ross, 1996).

### **3.6 SUMMARY**

This chapter presented an overview and definition of the construct work success. Different measures of work success are indicated, and two subjective measures (dimensions) of work success and two objective measures of work success are discussed in more detail (Crites, 1969).

Job satisfaction and perceived work stress, as examples of subjective dimensions of work success, are defined and some individual and organisational outcomes are

discussed. Job stability and academic achievement, as examples of objective dimensions of work success, are defined and some individual and organisational implications are elaborated upon. The second aim of the literature survey has thereby been established, namely to define work success and its relevant dimensions.

Chapter 4 presents an integration of occupational choice and work success into a model of psychological success.

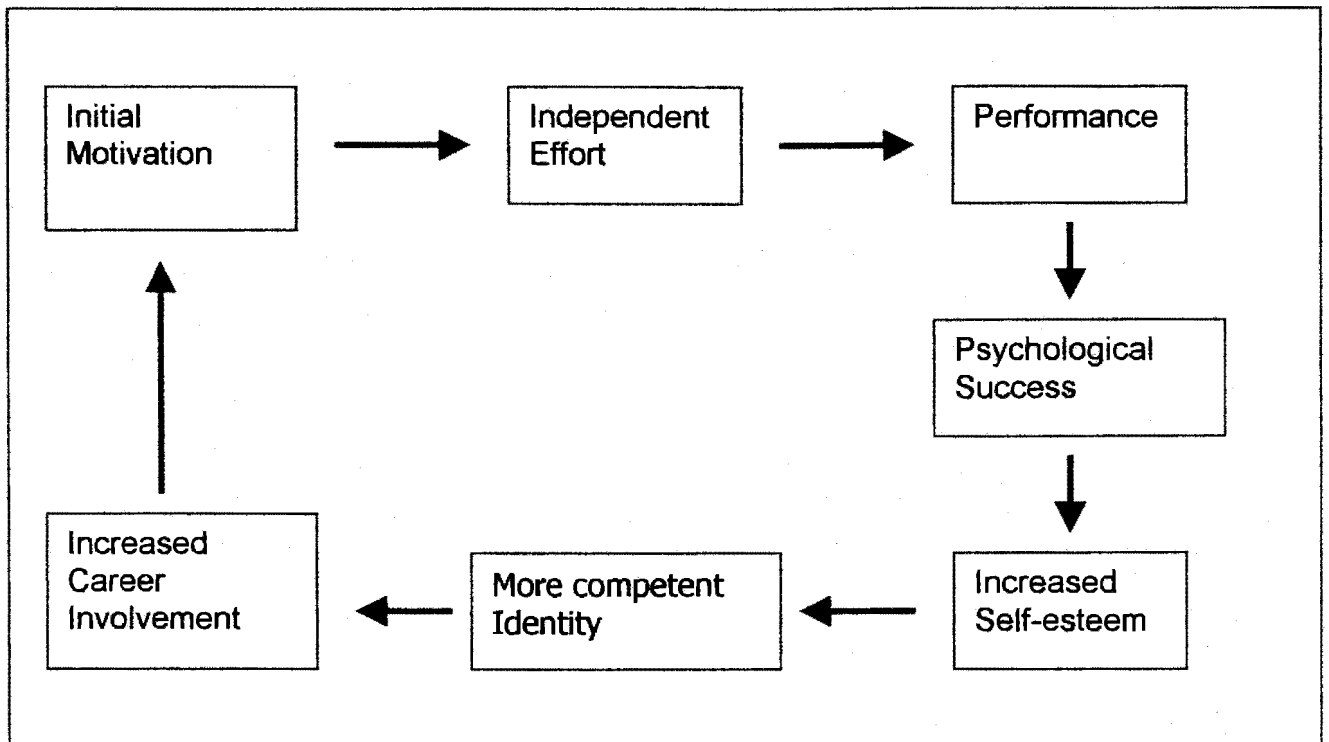
## CHAPTER 4: INTEGRATION OF OCCUPATIONAL CHOICE AND WORK SUCCESS INTO A MODEL OF PSYCHOLOGICAL SUCCESS

Hall (1976, 1990) provides a theory of career development from the perspective of an organisational approach, focussing on adults in organisational work settings. Central to Hall's (1976, 1990) propositions are the concepts of identity and self-esteem. Identity refers to an individual's conception of who he or she is in relation to significant reference persons in the social environment (of which the work environment forms a part). Self-esteem is regarded as a positive motivator, a driving force, where an individual tends to be drawn toward things that enhance self-esteem. Things that diminish self-esteem are avoided.

These concepts form the core of Hall's (1976, 1990) proposed psychological success model of career development. The psychological success model is closely aligned with Vroom's (1964) expectancy theory of motivation. Vroom (1964) maintains individual behaviour is influenced by a subjective belief regarding the probability or likelihood that a certain behaviour leads to a favourable outcome. An individual's perception of the degree of association between a certain action or behaviour (e.g. occupational choice) and subsequent outcome (e.g. job satisfaction) is called instrumentality. The preference for an outcome is called valence. Based on the propositions of the expectancy theory it can be assumed that an individual stands a good chance of success or goal attainment in case of high instrumentality and valence. Chances of goal attainment are, however, also influenced by a necessary level of ability (Vroom, 1964). Strong performance and individual effort in line with the attainment of a valued goal produces a feeling of pride and intrinsic satisfaction, or psychological success (Hall, 1990). Psychological success enhances a person's self-esteem and contributes toward a better perception of identity. Such intrinsic reward impact positively on an individual's career involvement and raises his / her level of aspiration concerning future goals (Hall, 1990).

This process is depicted in Figure 4.1 (Hall, 1976, 1990).

**Figure 4.1 : The psychological success model of organisational career development**



Self-concept and expectancy are, therefore, important correlates with success. Ideally, therefore, an individual should be subjected to a situation where he / she can experience meaningful success through the careful selection of jobs and tasks which would constitute good success opportunities based on self-concept and expectancy (Hall, 1976).

Occupational choice should, therefore, be of such a nature that self-esteem and career involvement can be increased through realistic expectancies concerning performance outcomes. Personal orientation can be regarded as an initial motivation to choose a particular occupation. This is exemplified in Holland's (1966, 1973, 1985) assumption that a certain personality type has a preference for a specific environmental model. For example, a realistic type prefers a realistic environment, due to a higher expectancy of goal attainment on grounds of a specific (realistic) set of self-perceived interests, competencies, and preferences. A proper fit between person and environment (congruence), as well as high perceptual intensity (differentiation) and agreement

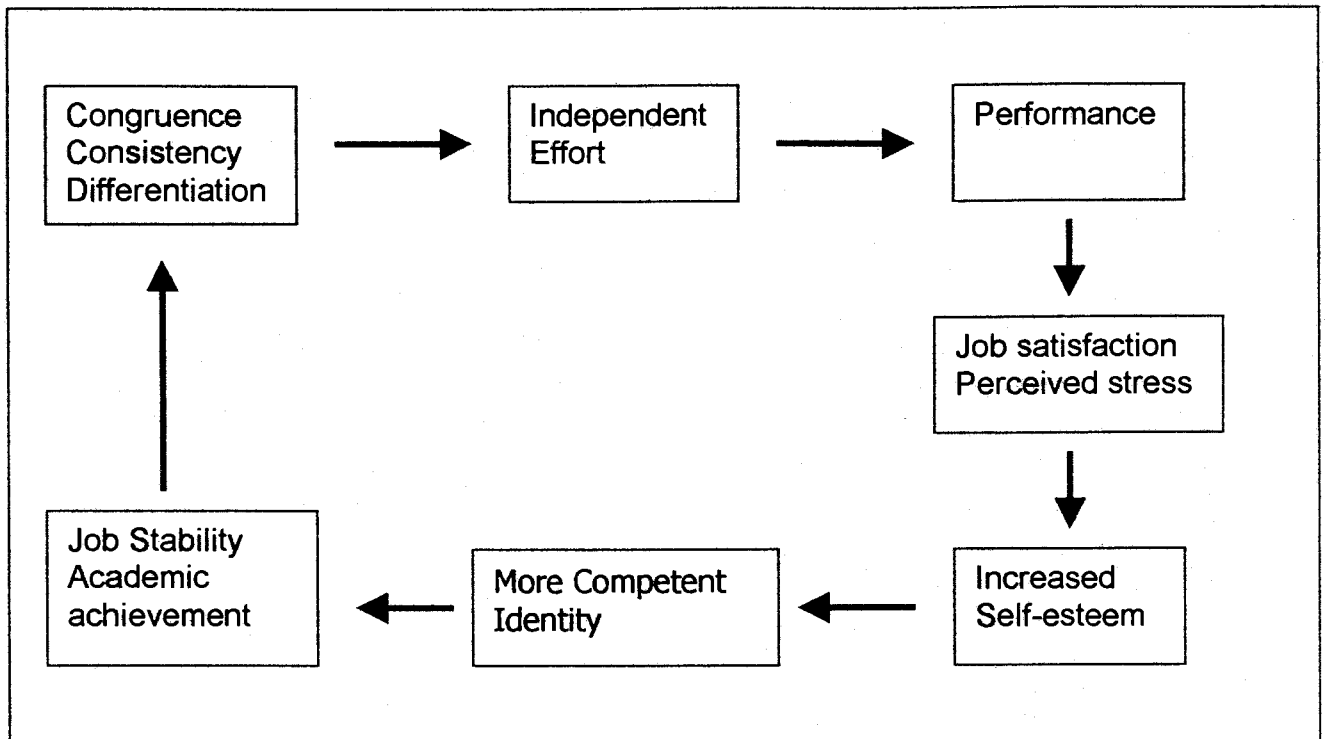
(consistency) of individual interests, competencies, and preferences leads to a situation where an individual forms a proper judgement on the instrumentality and valence of work outcomes, and therefore increases his/her chances for success attainment. A highly congruent, differentiated, and consistent occupational choice (as initial motivation), therefore, impacts positively on the effort a person displays in the work situation, leads to higher levels of performance and subsequent psychological and occupational success (Holland, 1985).

A highly congruent, consistent, and differentiated choice makes it easier to face the challenges presented by the organisational entry stage, the training stage and full membership stage in the earlier part of an individual's career (Schein, 1978). Some challenges of the entry stage are the following: the negotiation of a psychological contract between individual and employer, the passing through first organisational boundaries and laying the groundwork for a future career. Dealing with the reality shock of organisational membership, becoming an effective organisational member, adjusting to daily routines and achieving acceptance as a contributing member are examples of challenges faced during the training stage. The increased acceptance of responsibility and development of special skills and expertise are major challenges during the stage of full membership in the early career. The mastering of these challenges can be a direct consequence of a highly congruent, highly consistent, and well differentiated choice due to more accurate expectancies of goal attainment, leading to enhanced effort and performance, with positive outcomes for success perception. Experience of success in the earlier stages of the career are especially important as it reinforces paths that are followed in the later stages of career development (Hall, 1990). Job satisfaction and lower experienced levels of work stress can be regarded as manifestations of psychological success perception. Resultant effects on self-esteem and identity development lead to a greater degree of career involvement, of which job stability and work-related academic achievement are important indicators.

The integration of occupational choice and work success into the psychological success cycle is graphically shown in figure 4.2 (Hall, 1990).



**Figure 4.2: The integration of occupational choice and work success into the psychological success cycle**



A congruent, consistent, and differentiated occupational choice leads to realistic expectancies concerning the attainment of valued outcomes in the work situation. This has a positive implication for performance on the job (due to a proper job - person fit, and greater experienced meaningfulness of work) and leads to job satisfaction and decreased levels of experienced work stress. Job satisfaction and perceived work stress as subjective dimensions of work success (Crites, 1969), or psychological success, are associated with higher levels of self-esteem and with a reinforced identity perception, which reveals itself in objective success measures (Crites, 1969), or career involvement, as exemplified by job stability and academic achievement. Increased career involvement reinforces personal orientation and increases commitment in the setting of future goals pertaining to the chosen occupation (e.g. vertical advancement). The degree of initial motivation is directly related to the degree of successful performance and commitment to future goals (Hall & Foster, 1977). A highly congruent, highly consistent, and well-differentiated occupational choice should, therefore, lead to higher levels of psychological success (higher job satisfaction, lower work stress perception) and higher levels of career involvement (more job stability, higher academic achievement), as opposed to an

incongruent, inconsistent, and undifferentiated occupational choice. Psychological success, self-esteem, and career involvement should not be regarded as being causally related, but rather as occurring concomitantly (Hall & Foster, 1977).

An incongruent, inconsistent, undifferentiated occupational choice can have an adverse effect on occupational success. Hall (1990, p. 437) maintains that "if a person has a negative attitude toward a new area of activity or does not see himself or herself as the type of person who would be comfortable doing that kind of work, no amount of task training can overcome these attitudinal or identity barriers." This obviously has a detrimental effect on work effort, performance and perceived success. Decreasing self-esteem and confusing identity perceptions lead to unfavourable work outcomes such as termination (Hall, 1990). The result of such a state of affairs in the early stages of career development can very well be one of floundering, where a person cannot find a good occupational and organisational fit and is likely to fail to master any of Schein's (1978) career stages (Hall, 1990).

#### **4.1 SUMMARY**

The third aim of the literature survey, namely to integrate the two constructs of occupational choice and work success towards building a theoretical model to be tested in the following empirical study, has been established. The relation between congruence, consistency, differentiation and global job satisfaction, perceived work stress, job stability, and academic achievement will be tested empirically as part of the establishment of the validity of the SDS.

## CHAPTER 5: EMPIRICAL INVESTIGATION

Chapters 5, 6 and 7 contain the empirical investigation. The objectives of the empirical investigation are:

- (1) To determine the relations respectively between congruence, differentiation, consistency and job satisfaction, experienced work stress, job stability and academic achievement in order to determine whether occupational choice predicts work success.
- (2) To formulate recommendations towards more effective occupational guidance and career counselling based on the concurrent validity and predictive power of the SDS.

This chapter describes the first six steps of the empirical study, namely:

- Step 1: Formulation of hypotheses.
- Step 2: Determination and description of the sample.
- Step 3: Description of the psychometric battery.
- Step 4: Administration of the psychometric battery.
- Step 5: Scoring of the psychometric battery.
- Step 6: Statistical processing of data.

Steps 7 to 11 will be discussed in chapters 6 and 7, namely reporting and interpretation of results, conclusions, limits of the research and recommendations for further research.

## 5.1 FORMULATION OF THE RESEARCH HYPOTHESES

The following research hypotheses were formulated:

- Null hypothesis 1**            Job satisfaction is not related to: (a) the degree of congruence between SDS code and occupational code, (b) the degree of differentiation of the SDS code, (c) the degree of consistency of the SDS code.
- Alternative hypothesis 1**    Job satisfaction is related to: (a) the degree of congruence between SDS code and occupational code, (b) the degree of differentiation of the SDS code, (c) the degree of consistency of the SDS code.
- Null hypothesis 2**            Experienced level of work stress is not related to: (a) the degree of congruence between SDS code and occupational code, (b) the degree of differentiation of the SDS code, (c) the degree of consistency of the SDS code.
- Alternative hypothesis 2**    Experienced level of work stress is related to: (a) the degree of congruence between SDS code and occupational code, (b) the degree of differentiation of the SDS code, (c) the degree of consistency of the SDS code.
- Null hypothesis 3**            Job stability of is not related to: (a) the degree of congruence between SDS code and occupational code, (b) the degree of differentiation of the SDS code, (c) the degree of consistency of the SDS code.
- Alternative hypothesis 3**    Job stability is related to: (a) the degree of congruence between SDS code and occupational code, (b) the degree of differentiation of the SDS code, (c) the degree of

consistency of the SDS code.

**Null hypothesis 4**

Academic achievement is not related to: (a) the degree of congruence between SDS code and occupational code, (b) the degree of differentiation of the SDS code, (c) the degree of consistency of the SDS code.

**Alternative hypothesis 4**

Academic achievement is related to: (a) the degree of congruence between SDS code and occupational code, (b) the degree of differentiation of the SDS code, (c) the degree of consistency of the SDS code.

**5.2 THE SAMPLE**

The population for this study were administrative, clerical, and professional employees in the Namibian public sector.

Namibian public sector organisations, in the context of this research, refer to government ministries and parastatal institutions. Seven organisations were randomly selected from a total of 21 organisations within the Namibian public sector, having large numbers of administrative, clerical, and professional employees. The sectors in which these organisations are involved are the following: social services, transport and communication, water and electricity and financial services.

Owing to practical reasons no random samples could be drawn from within the seven organisations and a convenience sample had to suffice, relying on the voluntary participation of incumbents within the organisations. In some cases the personnel / human resources managers of the respective organisations were requested to distribute the questionnaires to employees in relevant occupational categories.

Employees were classified as clerical or administrative workers according to their occupational title. To be classified as professional an employee had to comply with the following additional educational criterion: training at a technicon or university plus experience for professional registration (Gevers, Du Toit & Harilall, 1992). Only employees within the grade range 2AL1 : 4AL1 of the government salary grading scale were included in the final sample. Low-level employees and the higher echelons of management were, therefore, excluded from this study. A further restriction imposed on participation in the study was the age of employees. Only employees older than 26 years of age were included in the final sample in order to make a meaningful analysis of work record possible.

A number of 142 usable responses (n=142) could be obtained over a five-month period. A total number of 360 questionnaires were issued and the rate of return of completed questionnaires varied from 22% to 90% across the organisations. A total number of 203 questionnaires were returned out which 61 had to be rejected. The main reasons for rejection were the following: occupational category falling outside the sample demarcation (e.g. trades, labour, security personnel), age of respondent below 26 years, neglect to complete all questionnaires, incomplete completion of individual questionnaires. The response rate therefore was 56% and the rate of useable questionnaires was 39%. The sample consisted of 58 males and 84 females, whose ages ranged from 26 to 63 years (mean age: 34), academic achievement ranged from school leaving (Grade 12) to post graduate. All three major racial groups of the Namibian population were included in the sample: white (n = 46); coloured (n = 52); black (n = 44).

The occupational composition of the sample is illustrated in Appendix 1.

### **5.3 THE PSYCHOMETRIC BATTERY**

The psychometric instruments were selected according to their applicability to the relevant constructs and theories of the research. Emphasis was placed on the reliability and construct validity of the measurement instruments.

Reliability refers to “the degree to which test scores are consistent, dependable, or repeatable, that is, the degree to which they are free from errors of measurement” (American Psychological Association, 1985, p.93).

Construct validity refers to “evidence that supports a proposed construct interpretation of scores on a test based on theoretical implications associated with the construct” (American Psychological Association, 1985, p.90).

The following measurement instruments were used in this study:

- (1) A biographical questionnaire.
- (2) The Self – Directed Search Questionnaire (SDS).
- (3) The Job Satisfaction Index (JSI).
- (4) The Experience of Work and Life Circumstances Questionnaire (WLQ).

Appendix 2 depicts the psychometric battery as utilised in this research.

### **5.3.1 Biographical questionnaire**

The questionnaire was designed to capture information necessary for the statistical analysis. Candidates were not required to indicate their names on the questionnaire in order to secure confidentiality and, hopefully, enhanced honesty in the completion of, especially, the JSI and WLQ.

The questionnaire includes items on the current position (job designation) held by the incumbent, gender, age, home language (to indicate racial group membership), highest formal educational qualification, field of qualification, and work record since 1990. The year 1990 was established as cut-off year for work record due to the massive restructuring of the public service that took place in 1989 after independence. The current structure and employee composition of the public service is, therefore, only nine years old.

The biographical questionnaire was purposefully constructed in a very simple and clear manner so as to reduce the risk of confusion and misinformation on the part of the respondents to a minimum.

### **5.3.2 The Self-Directed Search (SDS)**

The SDS is an interest questionnaire closely modelled on Holland's theory of occupational choice (Holland, 1966, 1973, 1985). The SDS is one of the few interest inventories that is based on the individual, as well as on the world of work. In this sense it reflects the structural-interactive nature of Holland's theory (Van der Walt & Els, 1991).

In line with the theory the SDS is based on the following assumptions (Gevers, Du Toit & Harilall, 1992):

- (1) Occupational choice is an expression of personality, where interest is a dynamic factor of personality that involves the needs and emotional life of individuals.
- (2) People have a tendency to perceive related occupations and activities in a similar way; people develop occupational stereotypes.
- (3) People in specific occupations have comparable personalities and corresponding occupational histories.
- (4) People working in similar occupational environments and portraying similar personality traits are often inclined to react in similar ways to most situations.

The first edition of the SDS appeared in 1970 and it has been revised several times since. The questionnaire was standardised for use in South Africa in 1992.

For this research the self-administering 1985 form of the SDS has been utilised<sup>1</sup>.

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<sup>1</sup> Changes to items 8 and 69 have been effected on grounds of the recommendations of Gevers et al. (1992). "Work on a hotrod or bicycle" was changed to "Work on a bicycle or motorcycle" ; "I can adjust a carburetor" was changed to "I can change car oil or tyres."



### 5.3.2.1 Aim and rationale of the SDS

The aim of the SDS is to operationalise Holland's theory of occupational choice (Holland, 1966, 1973, 1985). Holland (1985) characterises the main aims of the SDS as follows:

- (1) To determine and interpret the individual occupational interest scores according to the formulations of the theory.
- (2) To predict occupational categories that appear congruent for an individual.
- (3) To determine causes of job dissatisfaction and work adjustment problems by following the formulations of congruence, differentiation, and consistency.
- (4) To identify clients whose characteristics imply a need for career assistance.

The SDS can be used with students and employed individuals and can function as an aid for career counselling, selection and placement, occupational and job classification, the investigation of alternative career opportunities and the determination of individual's personal development through the re-administration of the questionnaire after the lapse of a reasonable time period (Gevers et al., 1992).

### 5.3.2.2 Description of the SDS

The SDS comprises four sections, each of which includes six interest fields or personal orientations, namely: realistic (R), investigative (I), artistic (A), social (S), enterprising (E), conventional (C). Section 2.7.1 of chapter two can be consulted for a detailed description of these types.

The four sections of the SDS are activities, competencies, occupations, self-estimates of abilities and skills.

**Activities:** This section consists of 66 items, each interest field (R,I,A,S,E,C) is represented by 11 items. The items in this section deal with activities typically encountered in specific occupations. The respondent should indicate whether he / she is interested in a particular activity (Gevers et al., 1992). The respondent indicates his / her choice by means of a dichotomous 'like / dislike' response. 'Like' (L) verifies a liking for a

certain activity, whereas 'Dislike' (D) points toward a disliking or indifference toward the activity (Holland, 1985).

**Competencies:** This section consists of 66 items, each interest field is represented by 11 items. The items in this section deal with the respondent's perception concerning his / her competency and working knowledge in the carrying out of certain work tasks (Gevers et al., 1992). Interest in work-related activities is often supported by competencies in carrying out these tasks (Van der Walt & Els, 1991). The respondent indicates his / her choice by means of a dichotomous 'Yes / No' response. 'Yes' (Y) stands for activities that the respondent can do well, 'No' (N) stands for activities which have never been performed or can only be performed poorly (Holland, 1985).

**Occupations:** This section consists of 84 items, each interest field is represented by 14 items. The items in this section deal with the respondent's preferences for certain occupations. Feelings and attitudes toward a variety of occupations are probed (Gevers et al., 1992). Occupational preferences are indicated by means of a dichotomous 'Yes / No' response. 'Yes' (Y) is an indication of a respondent's interest in a certain occupation, 'No' (N) is indicative of a candidate's disinterest or dislike of a certain occupation (Holland, 1985).

**Self-estimates of abilities and skills:** This section consists of two groups (group I and group II) each representing six abilities / skills which correspond with the six interest fields (Gevers et al., 1992). Group I of this section is concerned with self-estimates of abilities in the following areas: mechanical ability, scientific ability, artistic ability, teaching ability, sales ability and clerical ability (Holland, 1985). Group II of this section is concerned with self-estimates of skills and abilities in the following areas: manual skills, math ability, musical ability, friendliness, managerial skills and office skills (Holland, 1985). Each item of group I and group II consists of a seven-point scale. A self-rating of seven (7) represents a high self-estimate on a certain skill or ability, a self-rating of one (1) represents a low self-estimate on a certain skill or ability (Holland, 1985).

Based on the scores yielded by these four sections the corresponding indices of consistency, differentiation and congruence can be determined. For a formal definition

and description of consistency, differentiation, and congruence see sections 2.7.3, 2.7.4, 2.7.5 of chapter two.

### **5.3.2.3 Reliability of the SDS**

Van der Walt and Els (1991) report the following reliability coefficients, as determined by the Sichel formula, for the six fields of the SDS: realistic: 0,87 ; investigative: 0,82 ; artistic: 0,80 ; social: 0,69 ; enterprising: 0,79 ; conventional: 0,68. Gevers et al. (1992) report the following reliability coefficients, also determined by the Sichel formula, for the six fields of the SDS: realistic: 0,88 ; investigative: 0,85 ; artistic: 0,87 ; social: 0,85 ; enterprising: 0,77 ; conventional: 0,82. Gevers et al. (1992) furthermore report on test-retest reliability coefficients ranging from 0,57 to 0,85 across all six fields of the SDS.

Neethling (in Van der Walt & Els, 1991) determined reliability coefficients ranging from 0,84 to 0,94 across the SDS fields. These results compare favourably with those of Holland (1979), where reliabilities (KR-20) ranged from 0,67 to 0,94. Brand et al. (1994) established a test-retest reliability of the SDS of 0,87. Acceptable levels of reliability for the SDS have, therefore, been established in numerous investigations.

### **5.3.2.4 Construct validity of the SDS**

Evidence on the construct validity of the SDS is plentiful. Section 2.7.6 of chapter two outlines the most important international findings in this regard. Examples of international studies confirming the construct validity of the SDS are the following: Dumenci (1995); Edwards & Whitney (1972), Gaffey and Walsh (1974); Holland (1979); Mount and Muchinisky (1978a); Nafziger and Helms (1974). Some important findings on the construct validity of the SDS in the South African context are quoted below.

Van der Walt and Els (1991) confirm the construct validity of Holland's occupational codes, as operationalised by the SDS, in the South African setting. The structural relationship between the fields of the SDS is confirmed by Gevers et al. (1992) who find that fields with the most common characteristics, namely RI, IA, AS, SE, ES, and CR are indeed located adjacent to each other on the hexagonal structure as proposed by

Holland, whilst fields with less common characteristics, namely RS, IE, AC, are indeed polar opposites.

Brand et al. (1994) find that corresponding interest fields of the SDS and the Vocational Interest Questionnaire (VIQ) correlate significantly and in line with the propositions of Holland's theory of occupational choice, where some fields are more significantly related with each other than others. Wheeler (1992), on the other hand, employed the SDS among black Grade 12 students and found no significant evidence for the construct validity of the SDS, as the ordering of interests, as compared with the hexagon, was not correct. The proposed order of the RIASEC anagram could, therefore, not be substantiated by the SDS in this particular instance.

### **5.3.3 The Job Satisfaction Index (JSI)**

The JSI, developed by Brayfield and Rothe (1951), is a job satisfaction scale designed to yield a global measurement of job satisfaction.

#### **5.3.3.1 Aim and rationale of the JSI**

The JSI is an attitude scale devised to "give an index to 'overall' job satisfaction rather than the specific aspects of job satisfaction (Brayfield & Rothe, 1951, p. 307)."

Brayfield and Rothe (1951) designed the JSI with the following requirements in mind:

- (1) The JSI should be applicable to a wide variety of jobs.
- (2) The JSI should be sensitive to variations in attitude.
- (3) The JSI should be acceptable to management and employees.
- (4) The JSI should yield a reliable index.
- (5) The JSI should yield a valid index.
- (6) The JSI should be brief and easily scored.

#### **5.3.3.2 Description of the JSI**

The JSI consists of one scale comprising 18 items. The items are presented in a five-point Likert format. Scoring weights therefore range from one to five. The satisfied end of

the scale is indicated by a 'Strongly Agree' and 'Agree' response option for one half of the items and by 'Strongly Disagree' and 'Disagree' for the other half of the items. 'Undecided' is regarded as a neutral response (Brayfield & Rothe, 1951). The range of possible total scores lies between 18 (highly dissatisfied) and 99 (highly satisfied) with the neutral point lying at score 54.

### **5.3.3.3 Reliability of the JSI**

Brayfield and Rothe (1951) report a split-half reliability coefficient, as corrected by the Spearman-Brown formula, of 0,87. Mauer (in Van der Walt & Els, 1991) reports a KR-20 coefficient of 0,81. Van der Walt and Els (1991) report a reliability coefficient of 0,87, as calculated by the KR-8 formula. The reliability of the JSI can, therefore, be regarded as acceptable.

### **5.3.3.4 Construct validity of the JSI**

Brayfield and Rothe (1951) compared two groups of workers classified as satisfied and dissatisfied respectively. A significant difference ( $p \leq 0,01$ ) between the mean scores of the two groups was found. The JSI therefore differentiated successfully between the satisfied and dissatisfied groups of workers. A correlation of 0,93 between the JSI and the Hoppock blank of job satisfaction serves as further proof of the construct validity of the JSI (Van der Walt & Els, 1991).

## **5.3.4 The Experience of Work and Life Circumstances Questionnaire (WLQ)**

The WLQ was released in 1991 with a view to meeting the need for a stress questionnaire standardised for South African circumstances.

### **5.3.4.1 Aim and rationale of the WLQ**

The WLQ was developed to determine the level and causes of stress of employees with a minimum schooling of Standard 8 (Grade 10) (Van Zyl & Van der Walt, 1991). The questionnaire can be used for diagnostic purposes, firstly to determine the level of stress

experienced by employees, and secondly to pinpoint the factors that cause the experienced stress levels. The WLQ is based on the rationale that a person scoring high on the questionnaire experiences high levels of stress. High stress levels are indicative of experiential problems arising from the environment (Van Zyl & Van der Walt, 1991).

#### **5.3.4.2 Description of the WLQ**

The WLQ consists of three parts: experience of work, circumstances and expectations. The experience of work part of the questionnaire is used to determine a person's level of experienced work stress. The circumstances part of the questionnaire analyses the causes of experienced stress levels. These causes can arise from within the work situation or from outside the work environment. Causes arising from within the work situation which are analysed, include the following: the functioning of the organisation, the characteristics of the tasks to be performed, physical working conditions and equipment, social matters, career matters, remuneration and fringe benefits and personnel policy (Van Zyl & Van der Walt, 1991). Causes arising from outside the work environment which are analysed, include the following: family problems, financial situation, economic situation in the country, changing technology, social situation, status, health, background, facilities at home, political views, religious considerations and recreational facilities (Van Zyl & Van der Walt, 1991). The expectations part of the questionnaire focuses on the degree to which expectations are fulfilled in the work place. Expectations regarding the following work-related issues are addressed: organisational functioning, task characteristics, physical working conditions, career opportunities and social matters (Van Zyl & Van der Walt, 1991).

Since only work stress levels are investigated in this research, only the experience of work part of the WLQ was utilised. Stress-related feelings can manifest themselves in depression, anxiety, and frustration and are captured on a five-point scale (Scale A) (Van Zyl & Van der Walt, 1991). Responses can vary from 'Virtually Never' (1) to 'Virtually Always' (5). The higher the score on Scale A, the higher the level of stress experienced. Scale A consists of 40 questions with a minimum score of 40 (very low experienced stress level) and a maximum score of 200 (very high experienced stress level) obtainable (Van Zyl & Van der Walt, 1991).

#### **5.3.4.3 The reliability of the WLQ**

Van Zyl and Van der Walt (1991) report a test-retest reliability coefficient of 0,79 for Scale A of the WLQ. A KR-8 reliability coefficient of 0,92 for Scale A is also reported on. The reliability of Scale A of the WLQ can, therefore, be regarded as satisfactory.

#### **5.3.4.4 Construct validity of the WLQ**

The construct validity of the WLQ is supported by fairly significant correlations obtained between the different scales of the WLQ. This intratest method of construct validity confirmed the internal structure of the WLQ (Van Zyl & Van der Walt, 1991). The WLQ was also subjected to correlations with other tests and questionnaires as part of a intertest study of construct validity. Correlations between the WLQ and the 16-Personality Factor and the PHSF Relations Questionnaire (a measurement of adjustment) confirmed the theoretical premises on which the WLQ was constructed (Van Zyl & Van der Walt, 1991).

### **5.4 ADMINISTRATION OF THE PSYCHOMETRIC BATTERY**

The personnel / human resources managers of the target organisations were approached to distribute and collect the questionnaires. These individuals were briefed by the researcher on the particulars of the study in general and the characteristics of the questionnaires specifically. Every effort was made to recruit registered psychologists and psychometrists, people with assessment experience, as questionnaire distributors. Two psychologists and three psychometrists were eventually involved in the data collection process. Each questionnaire was accompanied by a covering letter explaining the background to the study and promising absolute confidentiality. The questionnaires were accompanied by instructions and were self-administering. Completed questionnaires were to be submitted in sealed official envelopes to the contact persons within the organisations. Approximately 50 questionnaires were personally administered by the researcher.

## **5.5 SCORING OF THE PSYCHOMETRIC BATTERY**

The completed questionnaires were initially screened to detect obvious completion mistakes and incomplete questionnaires. Such questionnaires were immediately eliminated from the sample. Questionnaires not conforming to the sample restrictions in terms of occupational category, age and job grade (see section 4.1) were also rejected. All questionnaires were scored by hand and were double-checked.

### **5.5.1 Scoring of the SDS**

The determination of SDS codes, and indices of consistency, differentiation, and congruence will be outlined below.

#### **5.5.1.1 Determination of the SDS codes**

The SDS code of an individual was determined along the following lines:

- (1) Total scores obtained on each field of the SDS (R,I,A,S,E,C) were sorted from high to low. The code was obtained by ranking the three highest scoring fields sequentially, and combining them into a three-letter code.
- (2) In case of a respondent obtaining the same score on two or more fields of the SDS, the letter complementing the occupational code the best was given preference in the SDS code (Turner & Horn, 1977; Van der Walt & Els, 1991)

Occupational codes were determined on the grounds of the Holland classifications offered in The South African Dictionary of Occupations (Taljaard & Mollendorf, 1987).

#### **5.5.1.2 Determination of consistency**

The recommendations of Holland (1985) were followed to determine consistency. The first two letters of each SDS code were compared and their hexagonal distance was determined. Highly consistent, or adjacent fields, namely RI, RC, IA, IR, AS, AI, SE, SA, EC, ES, CE, CR were allocated three (3) points. Non-adjacent fields, separate by a third



one, indicating medium consistency were allocated two (2) points. Possible combinations in this regard were: RA, RE, IS, IC, AE, AR, SC, SI, ER, EA, CI, CS. Opposite fields, indicating low consistency, were allocated one (1) point. Possible combinations in this regard were: RS, IE, AC, SR, EI, CA.

### 5.5.1.3 Determination of differentiation

Differentiation is the degree of spread of an individual's score across all six fields of the SDS.

Following the recommendations of Healy & Mourton (1983) and Van der Walt & Els (1991) the standard deviation of an individual's scores across the six SDS fields was utilised as index of differentiation.

### 5.5.1.4 Determination of congruence

Congruence was operationalised by means of the Iachan index (Iachan, 1984). For the allocated scores for different combinations of the letters of the SDS code in relation to the occupational code refer to table 5.1. (Iachan, 1984).

**Table 5.1: The Iachan index of congruence**

Occupational Code	SDS CODE			
	First Letter	Second Letter	Third Letter	Other Letters
First Letter	22	10	4	0
Second Letter	10	5	2	0
Third Letter	4	2	1	0

A highly congruent code, where the corresponding letters of the SDS code and occupational code appear in the same sequence, was therefore allocated 28 points

(maximum score). If no letters of the SDS code and occupational code corresponded, indicating extreme incongruence, a minimum score of nought (0) was allocated.

Total scores of 26 to 28 indicate a high level of congruence, total scores of 20 to 25 indicate reasonably close matches between personal orientation and occupational code, total scores of 14 to 19 do not point to a close match, total scores of 13 and less are indicative of poor matches between personal orientation and occupational code (Gevers et al., 1992).

### **5.5.2 Scoring of the JSI**

The JSI was scored by adding the scores obtained on every item together, with the view to obtaining a total score for job satisfaction. Total scores exceeding 54 can be regarded as a reflection of job satisfaction and scores of 54 and below can be regarded as a reflection of job dissatisfaction.

### **5.5.3 Scoring of the WLQ**

The score for Scale A of the WLQ was obtained by the determination of the aggregate of the answers of items 1-40 (Van Zyl & Van der Walt, 1991). Scores on Scale A ranging from 40 to 79 are indicative of low levels of experienced work stress. Scores on Scale A ranging from 80 to 97 are indicative of high levels of work stress. Scores on Scale A ranging from 98 to 200 are indicative of very high levels of work stress.

### **5.5.4 Scoring of the biographical questionnaire**

Two research variables were operationalised by means of the biographical questionnaire, namely academic achievement and job stability.

Academic achievement was assessed on a five-point scale where scores were allocated according to the level of formal qualification. For purposes of this research the lowest level of educational attainment, a Grade 12 qualification only, was allocated a score of one (1), the highest level of educational attainment, a postgraduate qualification, was

allocated a score of five (5). Attainments of qualifications certified by post-school certificates, technikon diplomas and technical qualifications, and university degrees were allocated values of two (2), three (3), and four (4) respectively.

Job stability was operationalised on grounds of the work record of respondents and on grounds of Holland's (1966) recommendations. Holland (1966) calls the move from one occupation to another occupation which lies in the same field, for example a clerk (conventional occupational code) becoming a secretary (conventional occupational code), an 'intraclass change'. An 'interclass change' involves a move from one class of occupation (e.g. artistic) to another (e.g. realistic). An example of such a move would be an artist becoming a plumber.

An intraclass change was allocated a score of two (2) with additional two (2) points added for the number of each additional intraclass change. For example: an employee who has undertaken three intraclass changes was allocated a job stability score of 6 ( $2 + 2 + 2$ ). Obvious vertical, promotional advancements were not regarded as intraclass changes in this research. An interclass change was allocated a score of four (4), with additional four (4) points allocated for each further interclass change. For example: an employee who has undertaken three interclass changes was allocated a score of 12 ( $4 + 4 + 4$ ). An individual who has, for example, undertaken two intraclass changes in addition to an interclass change would obtain a job stability score of 8 ( $2 + 2 + 4$ ). No intra-or interclass changes were valued with nought (0). The time reference period of work record analysis consisted of nine (9) years, from 1990 to 1998.

## **5.6 STATISTICAL PROCESSING OF THE DATA**

This section describes the statistical procedures that were carried out once the data had been collected and the scores had been computed.

(1) Descriptive statistics (means, standard deviations, ranges) for the research variables were determined.

- (2) The categorical or frequency data of observed occupational types, congruence, and consistency levels as established by the SDS and the South African Dictionary of Occupations were determined for the total sample.
- (3) Reliability coefficients for the SDS, JSI, and WLQ were determined by means of the split-half method, and corrected with the Spearman-Brown formula (Kerlinger, 1992).
- (4) Pearson product-moment correlation coefficients were calculated to determine the interrelations of the individual fields of the SDS and to determine linear relationships between the SDS indices as predictor variables and job satisfaction, work stress, job stability and academic achievement as criterion variables (Frankfort-Nachmias & Nachmias, 1992).
- (5) The percentage explained variance of job satisfaction, work stress, job stability, and academic achievement by congruence, differentiation and consistency was determined by multiple regression analysis (Kerlinger, 1992). Gender, age and race were controlled for by means of semipartial correlation (Villwock et al., 1976).

## **5.7 SUMMARY**

In this chapter the first six steps of the empirical investigation were discussed: the determination and description of the sample, the psychometric battery, the administration of the psychometric battery, the scoring of the psychometric battery, the statistical processing of the data, and the formulation of the research hypotheses.

In chapter 6 the seventh and eighth steps of the empirical investigation will be discussed, namely the reporting and interpretation of results and the integration and research findings.

## CHAPTER 6: RESULTS AND INTERPRETATION

Chapter 6 focuses on the results of the empirical study with the aim of reporting, interpreting and integrating the results with the literature survey.

### 6.1 DESCRIPTIVE STATISTICS OF THE RESEARCH VARIABLES

Means, standard deviations, and ranges were computed for age, the research variables, and the individual SDS fields. The results are shown in table 6.1.

**TABLE 6.1 DESCRIPTIVE STATISTICS (n=142)**

<b>Variable</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum</b>	<b>Maximum</b>
Age	33,5	7,2	26,0	63,0
Academic achievement	2,0	1,4	1,0	5,0
JSI	63,3	11,0	20,0	86,0
Job stability	2,1	3,6	0,0	20,0
WLQ	71,4	17,7	40,0	142,0
Congruence	20,5	7,2	1,0	28,0
Consistency	2,3	0,8	1,0	3,0
Differentiation	8,6	2,7	2,0	14,8
SDS (R)	15,6	9,7	1,0	45,0
SDS (I)	19,3	11,0	2,0	47,0
SDS (A)	17,0	9,1	2,0	43,0
SDS (S)	28,2	8,3	11,0	50,0
SDS (E)	24,3	9,8	3,0	47,0
SDS (C)	30,8	8,8	7,0	49,0

Table 6.1 indicates a mean age of 33,5 years for the sample. Age ranges from 26 to 63 years.

The mean of 2 for academic achievement indicates that the most common educational qualification of the sample is a post-school certificate, thus below a technicon qualification level. Academic achievement ranges from Grade 12 to post graduate.

The mean observed for job satisfaction is 63,3, thus well above the neutral point as proposed by Brayfield and Rothe (1951). Job satisfaction ranges from a very low JSI score of 20 to a very high JSI score of 86.

The mean job stability (2,08) observed can be approximated as a single intraclass change for the sample (Holland, 1966). Average job stability can therefore be regarded as fairly high. Job stability ranges from 0 (no change) to 20 (five interclass changes).

The mean of 71,4 on Scale A of the WLQ indicates that the experienced levels of work stress for respondents are well within normal levels (Scale A  $\leq$  78) (Van Zyl & Van der Walt, 1991). Work stress levels range from 40 (very low level of experienced stress) to 142 (very high level of experienced stress).

The mean of 20,5 for congruence indicates a reasonably close match between personal orientation and occupation for the sample (Holland, 1985). Congruence ranges from a low of 1 to a maximum level of 28.

For consistency a mean of 2,3 can be observed. The average consistency level for the sample can therefore be regarded as slightly above expectations. Consistency ranged from 1 (inconsistent SDS code) to 3 (consistent SDS code).

The mean obtained for differentiation is 8,6 which can be regarded as normal (Healy &

Mourton, 1983). Differentiation ranges from 2 to 14,8 standard deviations across the SDS fields.

The means obtained on the respective SDS fields range from 15,6 to 30,8. The highest mean can be observed for the conventional field and the lowest mean can be observed for the realistic field. The high averages obtained on the conventional and social fields is in line with the typically administrative occupations encountered in the public service. Low scores on the artistic and realistic fields conform with expectations, due to an extreme rarity of artistic occupations in the public service and the exclusion of characteristically realistic occupations, such as trades, from the sample.

## 6.2 FREQUENCY DISTRIBUTIONS OF OBSERVED OCCUPATIONAL TYPES, CONSISTENCY LEVELS AND CONGRUENCE SCORES

Table 6.2 depicts the distribution of occupational types, as indicated by the first letter of the SDS code, for the sample.

**Table 6.2 Frequency distribution of occupational types**

Occupational type	Frequency (n)	Percent
Realistic (R)	8	5,6
Investigative (I)	11	7,7
Artistic (A)	2	1,4
Social (S)	34	23,9
Enterprising (E)	14	9,9
Conventional (C)	73	51,4
<b>Total</b>	<b>142</b>	<b>100,0</b>

The conventional type, in line with expectations, is the most prominently represented type in the sample ( $n = 73$ ). It makes up 51,4 % of the sample. The artistic type is barely featured at all in the sample and is represented by a mere 1,4 % ( $n=2$ ). Most occupations in the arena of the public service are of a conventional character. It is therefore hardly surprising to find a proportionally higher number of conventional types in such an environment. The prevalence of conventional types in the sample also corresponds to the sampling restrictions in terms of occupational categories.

Table 6.3 depicts the degree of consistency of the observed occupational codes of the sampling population, as operationalised according to the recommendations of Holland (1985) (see section 5.5.1.2).

**Table 6.3 Frequency distribution of consistency levels based on the sequence of the two highest scoring SDS fields**

Consistency Level	Frequency	Percent	Cumulative Percent
Low consistency	9	6,3	6,3
Medium consistency	76	53,5	59,6
High consistency	57	40,1	100,0
<b>Total</b>	<b>142</b>	<b>100,0</b>	<b>100,0</b>

Only a minimal percentage (6,3 %) of the sample displays inconsistent interests, whereas 53,5 % of the sample exhibits medium level consistency, and 40,1 % of the SDS codes of the sample can be classified as highly consistent. Van der Walt and Els (1991) also report on relative small percentages of inconsistent profiles typically encountered with employed samples. This observation is also in line with Holland's (1985) proposition that interest is determined by a preference for relative similar activities and similar perceptions of competencies.



Table 6.4 depicts the distribution of observed congruence scores for the sample as determined by the Iachan index (see section 5.5.1.4).

**Table 6.4 Frequency distribution of congruence scores**

<b>Congruence</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Percent</b>
1,0	1	0,7	0,7
2,0	1	0,7	1,4
4,0	1	0,7	2,1
5,0	2	1,4	3,5
6,0	2	1,4	4,9
8,0	1	0,7	5,6
9,0	3	2,1	7,7
10,0	6	4,2	12,0
11,0	7	4,9	16,9
12,0	4	2,8	19,7
13,0	1	0,7	20,4
14,0	9	6,3	26,8
16,0	10	7,0	33,8
20,0	8	5,6	39,4
21,0	7	4,9	44,4
22,0	4	2,8	47,2
23,0	7	4,9	52,1
24,0	12	8,5	60,6
26,0	19	13,4	73,9
27,0	12	8,5	82,4
28,0	25	17,6	100,0
<b>Total</b>	<b>142</b>	<b>100,0</b>	<b>100,0</b>

Scores of 20 and above can be regarded as close matches between personal orientation and occupational code. From table 6.4 it can be observed that 66,2 % of the sample obtained a congruence score of 20 and higher. This points to a high average level of congruence as concerns the sample and supports Holland's (1985) primary notion that a certain work environment, in this case a primarily conventional one, will attract and retain people with personal orientations that correspond with the demands and particularities of that given environment.

### 6.3 RELIABILITY OF THE SDS FIELD TOTALS, JSI, AND SCALE A OF THE WLQ

The coefficients of internal consistency of the SDS field totals, JSI, and Scale A of the WLQ were determined by means of the split-half method of reliability. The results were corrected with the Spearman-Brown formula (Huysamen, 1996). The corrected reliability coefficients are shown in table 6.5.

**Table 6.5 Reliability coefficients of the SDS field totals, JSI, and Scale A of the WLQ (n =142)**

SDS fields, JSI, WLQ	Reliability coefficient
Realistic (R)	0,87
Investigative (I)	0,93
Artistic (A)	0,89
Social (S)	0,83
Enterprising (E)	0,93
Conventional (C)	0,86
JSI	0,76
Scale A of WLQ	0,93

All correlations significant at the 0,01 level ( $p \leq 0,01$ ).

The reliability coefficients obtained for the SDS field totals range from 0,83 (S) to 0,93 (I, E). These figures compare extremely well with those obtained by Gevers et al. (1991), Holland (1979), Neethling (in Van der Walt & Els, 1991) and Van der Walt and Els (1991). The results therefore provide evidence for the reliability of the SDS.

The reliability coefficient of 0,76 for the JSI can be regarded as acceptable, it does, however, lie below the coefficients reported by Brayfield and Rothe (1951), Mauer (in Van der Walt & Els, 1991), and Van der Walt and Els (1991).

The reliability coefficient of 0,93 for Scale A of the WLQ can be regarded as highly satisfactory, as it surpasses the reliability coefficients quoted by Van Zyl and Van der Walt (1991).

#### **6.4 CORRELATIONS OF THE INDIVIDUAL FIELDS OF THE SDS**

The relations among types, or psychological resemblances among types, are illustrated by Holland's (1985) hexagonal model (see figure 2.1.). According to this model and the formulations of the consistency concept, the following theoretical relations should exist between types on grounds of inherent similarities (Holland, 1985):

Strong relations are anticipated between the following types: RI, IA, AS, SE, EC, CR.

Weak relations are anticipated between the following types: RS, IE, AC.

The validity of these assumptions was tested by means of correlating the individual fields of the SDS with each other. The results are presented in table 6.6 below.

**Table 6.6 Correlations of the individual fields of the SDS (n = 142)**

	<b>R</b>	<b>I</b>	<b>A</b>	<b>S</b>	<b>E</b>	<b>C</b>
<b>R</b>	1,00					
<b>I</b>	0,51**	1,00				
<b>A</b>	0,15	0,28**	1,00			
<b>S</b>	0,16	0,39**	0,44**	1,00		
<b>E</b>	0,39**	0,35**	0,17*	0,52**	1,00	
<b>C</b>	0,23**	0,23**	0,10	0,37**	0,52**	1,00

\*\* Correlations significant at the 0,01 level ( $p \leq 0,01$ ).

\* Correlations significant at the 0,05 level ( $p \leq 0,05$ ).

The strongest relationships can be observed between S-E (0,52); E-C (0,52); R-I (0,51); S-A (0,44).

Insignificant relationships can be observed between R-S ; A-C ; A-R.

The adjacent fields of SE, EC, RI, SA, therefore, demonstrate the closest relations in line with the hexagonal model. The opposite fields of RS and AC achieve no significant correlations, also in line with the propositions of Holland (1985).

The following correlations, however, are theoretically (according to the hexagonal model) unexpected:

A-I (0,28) : lower than theoretically expected.

C-R (0,23) : lower than theoretically expected.

E-I (0,35) : higher than theoretically expected.

By and large these results seem to support the structure of Holland's (1985) hexagonal model of the interrelationships of occupational types. This finding points toward support for

the construct validity of the SDS, as applied to a sample of Namibian public servants. The correlations of the research variables are now investigated.

## 6.5 CORRELATIONS OF THE RESEARCH VARIABLES

Pearson product-moment correlation coefficients were calculated to determine the linear relationships between the research variables. The results are presented in table 6.7.

**Table 6.7 Correlations of the research variables (n=142)**

	<b>Congr.</b>	<b>Cons.</b>	<b>Diff.</b>	<b>Acad.</b>	<b>JSI</b>	<b>Stability</b>	<b>WLQ</b>
<b>Congr.</b>	1,00						
<b>Cons.</b>	0,01	1,00					
<b>Diff.</b>	0,36**	-0,05	1,00				
<b>Acad.</b>	-0,11	0,16	0,03	1,00			
<b>JSI</b>	0,22*	0,05	0,11	-0,05	1,00		
<b>Stability</b>	-0,03	0,002	-0,09	0,09	-0,03	1,00	
<b>WLQ</b>	-0,08	-0,03	-0,09	0,07	-0,41**	-0,03	1,00

\*\* Correlations significant at the 0,01 level ( $p \leq 0,01$ ).

\* Correlations significant at the 0,05 level ( $p \leq 0,05$ ).

An inspection of the intercorrelation matrix reveals that only four significant correlations were obtained.

A significant correlation of 0,22 can be observed between congruence and job satisfaction. This could mean that the subjects who experience a better match between personal orientation and job satisfaction tend to be more satisfied with their jobs. The relatively low correlation conforms largely with the findings of other studies investigating the congruence - job satisfaction relationship. A number of authors point toward the 'magic 0,30 plateau' as the magnitude of relation that is seldom surpassed in congruence - job satisfaction research

(Assouline & Meir, 1987 ; Spokane, 1985 ; Tokar & Subich, 1997). Tranberg et al. (1993), in a meta-analysis dealing with the relation between congruence and job satisfaction, report on a mean correlation of congruence with job satisfaction of 0,20 for 27 studies. The overall mean congruence - job satisfaction correlation could, however, not be regarded as significant. Research findings on the congruence - job satisfaction relation range from insignificant correlations (Elton & Smart, 1988, Tokar & Subich, 1997) to correlations exceeding the 'magic 0,30 plateau' (Hener & Meir, 1981; Furnham & Schaeffer, 1984). The strength of the correlation obtained in this research can, therefore, be regarded to be in general agreement with the overall picture that is presented on the congruence - job satisfaction relationship. This conclusion is also supported by the results of a meta-analysis (53 studies) of congruence studies by Assouline and Meir (1987), who report a weighted mean of 0,21 for the correlations between congruence and job satisfaction.

No significant relationships between congruence and experienced work stress, congruence and job stability, congruence and academic achievement could be established. Furnham and Schaeffer (1984) in a study on the relationship between congruence and mental health (as operationalised in terms of typically stress-related ailments, such as anxiety, frustration, depression) report a negative correlation of -0,24 between these two variables. Such a result could not be confirmed in this study. Schwartz (1992) in a review of a number of studies on the congruence - stability relationship and the congruence - achievement relationship point to important evidence pertaining to non-significant associations between these constructs, in line with the results obtained in this study.

Assouline and Meir (1987) report correlations of 0,16 and 0,06 between congruence - stability and congruence - academic achievement respectively. These findings could not be supported, although the percentage variance explained ( $r^2$ ) for correlations quoted by Assouline and Meir (1987) border on the trivial and insignificant as well. The result obtained in this study also substantiates Meir and Navon's (1992) finding that congruence has no bearing on job stability and persistence.

No significant correlations could be obtained between consistency and job satisfaction; consistency and experienced work stress; consistency and job stability and consistency and academic achievement. This observation is supported by Furnham and Schaeffer (1984) who found no relationship between consistency and job satisfaction, as well as no relationship between consistency and stress related symptoms. Villwock et al. (1976) report a non-significant impact of consistency on the prediction of vocational stability. An insignificant relationship between consistency and academic achievement is reported by O'Neil (1977). The findings on consistency in this research are therefore supported by other studies as well which "failed to establish the usefulness of the concept of consistency as operationalised by Holland as a predictor of vocational behaviour" (Khan, Alvi, Shaukat, Hussain & Baig, 1990, p. 145).

No significant correlations could be obtained between differentiation and job satisfaction; differentiation and experienced work stress; differentiation and job stability or differentiation and academic achievement. Furnham and Schaeffer (1984) and Wiggins (1982) demonstrate significant findings concerning the differentiation - job satisfaction relationship. These results could not be supported. Insignificant relations between differentiation and stress-related symptoms and academic achievement are reported by Furnham and Schaeffer (1984) and O'Neil (1977) respectively. These findings are in line with the results reported in table 6.7. A relationship between differentiation and stability, albeit stability of occupational choice, as proposed by Taylor, Kelso, Longthorp and Pattison (1980) could not be confirmed.

Furnham and Schaeffer (1984) and Van der Walt and Els (1991) report on significant positive correlations between congruence and differentiation. These findings substantiate the result in table 6.7 where a correlation of 0,36 between congruence and differentiation is indicated. This implies that subjects with a differentiated profile are more likely to have a job which suits their personal orientation and interests. This assumption is also central to Holland's theory of occupational choice (Holland, 1985 ; Furnham & Schaeffer, 1984).

A significant negative relationship of  $-0,42$  can be observed from table 6.7 for job satisfaction and experienced work stress. This result is consistent with other findings in the research literature that pertain to the negative relationship between job satisfaction and stress measures (McCormick & Illgen, 1985 ; Tetrick & LaRocco, 1987). Public servants who experience high job satisfaction are therefore less likely to experience high levels of work-related stress.

The following sections elaborate these simple correlations by investigating the combined impact of congruence, differentiation, and consistency on job satisfaction, perceived work stress levels, job stability, and academic achievement. The effect of gender, age, and race as possible moderating variables is also investigated.

## **6.6 COMBINED EFFECT OF CONGRUENCE, DIFFERENTIATION AND CONSISTENCY AS PREDICTORS OF JOB SATISFACTION**

The effect of each independent variable, namely congruence, differentiation and consistency and the combined effect of these independent variables on job satisfaction was established by means of multiple regression analysis (Frankfort-Nachmias & Nachmias, 1992; Kerlinger, 1992).

Gender, age and race were controlled for by means of semi-partial correlation.

The results are presented in table 6.8.



**Table 6.8 Multiple regression analysis of congruence, differentiation and consistency as predictors of job satisfaction (n=142)**

Variables	Multiple R	R <sup>2</sup>	F	Significance
				Multiple regression
Congruence	0,216	0,046	6,776	0,010
Differentiation	0,218	0,048	3,458	0,034
Consistency	0,225	0,050	2,426	0,068
				Controlling for gender, age, and race
Gender	0,115	0,013	1,848	0,176
Age	0,209	0,043	3,138	0,046
Race	0,236	0,056	2,969	0,048
Congruence	0,317	0,100	3,788	0,006
Differentiation	0,317	0,101	3,024	0,013
Consistency	0,318	0,101	2,504	0,025

The variables were entered into the equation according to the order suggested by Holland (1985) and Villwock et al. (1976).

Congruence and differentiation did predict job satisfaction, explaining approximately 5% of job satisfaction variance. The F ratio after differentiation was entered was significant beyond the 0,034 level, F= 3,458. Congruence explained 4,6 % of the variance of job satisfaction. A minute increase of 0,02% in variance accounted for can be observed as a consequence of entering differentiation into the equation. The effect of consistency can be regarded as

insignificant. Congruence must, therefore, be regarded as the most important predictor of job satisfaction, with differentiation contributing a minute percentage to the explained variance of job satisfaction. It must be stated that the overall predictive power of congruence for job satisfaction remains extremely small.

After regressing job satisfaction on all three control variables (gender, age, race), the following was established:

Gender did not play a significant role in the job satisfaction variance accounted for. The effect of age was significant beyond the ,05 level, accounting for 4,3% of the variance of job satisfaction in conjunction with gender. Race contributed an additional 1,3 % of explained variance.

The three control variables, therefore, accounted for 5,6% of explained variance, with age playing the most prominent role. After adding congruence, differentiation, and consistency to the equation the percentage variance accounted for rose to 10,1%. Congruence and age seem to play the most important part in the prediction of job satisfaction. The effect of congruence is in line with Holland's (1985) assumptions regarding this construct. The effect of age on job satisfaction reflects the well documented research findings that job satisfaction tends to increase with age (Furnham & Schaeffer, 1984 ; Saal & Knight, 1995).

## **6.7 COMBINED EFFECT OF CONGRUENCE, DIFFERENTIATION AND CONSISTENCY AS PREDICTORS OF WORK STRESS**

The effect of each independent variable, namely congruence, differentiation and consistency and the combined effect of these independent variables on work stress was established by means of multiple regression analysis (Frankfort-Nachmias & Nachmias, 1992; Kerlinger, 1992).

Gender, age and race were controlled for by means of semi-partial correlation. The results are indicated in table 6.9.

**Table 6.9 Multiple regression analysis of congruence, differentiation and consistency as predictors of experienced work stress (n=142)**

Variables	Multiple R	R <sup>2</sup>	F	Significance
				Multiple regression
Congruence	0,076	0,006	0,813	0,369
Differentiation	0,101	0,010	0,718	0,490
Consistency	0,105	0,011	0,516	0,672
				Controlling for gender, age, and race
Gender	0,121	0,015	2,085	0,151
Age	0,162	0,026	1,865	0,159
Race	0,162	0,026	1,235	0,299
Congruence	0,182	0,033	1,169	0,327
Differentiation	0,193	0,037	1,053	0,389
Consistency	0,193	0,037	0,871	0,518

The variables were entered into the equation according to the order suggested by Holland (1985) and Villwock et al. (1976).

The percentage variance of work stress accounted for by congruence, differentiation and consistency was insignificant. None of the independent variables predicted experienced

work stress level. The same applies for the control variables, none of which had a significant effect on work stress.

### **6.8 COMBINED EFFECT OF CONGRUENCE, DIFFERENTIATION AND CONSISTENCY AS PREDICTORS OF JOB STABILITY**

The effect of each independent variable, namely congruence, differentiation and consistency and the combined effect of these independent variables on job stability was established by means of multiple regression analysis (Frankfort-Nachmias & Nachmias, 1992 ; Kerlinger, 1992).

Gender, age and race were controlled for by means of semi-partial correlation.

The results are indicated in table 6.10.

**Table 6.10 Multiple regression analysis of congruence, differentiation and consistency as predictors of job stability (n=142)**

<b>Variables</b>	<b>Multiple R</b>	<b>R<sup>2</sup></b>	<b>F</b>	<b>Significance</b>
				Multiple regression
Congruence	0,032	0,001	0,144	0,705
Differentiation	0,093	0,009	0,603	0,549
Consistency	0,093	0,009	0,399	0,754
				Controlling for gender, age, and race
Gender	0,142	0,020	2,890	0,091
Age	0,214	0,046	3,341	0,038
Race	0,223	0,050	2,397	0,071
Congruence	0,223	0,050	1,796	0,133
Differentiation	0,239	0,057	1,644	0,153
Consistency	0,243	0,059	1,417	0,213

The variables were entered into the equation according to the order suggested by Holland (1985) and Villwock et al. (1976).

The percentage variance of job stability accounted for by congruence, differentiation and consistency was insignificant. None of the independent variables predicted job stability. Age, as control variable, had a significant effect ( $F= 3,341$ ,  $p= 0,038$ ) on job stability. Younger public servants probably engaged in more intra- and interclass changes during the reference period (from 1990) than their older counterparts. Age therefore seemed to have an impact on

job stability.

## **6.9 COMBINED EFFECT OF CONGRUENCE, DIFFERENTIATION AND CONSISTENCY AS PREDICTORS OF ACADEMIC ACHIEVEMENT**

The effect of each independent variable, namely congruence, differentiation and consistency and the combined effect of these independent variables on academic achievement was established by means of multiple regression analysis (Frankfort-Nachmias & Nachmias, 1992; Kerlinger, 1992).

Gender, age and race were controlled for by means of semi-partial correlation.

The results are indicated in table 6.11.

**Table 6.11 Multiple regression analysis of congruence, differentiation and consistency as predictors of academic achievement (n=142)**

Variables	Multiple R	R <sup>2</sup>	F	Significance
				Multiple regression
Congruence	0,105	0,011	1,563	0,213
Differentiation	0,124	0,015	1,092	0,338
Consistency	0,203	0,041	1,973	0,121
				Controlling for gender, age, and race
Gender	0,204	0,042	6,078	0,015
Age	0,232	0,054	3,938	0,022
Race	0,237	0,056	2,744	0,046
Congruence	0,244	0,059	2,160	0,077
Differentiation	0,253	0,064	1,859	0,105
Consistency	0,277	0,077	1,877	0,089

The variables were entered into the equation according to the order suggested by Holland (1985) and Villwock et al. (1979).

The percentage variance of academic achievement accounted for by congruence, differentiation and consistency was insignificant. None of the independent variables predicted job stability. Gender, age and race, on the other hand, had a significant effect on academic achievement. The three control variables combined accounted for approximately 6 % explained variance of academic achievement, with gender having the strongest effect.

Overall, however, the strength of the relationship between the control variables and academic achievement does seem to be weak.

## **6.10 INTEGRATION OF RESEARCH FINDINGS**

The general aim of this research was to determine the relation between occupational choice, as operationalised by the SDS, and specific dimensions of work success.

The only relationship that could be identified was one between congruence and job satisfaction. No other relationships between the independent variables, namely congruence, differentiation, and consistency, and the specified dimensions of work success, namely job satisfaction, experienced work stress, job stability and academic achievement, could be established.

These results have the following implications for the research hypotheses:

Hypothesis 1(a) received empirical support and can subsequently be accepted.

Hypotheses 1(b) and 1(c) received no empirical support and must be rejected.

Hypotheses 2 and 3 received no empirical support and must be rejected.

No direct relationship, except for the congruence - job satisfaction relationship, between occupational choice (as operationalised in terms of congruence, differentiation, and consistency) and work success (as operationalised in terms of job satisfaction, experienced work stress, job stability and academic achievement) could be observed.

These findings on congruence, differentiation, and consistency are not dissimilar from other studies, as has been highlighted in the previous sections.

Of the factors controlled for in this research only age impacted on job satisfaction and job stability, according to expectations, and gender had a slight impact on academic



achievement. The latter observation could point toward differential academic achievement among female and male subjects.

Occupational choice and work success are extremely multi-faceted constructs (Brown & Brooks, 1990; Crites, 1969). It is, therefore, not entirely unanticipated that no direct relationship between one aspect of occupational choice, namely personal orientation as manifested in vocational interests, and individual dimensions of work success could be established. The relation could, however, very well be an indirect one were intervening variables such as performance, as antecedent of psychological success, are playing an important role as well (Hall, 1990). Socio-economic forces, such as an increasingly high rate of unemployment, could possibly impact on the relation as well, in that employment represents success in its own right, demoting the psychological facets of work success in significance (Furnham & Schaeffer, 1984). The lack of significant correlations between most of the research variables could also be a consequence of the unexpectedly high average levels observed particularly for job satisfaction, and unexpectedly low average levels observed for work stress, which could have had a restricting effect on variance (Van der Walt & Els, 1991).

The results of this research pertain directly to the criterion-related evidence of validity that can be observed for the SDS. Criterion-related evidence can be regarded as "evidence that shows the extent to which scores on a test are related to a criterion measure" (American Psychological Association, 1985, p. 90). The predictor in this research was the SDS, through its indices of congruence, differentiation, and consistency, and the criterion measure work success, through its dimensions of job satisfaction, experienced work stress, job stability and academic achievement. The design implemented to test the criterion-related validity of the SDS was one of concurrent validity. Concurrent validity refers to "evidence of criterion-related validity in which predictor and criterion information are obtained at approximately the same time" (American Psychological Association, 1985, p. 89). For this research the measures of occupational choice and work success were obtained at the same time. Only

very limited evidence of concurrent validity could be obtained for the SDS. Congruence predicted job satisfaction to a very moderate degree. Congruence did not predict experienced work stress, job stability or academic achievement. Neither differentiation nor consistency predicted job satisfaction, experienced work stress, job stability or academic achievement. Leung, Conoley, Scheel and Sonnenberg (1992) maintain that lack of predictive power concerning differentiation and consistency is well documented and might be a consequence of inadequate operational definitions for both constructs.

Reliability of the fields of the SDS can be regarded as satisfactory (see section 6.3). Evidence pertaining to the construct validity has been established in the form of correlations among the different fields of the SDS (see section 6.4). Concurrent validity of the SDS for work success could be established only to a very limited degree.

## **6.11 SUMMARY**

This chapter contains step 7 of the empirical investigation, namely the reporting and interpretation of the results of the empirical study.

Chapter 7 comprises steps 9, 10, and 11 of the empirical investigation - the conclusions, limitations and recommendations for further research.

## CHAPTER 7: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

Chapter 7 contains steps 9, 10 and 11 of the empirical research. The conclusions of the research are discussed, followed by the limitations and recommendations for further research.

### 7.1 CONCLUSIONS

On the basis of the literature survey the following conclusions can be arrived at.

(1) Occupational choice is a multifaceted construct. Several theoretical approaches have been forwarded to define occupational choice. Five of the most distinct approaches to the thinking about occupational choice are the following: trait and factor theory, personality theories of occupational choice, sociological perspectives of occupational choice, developmental perspectives of occupational choice, and behavioural approaches to occupational choice. Trait and factor theory and personality theories can be regarded as content theories of occupational choice, focussing on psychological characteristics and individual traits as determinants of occupational choice. Developmental theories can be regarded as process theories of occupational choice, focussing on the dynamic nature of a career as it unfolds over the life-span of an individual. The sociological perspectives and behavioural approaches represent a combination of content and process theories. Holland's theory of occupational choice is a trait-based personality theory of occupational choice. Holland (1966, 1973, 1985) regards occupational choice as an expression of personality, where occupational interests must be regarded as an integral part of personality. Holland (1966, 1973, 1985) provides definitions of personal orientations (personality types), environmental models (occupational classification) and describes the dynamics and the interaction of these entities in terms of constructs such as congruence, differentiation, and consistency. Holland's (1966, 1973, 1985) theory is regarded as one of the most robust theories of occupational choice and it has generated extensive research. Whilst some constructs, such as congruence, have received a fair amount of empirical support, other constructs, such as differentiation and consistency, generated some negative results as well.

(2) The definition and operationalisation of work success can be approached from a subjective and an objective angle. Subjective measures of work success pertain to the perception an employee holds toward his / her work, such as job satisfaction, whilst objective measures refer to outcomes such as individual earnings and job stability. Job satisfaction and experienced work stress can be regarded as subjective measures of work success and both constructs have profound individual and organisational implications. Job stability and work related academic achievement can be regarded as objective measures of work success with significant individual and organisational implications. Occupational choice and subjective and objective dimensions of work success can be integrated into a model closely related to the initial model of psychological success as proposed by Hall (1976, 1990). A highly congruent, well differentiated, and highly consistent choice leads to more accurate expectancies of goal attainment, leading to enhanced effort and performance with positive outcomes for success perception. Psychological success can manifest itself in higher job satisfaction and less experienced work stress. Psychological success positively influences individual self-esteem and identity, with positive outcomes for career involvement which can manifest itself in job stability and academic achievement.

On the basis of the empirical study the following conclusions can be arrived at.

- (1) There is a significant relationship between congruence and job satisfaction. Congruence predicts job satisfaction to a certain degree. Subjects with personal orientations matching their work environment are likely to experience higher job satisfaction.
- (2) No significant relationship exists between congruence and experienced work stress, job stability, and academic achievement. Congruence, therefore, does not predict experienced work stress, job stability, and academic achievement.
- (3) No significant relationship exists between differentiation and job satisfaction, experienced work stress, job stability, and academic achievement. Differentiation,

therefore, does not predict experienced job satisfaction, work stress, job stability, and academic achievement.

- (4) No significant relationship exists between consistency and job satisfaction, experienced work stress, job stability, and academic achievement. Consistency, therefore, does not predict experienced job satisfaction, work stress, job stability, and academic achievement.
- (5) The SDS can be regarded as reliable. Evidence for the construct validity of the SDS exists in the form of intercorrelations between the individual SDS fields which generally comply with the proposed structure of the hexagon of interrelationships among types.
- (6) The validity of the SDS for work success must be regarded as limited as concerns clerical, administrative, and professional workers. The only dimension of work success that could be predicted by the SDS was job satisfaction.

These conclusions have important implications for occupational and career guidance. Kidd (1996) identifies the acquisition of cognition frameworks for understanding self, opportunities, and their relationship as one of the crucial elements of successful occupational counselling. Occupational recommendations made to school-leavers and career changers should ideally lead to the following four outcomes (Kidd, 1996):

- self-awareness, learning about self, promotion of self-information search, organisation of self-information in a way relevant decision-making
- opportunity awareness, learning about opportunities, options, information search behaviour, organisation of occupational behaviour in a way relevant to decision-making
- decision-making skills, learning of rational decision-making skills, abandonment of irrational decision-making methods
- transition skills, learning of job search skills, utilisation of personal attributes in the implementation of the decision.

The SDS provides an ideal framework for enhanced self-awareness as concerns individual occupational interests. Opportunity awareness and the understanding of the relationship between self and opportunity can be facilitated by the SDS, due to its direct link to occupational classifications. The results of this research point to the fact that the SDS can fruitfully be administered to enhance client self-exploration and environmental exploration (Greenhaus & Callanan, 1994). The SDS seems to differentiate between personality types. The intercorrelations of the individual SDS fields indicate that certain types are indeed more closely related to each other as compared with others. The SDS also seems to identify personality types linked to the nature of the work environment these individuals function in. This is illustrated by the high levels of person-occupation fit observed in the frequency analysis. The largely conventional environment from which the sample was drawn was indeed occupied by a great majority of conventional types. Artistic types, as polar opposites of the conventional personal orientation, barely featured in the investigated work environment. The SDS also seems to yield fairly consistent results.

A guiding principle in occupational guidance is finding the right person for the right job. The SDS, according to the results obtained by the multiple regression analysis, does not seem to have enough predictive power to significantly project the outcomes of occupational fit. Successful occupational fit must, therefore, be considered as more than the sole match between occupational interest and work environment (Tranberg et al., 1993).

It must therefore be concluded that the SDS can be regarded as a useful tool for individual and occupational exploration efforts within the framework of occupational counselling purposes. In a counselling situation the results of the SDS should be substantiated by other factors such as aptitudes, values, educational possibilities, and labour market conditions. The SDS does not seem to be suitable for selection and placement purposes due to its lack of predictive power.

## 7.2 LIMITATIONS OF THE RESEARCH

The main limitations pertaining to the internal and external validity of the research, as well as to the psychometric properties of the research questionnaires, are listed below.

The measurement method, relying on self-report inventories in the context of a field survey, might pose a threat to the internal validity of the research. Lease (1998) maintains that self-report measures as sole means of data collection instruments often provide a distorted picture of research variables such as job satisfaction, which are regarded as sensitive and highly confidential by respondents.

The correlational design used in this study automatically prohibits clear causal identification of relations between research variables (Lease, 1998). The accuracy of experimental and quasi-experimental research designs, as recommended by, *inter alia*, Campbell & Stanley (1963), could therefore not be achieved with this research. This research suffers, therefore, from the inherent weaknesses of general non-experimental research, namely lack of control of independent variables, resulting in less accuracy and less confidence in the results (Kerlinger, 1992).

The external validity / generalisability of the study must also be regarded with a certain amount of caution due to the limited sample size and the limited sample breadth (Tokar & Subich, 1997). The results of this research can, in essence, only be generalised to clerical and professionally orientated Namibian public servants, falling within the salary ranges of 2AL1 and 4AL1 (government salary scale).

No bona-fide random sample could be obtained from within the identified organisations. Only the responses of volunteers willing to participate in the study were processed.

The reliability coefficient of 0,76 obtained for the JSI was below the levels reported in previous investigations involving the JSI. This lower level of reliability must be taken into account when considering the consistency of the obtained job satisfaction scores.

However, since the JSI is used to measure a broad trend (global job satisfaction) rather than individual differences, a reliability coefficient of 0,76 can still be regarded as acceptable (Ellison, 1997).

The version of the SDS used in this research was the self-administering form released by Holland in 1985. The only adaptations that were made are in line with the recommendations made by Gevers et al. (1992) in the context of the adaptation of the SDS for South African use. No item analysis has been undertaken to determine the effect of language and the discrimination values of the individual items. No initial adaptation of the SDS for use in the Namibian context has, therefore, been undertaken.

### **7.3 RECOMMENDATIONS FOR FURTHER RESEARCH**

Further research on the SDS can be encouraged. This study has yielded some positive results, especially regarding the reliability and construct validity of the SDS, which should be followed up and substantiated by other studies. Test construction issues, such as the effect of language and the discrimination value of individual SDS items, could be looked into as part of a thorough item analysis of the SDS.

A more complex and exact test of the structure of the hexagon in the Namibian context could also be engaged upon. The validity of the SDS for work success should be tested for samples different to the one used in this study.

Comparative measures of occupational choice could be tested for their validity concerning work success. This would provide a direct point of comparison concerning the effectiveness of the SDS and its indices.

Additional dimensions of work success, such as organisational commitment, could be introduced into the research design.

Further control of variables, such as pay and performance, possibly moderating the relationship between the SDS indices and work success, could be initiated.

Lastly, a longitudinal research design to establish the predictive validity of the SDS would prove to be valuable as a more complete picture of the causes and effects of operational choice could be obtained.



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## **APPENDICES**

## APPENDIX 1: OCCUPATIONAL COMPOSITION OF SAMPLE

Occupation	Holland Code	Observed Code
Accountant	CES	CAS
Accountant	CES	CES
Accountant	CES	CES
Accountant	CES	CES
Accountant	CES	CES
Accountant	CES	CRE
Accountant	CES	CSE
Accountant	CES	CSE
Accountant	CES	CSE
Accountant	CES	CSE
Accountant	CES	CSE
Accountant	CES	CSE
Accountant	CES	CSI
Accountant	CES	ECS
Accountant	CES	ICS
Administrative Control Officer	ECS	CES
Administrative Control Officer	ECS	CSE
Administrative Manager	ECS	CSE
Administrative Officer	CES	CER
Administrative Officer	CES	CES
Administrative Officer	CES	CES
Administrative Officer	CES	CES
Administrative Officer	CES	ECS
Cashier	CSE	ACI
Clerk: Credit	CES	CAS
Clerk: Credit	CES	CIS
Clerk: Credit	CES	CSE
Clerk: Credit	CES	SAE
Clerk: Dispatch	CRE	ECS
Clerk: Enquiries	CSE	CSE
Clerk: Enquiries	CSE	CES
Clerk: Financial	CES	CAS
Clerk: Financial	CES	CIE
Clerk: Financial	CES	CSE
Clerk: Financial	CES	SCI
Clerk: General	CSE	CEI
Clerk: General	CSE	CES
Clerk: General	CSE	CIS
Clerk: General	CSE	CIS
Clerk: General	CSE	CSE
Clerk: General	CSE	CSE
Clerk: General	CSE	CSE
Clerk: General	CSE	CSE
Clerk: General	CSE	CSE



Clerk: General	CSE	CSI
Clerk: General	CSE	CSI
Clerk: General	CSE	ECS
Clerk: General	CSE	IAS
Clerk: General	CSE	ISC
Clerk: General	CSE	ISR
Clerk: General	CSE	RCS
Clerk: General	CSE	SCE
Clerk: General	CSE	SCE
Clerk: General	CSE	SEC
Clerk: General	CSE	SRC
Clerk: Personnel	CSE	CSA
Clerk: Personnel	CSE	RCS
Clerk: Personnel	CSE	SCE
Clerk: Personnel	CSE	SEC
Clerk: Records	CSE	CSE
Clerk: Records	CSE	SCE
Clerk: Registry	CSE	CES
Clerk: Registry	CSE	CSE
Clerk: Stock	CRE	CEA
Counselling Psychologist	ISE	SAI
Credit Analyst	ESC	CIE
Credit Controller	CES	CSE
Customs and Excise Officer	SCE	CES
Data Processing Clerk	CER	CES
Data Typist	CER	ECS
Development Planner	ECS	SCE
Draftsman: Engineering	RIE	RAC
Economist	IEC	CES
Employment Officer	CSE	CES
Employment Officer	CSE	CSE
Employment Officer	CSE	SCI
Employment Officer	CSE	SCI
Employment Officer	CSE	SEI
Employment Officer	CSE	SIC
Employment Officer	CSE	SIE
Engineer: Industrial	RIE	RIE
Engineer: Mechanical	RIE	RIE
Engineering Technician: Civil	RIE	RIC
Engineering Technician: Electrical	RIE	IES
Engineering Technician: Mechanical	RIE	IRE
Engineering Technician: Mechanical	RIE	RIC
Financial Manager	ECS	ECS
Housekeeper	SCR	ISE
Human Resources Manager	ESI	ECS
Human Resources Manager	ESI	SCI
Instructor: Skills	SEC	SCA
Instructor: Skills	SEC	SEC
Labour Relations Officer	IES	CES

Library Assistant	IES	CSE
Marketing Manager	ESC	ECS
Marketing Officer	ESC	CES
Marketing Officer	ESC	ECS
Marketing Officer	ESC	ESC
Personnel Officer	ESI	CES
Personnel Officer	ESI	RSC
Personnel Officer	ESI	SCE
Personnel Officer	ESI	SCI
Personnel Officer	ESI	SCR
Personnel Officer	ESI	SEC
Receptionist	CSE	CAS
Receptionist	CSE	SEC
Safety Officer	SCR	ERC
Salaries Administrator	CSE	CSE
Secretary	CSE	CAS
Secretary	CSE	CES
Secretary	CSE	CIE
Secretary	CSE	CIS
Secretary	CSE	CSA
Secretary	CSE	CSA
Secretary	CSE	CSA
Secretary	CSE	CSA
Secretary	CSE	CSE
Secretary	CSE	CSE
Secretary	CSE	CSE
Secretary	CSE	ESA
Secretary	CSE	ESC
Secretary	CSE	SCA
Secretary	CSE	SCA
Secretary	CSE	SCE
Secretary	CSE	SCI
Sociologist	ISA	ASI
Statistician	ICA	ISC
Statistician	ICA	ISE
Stock Controller	CSE	CRE
Stock Controller	CSE	CES
Supervisor: Trainpersonnel	CSE	CES
Technical Assistant	RIE	CRI
Technologist: Microbiology	ISR	ICA
Teller	CSE	IRE
Teller	CSE	SAR
Training Officer	SEC	SCE
Training Officer	SEC	SEC
Vocational Counsellor	ISE	CIA
Vocational Counsellor	ISE	ECS
Vocational Counsellor	ISE	SAI
Vocational Counsellor	ISE	SAI
Vocational Counsellor	ISE	SCI

**SECTION A: BIOGRAPHICAL QUESTIONNAIRE**

Please complete the following section as accurately as possible

**CURRENT POSITION (JOB DESIGNATION)**.....

**GENDER**  male  female

**AGE (in years)** .....

**HOME LANGUAGE** .....

**RACE**  black  coloured  white

**HIGHEST FORMAL EDUCATIONAL QUALIFICATION**

Grade 12 / Matric	Certificate (Post School)	Diploma / Technical	Degree	Post Graduate
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In which field did you obtain your qualification .....

**WORK RECORD SINCE 1990:**

Position held*	Timeframe

\* Please note: you don't need to include the specific ministry / organisation for which you have worked, only your various job titles since 1990.

**SECTION B : Self-Directed Search Questionnaire**

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**ACTIVITIES**

Blacken under 'L' for those activities you would like to do. Blacken under 'D' for those things you would dislike doing or would be indifferent to.

R	L	D
Fix electrical things	<input type="checkbox"/>	<input type="checkbox"/>
Repair cars	<input type="checkbox"/>	<input type="checkbox"/>
Fix mechanical things	<input type="checkbox"/>	<input type="checkbox"/>
Build things with wood	<input type="checkbox"/>	<input type="checkbox"/>
Drive a truck or tractor	<input type="checkbox"/>	<input type="checkbox"/>
Use metalworking or machine tools	<input type="checkbox"/>	<input type="checkbox"/>
Work on a bicycle or motorcycle	<input type="checkbox"/>	<input type="checkbox"/>
Take Shop course	<input type="checkbox"/>	<input type="checkbox"/>
Take Mechanical drawing course	<input type="checkbox"/>	<input type="checkbox"/>
Take Woodworking course	<input type="checkbox"/>	<input type="checkbox"/>
Take Auto mechanics course	<input type="checkbox"/>	<input type="checkbox"/>
I	L	D
Read scientific books or magazines	<input type="checkbox"/>	<input type="checkbox"/>
Work in a laboratory	<input type="checkbox"/>	<input type="checkbox"/>
Work on a scientific project	<input type="checkbox"/>	<input type="checkbox"/>
Build rocket models	<input type="checkbox"/>	<input type="checkbox"/>
Work with a chemistry set	<input type="checkbox"/>	<input type="checkbox"/>
Read about special subjects on my own	<input type="checkbox"/>	<input type="checkbox"/>
Solve math or chess puzzles	<input type="checkbox"/>	<input type="checkbox"/>
Take Physics course	<input type="checkbox"/>	<input type="checkbox"/>
Take Chemistry course	<input type="checkbox"/>	<input type="checkbox"/>
Take Geometry course	<input type="checkbox"/>	<input type="checkbox"/>
Take Biology course	<input type="checkbox"/>	<input type="checkbox"/>
A	L	D
Sketch, draw, or paint	<input type="checkbox"/>	<input type="checkbox"/>
Attend plays	<input type="checkbox"/>	<input type="checkbox"/>
Design furniture or buildings	<input type="checkbox"/>	<input type="checkbox"/>
Play in a band, group, or orchestra	<input type="checkbox"/>	<input type="checkbox"/>
Practice a musical instrument	<input type="checkbox"/>	<input type="checkbox"/>
Go to recitals, concerts, or musicals	<input type="checkbox"/>	<input type="checkbox"/>
Read popular fiction	<input type="checkbox"/>	<input type="checkbox"/>
Create portraits or photographs	<input type="checkbox"/>	<input type="checkbox"/>
Read plays	<input type="checkbox"/>	<input type="checkbox"/>
Read or write poetry	<input type="checkbox"/>	<input type="checkbox"/>
Take Art courses	<input type="checkbox"/>	<input type="checkbox"/>

S	L	D
Write letters to friends	<input type="checkbox"/>	<input type="checkbox"/>
Attend religious services	<input type="checkbox"/>	<input type="checkbox"/>
Belong to social clubs	<input type="checkbox"/>	<input type="checkbox"/>
Help others with their personal problems	<input type="checkbox"/>	<input type="checkbox"/>
Take care of children	<input type="checkbox"/>	<input type="checkbox"/>
Go to parties	<input type="checkbox"/>	<input type="checkbox"/>
Dance	<input type="checkbox"/>	<input type="checkbox"/>
Read psychology books	<input type="checkbox"/>	<input type="checkbox"/>
Attend meetings and conferences	<input type="checkbox"/>	<input type="checkbox"/>
Go to sports events	<input type="checkbox"/>	<input type="checkbox"/>
Make new friends	<input type="checkbox"/>	<input type="checkbox"/>
E	L	D
Influence others	<input type="checkbox"/>	<input type="checkbox"/>
Sell something	<input type="checkbox"/>	<input type="checkbox"/>
Discuss politics	<input type="checkbox"/>	<input type="checkbox"/>
Operate my own service or business	<input type="checkbox"/>	<input type="checkbox"/>
Attend conferences	<input type="checkbox"/>	<input type="checkbox"/>
Give talks	<input type="checkbox"/>	<input type="checkbox"/>
Serve as an officer of any group	<input type="checkbox"/>	<input type="checkbox"/>
Supervise the work of others	<input type="checkbox"/>	<input type="checkbox"/>
Meet important people	<input type="checkbox"/>	<input type="checkbox"/>
Lead a group in accomplishing some goal	<input type="checkbox"/>	<input type="checkbox"/>
Participate in political campaign	<input type="checkbox"/>	<input type="checkbox"/>
C	L	D
Keep your desk and room neat	<input type="checkbox"/>	<input type="checkbox"/>
Type papers or letters for yourself or for others	<input type="checkbox"/>	<input type="checkbox"/>
Add, subtract, multiply, and divide numbers in business, or bookkeeping	<input type="checkbox"/>	<input type="checkbox"/>
Operate business machines of any kind	<input type="checkbox"/>	<input type="checkbox"/>
Keep detailed records of expenses	<input type="checkbox"/>	<input type="checkbox"/>
Take Typewriting course	<input type="checkbox"/>	<input type="checkbox"/>
Take Business course	<input type="checkbox"/>	<input type="checkbox"/>
Take Bookkeeping course	<input type="checkbox"/>	<input type="checkbox"/>
Take Commercial math course	<input type="checkbox"/>	<input type="checkbox"/>
File letters, reports, records, etc	<input type="checkbox"/>	<input type="checkbox"/>
Write business letters	<input type="checkbox"/>	<input type="checkbox"/>

### COMPETENCIES

Blacken under Y for "Yes" for those activities you can do well or competently. Blacken under N for "No" for those activities you have never performed or perform poorly.

R	Y	N
I have used wood shop power tools such as power saw or sander	<input type="checkbox"/>	<input type="checkbox"/>
I know how to use a voltmeter	<input type="checkbox"/>	<input type="checkbox"/>
I can change car oil and tyres	<input type="checkbox"/>	<input type="checkbox"/>
I have operated power tools such as a drill press or grinder or sewing machine	<input type="checkbox"/>	<input type="checkbox"/>
I can refinish varnished or stained furniture or woodwork	<input type="checkbox"/>	<input type="checkbox"/>
I can read blueprints	<input type="checkbox"/>	<input type="checkbox"/>
I can make simple electrical repairs	<input type="checkbox"/>	<input type="checkbox"/>
I can repair furniture	<input type="checkbox"/>	<input type="checkbox"/>
I can make mechanical drawings	<input type="checkbox"/>	<input type="checkbox"/>
I can make simple repairs on a TV set	<input type="checkbox"/>	<input type="checkbox"/>
I can make simple plumbing repairs	<input type="checkbox"/>	<input type="checkbox"/>
I	Y	N
I understand how a vacuum tube works	<input type="checkbox"/>	<input type="checkbox"/>
I can name three foods that are high in protein content	<input type="checkbox"/>	<input type="checkbox"/>
I understand the "half-life" of a radioactive element	<input type="checkbox"/>	<input type="checkbox"/>
I can use logarithmic tables	<input type="checkbox"/>	<input type="checkbox"/>
I can use a slide rule to multiply or divide	<input type="checkbox"/>	<input type="checkbox"/>
I can use a microscope	<input type="checkbox"/>	<input type="checkbox"/>
I can identify three constellations of the stars	<input type="checkbox"/>	<input type="checkbox"/>
I can describe the function of the white blood cells	<input type="checkbox"/>	<input type="checkbox"/>
I can interpret simple chemical formulae	<input type="checkbox"/>	<input type="checkbox"/>
I understand why man-made satellites do not fall to the earth	<input type="checkbox"/>	<input type="checkbox"/>
I have participated in a scientific fair or contest	<input type="checkbox"/>	<input type="checkbox"/>
A	Y	N
I can play a musical instrument	<input type="checkbox"/>	<input type="checkbox"/>
I can participate in two- or four-part choral singing	<input type="checkbox"/>	<input type="checkbox"/>
I can perform as a musical soloist	<input type="checkbox"/>	<input type="checkbox"/>
I can act in a play	<input type="checkbox"/>	<input type="checkbox"/>
I can do interpretive reading	<input type="checkbox"/>	<input type="checkbox"/>
I can do modern interpretive or ballet dancing	<input type="checkbox"/>	<input type="checkbox"/>
I can sketch people so that they can be recognized	<input type="checkbox"/>	<input type="checkbox"/>
I can do a painting or sculpture	<input type="checkbox"/>	<input type="checkbox"/>
I can make pottery	<input type="checkbox"/>	<input type="checkbox"/>
I can design clothing, posters, or furniture	<input type="checkbox"/>	<input type="checkbox"/>
I write stories or poetry well	<input type="checkbox"/>	<input type="checkbox"/>

S	Y	N
I am good at explaining things to others	<input type="checkbox"/>	<input type="checkbox"/>
I have participated in charity or benefit drives	<input type="checkbox"/>	<input type="checkbox"/>
I cooperate and work well with others	<input type="checkbox"/>	<input type="checkbox"/>
I am competent at entertaining people older than I	<input type="checkbox"/>	<input type="checkbox"/>
I can be a good host (hostess)	<input type="checkbox"/>	<input type="checkbox"/>
I can teach children easily	<input type="checkbox"/>	<input type="checkbox"/>
I can plan entertainment for a party	<input type="checkbox"/>	<input type="checkbox"/>
I am good at helping people who are upset or troubled	<input type="checkbox"/>	<input type="checkbox"/>
I have worked as a volunteer aide in a hospital, clinic, or home	<input type="checkbox"/>	<input type="checkbox"/>
I can plan school or church social affairs	<input type="checkbox"/>	<input type="checkbox"/>
I am a good judge of personality	<input type="checkbox"/>	<input type="checkbox"/>
E	Y	N
I have been elected to an office in high school or college	<input type="checkbox"/>	<input type="checkbox"/>
I can supervise the work of others	<input type="checkbox"/>	<input type="checkbox"/>
I have unusual energy and enthusiasm	<input type="checkbox"/>	<input type="checkbox"/>
I am good at getting people to do things my way	<input type="checkbox"/>	<input type="checkbox"/>
I am a good salesperson	<input type="checkbox"/>	<input type="checkbox"/>
I have acted as leader for some group in presenting suggestions or complaints to a person in authority	<input type="checkbox"/>	<input type="checkbox"/>
I won an award for work as a salesperson or leader	<input type="checkbox"/>	<input type="checkbox"/>
I have organized a club, group, or gang	<input type="checkbox"/>	<input type="checkbox"/>
I have started my own business or service	<input type="checkbox"/>	<input type="checkbox"/>
I know how to be a successful leader	<input type="checkbox"/>	<input type="checkbox"/>
I am a good debater	<input type="checkbox"/>	<input type="checkbox"/>
C	Y	N
I can type 40 words a minute	<input type="checkbox"/>	<input type="checkbox"/>
I can operate a duplicating or adding machine	<input type="checkbox"/>	<input type="checkbox"/>
I can take shorthand	<input type="checkbox"/>	<input type="checkbox"/>
I can file correspondence and other papers	<input type="checkbox"/>	<input type="checkbox"/>
I have held an office job	<input type="checkbox"/>	<input type="checkbox"/>
I can use a bookkeeping machine	<input type="checkbox"/>	<input type="checkbox"/>
I can do a lot of paper work in a short time	<input type="checkbox"/>	<input type="checkbox"/>
I can use a calculating machine	<input type="checkbox"/>	<input type="checkbox"/>
I can use simple data processing equipment such as a keypunch	<input type="checkbox"/>	<input type="checkbox"/>
I can post credits and debits	<input type="checkbox"/>	<input type="checkbox"/>
I can keep accurate records of payments or sales	<input type="checkbox"/>	<input type="checkbox"/>

### OCCUPATIONS

This is an inventory of your feelings and attitudes about many kinds of work. Show the occupations that *interest or appeal* to you by blackening under Y for "Yes." Show the occupations that you *dislike or find uninteresting* by blackening under N for "No."

	Y	N		Y	N
Airplane Mechanic	<input type="checkbox"/>	<input type="checkbox"/>	Sociologist	<input type="checkbox"/>	<input type="checkbox"/>
Fish and Wildlife Specialist	<input type="checkbox"/>	<input type="checkbox"/>	High School Teacher	<input type="checkbox"/>	<input type="checkbox"/>
Auto Mechanic	<input type="checkbox"/>	<input type="checkbox"/>	Juvenile Delinquency Expert	<input type="checkbox"/>	<input type="checkbox"/>
Carpenter	<input type="checkbox"/>	<input type="checkbox"/>	Speech Therapist	<input type="checkbox"/>	<input type="checkbox"/>
Power Shovel Operator	<input type="checkbox"/>	<input type="checkbox"/>	Marriage Counselor	<input type="checkbox"/>	<input type="checkbox"/>
Surveyor	<input type="checkbox"/>	<input type="checkbox"/>	School Principal	<input type="checkbox"/>	<input type="checkbox"/>
Construction Inspector	<input type="checkbox"/>	<input type="checkbox"/>	Playground Director	<input type="checkbox"/>	<input type="checkbox"/>
Radio Operator	<input type="checkbox"/>	<input type="checkbox"/>	Clinical Psychologist	<input type="checkbox"/>	<input type="checkbox"/>
Filling Station Worker	<input type="checkbox"/>	<input type="checkbox"/>	Social Science Teacher	<input type="checkbox"/>	<input type="checkbox"/>
Tree Surgeon	<input type="checkbox"/>	<input type="checkbox"/>	Director of Welfare Agency	<input type="checkbox"/>	<input type="checkbox"/>
Long Distance Bus Driver	<input type="checkbox"/>	<input type="checkbox"/>	Youth Camp Director	<input type="checkbox"/>	<input type="checkbox"/>
Locomotive Engineer	<input type="checkbox"/>	<input type="checkbox"/>	Personal Counselor	<input type="checkbox"/>	<input type="checkbox"/>
Machinist	<input type="checkbox"/>	<input type="checkbox"/>	Psychiatric Case Worker	<input type="checkbox"/>	<input type="checkbox"/>
Electrician	<input type="checkbox"/>	<input type="checkbox"/>	Vocational Counselor	<input type="checkbox"/>	<input type="checkbox"/>
Meteorologist	<input type="checkbox"/>	<input type="checkbox"/>	Speculator	<input type="checkbox"/>	<input type="checkbox"/>
Biologist	<input type="checkbox"/>	<input type="checkbox"/>	Buyer	<input type="checkbox"/>	<input type="checkbox"/>
Astronomer	<input type="checkbox"/>	<input type="checkbox"/>	Advertising Executive	<input type="checkbox"/>	<input type="checkbox"/>
Medical Laboratory Technician	<input type="checkbox"/>	<input type="checkbox"/>	Manufacturer's Representative	<input type="checkbox"/>	<input type="checkbox"/>
Anthropologist	<input type="checkbox"/>	<input type="checkbox"/>	Television Producer	<input type="checkbox"/>	<input type="checkbox"/>
Zoologist	<input type="checkbox"/>	<input type="checkbox"/>	Hotel Manager	<input type="checkbox"/>	<input type="checkbox"/>
Chemist	<input type="checkbox"/>	<input type="checkbox"/>	Business Executive	<input type="checkbox"/>	<input type="checkbox"/>
Independent Research Scientist	<input type="checkbox"/>	<input type="checkbox"/>	Restaurant Manager	<input type="checkbox"/>	<input type="checkbox"/>
Writer of Scientific Articles	<input type="checkbox"/>	<input type="checkbox"/>	Master of Ceremonies	<input type="checkbox"/>	<input type="checkbox"/>
Editor of a Scientific Journal	<input type="checkbox"/>	<input type="checkbox"/>	Salesperson	<input type="checkbox"/>	<input type="checkbox"/>
Geologist	<input type="checkbox"/>	<input type="checkbox"/>	Real Estate Salesperson	<input type="checkbox"/>	<input type="checkbox"/>
Botanist	<input type="checkbox"/>	<input type="checkbox"/>	Publicity Director	<input type="checkbox"/>	<input type="checkbox"/>
Scientific Research Worker	<input type="checkbox"/>	<input type="checkbox"/>	Sports Promoter	<input type="checkbox"/>	<input type="checkbox"/>
Physicist	<input type="checkbox"/>	<input type="checkbox"/>	Sales Manager	<input type="checkbox"/>	<input type="checkbox"/>
Poet	<input type="checkbox"/>	<input type="checkbox"/>	Bookkeeper	<input type="checkbox"/>	<input type="checkbox"/>
Symphony Conductor	<input type="checkbox"/>	<input type="checkbox"/>	Business Teacher	<input type="checkbox"/>	<input type="checkbox"/>
Musician	<input type="checkbox"/>	<input type="checkbox"/>	Budget Reviewer	<input type="checkbox"/>	<input type="checkbox"/>
Author	<input type="checkbox"/>	<input type="checkbox"/>	Certified Public Accountant	<input type="checkbox"/>	<input type="checkbox"/>
Commercial Artist	<input type="checkbox"/>	<input type="checkbox"/>	Credit Investigator	<input type="checkbox"/>	<input type="checkbox"/>
Free-Lance Writer	<input type="checkbox"/>	<input type="checkbox"/>	Court Stenographer	<input type="checkbox"/>	<input type="checkbox"/>
Musical Arranger	<input type="checkbox"/>	<input type="checkbox"/>	Bank Teller	<input type="checkbox"/>	<input type="checkbox"/>
Journalist	<input type="checkbox"/>	<input type="checkbox"/>	Tax Expert	<input type="checkbox"/>	<input type="checkbox"/>
Portrait Artist	<input type="checkbox"/>	<input type="checkbox"/>	Inventory Controller	<input type="checkbox"/>	<input type="checkbox"/>
Concert Singer	<input type="checkbox"/>	<input type="checkbox"/>	IBM Equipment Operator	<input type="checkbox"/>	<input type="checkbox"/>
Composer	<input type="checkbox"/>	<input type="checkbox"/>	Financial Analyst	<input type="checkbox"/>	<input type="checkbox"/>
Sculptor/Sculptress	<input type="checkbox"/>	<input type="checkbox"/>	Cost Estimator	<input type="checkbox"/>	<input type="checkbox"/>
Playwright	<input type="checkbox"/>	<input type="checkbox"/>	Payroll Clerk	<input type="checkbox"/>	<input type="checkbox"/>
Cartoonist	<input type="checkbox"/>	<input type="checkbox"/>	Bank Examiner	<input type="checkbox"/>	<input type="checkbox"/>

### SELF-ESTIMATES

1. Rate yourself on each of the following traits as you *really think you are* when compared with other persons your own age. Give the most accurate estimate of how you see yourself. Circle the appropriate number and avoid rating yourself the same in each ability.

	Mechanical Ability	Scientific Ability	Artistic Ability	Teaching Ability	Sales Ability	Clerical Ability
High	7	7	7	7	7	7
	6	6	6	6	6	6
	5	5	5	5	5	5
Average	4	4	4	4	4	4
	3	3	3	3	3	3
	2	2	2	2	2	2
Low	1	1	1	1	1	1
	R	I	A	S	E	C

	Manual Skills	Math Ability	Musical Ability	Friendliness	Managerial Skills	Office Skills
High	7	7	7	7	7	7
	6	6	6	6	6	6
	5	5	5	5	5	5
Average	4	4	4	4	4	4
	3	3	3	3	3	3
	2	2	2	2	2	2
Low	1	1	1	1	1	1
	R	I	A	S	E	C



**EXPERIENCE OF WORK**

This part contains questions on feelings that you perhaps experience in your work

Indicate below Scale A how frequently a particular feeling occurs by writing down any figure from 1 to 5. Scale A is as follows:

- 1 = Virtually never
- 2 = Sometimes
- 3 = Reasonably often
- 4 = Very often
- 5 = Virtually always

Use this scale to answer each of the questions.

How often in your work do you feel ...

- 1 as if you are coming up against a wall and simply cannot make any progress?
- 2 afraid, not knowing of what exactly?
- 3 uncertain (unsure, doubtful)?
- 4 worried?
- 5 that your views clash with those of another person?
- 6 that you are experiencing conflict?
- 7 bored?
- 8 irritated (annoyed)?
- 9 that you have no confidence in yourself?
- 10 that you depend too much on the help of others?
- 11 alone?
- 12 that you would like to attack another person?
- 13 that you merely accept things as they are?
- 14 that you are disturbed whenever you work hard at something?
- 15 that you are losing control of your temper?
- 16 that no-one wants to support you?
- 17 that your work situation compares unfavourably with those of others?
- 18 despondent (cheerless, down)?
- 19 that you have broken some rule or other?
- 20 inferior (no self-confidence, unimportant)?
- 21 that someone and/or a situation is annoying you terribly?
- 22 guilty?
- 23 downhearted?
- 24 fearful?
- 25 that you can do nothing about a situation?
- 26 aggressive (want to hurt someone/break something)?
- 27 that you are getting sad?
- 28 overburdened (too much work/responsibilities)?
- 29 angry?
- 30 afraid without knowing whether you are afraid of a particular person and/or situation?
- 31 not exactly sure how to act?
- 32 that you are having trouble concentrating since you are worried about something?
- 33 that you have no interest in the activities around you?
- 34 that you need assistance continuously?
- 35 that you do not wish to participate in anything?
- 36 afraid of colleagues and/or supervisors?
- 37 that it seems as if you will never get out of this mess?
- 38 dissatisfied?
- 39 that you are tearful (weeping, sorrowful)?
- 40 that you have too much responsibility and too many problems?

	<b>Scale A</b>
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