CAREER DECISION-MAKING: THE RELATIONSHIP BETWEEN EDUCATIONAL INDECISION AND VOCATIONAL INDECISION

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DEDICATED

to

GRUHEET AND GIVARN

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ABSTRACT

The present study investigates the relationship between educational and vocational indecision. It examines gender and cultural differences in relation to these two main variables. Three levels of educational and vocational indecision among first-entry university students were studied and designated the categories **decided, tentatively decided** and **undecided.** A biographical questionnaire and the Career Decision Scale (CDS) were used to gather quantitative data. The CDS was used to measure career indecision. Students here were arbitrarily categorised as **decided, somewhat decided** and **undecided** according to their CDS scores. Interviews were also conducted to gather qualitative data.

A total of 404 students completed the questionnaire and CDS, and a total of 25 students were interviewed. The sample was drawn from the first year student population and comprised 153 male and 221 female students. There were 271 African, 1 Coloured, 99 Indian and 4 White students in the sample.

The results from the data show that there is a significant relationship between educational and vocational indecision in the sample. There were significant differences for gender and culture in relation to educational and vocational indecision. Male students were found to be more decided than female students about their majors and vocation. African students were more decided about their vocation than their majors. The reverse was true for Indian students, that is, they were more decided about their majors than their vocation. There were also very interesting differences among the different language groups. The findings of this study show that the levels of educational and vocational indecision were high among the first-entry university students. Recommendations and implications for further study are discussed.

KEY TERMS: Career decision-making; majors; vocation; indecision.

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CHAPTER 1

INTRODUCTION

> ***"The choice of an occupation is an expressive act which reflects the person's motivation, knowledge, personality and ability. Occupations represent a way of life, an environment rather than a set of isolated work functions or skills" (Holland, 1985, p.8).***

Krumboltz *et al* (1976) state that career selection is a lifelong process. The choice of a career does not take place at one point in time, but is shaped by events and decisions that occur from infancy through the retirement years.

In the larger scheme of career development, choice about school subjects, university courses and degree, and decisions about where to study and what career to follow, are important considerations in a person's life.

University students have faced the dilemma of choice of majors and choice of career for a number of years. The relationship between educational courses and vocation has been researched extensively in the literature. Some university courses such as psychology and sociology in the B.A. degree do not lead directly to a particular job or career, while degrees in pharmacy and speech and hearing therapy are directly related to a specific profession and vocation.

The problem of choosing courses and majors relevant to a vocation has been prevalent among many university students for years. This has been of concern to the researcher, who consequently chooses, in the present study, to investigate the relationship between educational indecision and vocational indecision. The study will also examine gender and cultural differences relating to educational indecision and vocational indecision.

There is an increasing demand on counsellors especially at universities, to help students make informed career decisions. Since not all university courses are vocationally oriented, students

require professional assistance to guide them through the decision-making process. There has been a substantial increase in the number of students who seek educational or vocational assistance in the process of career decision-making. Increases in the number of students who are undecided about a major or vocational choice, and the fact that undecided students tend to drop out of college at a greater rate than decided students who are more sure about their choice, demonstrate the need to provide proper and effective career development and counselling services (Salomone, 1982).

At the University of Durban-Westville over 60% of first-entry students seek career counselling at the beginning of the year prior to registration. Many of these students are unsure about their course of study and career choice. Some of them seek help to clarify their thoughts and decisions about what they want to do. The researcher has observed over the years that students who are undecided or tentatively decided about their majors or choice of career have difficulty coping with their academic work, develop high levels of anxiety and tend to drop out of university. Another observation is that students who do not do proper career planning from the first year of study tend to proceed with their studies but flounder when it comes to career choice after their final year of study. Students who are undecided about their careers have been found to be unprepared for the labour market and are unable to market their skills to prospective employers. They take longer to find suitable employment. These are a few of several reasons for enhancing one's ability to assist educationally and vocationally undecided students

Three levels of Vocational Indecision and Educational Indecision were identified by Bergeron and Romano (1994): **decided; tentatively decided** and **undecided**. A survey of the literature indicates that there are significant numbers of vocationally and educationally undecided students. It is estimated that 20% to 50% of the students entering college have reported to be undecided, and further that undecided students have been identified as attrition prone (Bergeron and Romano, 1994). The number of students who enter college decided and then change their majors, is estimated to be between 50% and 60% (Gordon, 1981).

Several writers have described undecidedness as a state of being uncertain, doubtful, unwilling to commit oneself, open-minded or having several options (Bergeron and Romano,

1994; Gordon, 1981; Holland and Nichols, 1964; Krumboltz, 1992; Salomone, 1982). Krumboltz (1992) proposed that career undecidedness should not be perceived as being negative, just as career decidedness is not necessarily positive. In the present study vocational and educational undecidedness will be examined from a variety of perspectives: that the student is either uninformed or ill-informed, wants further information, has many alternatives to choose from, may be career immature, or has varied interests and capabilities.

A theoretical framework for career decision-making will be of value to the problem under investigation. To this end the Social Learning Theory of Career Selection postulated by Krumboltz *et al* (1976) will be applied. This Theory attempts to explain how educational and occupational preferences and skills are acquired and how the selection of courses, occupations and fields of work is made. The theory identifies the interactive influence of genetic factors, environmental conditions, learning experiences, cognitive and emotional responses and performance skills, that move along one career path or another. These factors when combined, interact in different ways to produce different decisions (Krumboltz, 1976). The most essential concept in this theory is the concept of **learning**. According to Krumboltz (1993), it is through learning experiences that people develop preferences for various activities. They make sense of their activities through experience or ideas they have been taught.

Driver (in Kiechel III, 1994, p. 50) a management professor who studied career patterns for three decades, contrasted decision-making in the Industrial Age and the Information Age. He asserted that "the old Industrial model primarily called for people who were very focused, structured, analytical, and action-oriented". In contrast, as civilization moves into the Information Age, people will have to develop adaptive, multi-focus thinking styles in order to use and process vast quantities of information in multiple directions. According to Kiechel III (1994, p.50), the "job" as it is known, will cease to exist if it is defined as "a regular set of duties, with regular pay, and regular hours, and a fixed place in an organisation's structure". It will become an obsolescent social artifact of the Industrial Revolution. Bridges (in Kiechel, 1994, p.50) calls this an "age of de-jobbing" where people will be more market ready: in other words, they will be constantly scanning sources to identify the market for their services and focusing on those which will continue to have value

in the market. The new economy will be built on one-person organisations where an individual will be recognised as a business rather than as an employee. This economy will be a service economy with the majority of the workers being service deliverers.

Kiechel (1994) argues that the most critical type of knowledge in the Information Age will be self-knowledge, and the key to success and survival will be life-long learning. The most painful type of learning for many, especially professionals, will be that of knowing 'thy-self'. The need for process skills like decision-making, team leadership, team membership and the ability to communicate, will be even greater. It will no longer be possible to count on spending 30 years with the same company or in pursuit of a life-long career.

In the light of the arguments presented by Kiechel (1994), it is critical that established values of career permanence be replaced by the need to be adaptive, and to foster an integrative style.

It comes as no surprise therefore that both counsellors and clients are experiencing great difficulty with the influx of new information. As noted by Hasler and Roberts (in Oosthuizen, 1991, p.2) "there will be a greater number of vocational decisions to make and a lessening of stability in the outcome of these decisions".

If career development is viewed as an on-going process, it is generally agreed that a decision-making component is essential to any educational curriculum (Oosthuizen, 1991). Oosthuizen states further that to be self-fulfilled an individual should be responsible for his/her own career decisions which will allow greater freedom of choice. This freedom has certain costs where greater freedom means increased difficulties in making career decisions. Without sufficient self-knowledge and knowledge of the world of work, it is difficult for anyone to attain a level of self-fulfilment. It will therefore be even more unlikely for one to be happy in a chosen career.

Students who seek counselling at Career Counselling and Development Centres in educational and other institutions are at different levels of vocational indecision and educational indecision. Several studies done in South Africa (Smith, 1993; Van Vuuren, 1991; Watson

and Allan, 1989; Watson and Stead, 1990) have examined the career development of high school pupils, taking into account role salience, career decision-making skills and career development across cultures. To date none of the South African studies has empirically investigated the relationship between vocational indecision and educational indecision. The present study will therefore examine this problem, focusing specifically on the experiences of first-entry students at the University of Durban-Westville. Many of these students come to university with no idea of why they want to enter a particular educational programme or occupation or why they want to change from one educational programme or occupation to another.

Against this background the primary objectives of the present study will be as follows:

* to investigate the levels of educational indecision and vocational indecision;
* to examine gender differences and
* to explore cultural differences (in terms of population and language groups).

The key questions to be answered in this research are as follows:

1. What is the relationship between the three levels of educational indecision and the three levels of vocational indecision?
2. Is there a relationship between gender and the three levels of educational indecision?
3. Is there a relationship between gender and the three levels of vocational indecision?
4. What is the relationship between the different cultural groups and the three levels of educational and vocational indecision?

College major indecision has been researched in many studies under the rubric of vocational indecision (Bergeron and Romano, 1994). The terms college and university have been used synonymously in the literature. The term **major** as used in the present study refers to an area of specialization in a given subject normally taken over three years in a three year degree programme.

The present study will explore the differences between these two domains of undecidedness.

Gender differences as well as cultural differences with respect to these primary variables (that is, major and vocational indecision), will be examined. Cultural differences will include differences among population and language groups. Selected biographical and demographic variables, and questions concerning opinions and attitudes associated with choosing a major and a career, will be investigated.

In Chapter 2 of this dissertation, Career Development Theory, Decision-making Models and Career Decision-making research relevant to this study will be discussed. Methodology and a description of the research instruments used will be the focus of Chapter 3 while Chapter 4 will report the results. The discussion of the results, possible recommendations and the conclusion will be provided in Chapter 5.

CHAPTER 2

LITERATURE REVIEW

A review of the literature shows that a diversity of perceptions and terminology in career decision-making are used. The meaning of concepts depends on the perspective from which they are viewed. Terms such as **vocation**, **career** and **occupation** are used synonymously. **Educational indecision** and **major indecision** as well as **vocational indecision** and **career indecision** are used interchangeably. The concepts **undecided** and **indecisive** have different meanings depending on the context in which they are used. It is therefore necessary to define the terms and concepts used in this study.

2.1 DEFINITION OF TERMS

2.1.1 Educational Indecision and Vocational Indecision

Many words associated with the verb **decide** have been used interchangeably in the literature and insufficient attention has been given to adjectives such as **decided, undecided, decisive** and **indecisive**. The result is linguistic havoc in the literature pertaining to students who have or have not made a decision about their career or major (Salomone, 1982). Salomone (1982, p.498) maintains that "undecided and indecisive" are adjectives that should be used to describe different types of people. It is possible for an individual to be both decided and decisive, as it is possible to be undecided but of a decisive nature. He believes that Vocational Decision-Indecision comprises two subconcepts with attendant behaviours. This he outlines in the following continua:

* Decidedness .....Undecidedness(state)

decided-undecided (behaviour)

* Decisiveness .....Indecisiveness(state)

decisive-indecisive (behaviour)

In the first continuum the counsellor has to explore a rational-cognitive issue with a

developmental aspect. The second continuum, in contrast to the first, foregrounds an emotional-psychological issue with a developmental aspect. An indecisive person can be described as one who would fail to make important decisions not because he/she lacks sufficient information but because his/her personal qualities do not allow him/her to reach "a decisional state of mind and take a course of action" (Salomone, 1982, p.497). Indecisive people are not capable of making critical decisions because they are psychologically incapable of such behaviours.

Some authors have referred to indecision as a chronic condition (Fuqua and Hartman, 1983a; Fuqua and Hartman, 1983b) and relate career indecision to serious psychological problems such as situational anxiety, characteristic anxiety and self-perceptual problems. Tyler (in Salomone, 1982, p.497) describes the indecisive student as "fraught with personal problems that are demonstrated by neurotic and maladjustive behaviour". She refers to individuals who seem to have difficulty in making all sorts of life decisions.

Crites (1969, p.303) defines vocational indecision as "the inability of the individual to select, or commit himself to, a particular course of action which will eventuate in his preparing for and entering a specific occupation". Another distinction is made between **indecision** and **indecisiveness**. According to Van Vuuren (1991, p.23), "indecision is applicable only to career choice, whereas indecisiveness is a more general term related to an underlying personality trait where the ability to take decisions and the responsibility for decision-taking behaviour, is part of the individual's interaction style".

In the present study the relationship between vocational indecision and educational indecision will, in the light of the discussion above, be examined as a rational-cognitive issue and not as an emotional-psychological issue. The term **indecision** is used as it applies only to career choice.

The terms **educational choice** and **choice of college major** have also been used synonymously. Bergeron and Romano (1994) investigate educational indecision with respect to choosing a college major. Other studies (Gordon in Bergeron and Romano, 1994) indicate that there are significant numbers of vocationally and educationally undecided students where

educationally **undecided** refers to those students who have not decided on a major or academic course. In this study the terms "**educational indecision**" and "**indecision about majors**" are used synonmously.

2.1.2 Career/Vocation

The terms **career, vocation, occupation** and **work** are also used interchangeably in the literature. Some of these definitions will be outlined and discussed in order to understand their use in the context of this research.

A career is defined as "the combination and sequence of roles played by a person during the course of a lifetime (Super, 1981, p.282). Some of these roles include those of a child, parent, student, homemaker, worker and citizen. Tiedeman (in Gordon 1981, p.435) defines career as "the imposition of direction into the vocational behaviour of a person which is subject to his comprehension and will". Vocational choice has been described by Crites (1969, p.127) as "what the individual prefers to do". The individual expresses his/her preference for a particular vocation from a given number of vocational alternatives and this constitutes his/her choice. Super's definition of **career** is all-encompassing and acceptable to the researcher. However, for the purposes of this study the definition given by Crites will be more appropriate as the focus in this research is on choices and decisions of university students pertaining to academic courses, majors and related vocations.

This chapter will include a review of the literature on Career Development Theory, Decision-making models and Career decision-making research in relation to the present study.

2.2 CAREER DEVELOPMENT THEORY

Career development as a process has been researched and described by many authors (Krumboltz, 1976; Super, 1957 and Tiedeman, 1963). Many vocational psychologists believe that vocational choice is an expression of the total personality. The choice of a vocation is not a single event that takes place at a certain time but rather a result of a developmental process (Zytowski, 1968). Although career development is a complex process to describe, Tiedeman (1963, p.4) refers to career development as "an orientation towards work that evolves within the psychological process of forming an ego-identity". It is self-

development that is related to choice, entry and progress in educational and vocational pursuits. Although several theoretical models have been postulated over the years, Super's Developmental Theory and Holland's Theory of Vocational Types have been the dominant theoretical perspectives in the past two decades. Super's Theory is described briefly because it is not the focus of the study. Gottfredson's Developmental Theory of Occupational Aspirations is offered as a developmental theory because it highlights important predictors of vocational choice such as social class, intelligence and gender. The fundamental concepts of Circumscription and Compromise are relevant to this study.

2.2.1 Super's Theory of Career Development

Super (1953) prefers to use the term **development** rather than **choice** in his Theory of Career Development, because it encompasses the concepts of preference, choice, entry and adjustment. He outlines twelve elements that have appeared in the literature which are fundamental to an adequate theory of vocational development. These include: individual differences; multipotentiality; occupational ability patterns; identification and the role of models; continuity of adjustment; life stages; career patterns; guidance through the developmental process; the result of interaction; dynamics of career patterns; job satisfaction, and work as a way of life. Super's Theory of Career Development comprises four major elements: **career patterns, the development of the self-concept into a career self-concept, career maturity and career life stages** (Super, 1953; Super, 1957; Super, 1963). Super (1953) describes vocational development by means of ten propositions. These propositions highlight the diverse elements of a comprehensive theory and include the following:

- noting differences in the abilities, interests and personalities of individuals;
- developing and implementing a self-concept;
- compromising between individual and social factors, between self-concept and reality;
- understanding that the process of career development is characterised by a series of life stages, namely: growth, exploration, establishment, maintenance and decline.

Super's theory has been criticised by Borgen (1991) who states that many of the constructs included in the theory have become so integrated into the vocabulary and conceptualization of the field that researchers implicitly assume their validity. Super himself indicates that his

hopes for future efforts include adaptations of his theory and methods to accommodate gender and ethnic/racial group differences (in Fouad, 1994).

2.2.2 Gottfredson's Developmental Theory of Occupational Aspirations

Gottfredson's Development Theory of Compromise and Circumscription was stimulated by the following observations:

1. The primary focus of most of the psychological theories of vocational choice has been on the process of development: Super, for example, who has detailed the process by which people attempt to implement their self-concepts at different stages in career development, and Holland's theory looks at occupational choice and personality types. Gottfredson examines how these processes and approaches could be integrated.

2. Gottfredson states that important predictors of vocational choice such as social class, intelligence and sex are often taken for granted, and that the importance of these predictors should be highlighted.

3. Gottfredson accepts that self-concept is useful in integrating the process and organisational approaches to career development but argues that social class and intelligence are equally important for incorporation into a self-concept theory of occupational choice.

4. The importance of compromise had been noted by other theorists such as Super (1953) and Ginzberg *et al* (in Gottfredson, 1981), but vocational theory had little to say about what compromises individuals face and how they cope with them. Gottfredson thus saw the need to investigate this theoretical perspective.

Fundamental to Gottfredson's formulation of the development of occupational aspirations, are the concepts of **circumscription** and **compromise**. The individuals' views of themselves (self-concepts) and their views of work (occupational images and cognitive maps of occupations) become differentiated as they develop. Pryor and Taylor (1989) outline the four developmental stages of Gottfredson's formulation:

1. Orientation to size and power (3 to 5 years).

2. Orientation to sex roles (6 to 8 years).
3. Orientation to social valuation (9 to 13 years).
4. Orientation to the internal, unique self (from 14 years).

Gottfredson proposes that as people progress through the different stages of development new elements are incorporated into their perceptions of themselves and their understanding of the world of work. These perceptions of self and work subsequently affect career choices as individuals define what is 'acceptable ' to them. During the ages 6 to 8 years, children focus on sex roles and boys and girls develop a set of beliefs about what is appropriate behaviour for themselves as a member of a particular sex. At the same time, generalised notions of stereotypes about the different types of work that are acceptable for males and females are developed. From 9 to 13 years children become oriented to social valuations where they internalise what is expected of them from their peers, family, school and society. During this stage children begin to see what kinds of work are acceptable for people in their social situation. During the next stage, from 14 years of age, adolescents focus on their personal uniqueness that is, their individual values, interests, and unique capacities. Concurrently, there is development of a differentiated set of perceptions of occupations. Gottfredson argues that people develop a common view of the world of work based on the social meaning of occupations. This view or cognitive map depends on three interrelated dimensions, these are the perceived suitability of each occupation for males and females (sex-type), prestige level, and psychological characteristics.

When it is time to make career choices people can predict which occupations are more compatible with their self-concept based on their cognitive map of occupations. Gottfredson suggests that it is at this time that the internalised perceptions of people greatly restrict the options deemed as acceptable. This is the process of **circumscription** of occupational alternatives. As a result of the process of circumscription many jobs are excluded on the basis of sex type while other jobs are excluded because they are seen to be socially unacceptable. Those jobs that are not excluded form a "zone of acceptable alternatives" (Pryor and Taylor, p.103). It is from this set of alternatives that individuals seek to find occupations that match their vocational interests, occupational values, and unique abilities. Gottfredson (in Pryor and Taylor, 1989), suggests that people seem to select their best option

from a range of occupations. However, sometimes individuals are unable to choose an occupation within their circumscribed range of acceptable alternatives and therefore have to compromise.

The process of **compromise** involves the sacrificing of personal expectations based on perceptions of self and occupations in order to widen the range of employment possibilities. The typical pattern of compromise is that interests and other psychological characteristics are relinquished first. Acceptable and accessible occupations are sought and if these are not found, then prestige expectations will be relinquished and individuals will seek acceptable and accessible possibilities. At this stage if a suitable alternative is not found, individuals will forfeit their conceptions of gender-appropriate jobs in order to obtain employment.

The Developmental Theory of Occupational Aspirations tries to explain why people are attracted to particular occupations. It stresses the importance of self-concept in vocational development where self-concept and the types of compromises that people make are determined by social class, intelligence and sex. The theory therefore "integrates a social systems perspective with the more psychological approaches" (Gottfredson, 1981, p.546). The process of circumscription involves the narrowing of the range of occupational alternatives during early childhood and adolescent career development. According to Circumscription Theory, gender influences career preferences at an earlier age than social class which in turn influences preferences at an earlier age than interests and values. The model addresses the influence of gender: Gottfredson (1981) suggests that adolescent females, through sex-role socialization, can limit their chances on the basis of gender.

Gottfredson's Circumscription Theory however, has been criticised for the role of gender, social class and interests. Hesketh *et al* (1990), while accepting the importance of the tenets of the Compromise and Circumscription Theory, argue that the factors that are incorporated earlier into self-concept, such as sex type, should not be the most important in career development. They suggest that circumscription be viewed as cumulative: it should incorporate previous experiences and integrate each psychological structure into the self-concept.

In providing an alternative account of Gottfredson's Theory, Hesketh *et al* (1990) reported that interests are considered most important in career choice, followed by prestige and sex type. This alternative account, which involves a modification of Gottfredson's Theory, builds on the non inter-dependence of gender, prestige and interests. Interests are seen to be more important because they are more differentiated and indirectly express sex type and prestige level of career preferences. Another limitation of Gottfredson's theory was the assumption that once an occupation has been rejected on the basis of being gender inappropriate or outside the preferred prestige zone, it would not be reconsidered in the future. The alternative theory proposes that occupations previously rejected on the basis of one factor (such as gender) could be reconsidered through their relation to another underlying factor (for example, interests). A further criticism of the theory was that it specified the content dimensions (gender, prestige and interests) but offered little insight into the cognitive processes involved.

2.3 DECISION-MAKING MODELS

Numerous theoretical views of the process of decision-making have guided research on career decision-making (Ciavarella, 1972; Harren, 1979; Krumboltz, 1976; Pitz and Harren 1980; Osipow *et al* 1976). Cognitive psychologists have also made contributions to the understanding of decision-making. Pitz and Harren (1980) investigated the implications for career decision-making through studies of human information processing and decision-making. According to Harren (1979) there should be a differentiation between decision-making models and career development models.

Decision-making models describe psychological processes by which one organises information, deliberates on alternatives and makes a commitment to a course of action. Career development models are broader in scope and focus on the characteristics of the decision-maker and the development tasks that need to be confronted at different life stages.

Decision-making theories have been classified as **normative** (or **prescriptive**) and **descriptive** (or **behavioural**). Normative decision-making theory is concerned with developing procedures for making decisions and explains **how one ought to make decisions**. Descriptive decision-making theory, rather than prescribe methods of decision-making,

describes **how individuals make decisions**.

Although this study will discuss the career choice of students, the main focus of this research will be on the relationship between vocational indecision and educational indecision. An example of a prescriptive theory and descriptive theory will be provided to show how these might be used in explaining the decision-making process. A prescriptive model of decision-making is exemplified in Krumboltz's Social Learning Theory of career selection, according to Stead (1988). This theory will be discussed in detail in the following section because it provides the theoretical framework for this study. The decision-making theory of Tiedeman (1963) will be viewed as an example of a descriptive model.

2.3.1 Tiedeman's Theory of Career Decision-making

According to Tiedeman (1963), people are confronted at many points in their lives with study and work discontinuities. These environmentally caused discontinuities are the result of a transition of events that call for career-related decisions. Some of these events include the transition from primary to secondary school, selecting subjects in high school, deciding on which university to go to, and choosing a course of study. Central to Tiedeman's view of career, is that people are responsible for their own behaviour at points of study and work discontinuity, and are capable of purposeful action. The paradigm of the processes of differentiation and integration in problem-solving is the basis of this theory, which is rooted in seven stages of career decidedness. The first four stages are incorporated in the anticipatory stage and the last three are part of the implementation or adjustment stage.

Tiedeman (1963) explains that rational differentiation occurs when a **problem** is experienced. The individual becomes aware that his/her present situation is unsatisfactory or will become unsatisfactory and that a **decision** must be made. The problem of deciding may be divided into two aspects: one of **anticipation** and one of **implementation**. The aspect of anticipation comprises four steps: **exploration, crystallization, choice and clarification**. The aspect of implementation or adjustment comprises **induction, reformation and integration**. The four steps of anticipation are described below because they are concerned with planning and the needs of undecided students:

* **Exploration** - the person reflects upon his/her aspirations, interests and capabilities. Students are vaguely anxious about the future and are unable to identify a plan of action.
* **Crystallization** - patterns in the form of alternatives and their consequences emerge. Students are able to recognise alternatives and consider advantages and disadvantages of options.
* **Choice** - after crystallization choice becomes easy and the person begins to organise and clarify. Students commit themselves to a particular course of study with a sense of satisfaction and relief. They are more optimistic about their future and begin to formulate a plan of action to implement their career goals.
* **Clarification** - the consequences of students' choices are internalized and they realize they have made a definite commitment. There is elaboration and perfecting of self-image and the perceived future.

Tiedeman's theory has been described as a framework for understanding all students and is particularly helpful in identifying decision-making problems experienced by undecided students (Gordon, 1981). A detailed summary of this theory is provided in Figure 1.

Tiedeman's Theory like Super's, helps us understand what the vocational tasks are and when society expects them to be completed. Krumboltz's Social Learning Theory of Career Selection draws on psychological, sociological and educational theories and attempts to encompass the developmental process in career decision-making.

2.3.2 Krumboltz : Social Learning Theory of Career Selection

This theory draws on psychological, sociological and educational theories and attempts to encompass the developmental process in career decision-making. Krumboltz, Mitchell and Jones (1976) have written extensively about the interactions of genetic, environmental and learning factors in influencing career decision-making. The theory attempts to explain how educational and occupational preferences and skills are acquired and how selection of courses, occupations and fields of work are made.

In this model the interaction of genetic factors, environmental conditions, learning

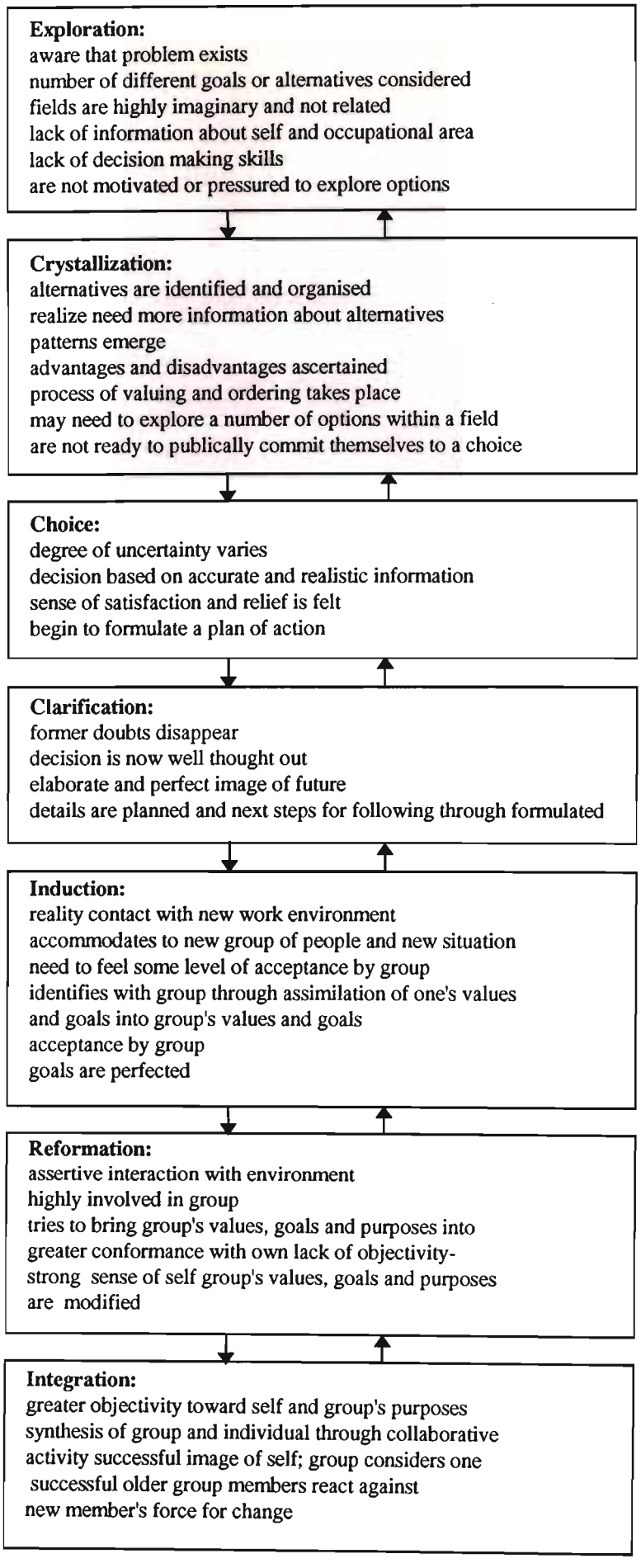


Figure 1. Summary of postulated stages and tasks by Tiedeman as they relate to Career Development. Reproduced (from Gordon, 1981, p. 436).

experiences, cognitive and emotional responses, and performance skills that produce movement along one career path or another, are identified. The process of career planning and development involves both cognitive and affective learning experiences. Individuals will pursue similar learning experiences if their decisions and actions are successful, whereas negative experiences will reduce the likelihood of further participation in similar learning experiences.

The Social Learning Theory of Career Selection postulates that at each decision point the decider has one or more response or decision options. The nature and number of those options and the way in which individuals respond to them are shaped by internal (personal) and external (environmental) factors, referred to as **influencers**. At times there are so many options that the individual feels incapable of deciding. At other times there are limited options suggesting that there is only one option available. While the person may feel that he/she has no choice, there are always options, including that of not making a decision.

Krumboltz et al (1976) advocate that various factors influence the nature of career decision-making. Four categories of influencers are identified:

1. **Genetic endowment and special abilities:** These include certain inherited qualities that may set limits on an individual's educational and occupational preferences, skills and selection. Some factors that may make a difference are race, sex, physical appearance and characteristics (physical defects and handicaps).

2. **Environmental conditions:** According to the theory, educational and occupational decision making is influenced to a large extent by factors usually outside the control of any one individual. It is postulated that these environmental conditions may be attributed to human action (social, cultural, political or economic). They may also be a consequence of natural forces such as location of natural resources or natural disasters. As a result certain conditions occur which influence the career preferences, skills, plans and activities of the individual. Some of these factors include the number of job opportunities, the number and nature of training opportunities, social policies and procedures for selecting trainees and employees, labour laws and union

rules, changes in social organisations and structures, technological developments, family background and experience.

3. **Learning experiences**: The learning experiences of an individual play an important part in educational and occupational decision-making. Krumboltz *et al* (1976, p.72) state that "the patterns of stimuli and reinforcement, their nature and scheduling are exceedingly complex that no theory can adequately account for the infinite variations that influence the development of career preferences and skills and the making of career selections". They identify two categories of learning that have an impact on career decision-making:

A. **Instrumental learning experiences (ILEs)**

The individual, it is asserted, acts on the environment to produce certain consequences. Examples of such learning experiences would include knitting a sweater, reading a book, saying 'hello' to a stranger, baking a cake or kissing someone of the opposite sex. This type of learning has three general components: **antecedents**, **covert** and **overt behavioral responses**, and **consequences**. These **consequences** may include responses which in turn become a part of subsequent learning experiences.

The **antecedents** in this model consist of factors such as cultural setting, the social history of a particular group and the stimulus characteristics of a particular task or problem that is presented to the individual.

Behavioral responses include cognitive and emotional responses as well as overt actions. **Consequences** refer to the direct effects produced by the action i.e. feedback, verbal feedback from other individuals, observable results of the action itself, and immediate or delayed impact on other people. This also includes the cognitive and feeling responses the individual makes when he/she experiences these consequences.

Krumboltz *et al* (1976, p.73) represent this type of learning in the following diagrammatic model (Figure 2):

ANTECEDENTS	BEHAVIOURS	CONSEQUENCES
genetic endowments e.g. poor muscular co-ordination *special abilities & skills* e.g. superior writing skills		*verbal feedback from self and/or others* e.g. teacher gives paper an 'A' grade and writes 'well done'. Student thinks "I could have done better if I had to"
task or problem e.g. student interacted with teacher & 29 others for 7 months. Teacher assigns paper on 'a famous person in Govt.' due in 3 weeks	*covert & overt actions* eg. student (who happened to have visited Jefferson Memorial in Washington) writes paper on Thomas Jefferson and turns it in on time	*covert reactions to consequences (cognitive and emotional responses)* e.g. student has stimulating conversation with father on how the U.S. would be different today if Jefferson had not lived
planned & unplanned environmental conditions or events e.g. Govt. class in U.S. high school where athletic success is dominant basis for male students		*impact on significant others* e.g. student's classmate sees teacher's comment and calls student the "teacher's pet"

Figure 2. **Diagrammatic representation of Instrumental Learning Experiences (ILEs)**

B. **Associative Learning Experiences (ALEs)**

This type of learning experience occurs when the individual's response pattern is a reaction to external stimuli. The individual learns by observing real or fictitious models. Associative learning experiences also include two events that are paired in time or location such that the learner associates a previously neutral situation with some emotionally positive or negative reaction. Hearing or reading words that pair two things together can, in this way, have an impact. For example, statements such as "all lawyers are crooked" or "plumbers make a lot of money" are verbal stereotypes about occupations that can influence the relative attractiveness or unattractiveness of an occupation. Associations of this nature can be learned through words, images on films, through reading books, observation of people employed in various occupations and direct experience. There is a tendency for individuals to form generalizations about entire occupations from very few examples, and sometimes the first associations formed are the lasting ones. The pairing of stimuli as described in classical conditioning theory is included here: for example, a person who becomes nauseous at the sight of blood may generalize that becoming a physician is inappropriate for him/her.

Figure 3 is a diagrammatic representation of associative learning experiences as postulated by Krumboltz *et al* (1976, p.73):

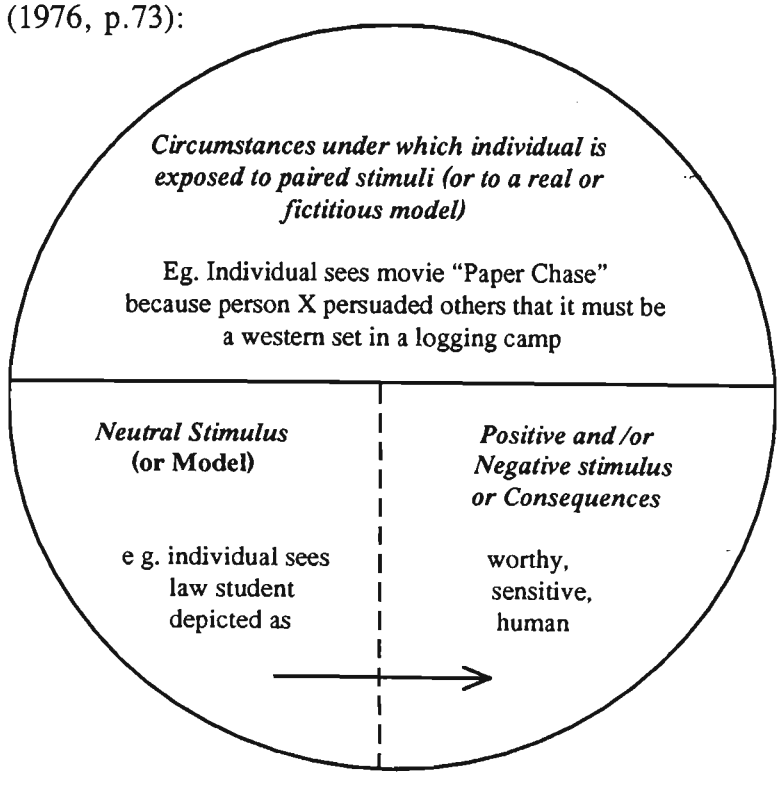


Figure 3. **Diagrammatic representation of Associative Learning Experiences (ALEs)**

In the above model the top of the diagram describes the circumstances under which the individual is exposed to paired stimuli. The neutral stimulus is represented in the lower left quadrant with an arrow pointing to the associated positive or negative stimulus or consequences. An example has been included in the model.

4. **Task approach skills**: An individual can bring to a new task or problem a set of skills, performance standards and values, work habits, perceptual and cognitive processes (such as attending, selecting, symbolic rehearsing, coding, encoding, reflecting and evaluating responses), mental sets and emotional responses. These Task Approach Skills affect the outcomes of each task or problem. As a result of differential outcomes the skills become modified: for example, a student in high school may cram for final examinations and get 'A' grades, but at university the cramming habit may produce poor grades. Differential feedback may convince the student to change his/her habits. The four types of influencers discussed above, and their interactions, lead to two distinct types of outcomes:

a. Self-observation generalizations (SOGs), which involve overt or covert self statements in evaluating one's own actual performance in relation to learned standards. The evaluations may or may not be accurate, but do result in self-descriptions of traits and interests.

b. Task Approach Skills (TASs), which are defined as cognitive and behavioral skills. Task approach skills include skills in clarifying values, setting goals, predicting future events, generating alternatives, seeking information, eliminating and selecting alternatives, planning and generalizing.

A Social Learning Approach to career decision-making is concerned specifically with "entry behaviours" (Krumboltz, 1976, p.75). Such behaviour will represent an overt step in a career progression, for example, in applying for a job, applying to a specific school or training programme, accepting a job offer or training opportunity, accepting a promotion or changing a major.

The process of career planning and development is outlined by Krumboltz *et al* (1976) in Figure 4. The model indicates factors affecting educational and occupational decision-making. On the left side are the genetic factors inherent in an individual. Underlying environmental, economical, social and cultural events and conditions, indicated by the arrows, influence the individual's learning experiences. The learning experiences of the individual are represented by the letters O and H, and the triangles and parallelograms represent additional products and thought processes. The triple arrows after certain events indicate that the event which followed did not necessarily have to occur at that point. The dots (...) indicate the amount of time (...) and the number of learning experiences(...).

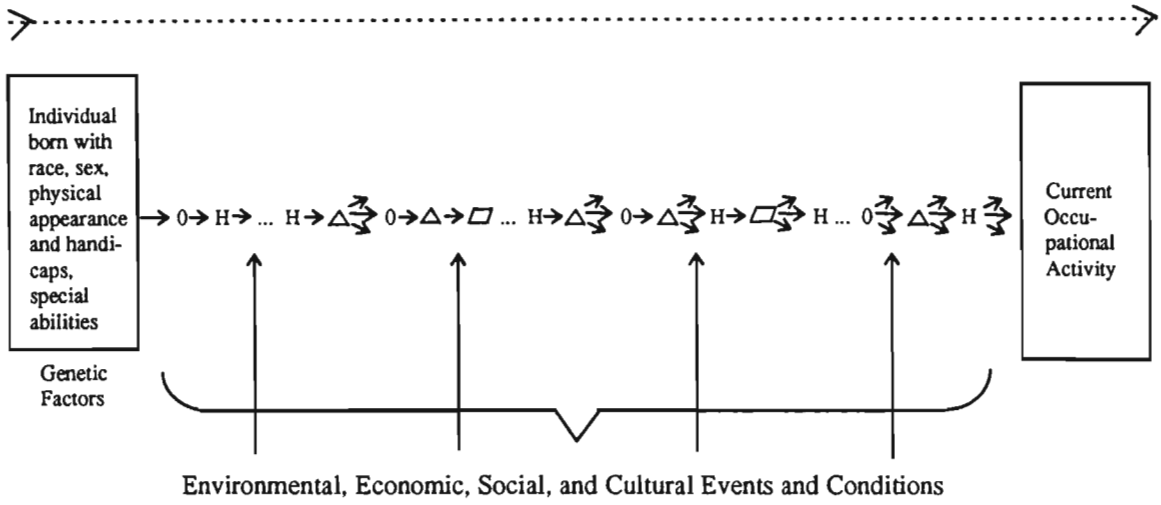


Figure 4. **General model of factors affecting occupational selection**

The interaction of genetic and environmental factors and a complex sequence of learning experiences leads the individual at a certain point in time to a current activity. This does not mean that the current activity is the final career activity. Further events and learning experiences may occur in time and educational and vocational activities may change. Learning experiences produce preferences (such as emotional reactions of liking and disliking) for various activities, as well as cognitive and performance skills. The individual therefore observes himself/herself engaging in a skilled performance and can obtain reactions from other people about the quality of that performance. The decision to enrol in a particular educational program or to take up a chosen occupation is the result of the "sequential cumulative effects of numerous learning experiences affected by various environmental circumstances and the individual's cognitive and emotional reactions to these learning experiences and circumstances" (Krumboltz, 1976, p. 75).

The Social Learning Theory has received increasing acknowledgement as an important theoretical contribution to career development. However, Holland's criticism is that the theory has stimulated few empirical tests and has paid insufficient attention to the content of career choice (Smith, 1993).

2.4 THE PRESENT STUDY

The Social Learning Theory of Career Selection will provide the theoretical framework for this research. The theory takes into account factors that are pertinent to the problems of students seeking career counselling at the University of Durban-Westville. Historically, this university has been an Indian university. With a rapid change in the demography of the student population, students coming from disadvantaged backgrounds have experienced greater problems concerning career decision-making than those coming from more advantaged backgrounds. Influencers such as learning experiences, social circumstances, economy, job opportunities, educational systems and cultural background identified in the theory have had tremendous effects on the choice of careers of these students. Morover, studies in South Africa in the field of career development have not focused on the Social Learning Theory of Career Selection. It is felt that a study of this nature would highlight some of the valuable contributions of this theory to career decision-making. The research of this theory by Krumboltz (1993) has produced a useful career assessment tool, the Careers Belief Inventory, which he suggests should be used as a learning tool in career development. He (Krumboltz, 1993) argues that career assessment instruments summarise the consequences of past learning experiences and can be used to match respondents with vocations and educational choices.

2.5 CAREER DECISION-MAKING RESEARCH

Having examined career development theories and decision making models, it is necessary to review research related to the present study. Much of the research has focused on career decision-making, vocational assessment, career choice, and career counselling and intervention. The literature review in this section will focus on the two main constructs that is, vocational indecision and educational indecision in relation to gender and cultural differences (two important variables in this study).

2.5.1 Gender and Career Decision-making

Studies investigating the relationship between gender and career decidedness or career decision-making of adolescents have produced varying results (Bergeron and Romano, 1994; Betz and Hackett, 1981; DiSabatino, 1976; Moreland *et al*, 1979; Niece and Bradley, 1979; Smith, 1993). Smith (1993) found that there were no significant relationships between gender and career decidedness for Asian and White students. However, in the same study Black males were found to be more career-decided than Black females. Betz and Hackett (1981) reported that the increased participation of women in the labour force has been accompanied by greater awareness on the part of counsellors that their ability to predict, explain, and modify women's vocational behaviour is inadequate. The need for greater understanding of the career development of women has been addressed by a number of empirical studies. However, there was still a lack of attention given to the development and elaboration of theories capable of integrating existing knowledge and intervention efforts that pertain particularly to the career development of women.

Betz and Hackett (1981) argue that there are major differences in the career development patterns of men and women. In an attempt to address the need for theoretical conceptualizations for women's career development, Betz and Hackett (1981) propose a self-efficacy approach to women's career development based on the Social Learning Theory of Krumboltz. They found that self-efficacy was greater among females in relation to some traditional female occupations such as dental hygienist, social worker and secretary, and greater self-efficacy among males with regard to some occupations that have been traditionally dominated by males, such as accountant, engineer and mathematician.

In another study (Bergeron and Romano, 1994) the relationships among processes involving career decision-making, self-efficacy, educational indecision, vocational indecision and gender, were investigated. This study found that there were significant differences in career decision-making self-efficacy and vocational indecision. However, there were no significant relationships between gender and vocational indecision, and gender and educational indecision. Bergeron and Romano reported that those students who had decided upon a college major would also be likely to have the same level of decision concerning a career choice. Their findings appeared to be intuitive, suggesting that future research examine the

decision making processes for each choice separately. These findings have direct implications for counselling with respect to client's perceptions and attitudes of their abilities and perceptions on the gender-appropriateness of the options that are available to them.

Harren *et al* (1978) reported that gender influenced both sex role attitudes and sex role self-concept. Both these factors in turn influenced progress in selecting an academic major. Student's endorsements of sex-role-related personal qualities were found to be associated with differences in their decision-making progress regarding choice of college, choice of major and choice of vocation (Moreland *et al*, 1979). The study by Moreland *et al* (1979) suggests that sex role self-concept is an important variable in defining target populations for special career decision-making programmes.

DiSabatino (1976) reports on the effects of factors such as fear of failure, self-esteem and sex-role conflicts on the occupational aspirations and vocational choices of women. The vocational decisions of women were found to be limited by their adherence to stereotypical feminine role concepts and self-concepts. A study of the relationship between feminine role and self-concepts to vocational maturity showed that self-concept was significantly associated with vocational maturity. Furthermore, the more liberal the woman perceived her role to be, the higher was her level of vocational maturity. The career choices of women could therefore be limited by their poor self-concepts. They had less confidence and self-esteem because they see themselves as less competent.

Fitzgerald and Crites (1980), in attempting to explicate a new career psychology for women, suggest that although existing theories of career choice were developed on men, they have much to offer the counsellor in helping women with career choices, unless males and females are fundamentally different in their needs and aspirations. It is reasonable to assume that all individuals regardless of sex, share the same human need for self-fulfilment through meaningful work. They (Fitzgerald and Crites, 1980) suggest that counsellors working with women should be thoroughly grounded in classical career development theories as well as made aware of factors that may complicate the application of such theories to women.

2.5.2 Culture and Career Decision-making

Picou (1975, p.92) states that "cultures tend to perpetuate their own values regarding work and life patterns, and generalizing research findings usually results in negative stereotyping". It is the intention of this research to examine closely the cultural and gender differences and similarities that might influence the career and educational choices of students. South African studies have been limited regarding gender and cultural differences. Studies to date have researched gender and cultural differences in relation to role salience, career maturity, grade and socio-economic status (Smith, 1993; Watson and Stead, 1994). A study by Smith (1993) found that culture is a major factor in the career decidedness of first-year technikon students. He reports that White students were more career decided than Asian and Black students.

As with gender studies, there has been limited research regarding ethnicity and cultural differences with respect to career decision-making. A few empirical studies investigated race, culture and ethnicity as a factor in vocational choice (Fouad, 1994). A study by Sidanius *et al* (cited in Fouad, 1994) found that students with business and law majors had more racist views than students with other majors. Students in social work and the arts had the least racist views. The authors suggested that individuals chose 'power' occupations to "exercise their consensually racist attitudes" (Fouad, 1994, p.132). In another finding by Lucas (1993b) the personal, social, academic, and career problems expressed by minority students at a predominantly White university were similar to those expressed by a White control group. The unique concerns of minority students included discrimination and the need for assertiveness skills. A study by Kimbrough and Salomone (1993) noted that the African-American culture is highly stratified: subgroups had differences in values and attitudes which contributed to career choice differences.

An investigation of racial differences on vocational variables among college women by Slaney (1980) suggested that minimal differences between Black and White college women existed when the relationship between socio-economic status and educational level of their parents and their own vocational choice, was compared.

2.6 SUMMARY

Career decision-making research in relation to gender and cultural differences has been neglected in South Africa and internationally: as the literature review shows, the amount of research conducted in this area is negligible. Career research has instead focused on personal and psychological factors as determinants of career choice. Few studies have investigated environmental conditions (social, cultural, political or economic) as determinants of career decision-making. The Social Learning Theory (Krumboltz, 1976) foregrounded environmental conditions and events such as culture and economy as important influencers in career preferences, skills and plans. Studies that examined gender differences produced varying results. Research which included more than one culture found significant. relationships. However, where only one culture was studied no gender differences existed. Inconsistent results and the limited number of studies to date call for further research in the field of career decision-making to include culture, gender and other situational factors. The present study, it is certain, will contribute to the existing body of career knowledge and our understanding of the complexities of client problems relating to career and educational choices and decisions. The study by Bergeron and Romano (1994) inspired the researcher to conduct further research on the relationship between educational and vocational indecision in relation to gender and cultural differences. It is important to establish the complex relationship between educational and vocational indecision as it is germane to a more comprehensive understanding of the process of career choice and career decision-making. Important influencers in career decision-making as identified by Krumboltz (1976) in the Social Learning Theory will be investigated among first-entry university students.

Chapter 3 will describe the research design, procedure, sampling technique and measures used in the present study.

CHAPTER 3

METHODOLOGY

3.1 RESEARCH DESIGN

The purpose of this study is to investigate career indecision and educational indecision of first-entry students at the University of Durban-Westville.

The main objectives of the present study are threefold:

1. To investigate the levels of vocational indecision and educational indecision
2. To establish the relationship between educational indecision and vocational indecision and
3. To examine cultural and gender differences in relation to educational and vocational indecision in career decision-making.

The study, which is of a descriptive nature, used the survey method to gather data. This method is one of the most widely used types of descriptive research in the behavioural sciences. It allows for the gathering of data from a large sample at a particular time and is concerned with overall statistics from which abstractions and conclusions can be drawn (Behr, 1973). This method is appropriate for the present study as it allows generalizations from the results. These can in turn be useful for career counselling purposes and programmes.

Since the study examined relationships among variables, aspects of correlational research were included. Correlational research, according to Cohen and Manion (1980), is mainly concerned with achieving a fuller understanding of phenomena and behavioural patterns through the study of relationships between variables. This type of research is particularly useful in investigating educational and social science problems, because it allows for the measurement of a number of variables and their relationships simultaneously.

In this study data was collected through the use of the biographical questionnaire (Appendix 1), the Career Decision Scale (Appendix 2) and the interview (Appendix 3). Cohen and

Manion (1980) refer to the use of two or more methods of data collection as **triangulation**. This method of data collection in the social sciences attempts to map out more fully the richness and complexity of human behaviour by studying it from more than one viewpoint. In so doing, triangulation makes use of both quantitative and qualitative data.

Before the survey was carried out a pilot study was done. The pilot study was useful for testing the adequacy of the instruments used, and clarifying and amending ambiguities in the questionnaire and interview.

3.2 PILOT STUDY

The pilot study, which included the research questionnaire and other measures, was conducted with a group of students comprising the Engineering bridging class of 1996 in the Faculty of Engineering. This group was chosen because of easy accessibility and the close co-operation that exists between the Faculty and the Careers Unit on the campus. The interview questions were also piloted with the same group of students. Students were asked to volunteer for an interview after they had completed the questionnaire (Appendix 1) and Career Decision Scale (CDS; Osipow, Carney, Winer, Yanico & Koschier, 1976). Appointments were made to interview the students individually. The students were very keen and willing to participate because they were informed that they could discuss the results of the CDS and questionnaire responses, as well as other career related problems and issues, with the researcher. In total 50 students completed the questionnaire and Career Decision Scale, and 17 were interviewed.

Some difficulties were experienced by students in completing the questionnaires and Career Decision Scale. These were as follows:

- Students were unsure about the word **majors** because it did not apply to the engineering curriculum. They were asked to treat the different areas of specialization in the field of engineering as their choice of majors.
- Some students did not understand the word **tentatively** in Questions 4.3 and 4.5. When they enquired the definition given for **tentatively** was "**not definite**".

Students did not have any difficulty in completing the Career Decision Scale. The interview questions presented some problems. In Question 1 the words **solely** and **partially** created some confusion. Many students did not understand the word **values** in Question 4 of the interview.

The pilot study helped the researcher to time each student's participation. An approximate time allocation was determined for each student for the actual interview. The difficulties experienced in the pilot study were clarified and rectified. The researcher refrained from using a tape recorder because students found it intimidating.

3.3 PROCEDURE

To ensure a high percentage of return on the questionnaires, the research measures were distributed during official lecture time. The participants in the main survey were registered first-entry university students in the Faculties of Science and Commerce. The researcher approached the Department of Physics in the Faculty of Science and the Department of Industrial Psychology in the Faculty of Commerce, because of the close liaison and cordial relationship that exists between these departments and the Careers Unit. Appointments were made with the respective lecturers of these courses and the objectives and benefits of the study were discussed. The numbers of each class, date, time of lecture period and venue for the lecture to be used for the survey, were finalised. For each group one lecture period (approximately 40 minutes) was designated to complete the questionnaires and the Career Decision Scale. Once again students were asked to volunteer for an interview. Individual appointments were made at the end of each lecture for students to see the researcher at the Careers Unit to discuss the results of the exercise and be interviewed.

3.4 SAMPLE

The sample comprised first-entry male and female students from the different language and cultural groups of the first-entry student population in the faculties of Commerce and Science at the University of Durban-Westville. A stratified random sample of male and female students and the different cultural and language groups was envisaged. However, it was a difficult task to achieve a random sample. The researcher had to settle for what was readily available. As a result the distribution of students according to gender, cultural and language

groupings was not random when the survey was carried out. The sampling technique used in this study is what Behr (1973, p.9) refers to as **quota sampling**. This type of sampling is similar to stratified sampling but the various sub-groups that make up the sample are not chosen on a random basis.

The sample consisted of 404 students. There were 153 males and 221 females. 30 of the 404 students did not indicate their gender. There were 99 Indian, 271 Black, 1 Coloured and 4 White students in the sample. The language groups that were identified included Afrikaans, English, Gujerati, Hindi, Sotho, Tamil, Telegu, Tswana, Urdu, Xhosa and Zulu. "Other" languages included German, Ndebele, Penda, Siswati, Swati and Tsongo. Although 404 questionnaires were completed, 29 were spoilt or incomplete.

98 of the 404 students were registered for Physics IB. This was 98% of the Physics class. 306 students were doing Industrial Psychology I for the first time and this consisted of 95% of the class. 21 students out of the 98 Physics IB class and 49 of the 306 Industrial Psychology I class volunteered to be interviewed. Of the 70 volunteers, 25 students finally completed the interview.

Those students who volunteered were undecided about their careers and majors. This was confirmed by their CDS scores and responses in their questionnaires. These students felt that they needed advice and assistance with their choice of career and courses. It was assumed therefore that those who did not volunteer did not require as much help with their career choice as those who volunteered.

3.5 MEASURES

To gain the maximum value from the survey careful consideration was given to the research instruments. Important considerations in selecting the instruments for the survey were the measurement of vocational and educational indecision, and the collection of biographical and qualitative data. As no South African measures of vocational and educational indecision have been developed, international measures were reviewed. In choosing the instrument, cultural applicability and gender bias were important. The measures used were the biographical questionnaire (Appendix 1), the Career Decision Scale (Appendix 2) and the interview.

3.5.1 Career Decision Scale

The Career Decision Scale (CDS; Osipow, Carney, Winer, Yanico & Koschier, 1976) was originally designed to measure the various aspects of educational-career indecision. This instrument was included because it has been studied and used widely in South African research (Stead, 1988; Oosthuizen, 1991; Smith, 1992 and Watson & Stead, 1994). These studies show that the Career Decision Scale is valid and reliable for the purpose of measuring career indecision in undergraduate students in South African institutions. For the purposes of this study the instrument was found to be gender-neutral (Smith, 1992). According to Osipow (1987), the scale is useful as a rapid and reliable instrument for surveying high school and university students about their level of decidedness in the decision-making process. The CDS provides an estimate of career indecision and its antecedents as well as an outcome measure for determining the effects of interventions relevant to career choice.

The Career Decision Scale consists of 18 items pertaining to various aspects of vocational decision-making. Responses are obtained using a 4-point Likert Scale with response alternatives ranging from **exactly like me** (scored 4), to **not at all like me** (scored 1). Scores range from 16 to 64. This yields an objective overall score for career indecision with higher scores indicative of career indecision and lower scores reflecting career decidedness. Items 1 and 2, which indicate decidedness about the choice of a career or university major, are not included in the career indecision score.

The test-retest reliability of the scale has been reported as varying from .61 to .90 (Hartman, Utz & Farnum, 1979) and internal consistency reliability coefficients have been consistently in the .80s (Hartman, Fuqua & Hartman, 1983). Watson, Foxcroft and Stead (1991) report internal consistency coefficients at .85 for White South African high school students. Various authors (Hartman & Hartman, 1982; Hartman *et al.*, 1983; Hartman, Fuqua, Blum & Hartman, 1985) show that the concurrent, construct, and predictive validity of the scale have been demonstrated adequately. Oosthuizen (1991) cautions that because of the lack of a two factor structure for the CDS, it is recommended that practitioners use the total CDS score in identifying potentially undecided students for career counselling interventions.

3.5.2 **Biographical Questionnaire**

The biographical questionnaire was constructed to collect data on gender, cultural groupings, language groups, parents' level of education and factors related to indecision. Vocational and educational indecision were also assessed by items in the questionnaire. Students were asked whether they were decided on a major and career. Response alternatives indicating differing levels of indecision were:

(a) are you decided on your major,

(b) tentatively decided on your major, and

(c) undecided about your major.

Similarly, students were asked whether they had decided upon a career, and responses followed the same format:

(a) are you decided on your career,

(b) tentatively decided on your career, and

(c) undecided about your career.

A 4-point Likert-type scale was also constructed to assess indecision about majors or educational indecision. The response alternatives ranged from **exactly like me** (scored 4), to **not at all like me** (scored 1). There were 9 questions in total, the higher scores indicating greater degrees of educational indecision.

There was a typographical error in the numbering of the questions in the questinnaire. Question 4.9 should read as question 4.8.

To justify the use of the scores of this scale measures were taken to ensure **face validity.** The questionnaire was distributed to colleagues in the Careers Unit and other researchers for comment. The responses indicated that the scale was valid in terms of what it was purporting to assess. Minor changes were proposed such as the exclusion of Question 4, which was a repeat question. The exclusion of this question created a balance in the number of questions in the scale. The choice of a 4-point scale represented a fair distribution of the categories. Another comment was that Questions 1, 2, and 3 "should have been divided into two sections and four responses obtained i.e. decided-comfortable, undecided-comfortable, decided-uncomfortable and undecided-uncomfortable". This comment was not taken into

consideration because it was not the intention of the researcher to assess degrees of comfort and decidedness.

3.5.3 Qualitative Data-Interviews

Interviews were conducted with the intention of validating and supplementing the data gathered through the Career Decision Scale and the biographical questionnaire. The interviews were structured but flexible in questioning. There were six questions in total (see Appendix 3). The questions were both open-ended and closed. The researcher made observations and notes on the interview schedule for each student during the interview. The open-ended questions elicited long discussions and in some instances required clarification. For example, students did not understand the concept of **values** in Question 4. The researcher had to explain the concept by using examples before the students could respond.

3.6 STATISTICAL ANALYSIS

All the information was captured on computer using the Windows Quatro Pro programme. Frequencies for all the questions in the questionnaire were calculated. Levels of educational and vocational indecision were assessed by the responses to the three-level categorical variable concerning the student's choice of major and career (Questions 4.3 and 4.5 respectively in the questionnaire) as well as question 5 and the CDS. The main variables were vocational and educational indecision with respect to gender, population and language group differences. Analysis of variance (ANOVA), "t" tests and chi-square analyses were carried out to test for significant differences.

CHAPTER 4

RESULTS

The purpose of this study was to investigate the relationship between educational and vocational indecision with respect to gender and cultural differences. With this purpose in mind the following objectives were set:

- To investigate the levels of vocational and educational indecision
- To establish the relationship between educational and vocational indecision
- To examine gender and cultural differences in relation to vocational and educational indecision.

Thus, the results reflect levels of indecision and the relationship between educational and vocational indecision according to gender, population and language groups.

The results discussed in this chapter reflect the data gathered from the biographical questionnaire, CDS and the interviews which were the measures in the study. The data reported is classified as quantitative and qualitative. Qualitative data gathered from the interviews is used to supplement the information collected from the CDS and the questionnaire.

A. QUANTITATIVE DATA

The information gathered from the questionnaires and the CDS is described in this section. All the frequencies calculated are reported as **valid percentages**. Valid percentages do not include missing cases and represent a true reflection of the number of cases investigated. General frequencies, ANOVA tests and cross tabulations are described. For the purposes of this study the CDS scores and the scores for major indecision assessed in question 5 in the biographical questionnaire were arbitrarily categorised in the following way:

CDS

35 and above	=	undecided
30 - 34	=	somewhat decided
29 and below	=	decided

Major Indecision

19 and above	=	undecided
14 - 18	=	somewhat decided
13 and below	=	decided

All the relationships were analyzed using the above categories. Wherever the terms **CDS** and **major** appear in the **RESULTS (Chapter 4)** and the **DISCUSSION (Chapter 5)** they refer to the scores obtained for the Career Decision Scale and the Likert-type scale in the questionnaire (Question 5). Career indecision was measured using the CDS and the three levels identified in question 4.5 in the questionnaire. Major or educational indecision was measured using the Likert-type scale (question 5) and the three levels identified in question 4.3 in the questionnaire.

The results are reported under the following headings:

4.1 General frequencies for the total sample
4.2 Chi-square analysis for the total sample
4.3 ANOVA analysis for the total sample
4.4 Analysis for gender
4.5 Analysis for population groups
4.6 Analysis for language groups
4.7 Analysis of factors influencing career-decision making

4.1 GENERAL FREQUENCIES FOR THE TOTAL SAMPLE

Frequencies were calculated for the total sample for all the questions in the biographical questionnaire and are reported as valid percentages. The frequency figures for question 4.1 are presented in Table 1. The question asked: "How certain are you that your career choice

is the correct one?". The results show that 44.4% of the students were "certain" that their career choice was the correct one. 7.9% said that they were "not at all certain".

Table 1. **Valid Percentages for Question 4.1**

	Valid percent
Very certain	24.1
Certain	44.4
A little uncertain	23.6
Not at all certain	7.9
Total	**100**

The valid percentages for questions 4.3 and 4.5 are provided in Table 2. Question 4.3 was based on the three levels of educational indecision. The results for this question indicate that 48.2% of the students were **decided** about their majors, 37.1% were **tentatively decided** and 14.6% were **undecided**. This suggests that the level of educational indecision was high among the students. Similarly, question 4.5 was based on the three levels of vocational indecision and it was found that 58.3% of the students were **decided** about their vocation, 33.9% were **tentatively decided** and 7.9% were **undecided**.

A comparison of the levels of indecision show that there was a higher percentage of students who were **decided** about their vocation than their majors.

Table 2. **Valid Percentages for the three levels of educational indecision and the three levels of vocational indecision**

	Question 4.3	Question 4.5
	Valid Percent	Valid Percent
Decided	48.2	58.3
Tentatively decided	37.1	33.9
Undecided	14.6	7.9
Totals	**100**	**100**

Question 5 investigated major indecision using a Likert-type scale. The results show that 33.9% of the sample were **decided** about their majors, 39.2% were **somewhat decided** and 26.9% were **undecided**. In comparison, the results for the CDS indicate that 46.1% were **decided**, 17.3% were **somewhat decided** and 36.5% were **undecided**. Although there was a higher percentage of students who were **decided** about their vocation rather than their majors, there was also a higher percentage who were **undecided** about their vocation. The results are presented in Table 3.

Table 3. **Valid Percentages for major indecision and CDS**

	Major	CDS
	Valid Percent	Valid Percent
Decided	33.9	46.1
Somewhat decided	39.2	17.3
Undecided	26.9	36.5
Totals	**100**	**100**

4.2 CHI-SQUARE ANALYSIS FOR THE TOTAL SAMPLE

Chi-square tests were carried out for the total sample to test the relationships between the three levels of educational indecision, the three levels of vocational indecision, CDS scores and major indecision. There were significant relationships for all the cross tabulations ($p < .0000$). Contingency coefficients (C) are reported for the Chi-square tests.

The relationship between the three levels of educational indecision and the three levels of vocational indecision (Questions 4.3 and 4.5) for the total sample was significant ($p < .0000$; $C = .46868$). Table 4a shows that 38.4% of the total sample were **decided** about their majors and vocation. This implied that 61.6% were **somewhat decided** or **undecided** about their majors and career.

Table 4a. **Relationship between the three levels of educational indecision and the three levels of vocational indecision for the total sample**

		Question 4.5		
Question 4.3	**Decided**	**Tentatively decided**	**Undecided**	**Total**
Decided	38.4	7.9	1.9	**48.2**
Tentatively Decided	14.2	21.3	1.6	**37.1**
Undecided	5.4	4.9	4.4	**14.7**
Total	58.0	34.1	7.9	**100**

Educational indecision was also investigated by cross tabulating the three levels of educational indecision (Question 4.3) and major indecision (Question 5). Table 4b indicates that only 26.6% of the total sample were **decided**. This showed that 73.4% were either **tentatively decided**, **somewhat decided** or **undecided** about their majors. This relationship was significant ($p < .0000$; $C = .40685$).

Table 4b. **Relationship between the three levels of educational indecision and major indecision for the total sample**

	Major			
Q4.3	**Decided**	**Somewhat decided**	**Undecided**	**Total**
Decided	26.6	15.2	6.5	48.2
Tentatively Decided	6.2	16.3	14.6	37.1
Undecided	1.4	7.6	5.7	14.6
Total	**34.1**	**39.0**	**26.8**	**100**

The Chi-square test between the three levels of educational indecision and CDS was also significant ($p < .0000$; $C = .31709$). The results in Table 4c show that 30.6% of the students were **decided** about their majors and vocation. This meant that 69.4% were **tentatively decided**, **somewhat decided** and/or **undecided** about their majors and vocation.

Table 4c. **Relationship between the three levels of educational indecision and CDS for the total sample**

	CDS			
Q4.3	**Decided**	**Somewhat decided**	**Undecided**	**Total**
Decided	30.6	5.1	12.5	48.2
Tentatively Decided	11.7	9.2	16.3	37.1
Undecided	4.3	2.7	7.6	14.6
Total	**46.6**	**17.1**	**36.3**	**100**

A comparison of the results presented in the preceding three tables show that educational and vocational indecision were high among the students. An average of about 30% of the sample were **decided** about their majors and vocation, which implied that the rest of the sample were **undecided**.

Table 5a provides the results of the relationship between the three levels of vocational indecision and major indecision (Questions 4.5 and 5). The relationship was significant ($p < .0000$; $C = .31169$). The results of this relationship were similar to those presented in Table 4b. This re-affirmed the high levels of educational and vocational indecision among the students.

Table 5a. **Relationship between the three levels of vocational indecision and major indecision for the total sample**

	Major			
Q4.5	**Decided**	**Somewhat decided**	**Undecided**	**Total**
Decided	27.4	19.0	11.9	**58.3**
Tentatively Decided	5.1	17.1	11.7	**33.9**
Undecided	1.6	3.0	3.3	**7.9**
Total	**34.1**	**39.0**	**26.8**	**100**

Table 5a shows that 27.4% of the total sample indicated that they were **decided** about their majors and vocation. This implies that the remaining percentage of students that is, 72.6% were either **somewhat decided**, **tentatively decided** or **undecided** about their majors and vocation. Those students who were **somewhat decided** about their majors and **decided** about their vocation accounted for 19.0%, while 17.1% were **somewhat decided** about their majors and **tentatively decided** about their vocation.

The relationship between the three levels of vocational indecision (Question 4.5) and CDS was significant ($p < .0000$; $C = .40018$). The results in Table 5b show that 37.4% of the sample reported that they were **decided** about their vocation. There was therefore a high percentage of vocational indecision (62.6%) among the students.

Table 5b. **Relationship between the three levels of vocational indecision and CDS for the total sample**

	CDS			
Q4.5	**Decided**	**Somewhat decided**	**Undecided**	**Total**
Decided	37.4	7.9	13.0	**58.3**
Tentatively Decided	7.6	8.4	17.9	**33.9**
Undecided	1.6	0.8	5.4	**7.9**
Total	**46.6**	**17.1**	**36.3**	**100**

The relationship between major indecision and CDS also yielded significant results ($p < .0000$; $C = .51559$), as Table 6 shows. Only 28.0% of the sample reported that they were **decided** about their majors and vocation. Although 15.2% said that they were **somewhat decided** about their majors and **decided** about their vocation, it implied that 72.0% were either **somewhat decided**, **tentatively decided** and/or **undecided**.

Table 6. **Relationship between major indecision and CDS for total sample**

	Major			
CDS	**Decided**	**Some Decided**	**Undecided**	**Total**
Decided	28.0	15.2	2.9	**46.1**
Some Decided	3.2	9.3	4.8	**17.3**
Undecided	2.7	14.7	19.2	**36.5**
Total	**33.9**	**39.2**	**26.9**	**100**

When the results of all the relationships were compared, it was noted that the highest percentage of students in the cell **undecided**, that is, 19.2% appeared in Table 6. This confirmed the high level of indecision in the sample.

4.3 ANOVA ANALYSIS FOR THE TOTAL SAMPLE

One-way ANOVA calculations were carried out for the following relationships which were found to be significant:

i) major indecision by the three levels of educational indecision ($p < .0000$);

ii) major indecision by the three levels of vocational indecision ($p < .0000$);

iii) CDS by the three levels of educational indecision ($p < .0000$), and

iv) CDS by the three levels of vocational indecision ($p < .0000$).

The mean scores, standard deviations, f ratio and f probability values are contained in the following tables for the ANOVA calculations. The relationship between **major indecision and the three levels of educational indecision** was significant and those students who were **undecided** about their majors had the highest mean major score, which was 17.78. The figures are presented in Table 7.

Table 7. **One-way ANOVA for major indecision and the three levels of educational indecision**

Group	Count	Mean	Std. Dev.	F Ratio	F Prob.
Q4.3=1 Decided	178	14.0	4.0	34.7170	.0000
Q4.3=2 Tentatively Decided	137	17.4	4.1		
Q4.3=3 Undecided	54	17.8	4.1		

In the relationship between **major indecision and the three levels of vocational indecision** the students who were **undecided** about their vocation had the highest mean major score. This was 17.93. Table 8 shows the mean major scores for this relationship.

Table 8. **One-way ANOVA for major indecision and the three levels of vocational indecision**

Group	Count	Mean	Std. Dev.	F Ratio	F Prob.
Q4.5=1 Decided	215	14.8	4.3	16.8978	.0000
Q4.5=2 Tentatively Decided	125	17.2	3.9		
Q4.5=3 Undecided	29	17.9	5.2		

The results for the one-way ANOVA relationship (results in Table 9) between **CDS and the three levels of educational indecision**, showed that the students who were **undecided** about their majors had the highest mean CDS score of 35.11.

Table 9. **One-way ANOVA for major indecision and the three levels of educational indecision**

Group	Count	Mean	Std. Dev.	F Ratio	F Prob.
Q4.3=1 Decided	178	28.2	8.7	22.4626	.0000
Q4.3=2 Tentatively Decided	137	34.1	10.0		
Q4.3=3 Undecided	54	35.1	8.5		

The results of the relationship between **CDS and the three levels of vocational indecision** also show that the students who had the highest mean CDS score were **undecided** about their vocation. The mean CDS score was 38.97 and the figures are presented in Table 10.

Table 10. **One-way ANOVA for CDS and the three levels of vocational indecision**

Group	Count	Mean	Std. Dev.	F Ratio	F Prob.
Q4.5=1 Decided	215	27.7	8.3	50.7146	.0000
Q4.5=2 Tentatively Decided	125	36.0	8.5		
Q4.5=3 Undecided	29	39.0	8.9		

General Linear Model (GLM) analysis of variance carried out for the 2-way interaction between **population groups and the three levels of vocational indecision** (Questions 1.3 and 4.5) **with CDS** as the dependent variable was significant ($p < .014$). This meant that the different population groups and the levels of vocational indecision together had an effect on CDS. The results of the two-way interaction are shown in Table 11.

Table 11. **Two-way ANOVA with CDS and the three levels of vocational indecision for African and Indian students**

Group	Count		Mean		Std. Dev.	
	Afr	Ind	Afr	Ind	Afr	Ind
Q4.5=1 Decided	161	50	29.1	23.7	7.9	8.2
Q4.5=2 Tent. Decided	83	41	36.9	33.9	8.4	8.5
Q4.5=3 Undecided	21	8	38.1	41.4	8.8	9.3
F Ratio: 6.135		F Prob: .014				

The 3-way interaction between **gender, population groups and the three levels of vocational indecision with CDS** as the dependent variable, yielded a significant result ($p < .014$, see Table 12). This implied that gender, population groups and the three levels of vocational indecision had an effect on CDS.

Table 12. **Three-way ANOVA with gender, population groups, three levels of vocational indecision and CDS**

Group	Count				Mean				Std. Dev.			
	Afr		Ind		Afr		Ind		Afr		Ind	
	M	F	M	F	M	F	M	F	M	F	M	F
Q4.5=1 Dec.	71	90	23	27	30.6	27.9	23.7	23.8	7.7	7.9	9.2	7.4
Q4.5=2 Tent. Dec.	29	54	15	25	35.9	37.5	34.4	33.4	8.9	8.1	9.7	8.0
Q4.5=3 Undec.	5	16	3	5	34.2	39.3	40.0	42.2	9.4	8.5	13.1	7.9
F Ratio: 6.115					**F Prob: .014**							

"t" tests were carried out to verify the results of the ANOVA calculations. They were calculated for the three levels of vocational indecision separately that is, mean CDS scores were compared for the **decided**, **tentatively decided** and **undecided** groups. The results for African and Indian students were significant for the **decided** group ($p < .000$). The "t" test for African and Indian male students for CDS scores was also significant ($p < .035$).

4.4 ANALYSIS FOR GENDER

The statistics for gender, which is one of the main variables in the study are discussed. The data gathered from the biographical questionnaire and the CDS are analysed with specific reference to male and female differences. Frequencies and chi-square tests relating to Questions 4.1, 4.2, 4.3, 4.4, 4.5 and 5 are reported. CDS scores were cross tabulated with these questions. The cross tabulations that were carried out showed very clear gender differences and significant relationships.

4.4.1 Frequencies for Gender

Valid percentages are reported according to gender for the questions in the questionnaire. The question: "How certain are you that your career choice is the correct one?" elicited responses that did not indicate significant gender differences.

In Question 4.3, which investigated the three levels of educational indecision, students were asked whether they were:

(a) decided,

(b) tentatively decided, or

(c) undecided.

For this question 25.8% of the females and 22.3% of the males reported that they were **decided**. This was 48.1% of the total sample. A total of 51.9% of the students said that they were either **tentatively decided** or **undecided**. This comprised 33.7% of females and 18.2% of males. There was some relationship between gender and the three levels of educational indecision ($p < .0543$), as the results in Table 13 indicate.

Table 13. **The three levels of educational indecision for males and females**

	Decided	Tentatively decided	Undecided	Total
Males	22.3	12.2	6.0	**40.5**
Females	25.8	25.0	8.7	**59.5**
Total	**48.1**	**37.2**	**14.7**	**100**

Similarly, the three levels of vocational indecision were examined in question 4.5, which asked whether the students were:

(a) decided,

(b) tentatively decided, or

(c) undecided.

The responses for this question showed that 31.8% of the females were **decided** and 26.6% of the males were **decided**. Table 14 shows that a higher percentage of students seemed to be **decided** about their vocation. This relationship was not significant.

Table 14. **The three levels of vocational indecision for males and females**

	Decided	Tentatively decided	Undecided	Total
Males	26,6	12,0	2,2	**40,8**
Females	31,8	21,7	5,7	**59,2**
Total	**58,4**	**33,7**	**7,9**	**100,0**

Major indecision was investigated by a Likert-type scale in the questionnaire (Question 5). This was another way of assessing educational indecision. The relationship between major indecision and gender was not significant. The results for this relationship in Table 15 indicate that a higher percentage of male and female students were **somewhat decided** (39.0%) compared to 34.0% who were **decided**. Table 15 shows that 24.3% of the females and 14.7% of the males were **somewhat decided**.

Table 15. **Major indecision for males and females**

	Decided	Somewhat decided	Undecided	Total
Males	14.7	14.7	11.5	**40.9**
Females	19.3	24.3	15.5	**59.1**
Total	**34.0**	**39.0**	**27.0**	**100**

The relationship between CDS scores and gender was not significant. The CDS scores show that 19.5% of the males and 26.7% of the females were **decided** about their vocation, while 14.2% of the males and 22.2% of the females were **undecided**. The results in Table 16

indicate that the level of vocational indecision was high, since 17.4% were **somewhat decided**. The fact that 46.3% were **decided** meant that about 53.7% were not sure about their vocation. In comparison to the results in Table 15, there was a higher percentage of males and females who were **decided** about their vocation than their majors. There was also a higher percentage in Table 16 who were **undecided**.

Table 16. **Vocational indecision for males and females according to CDS scores**

	Decided	**Somewhat decided**	**Undecided**	**Total**
Males	19.5	7.2	14.2	**40.9**
Females	26.7	10.2	22.2	**59.1**
Total	**46.3**	**17.4**	**36.4**	**100**

The results thus far indicate that the levels of educational and vocational indecision were high for males and females. There were more females than males who were **decided** about their majors and vocation. In other words, educational and vocational indecision seemed to be higher among male students. It must be noted that all the cross tabulations for gender in this section were not significant.

4.4.2 Chi-square Analysis for Gender

4.4.2.1 Cross tabulations between the three levels of educational indecision and the three levels of vocational indecision; major indecision and CDS

The first relationship between **the three levels of educational indecision and the three levels of vocational indecision** yielded significant results for males and females ($p < .0000$ for both). Coefficient of contingency for males was .46594 and for females .49584. The results contained in Table 17a of this comparison indicates that 46.6% of males and 33.0% of females were **decided** about their majors and vocation. There was a higher percentage of males who were **decided**. There were more females who were **tentatively decided** about

their majors and vocation than males. There was a high total percentage of males (64.9%) who were **decided** about their vocation than females (53.7%). Further, there was a higher total percentage of males (55.4%) who were **decided** about their majors than the females (43.1%).

Table 17a. **The relationship between the three levels of educational indecision and the three levels of vocational indecision for males and females**

Q4.3

Q4.5		**Decided**		**Tentatively decided**		**Undecided**		**Total**	
		M	**F**	**M**	**F**	**M**	**F**	**M**	**F**
Decided	M	46.6		9.5		8.8		**64.9**	
	F		33.0		17.4		3.2		**53.7**
Tentatively Decided	M	6.8		18.9		4.1		**29.7**	
	F		8.3		22.9		5.5		**36.7**
Undecided	M	2.0		1.4		2.0		**5.4**	
	F		1.8		1.8		6.0		**9.6**
Total	M	55.4		29.7		14.9		**100**	
	F		43.1		42.2		14.7		**100**

The second relationship between **the three levels of educational indecision and major indecision** was also significant for males and females ($p < .0000$ for both). Coefficient of contingency for males was .37945 and .43117 for females. The combined percentages of the cells for males and females showed that 86.7% were **tentatively decided, somewhat decided** or **undecided** about their majors. The results in Table 17b show very clearly that only 29.5% of the males and 24.7% of the females appeared in the cell **decided**. The total percentages indicate that the males were more **decided** than the females about their majors.

Table 17b. **Relationship between the three levels of educational indecision and major indecision for males and females**

Q4.3

Major		Decided		Tentatively decided		Undecided		Total	
		M	F	M	F	M	F	M	F
Decided	M	29.5		5.4		1.3		**36.2**	
	F		24.7		6.8		1.4		**32.9**
Somewhat Decided	M	15.4		12.8		7.4		**35.6**	
	F		14.6		18.7		7.8		**41.1**
Undecided	M	10.1		12.1		6.0		**28.2**	
	F		4.1		16.4		5.5		**26.0**
Total	**M**	**55.0**		**30.2**		**14.8**		**100**	
	F		**43.4**		**42.0**		**14.6**		**100**

The third relationship between the three levels of educational indecision and CDS (Question 4.3 and CDS) indicated significant relationships for males ($p < .0055$; $C = .29932$) and females ($p < .0000$; $C = .34393$). Table 17c shows that the cell for **decided** had a higher percentage of males (34.2%) than females (28.3%). This implied that there were more males who were **decided** about their majors and vocation than females. The combined percentage for males and females in the cells **tentatively decided**, **somewhat decided** and **undecided** was 70.2% which indicated a high level of educational and vocational indecision in this relationship. The total percentages indicate that the males were more **decided** than the females. Also, in this comparison there was a higher percentage (55.0%) of males who were **decided** about their majors than their vocation (48.3%). The reverse was true for the females, where 45.7% were **decided** about their vocation compared to 43.4% for majors.

Table 17c. **Relationship between the three levels of educational indecision and CDS for males and females**

Q4.3

CDS		Decided		Tentatively decided		Undecided		Total	
		M	**F**	**M**	**F**	**M**	**F**	**M**	**F**
Decided	M	34.2		8.7		5.4		**48.3**	
	F		28.3		13.7		3.7		**45.7**
Somewhat Decided	M	6.0		7.4		3.4		**16.8**	
	F		4.6		10.5		2.3		**17.4**
Undecided	M	14.8		14.1		6.0		**34.9**	
	F		10.5		17.8		8.7		**37.0**
Total	**M**	**55.0**		**30.2**		**14.8**		**100**	
	F		**43.4**		**42.0**		**14.6**		**100**

4.4.2.2 Cross tabulations between the three levels of vocational indecision and major indecision, and CDS

The first relationship between **the three levels of vocational indecision and major indecision** was significant for males ($p < .0015$; $C = .32383$) and females ($p < .0001$; $C = .31875$). The relationship was stronger for females. In this relationship (Table 18a), 31.3% of the males and 24.8% of the females were **decided** about their majors and vocational choice. This result was similar to that obtained in the comparison between the three levels of educational indecision and CDS (Table 17c). It confirms that educational and vocational indecision was high among the male and female students. This was 67.8% when the percentages in the cells for males and females were combined. A total of 65.3% of the males were **decided** about their vocation. This was higher than the percentage in the previous comparisons. In this relationship the males were more **decided** about their vocation than their majors. The males were also more **decided** than the females. A total of 53.7%

of the females were **decided** about their vocation and a total of 32.6% were **decided** about their majors.

Table 18a. **Comparison between the three levels of vocational indecision and major indecision for males and females**

Q4.5

Major		Decided		Tentatively decided		Undecided		Total	
		M	F	M	F	M	F	M	F
Decided	M	31.1		3.3		2.0		**36.7**	
	F		24.8		6.4		1.4		**32.6**
Somewhat Decided	M	18.7		14.7		2.0		**35.3**	
	F		19.3		18.3		3.7		**41.3**
Undecided	M	15.3		11.3		1.3		**28.0**	
	F		9.6		11.9		4.6		**26.1**
Total	**M**	**65.3**		**29.3**		**5.3**		**100**	
	F		**53.7**		**36.7**		**9.6**		**100**

Gender differences were also found for males and females in the second relationship between **the three levels of vocational indecision and CDS**. This relationship was significant for males ($p < .0099$; $C = .28545$) and females ($p < .0000$; $C = .46716$). The percentages for males and females who were **decided** were 38.7% and 36.7% respectively (Table 18b). The males were more **decided** than the females about the choice of their vocation. The total percentage for males in terms of CDS scores was 48.7% and for females 45.4%. CDS scores indicated a higher percentage of females (17.4%) who were **somewhat decided** and 37.2% who were **undecided**.

Table 18b. **Comparison between the three levels of vocational indecision and CDS for males and females**

Q4.5

CDS		Decided		Tentatively decided		Undecided		Total	
		M	F	M	F	M	F	M	F
Decided	M	38.7		8.0		2.0		**48.7**	
	F		36.7		7.3		1.4		**45.4**
Somewhat Decided	M	8.7		7.3		0.7		**16.7**	
	F		7.3		9.2		0.9		**17.4**
Undecided	M	18.0		14.0		2.7		**34.7**	
	F		9.6		20.2		7.3		**37.2**
Total	M	**65.3**		**29.3**		**5.3**		**100**	
	F		**53.7**		**36.7**		**9.6**		**100**

4.4.2.3 Cross tabulation between major indecision and CDS

In this last comparison in this section the Chi-square tests were significant for males and females ($p < .0000$ for both). The coefficient of contingency for males was .55087 and .49223 for females. Table 19 shows that the cell for **decided** contained 30.7% of males and 26.2% of females. This implied that there were more males than females who were **decided** about their majors and career according to their major and CDS scores. This meant that approximately 70% of the students were **tentatively decided, somewhat decided** or **undecided** about their majors and career, which indicated a high level of educational and vocational indecision. The relationship was strong for males and females with notable differences between the two. CDS scores indicated that there were more females who were **undecided** about their career than males. Also, major scores indicated that there were more females than males who were **somewhat decided** about their majors. Both males and females reported similar levels of decision and indecision (compare total percentages for males and females in column 1 and row 1).

Table 19. **Comparison between major indecision and CDS for males and females**

CDS

Major		Decided		Somewhat decided		Undecided		Total	
		M	**F**	**M**	**F**	**M**	**F**	**M**	**F**
Decided	M	30.7		2.6		2.6		**35.9**	
	F		26.2		3.6		2.7		**32.6**
Somewhat Decided	M	15.0		9.2		11.8		**35.9**	
	F		15.4		9.5		16.3		**41.2**
Undecided	M	2.0		5.9		20.3		**28.1**	
	F		3.6		4.1		18.6		**26.2**
Total	**M**	**47.7**		**17.6**		**34.6**		**100**	
	F		**45.2**		**17.2**		**37.6**		**100**

The Chi-square tests for gender indicated a high level of educational and vocational indecision among male and female students. Females appeared to exhibit higher levels of educational and vocational indecision.

4.5 ANALYSIS FOR POPULATION GROUPS

Cultural differences relating to educational and vocational indecision were investigated by analysing differences between population and language groups. Most of the results will focus on the African and Indian students. Although the sample included an uneven distribution of the different population groups, it comprised a proportional representation of the different groups in the first-entry student population.

4.5.1 Chi-square Analysis for Population Groups

There was a significant result ($p < .0169$) for the question: "How certain are you that your career choice is the correct one?" for the different population groups. The results in Table 20 show that 44.4% of the total sample were **certain** that their career choice was the correct one. Of this total 33.2% were African, 11.0% Indian and 0.3% White.

Table 20. **Degree of certainty about correct choice of career according to population groups**

Q4.1

Population Group	Very certain	Certain	A little uncertain	Not at all certain	Total
African	17.5	33.2	15.6	5.5	**71.8**
Coloured	0	0	0	0.3	**0.3**
Indian	5.8	11.0	7.9	2.2	**26.8**
White	0.8	0.3	0	0	**1.1**
Total	**24.1**	**44.4**	**23.6**	**7.9**	**100**

The results show that the highest percentage of African students that is, 33.2% were **certain** that their career choice was the correct one. The same applied to the Indian students where 11.0% were **certain** about their career choice. For the White students the highest percentage appeared in column 1 and they were **very certain** that their choice was correct.

The results were significant for the relationship between **major indecision and the different population groups** ($p < .0008$). Table 21 shows that 29.3% of the African students were **somewhat decided** about their majors while 22.9% were **undecided**. The highest percentage for the Indian students showed that they were **decided** and 9.3% said that they were **somewhat decided** about their majors. According to population groups a total of 39.2% said that they were **somewhat decided** about their majors.

Table 21. **Major indecision for the different population groups**

Population Group	Decided	Somewhat decided	Undecided	Total
African	20.0	29.3	22.9	**72.3**
Coloured	0	0.3	0	**0.3**
Indian	13.1	9.3	4.0	**26.4**
White	0.8	0.3	0	**1.1**
Total	**33.9**	**39.2**	**26.9**	**100**

The relationship between **population groups and CDS** was not significant. The results in Table 22 for CDS scores show that 30.7% of the African students were **decided** about their vocation and 29.3% were **undecided**. In the previous table there were more African students who were **somewhat decided** and **undecided** about their majors. This meant that the African students were more **decided** about their career than their majors.

The highest percentage of 14.7% of Indian students said that they were **decided** about their vocation and 6.9% were **undecided**. There was a higher percentage of Indian students who were **undecided** about their vocation than majors.

For the White students the results were similar for educational and vocational indecision.

Table 22. **Vocational indecision according to CDS scores for the different population groups**

CDS

Population Group	Decided	Somewhat decided	Undecided	Total
African	30.7	12.3	29.3	**72.3**
Coloured	0	0	0.3	**0.3**
Indian	14.7	4.8	6.9	**26.4**
White	0.8	0.3	0	**1.1**
Total	**46.1**	**17.3**	**36.5**	**100**

4.5.1.1 Cross tabulations between the three levels of educational indecision and the three levels of vocational indecision; major indecision and CDS

There were three significant comparisons in this section. Distinct differences between African and Indian students were found when the relationship between **the three levels of educational indecision and the three levels of vocational indecision** was investigated. In this relationship which was significant for the African students ($p < .0000$; $C = .49053$), 38.0% of the students were **decided** about their career and majors and 20.2 % were **tentatively decided**. This shows that about 60% of the African students were **undecided** about their career and majors.

For the Indian students ($p < .0001$; $C = .44136$) 38.4% also noted that they were **decided** about their majors and career, while 24.2 % were **tentatively decided**. A comparison of the results reveals that there were more African students than Indian students who were **decided** about their vocation. The reverse was also true where more Indian students than African students were **decided** about their majors. The results are presented in Table 23a.

Table 23a. **Relationship between the three levels of educational indecision and the three levels of vocational indecision for African and Indian students**

Q4.3

Q4.5		Decided		Tentatively decided		Undecided		Total	
		Afr	Ind	Afr	Ind	Afr	Ind	Afr	Ind
Decided	Afr	38.0		16.0		6.5		**60.5**	
	Ind		38.4		9.1		3.0		**50.5**
Tentatively Decided	Afr	6.8		20.2		4.6		**31.6**	
	Ind		11.1		24.2		6.13		**41.4**
Undecided	Afr	1.1		1.5		5.3		**8.0**	
	Ind		4.0		2.0		2.0		**8.1**
Total	**Afr**	**46.0**		**37.6**		**16.3**		**100**	
	Ind		**53.5**		**35.4**		**11.1**		**100**

In the second relationship between **the three levels of educational indecision and major indecision** the results were significant for the African students and Indian students ($p < .0000$ for both). The Coefficient of contingency for African and Indian students were .34606 and .53141 respectively. According to their major scores and the three levels of educational indecision, 20.4% of the African students were **decided** about their majors. The major scores indicated that 17.4% were **somewhat decided** and the three levels of educational indecision indicated that they were **decided**. Those who were **tentatively decided and somewhat decided** accounted for 15.5% while 16.2% were **tentatively decided and undecided**. In comparison, 41.4% of the Indian students were **decided** about their majors. The results in Table 23b included 17.2% who were **tentatively decided and somewhat decided**, while 11.1% were **tentatively decided and undecided**. There was a higher percentage of Indian students than African students who were **decided** about their majors. Total percentages of 49.5% and 27.9% respectively. Indian students showed higher

levels of vocational indecision and African students showed higher levels of educational indecision. This was evidence of the differences between the groups.

Table 23b. **Relationship between the three levels of educational indecision and major indecision for African and Indian students**

Q4.3

Major		Decided		Tentatively decided		Undecided		Total	
		Afr	**Ind**	**Afr**	**Ind**	**Afr**	**Ind**	**Afr**	**Ind**
Decided	Afr	20.4		6.0		1.5		**27.9**	
	Ind		41.4		7.1		1.0		**49.5**
Somewhat Decided	Afr	17.4		15.5		7.5		**40.4**	
	Ind		10.1		17.2		18.1		**35.4**
Undecided	Afr	8.3		16.2		7.2		**31.7**	
	Ind		2.0		11.1		2.0		**15.2**
Total	**Afr**	**46.0**		**37.7**		**16.2**		**100**	
	Ind		**53.5**		**35.4**		**11.1**		**100**

In the third relationship between **the three levels of educational indecision and CDS** the relationship was significant for African ($p < .0002$; $C = .27647$) and Indian students ($p < .0025$; $C = .37726$). Among the African students 26.8% were **decided** about their majors and career. The level of indecision was slightly lower in this relationship (see Table 23c) because a higher percentage of students were **decided**. This relationship for the Indian students showed that 39.4% were **decided**. In the case of the Indian students this percentage was lower when compared to the results in Table 23b. This confirmed that the Indian students had a higher level of vocational indecision.

Table 23c. **Relationship between levels of educational indecision and CDS for African and Indian students**

Q4.3

CDS		Decided		Tentatively decided		Undecided		Total	
		Afr	Ind	Afr	Ind	Afr	Ind	Afr	Ind
Decided	Afr	26.8		11.7		4.5		**43.0**	
	Ind		39.4		12.1		4.0		**55.6**
Somewhat Decided	Afr	5.3		8.3		3.0		**16.6**	
	Ind		5.1		11.1		2.0		**18.2**
Undecided	Afr	14.0		17.7		8.7		**40.4**	
	Ind		9.1		12.1		5.1		**26.3**
Total	**Afr**	**46.0**		**37.7**		**16.2**		**100**	
	Ind		**53.5**		**35.4**		**11.1**		**100**

The relationship between levels of educational indecision and CDS for the White students was significant ($p < .0455$), indicating that 75% were **decided**.

4.5.1.2 Cross tabulations between the three levels of vocational indecision and major indecision, and CDS

There were two comparisons in this section that yielded significant results. The first comparison between **the three levels of vocational indecision and major indecision** was significant for African students ($p < .0024$; $C = .24234$) and for Indian students ($p < .0000$; $C = .51582$). The relationship for the African students showed that 22.3% were **decided** about their vocation. The three levels of vocational indecision showed that 16.2% were **decided** though their CDS scores showed that they were **undecided**.

The results in Table 24a show that 39.4% of the Indian students were **decided** about their majors and vocation. Among them 22.2% were **tentatively decided and somewhat decided,** while 11.1% were **tentatively decided and undecided**.

Table 24a. **Relationship between the three levels of vocational indecision and major indecision for African and Indian students**

Q4.5

Major		Decided		Tentatively decided		Undecided		Total	
		Afr	**Ind**	**Afr**	**Ind**	**Afr**	**Ind**	**Afr**	**Ind**
Decided	Afr	22.3		4.2		1.5		**27.9**	
	Ind		39.4		8.1		2.0		**49.5**
Somewhat Decided	Afr	22.3		15.1		3.0		**40.4**	
	Ind		10.1		22.2		3.0		**35.4**
Undecided	Afr	16.2		12.1		3.4		**31.7**	
	Ind		1.0		11.1		3.0		**15.2**
Total	**Afr**	**60.8**		**31.3**		**7.9**		**100**	
	Ind		**50.5**		**41.4**		**8.1**		**100**

In this relationship there was a clear difference between African and Indian students where a total of 49.5% of Indian students were **decided** about their majors compared to 27.9% of African students. The results also showed that the Indian students were less **decided** about their vocation than the African students (50.5% and 60.8% respectively).

In the second comparison between **the three levels of vocational indecision and CDS** there was a strong relationship for the African and Indian students ($p < .0000$ for both). The Coefficient of contingency for African and Indian students were .35911 and .55620 respectively. The percentage of African students that were **decided** was 34.7%. The cell for **decided and undecided** comprised 16.2% of the African students. This meant that those students who were **decided** about their vocation according to the three levels of vocational indecision were **undecided** about their vocation according to their CDS scores. Table 24b shows that 18.9% were **tentatively decided and undecided**.

The results for the Indian students showed that 43.4% fell in the category of **decided**. There was a greater number of Indian students in this category than African students. There were fewer Indian students that is, 5.1% in the category **decided and undecided** than African students (16.2%). This indicated a major difference between Indian and African students. Among the Indian students 11.1% were **tentatively decided and decided**, 15.2% were **tentatively decided and somewhat decided** and 15.2% were also **tentatively decided and undecided**. There were more African students in the category of **tentatively decided and undecided**. This comparison showed distinct differences between African and Indian students. There was a higher percentage of African students who reported a higher level of vocational decision than Indian students according to the three levels of vocational indecision. According to CDS scores, a higher percentage of Indian students were **decided** (55.6%) compared to 43.0% of African students.

Table 24b. **Relationship between the three levels of vocational indecision and CDS for African and Indian students**

Q4.5

CDS		Decided		Tentatively decided		Undecided		Total	
		Afr	**Ind**	**Afr**	**Ind**	**Afr**	**Ind**	**Afr**	**Ind**
Decided	Afr	34.7		6.4		1.9		**43.0**	
	Ind		43.4		11.1		1.0		**55.6**
Somewhat Decided	Afr	9.8		6.0		0.8		**16.6**	
	Ind		2.0		15.2		1.0		**18.2**
Undecided	Afr	16.2		18.9		5.3		**40.4**	
	Ind		5.1		15.2		6.1		**26.3**
Total	**Afr**	**60.8**		**31.3**		**7.9**		**100**	
	Ind		**50.5**		**41.4**		**8.1**		**100**

4.5.1.3 Cross tabulation between major indecision and CDS

There was a strong relationship between **major indecision and CDS** for African and Indian students ($p < .0000$; $C = .49081$ for African students and $C = .56015$ for Indian students). The relationship showed that the cell for **decided** comprised 22.5% of the African students and the cell for **undecided** comprised 22.1%. The results are presented in Table 25. This implied that there were as many students who were **decided** about their majors and vocation as there were those who were **undecided** about their majors and vocation. Educational and vocational indecision among the African students was therefore approximately 78%. Among them 16.2% were **decided** about their vocation but **somewhat decided** about their majors, while 15.9% were **undecided** about their vocation and **somewhat decided** about their majors.

The same relationship for the Indian students indicated that 41.4% were in the cell **decided**. This was much higher than the results for the African students. It meant that about 60% of the Indian students were **undecided** about their vocation and majors. About 13.1% of the

Indian students were **decided and somewhat decided**, while 12.1% were in the category **undecided**. This relationship once again showed clear and conclusive results regarding cultural differences between African and Indian students. A total of 27,7% of African students were **decided** about their majors. This implied a high level of educational indecision. Comparatively, a total of 49.5% of Indian students were **decided** about their majors. While this also indicated a high level of educational indecision for Indian students, it is not as high as that for African students. Vocational indecision was higher for African students than for Indian students. Indian students were more **decided** about their vocation than their majors in this relationship.

Table 25. **Comparison between major indecision and CDS for African and Indian students**

CDS

Major		**Decided**		**Somewhat decided**		**Undecided**		**Total**	
		Afr	**Ind**	**Afr**	**Ind**	**Afr**	**Ind**	**Afr**	**Ind**
Decided	Afr	22.5		2.6		2.6		**27.7**	
	Ind		41.4		5.1		3.0		**49.5**
Somewhat Decided	Afr	16.2		8.5		15.9		**40.6**	
	Ind		13.1		11.1		11.1		**35.4**
Undecided	Afr	3.7		5.9		22.1		**31.7**	
	Ind		1.0		2.0		12.1		**15.2**
Total	**Afr**	**42.4**		**17.0**		**40.6**		**100**	
	Ind		**55.6**		**18.2**		**26.3**		**100**

There were strong relationships between the levels of educational indecision and the levels of vocational indecision for the different population groups. The levels of vocational and educational indecision were high for the Indian and African students. However, the African students exhibited higher levels of educational indecision and the reverse was true for the Indian students. Indian students seemed to be more **decided** than the African students about their majors and vocation.

4.6 ANALYSIS FOR LANGUAGE GROUPS

4.6.1 Chi-square Analysis for Language Groups

There were two significant results for the different language groups. Major scores indicated that Zulu speaking students constituted the highest percentage of students that is, 18.9% who were **somewhat decided** abbot their majors. Among the Zulu speaking students 16.3% were also **undecided**. The highest percentage of the English speaking students (5.3%) were **decided** about their majors while 3.5% were **somewhat decided**. The Xhosa and Sotho speaking students were **somewhat decided** about their majors. Table 26 shows that the Hindi and Tamil speaking students were more **decided** than **undecided** about their majors. For all the language groups a total of 33.9% said that they were **decided**, 39,2% were **somewhat decided** and 26.9% were **undecided**. The result for major indecision among the different language groups was significant ($p < .0012$).

Table 26. **Major indecision for the different language groups**

Lang group	Decided	Somewhat decided	Undecided	Total
English	5.3	3.5	1.1	**9.9**
Zulu	13.3	18.9	16.3	**48.5**
Xhosa	0.8	4.8	3.5	**9.1**
Sotho	1.3	2.7	1.1	**5.1**
Hindi	4.3	2.9	1.6	**8.8**
Tamil	3.5	1.9	0.5	**5.9**
Telegu	0	0.5	0.3	**0.8**
Gujerati	0.5	0.5	0.3	**1.3**
Other	4.8	3.5	2.4	**10.7**
Total	**33.9**	**39.2**	**26.9**	**100**

There was a significant relationship between the language groups and CDS scores ($p < .0109$). CDS scores indicated that a total of 46.1% of the students belonging to different language groups reported that they were **decided** about their career. Table 27 reflects that 5.3% of the English speaking students were **decided** about their career, while 2.7% were **undecided**. For the Zulu speaking students a higher percentage were **undecided**

that is, 22.1%, 18.9% were **decided**. The same applied to the Xhosa speaking students where 4.5% were **undecided** and 2.9% were **decided**. The results for the Hindi, Tamil and Gujerati speaking students according to their CDS scores indicated that they were all **decided** rather than **undecided** about their vocation. Those students who spoke "other" languages also said that they were **decided** rather than **undecided** about their vocation.

Table 27. **Vocational indecision according to CDS scores for the different language groups**

CDS

Language group	Decided	Somewhat decided	Undecided	Total
English	5.3	1.9	2.7	**9.9**
Zulu	18.9	7.5	22.1	**48.5**
Xhosa	2.9	1.6	4.5	**9.1**
Sotho	2.7	1.6	0.8	**5.1**
Hindi	5.1	1.1	2.7	**8.8**
Tamil	4.0	1.3	0.5	**5.9**
Telegu	0	0.3	0.5	**0.8**
Gujerati	0.8	0.3	0.3	**1.3**
Other	6.4	1.9	2.4	**10.7**
Total	**46.1**	**17.3**	**36.5**	**100.0**

When the major and CDS scores were compared for the different language groups it was noted that there were more students who were **decided** (46.1%) about their vocation rather than their majors (33.9%). At the same time there was a higher percentage of students who were **undecided** (36.5%) about their vocation than their majors (26.9%).

Chi-square tests were carried out between degree of certainty about choice of career, the three levels of educational indecision, the three levels of vocational indecision, major indecision and CDS for the different language groups to investigate cultural differences.

4.6.1.1 Cross tabulations between the three levels of educational indecision and the three levels of vocational indecision; major indecision and CDS

4.6.1.1.1 Cross tabulations between the three levels of educational indecision and the three levels of vocational indecision

The first relationship between **the three levels of educational indecision and the three levels of vocational indecision** was significant for the English speaking students ($p < .0018$; $C = .56261$) where 40.5% were **decided** about their majors and vocation. This implied that about 60% were either **tentatively decided** or **undecided** about their majors and vocation. 13.5% of the English speaking students were **decided** about their majors and **tentatively decided** about their vocation, 18.9% were **tentatively decided** about their majors and vocation, while 13.5% were **undecided** about their majors and **tentatively decided** about their vocation. The results for the English speaking students are presented in Table 28a.

Table 28a. **Relationship between the three levels of educational indecision and the three levels of vocational indecision for English speaking students**

Q4.3

Q4.5	Decided	Tentatively Decided	Undecided	Total
Decided	40.5	5.4	0	**45.9**
Tentatively decided	13.5	18.9	13.5	**45.9**
Undecided	2.7	0	5.4	**8.1**
Total	**56.8**	**24.3**	**18.9**	**100**

The relationship was also significant for the Zulu speaking students ($p < .0000$; $C = .54520$). However, a slightly lower percentage, 36.9%, were **decided** about their majors and vocation. Table 28b shows that 16.5% were **tentatively decided** about their majors and vocation and 21.6% were **tentatively decided**. Compared to the English speaking students the total percentages show that a lower percentage of Zulu speaking students were **undecided** and a higher percentage were **tentatively decided**.

Table 28b. **Relationship between the three levels of educational indecision and the three levels of vocational indecision for Zulu speaking students**

Q4.3

Q4.5	Decided	Tentatively Decided	Undecided	Total
Decided	36.9	16.5	5.7	**59.1**
Tentatively decided	7.4	21.6	4.5	**33.5**
Undecided	0.6	0.6	6.3	**7.4**
Total	**44.9**	**38.6**	**16.5**	**100**

The same relationship for Xhosa speaking students showed that 40.6% were **decided** about their majors and vocation, which was higher than for the Zulu speaking students. The relationship was significant ($p < .0189$; $C = .51901$). Table 28c shows that 21.9% of the students were **tentatively decided** about their majors and vocation, while 12.5% were **tentatively decided** about their majors and **decided** about their vocation. In comparison to Zulu speaking students there was a higher total percentage of Xhosa speaking students who were **decided** (46.9%), but also a higher total percentage who were **undecided** (18.8%) about their majors.

Table 28c. **Relationship between the three levels of educational indecision and the three levels of vocational indecision for Xhosa speaking students**

Q4.3

Q4.5	Decided	Tentatively Decided	Undecided	Total
Decided	40.6	12.5	6.3	**59.4**
Tentatively decided	3.1	21.9	9.4	**34.4**
Undecided	3.1	0	3.1	**6.3**
Total	**46.9**	**34.4**	**18.8**	**100**

4.6.1.1.2 Cross tabulation between the three levels of educational indecision and major indecision

The second comparison between **the three levels of educational indecision and major indecision** yielded significant results for the English ($p < .0004$; $C = .59728$), Zulu ($p < .0000$; $C = .38666$), Hindi ($p < .0016$; $C = .58722$) and Tamil ($p < .0315$; $C = .57010$) speaking students.

For the English speaking students 48.6% were **decided** about their majors, 16.2% were **tentatively decided and somewhat decided,** and 10.8% were **undecided and somewhat decided**. The results are shown in Table 29a.

Table 29a. **Comparison between the three levels of educational indecision and major indecision for English speaking students**

Q4.3

Major	Decided	Tentatively Decided	Undecided	Total
Decided	48.6	2.7	2.7	**54.1**
Tentatively decided	8.1	16.2	10.8	**35.1**
Undecided	0	5.4	5.4	**10.8**
Total	**56.8**	**24.3**	**18.8**	**100**

20.8% of the Zulu speaking students were **decided** about their majors, 16,3% were **decided and somewhat decided**, 14.6% were **tentatively decided and somewhat decided,** and 18.5% were **tentatively decided and undecided**. The figures in Table 29b indicate that 18,5%, a high percentage, were **tentatively decided and undecided** about their majors. There was a higher percentage of students (44.9%) who were **decided** about their majors according to the three levels of educational indecision than 27,5% who were **decided** about their majors according to major scores.

Table 29b. **Comparison between the three levels of educational indecision and major indecision for Zulu speaking students**

Q4.3

Major	Decided	Tentatively decided	Undecided	Total
Decided	20.8	5.6	1.1	**27.5**
Somewhat decided	16.3	14.6	8.4	**39.3**
Undecided	7.9	18.5	6.7	**33.1**
Total	**44.9**	**38.8**	**16.3**	**100**

The same comparison for the Hindi speaking students (results in Table 29c) showed that 42.4% were **decided** about their majors. 18.2% were **tentatively decided and somewhat decided** and 12.1% were **tentatively decided and undecided** about their majors. The total percentages indicate that 48.5% of the students were **decided** about their majors according to major scores, while 18.2% were **undecided**. According to the three levels of educational indecision, 54.5% were **decided** and 9.1% were **undecided**.

Table 29c. **Comparison between the three levels of educational indecision and major indecision for Hindi speaking students**

Q4.3

Major	Decided	Tentatively Decided	Undecided	Total
Decided	42.4	6.1	0	**48.5**
Somewhat decided	6.1	18.2	9.1	**33.3**
Undecided	6.1	12.1	0	**18.2**
Total	**54.5**	**36.4**	**9.1**	**100**

The results for the Tamil speaking students in Table 29d indicated that 45.5% of the students were **decided** about their majors, 13.6% were **tentatively decided and decided**, and 22,7% were **tentatively decided and somewhat decided.** There were no students who were totally **undecided**. The three levels of educational indecision indicate that 50,0% of the students were **decided** about their majors. The major scores indicate that 59.1% were **decided** about their majors.

Table 29d. **Comparison between the three levels of educational indecision and major indecision for Tamil speaking students**

Q4.3

Major	Decided	Tentatively Decided	Undecided	Total
Decided	45.5	13.6	0	**59.1**
Somewhat decided	4.5	22.7	4.5	**31.8**
Undecided	0	9.1	0	**9.1**
Total	**50.0**	**45.5**	**4.5**	**100**

In comparison of the results for the different language groups in this cross tabulation reveals that the English speaking students represented the highest percentage who were **decided** about their majors (compare results in the cell for **decided** in Tables 29a, 29b, 29c, and 29d).

4.6.1.1.3 Cross tabulation between the three levels of educational indecision and CDS

The results for the third relationship between **the three levels of educational indecision and CDS** were only significant for the English ($p < .0001$; $C = .62029$) and Zulu ($p < .0001$; $C = .34654$) speaking students. The three levels of educational indecision and CDS scores show that 48.6% of the English speaking students were **decided** about their majors and career. This implied that about 52% of the English speaking students were **tentatively decided, somewhat decided** and **undecided**. Table 30a shows the percentages in the different categories. 13.5% of the students were totally **undecided**. A total of 56.8% were **decided** about their majors and a total of 54.1% were **decided** about their vocation. There were more students who were **decided** about their majors than their vocation.

Table 30a. **Comparison between the three levels of educational indecision and CDS for English speaking students**

Q4.3

CDS	Decided	Tentatively Decided	Undecided	Total
Decided	48.6	2.7	2.7	**54.1**
Somewhat decided	5.4	10.8	2.7	**18.9**
Undecided	2.7	10.8	13.5	**27.0**
Total	**56.8**	**24.3**	**18.9**	**100**

In Table 30b, 26.4% of the Zulu speaking students were **decided** about their majors and vocation, 15.7% were **decided** about their majors but **undecided** about their vocation, 19.7% were **tentatively decided** about their majors and **undecided** about their vocation and 9.6% were totally **undecided**. Zulu speaking students appeared to be more **decided** about their majors than their vocation. CDS scores indicate that 44.9% of the students reported to be **undecided** about their vocation. This was higher than the percentage (39.9%) who were **decided**.

Table 30b. **Comparison between the three levels of educational indecision and CDS for Zulu speaking student**

Q4.3

CDS	Decided	Tentatively decided	Undecided	Total
Decided	26.4	10.1	3.4	**39.9**
Somewhat decided	2.8	9.0	3.4	**15.2**
Undecided	15.7	19.7	9.6	**44.9**
Total	**44.9**	**38.8**	**16.3**	**1O0**

When the results of the English and Zulu speaking students were compared it was found that a higher percentage of English speaking students than Zulu speaking students were **decided** about their majors and vocation.

4.6.1.2 Cross tabulations between the three levels of vocational indecision and major indecision and CDS

4.6.1.2.1 Cross tabulations between the three levels of vocational indecision and major indecision

The first relationship between **the three levels of vocational indecision and major indecision** was significant for the English, Zulu and Hindi speaking students ($p < .0023$, $p < .0069$ and $p < .0004$ respectively). The Coefficient of contingency were .5562, .27173 and .61704 respectively for the three groups.

Among the English speaking students 40.5% were **decided** about their majors and vocation. 24.3% were **tentatively decided** about their vocation and **somewhat decided** about their majors and 10.8% were **tentatively decided** about their vocation and **decided** about their majors. Also, 10.8% were **tentatively decided** about their vocation and **undecided** about their majors. A total of 54.1% for **decided** in row 1 was higher than the total, 45.9%, in the column for **decided.** This meant that the English speaking students were more **decided** about their majors than their vocation. The results are presented in Table 31a.

Table 31a. **Comparison between the three levels of vocational indecision and major indecision for English speaking students**

Q4.5

Major	Decided	Tentatively decided	Undecided	Total
Decided	40.5	10.8	2.7	**54.1**
Somewhat decided	5.4	24.3	5.4	**35.1**
Undecided	0	10.8	0	**10.8**
Total	**45.9**	**45.9**	**8.1**	**100**

The Zulu speaking students seemed to be more **decided** about their vocation than their majors. This was confirmed by the results of this relationship where a total of 59.3% (in column 1) were **decided** and a total of 27.7% (in row 1) were **decided**. Table 31b shows the results of the relationship: 22.0% of the Zulu speaking students were **decided** about their majors and career, 22.6% were **decided** about their vocation and **somewhat decided** about their majors, 14.7% were **decided** about their vocation and **undecided** about their majors, and 15.3% were **tentatively decided** about their vocation and **undecided** about their majors.

Table 31b. **Comparison between the three levels of vocational indecision and major indecision for Zulu speaking students**

Q4.5

Major	Decided	Tentatively decided	Undecided	Total
Decided	22.0	4.5	1.1	**27.7**
Somewhat decided	22.6	13.6	2.8	**39.0**
Undecided	14.7	15.3	3.4	**33.3**
Total	**59.3**	**33.3**	**7.3**	**100**

The results of the relationship in Table 31c for the Hindi speaking students showed that 45.5% of the students were **decided** about their majors and vocation. Among them 12,1% were **decided** about their vocation according to levels of vocational indecision and **somewhat decided** about their majors, 18.2% were **tentatively decided and somewhat decided,** and 12.1% were **tentatively decided and undecided**. The Hindi speaking students were more **decided** about their vocation than their majors.

Table 31c. **Comparison between the three levels of vocational indecision and major indecision for Hindi speaking students**

Q4.5

Major	Decided	Tentatively decided	Undecided	Total
Decided	45.5	3.0	0	**48.5**
Somewhat decided	12.1	18.2	3.0	**33.3**
Undecided	0	12.1	6.1	**18.2**
Total	**57.6**	**33.3**	**9.1**	**100**

The second relationship between **the three levels of vocational indecision and CDS** was significant for the English ($p < .0019$; $C = .56164$), Zulu ($p < .0000$; $C = .37694$), Hindi ($p < .0005$; $C = .61511$) and Tamil ($p < .0009$; $C = .62375$) speaking students.

The results in Table 32a for the English speaking students show that 40.5% of the students were **decided** about their vocation according to their CDS scores and the levels of vocational indecision. 13.5% were **tentatively decided and decided**, 10.8% were **tentatively decided and somewhat decided**, and 21.6% were **tentatively decided and undecided**.

Table 32a. **Comparison between the three levels of vocational indecision and CDS for the English speaking students**

Q4.5

CDS	Decided	Tentatively decided	Undecided	Total
Decided	40.5	13.5	0	**54.1**
Somewhat decided	5.4	10.8	2.7	**18.9**
Undecided	0	21.6	5.4	**27.0**
Total	**45.9**	**45.9**	**8.1**	**100**

A total of 45.9% respectively were **decided** and **tentatively decided** about their vocation, according to the levels of vocational indecision (totals in columns 1 and 2). CDS scores showed a higher level of decision for English speaking students about their vocation than the three levels of vocational indecision.

Table 32b shows that 32.8% of the Zulu speaking students were **decided** about their vocation, 18.1% were **decided and undecided** and 21.5% were **tentatively decided and undecided**. A total of 59.3% indicated that they were **decided** about their career according to the three levels of vocational indecision, while a total of 39.5% said that they were

decided about their vocation according to their CDS scores. The was a major difference (19.8%) between the totals is significant.

Table 32b. **Comparison between the three levels of vocational indecision and CDS for the Zulu speaking students**

Q4.5

CDS	Decided	Tentatively decided	Undecided	Total
Decided	32.8	6.2	0.6	**39.5**
Somewhat decided	8.5	5.6	1.1	**15.3**
Undecided	18.1	21.5	5.6	**45.2**
Total	**59.3**	**33.3**	**7.3**	**100**

Table 32c shows that 48.5% of the Hindi speaking students were **decided** about their vocation, 12.1% were **tentatively decided and somewhat decided** and 12.1% were **tentatively decided and undecided**. An interesting observation for the Hindi speaking students in this relationship was that although 9.1% were totally **undecided**, there were no students in the categories **undecided and decided** and **undecided and somewhat decided**. The overall results showed a low percentage of vocational indecision. In other words the Hindi speaking students showed a high level of vocational decidedness.

Table 32c. **Comparison between the three levels of vocational indecision and CDS for Hindi speaking students**

Q4.5

CDS	Decided	Tentatively decided	Undecided	Total
Decided	48.5	9.1	0	**57.6**
Somewhat decided	0	12.1	0	**12.1**
Undecided	9.1	12.1	9.1	**30.3**
Total	**57.6**	**33.3**	**9.1**	**100**

The level of vocational indecision was even lower for the Tamil speaking students than for the Hindi speaking students as the figures in Table 32d show. Among them 63.6% of the students were **decided** and 18.2% were **tentatively decided and somewhat decided**. The three levels of vocational indecision show that there were no students who were totally **undecided** about their vocation. The total percentages for **decided** was 68.2% for CDS scores and the three levels of vocational indecision. This confirmed the level of vocational decision among the students.

Table 32d. **Comparison between the three levels of vocational indecision and CDS for Tamil speaking students**

Q4.5

CDS	Decided	Tentatively decided	Total
Decided	63.6	4.5	**68.2**
Somewhat decided	4.5	18.2	**22.7**
Undecided	0	9.1	**9.1**
Total	**68.2**	**31.8**	**100**

4.6.1.3 Cross tabulation between major indecision and CDS

This Chi-square test investigated the relationship between **major indecision and CDS**. The results were significant for the English ($p < .0000$; $C = .66796$), Zulu ($p < .0000$; $C = .49804$) and Hindi ($p < .0031$; $C = .57096$) speaking students as well for those students speaking "other" languages ($p < .0041$; $C = .52636$).

In this relationship for the English speaking students the same levels of vocational indecision and major indecision were indicated, that is, the total percentages in column 1 and row 1 were 54.1% respectively. Those students who were totally **decided** made up 48.6%. The results in Table 33a show that 13.5% were **somewhat decided**, 16.2% were **undecided and somewhat decided,** and 10.8% were totally **undecided**.

Table 33a. **Comparison between major indecision and CDS for English speaking students**

CDS

Major	Decided	Somewhat decided	Undecided	Total
Decided	48.6	5.4	0	**54.1**
Somewhat decided	5.4	13.5	16.2	**35.1**
Undecided	0	0	10.8	**10.8**
Total	**54.1**	**18.9**	**27.0**	**100**

For the Zulu speaking students 21.4% reported to be **decided** about their majors and vocation. This was much lower than the English speaking students. 14.8% were **decided** about their vocation and **somewhat decided** about their majors and 16.5% were **undecided and somewhat decided**. A high percentage that is, 25.3% were totally **undecided** about their majors and vocation. The total percentage for **undecided** for major scores was higher than for **decided,** as shown in Table 33b. There were more students who were **somewhat decided** about their majors. The total percentages for CDS scores indicate a high level of vocational indecision. There was a higher percentage of students (45.6%) who were **undecided** than **decided** about their vocation but simultaneously more students were **decided** about their vocation than their majors.

Table 33b. **Comparison between major indecision and CDS for the Zulu speaking students**

CDS

Major	Decided	Somewhat decided	Undecided	Total
Decided	21.4	2.2	3.8	**27.5**
Some Decided	14.8	7.7	16.5	**39.0**
Undecided	2.7	5.5	25.3	**33.5**
Total	**39.0**	**15.4**	**45.6**	**100**

The results for the Hindi speaking students indicated that 39.4% of the students were **decided** about their vocation and majors. 18.2% were **decided** about their vocation and **somewhat decided** about their majors. This made up 57.6% of the total for **decided**. 15.2% who were totally **undecided**. This was a high percentage of indecision as shown in Table 33c. There was a higher percentage of students who were **decided** about their vocation than their majors. Although 57.6% of the students were **decided** about their vocation, a total of 30.3% were **undecided**.

Table 33c. **Comparison between major indecision and CDS for Hindi speaking students**

CDS

Major	Decided	Somewhat decided	Undecided	Total
Decided	39.4	0	9.1	**48.5**
Somewhat decided	18.2	9.1	6.1	**33.3**
Undecided	0	3.0	15.2	**18.2**
Total	**57.6**	**12.1**	**30.3**	**100**

For those students who belonged to "other" language groups the results (Table 33d) showed that 40.0% were **decided** about their vocation and majors, 12.5% were **decided** about their vocation and **somewhat decided** about their majors, 10.0% were **somewhat decided** about their majors and vocation and 10.0% were **undecided** about their vocation and **somewhat decided** about their majors. 12.5% who were totally **undecided** about their vocation and majors. CDS scores indicate that a total of 60.0% were **decided** about their vocation, and major scores show that 45.0% were **decided** about their majors.

Table 33d. **Comparison between major indecision and CDS for students speaking "other" languages**

CDS

Major	**Decided**	**Somewhat decided**	**Undecided**	**Total**
Decided	40.0	5.0	0	**45.0**
Somewhat decided	12.5	10.0	10.0	**32.5**
Undecided	7.5	2.5	12.5	**22.5**
Total	**60.0**	**17.5**	**22.5**	**100**

A comparison of the language groups for this cross tabulation showed that the Zulu speaking students had the highest percentage, 25.3%, in the category **undecided.** The other language groups also indicated high levels of indecision in the cell for **undecided**.

The results thus far show distinct cultural differences in terms of population and language groups. The levels of educational and vocational indecision investigated indicated that there were differences between the population and language groups.

The results showed further that there was a high level of educational and vocational indecision among the students. According to the CDS scores Table 22, 30.7% of the total sample of African students indicated that they were **decided** about their vocation. This

implied that approximately 69.3% were either **somewhat decided** or **undecided** about their vocation. According to their major scores 20,0% were **decided** about their majors. This meant that the level of educational indecision among the African students was higher than the level of vocational indecision. This was re-affirmed by the results of the cross tabulations that were carried out between the three levels of educational and vocational indecision; major indecision and CDS scores. Indian students were more **decided** about their vocation than their majors. They showed higher levels of vocational decision than educational decision.

There were also differences among the different language groups in relation to the three levels of educational and vocational indecision. There were strong relationships between educational and vocational indecision for the different language groups. The cross tabulations carried out showed that Zulu speaking students appeared to be the most **undecided**. They were more **undecided** about their majors than their choice of vocation. Comparatively, Hindi speaking students were more **decided** about their majors than their vocation. English speaking students seemed to be equally **decided** about their majors and vocation. The overall results indicate that the levels of educational and vocational indecision for the different population and language groups was approximately 50% and above.

4.7 ANALYSIS OF FACTORS INFLUENCING CAREER-DECISION MAKING

4.7.1 Parents' Education

The educational level of parents was investigated as an influencing factor in educational and vocational indecision and the career-decision making process of students.

4.7.1.1 Gender

The relationship between **major indecision and father's level of education** was significant for male students ($p < .0212$; $C = .31408$). The results contained in Table 34a indicate that 14.7% of the students, who were **decided** about their majors fell in the category where father's educational level was standard 10 and above. The same number of students who indicated that they were **undecided** about their majors fell in the category where father's educational level was standard 6 and below.

Table 34a. **Relationship between father's level of education and major indecision for male students**

Father's Educational Level

Major	> Std. 10	Std. 10	Std. 6	< Std. 6	Total
Decided	14.7	10.3	2.9	8.8	**36.8**
Somewhat decided	11.8	3.7	5.9	11.8	**33.1**
Undecided	4.4	8.1	2.9	14.7	**30.1**
Total	**30.9**	**22.1**	**11.8**	**35.3**	**100**

In total 36.8% of the males were **decided** about their majors, their father's level of education ranged from standard 10 and above to standard 6 and below. For the males in contrast to females, there was a higher percentage who were **decided** rather than **undecided** about their majors.

The relationship was not as strong for the females ($p < .0887$; $C = .24308$) as for the males. Table 34b shows that 11.4% were **decided** with the father's level of education at standard 10 and above. The majority of the females (41.1%) seemed to be **somewhat decided** about their majors, with their father's level of education ranging from standard 10 and above to standard 6 and below.

Table 34b. **Relationship between father's level of education and major indecision for female students**

Father's Educational Level

Majors	> Std. 10	Std. 10	Std. 6	< Std. 6	Total
Decided	11.4	12.0	4.6	4.6	**32.6**
Somewhat decided	16.6	8.0	6.3	10.3	**41.1**
Undecided	9.7	4.6	7.4	4.6	**26.3**
Total	**37.7**	**24.6**	**8.3**	**19.4**	**100**

The relationship between **major indecision and mother's level of education** was significant for the male students ($p < .0025$; $C = .35033$) but not for the female students. The results for this relationship in Table 35 show that an equal number of males were **decided** and **somewhat decided** about their majors, with their mother's level of education ranging from standard 10 and above to standard 6 and below. 13.1% were **somewhat decided** about their majors, with their mother's level of education at standard 10 and above; 12.4% were **undecided** and the level of education of mother was standard 6 and below, and 12.4% were **decided** with their mother's level of education at standard 10.

Table 35. **Relationship between mother's level of education and major indecision for male students**

Mother's Educational Level

Major	> Std. 10	Std. 10	Std. 6	< Std. 6	Total
Decided	11.7	12.4	3.4	8.3	**35.9**
Somewhat decided	13.1	3.4	9.7	9.7	**35.9**
Undecided	5.5	3.4	6.9	12.4	**28.3**
Total	**30.3**	**19.3**	**20.0**	**30.3**	**100**

The results of these relationships suggest that the higher the level of parents' education the more **decided** the students were, and the lower the level of parents' education the more **undecided** the students were.

4.7.1.2 Population groups

The relationship between parents' educational level and levels of educational and vocational indecision were examined by computing different cross tabulations relating to population groups.

The comparisons were not significant for the African students. This meant that there were no strong relationships between levels of educational and vocational indecision and the educational levels of fathers and mothers.

The comparison between **the three levels of educational indecision and mother's level of education** was significant ($p < .0023$; $C = .41710$) for the Indian students. In this relationship the majority of the Indian students, that is, 30.9% were **decided** about their majors, with their mother's level of education at standard 10. The results in Table 36 indicate that 48.5% of the mothers had an educational level of standard 10. The higher the level of education of mothers, the greater was the tendency for students to be **decided** about their majors.

Table 36. **Comparison between levels of educational indecision and mother's level of education for Indian students**

Mother's Educational Level

Q4.3	> Std. 10	Std. 10	Std. 6	< Std. 6	Total
Decided	16.5	30.9	4.1	3.1	**54.6**
Tentatively decided	7.2	15.5	12.4	0	**35.1**
Undecided	5.2	2.1	1.0	2.1	**10.3**
Total	**28.9**	**48.5**	**17.5**	**5.2**	**100**

4.7.1.3 Language Groups

There was a significant relationship for Hindi speaking students ($p < .0120$; $C = .58756$) between **the three levels of educational indecision and mother's level of education**. Among the Hindi speaking students 58.1% said that they were **decided** about their majors, with their mother's level of education ranging from standard 10 and above to below standard 6. 38.7% were **decided** and indicated that their mothers had an educational level of standard 10, while 16.1% had an educational level of standard 10 and above. The results in Table 37 include a total of 35.5% who were **tentatively decided** with 16,1% of mothers with an educational level of standard 10 and 12.9% with an educational level of standard 6. The majority of the students (54.8%) said that their mothers had an educational level of standard 10.

Table 37. **Comparison between levels of educational indecision and mother's level of education for Hindi speaking students**

Mother's Educational Level

Q4.3	> Std. 10	Std. 10	Std.6	< Std. 6	Total
Decided	16.1	38.7	0	3.2	**58.1**
Tentatively decided	6.5	16.1	12.9	0	**35.5**
Undecided	3.2	0	0	3.2	**6.5**
Total	**25.8**	**54.8**	**12.9**	**6.5**	**100**

There was a strong relationship between **the three levels of vocational indecision and mother's level of education** for English speaking students ($p < .0097$; $C = .55980$). An interesting observation in this comparison was that 45.9% of the total in Table 38 were **decided** about their vocation, while 45.9% were **tentatively decided**. A large percentage of the students who were **decided** or **tentatively decided** indicated that their mother's educational level ranged from standard 6 to standard 10 and above. A total of 40.5% said that their mothers had an educational level of standard 10. It was deduced from this that the

higher the level of mother's education, the lower was the level of vocational indecision among the English speaking students.

Table 38. **Comparison between levels of vocational indecision and mother's level of education for English speaking students**

Mother's Educational Level

Q4.5	> Std. 10	Std. 10	Std. 6	< Std. 6	Total
Decided	21.6	21.6	2.7	0	**45.9**
Tentatively decided	13.5	16.2	16.2	0	**45.9**
Undecided	2.7	2.7	0	2.7	**8.1**
Total	**37.9**	**40.5**	**18.9**	**2.7**	**100**

There were no significant relationships for the Zulu speaking students. There was one for the Xhosa speaking students between **CDS and father's level of education** ($p < .0126$; $C = .64313$). In this relationship 56.5% of all the Xhosa speaking students said that they were **undecided** about their vocation.

Table 39a. **Relationship between CDS and father's level of education for Xhosa speaking students**

Father's Educational Level

CDS	> Std. 10	Std. 10	Std. 6	< Std. 6	Total
Decided	13.0	13.0	0	0	**26.1**
Somewhat decided	4.3	0	0	13.0	**17.4**
Undecided	13.0	17.4	21.7	4.3	**56.5**
Total	**30.4**	**30.4**	**21.7**	**17.4**	**100**

Table 39a shows that 21.7% were **undecided,** with the father's level of education at standard 6. A total of 26.1% of the students who were **decided** had fathers who had an educational level of standard 10, and standard 10 and above. The high level of vocational indecision in this comparison did not imply that fathers had a low level of education, since 52.2% of the students who were **undecided** said that their fathers had an educational level of standard 6 and above. 60.8% of the students reported that their fathers had an educational level of standard 10 and standard 10 and above.

The same relationship for Tamil speaking students was significant ($p < .0334$; $C = .57660$) with the results according to CDS scores showing that 66.7% of the total in this group were **decided** about their vocation. The father's level of education was standard 10 and standard 10 and above. The results in Table 39b indicate that 38.1% were **decided** with the father's level of education at standard 10 and above; 28.6% were **decided** with father's level of education at standard 10, and 23.8% were **somewhat decided** about their vocation, 14.3% of whom had fathers who had an education of standard 6. The total percentage of students who had fathers with an educational level of standard 10 and above was 47,6%.

Table 39b. **Relationship between CDS and father's level of education for Tamil speaking students**

Father's Educational Level

CDS	> Std. 10	Std. 10	Std. 6	Total
Decided	38.1	28.6	0	**66.7**
Somewhat decided	4.8	4.8	14.3	**23.8**
Undecided	4.8	0	4.8	**9.5**
Total	**47.6**	**33.3**	**19.0**	**100**

4.7.2 Matric points

The number of matric points was investigated as a factor in the career-decision making process of first-entry university students, which contributed to educational and vocational indecision.

4.7.2.1 Gender

The comparison between **matric points and major indecision** was significant for males ($p < .0184$; $C = .30558$) and females ($p < .0016$; $C = .30323$). The majority of the males 21.6%, had matric points between 21 and 30, and indicated that they were **somewhat decided** about their majors. The results included 18.9% who were **decided** and 18.2% who were **undecided**. Table 40a shows that 37.2% of the males were **decided,** with matric points ranging from 21 to 48.

Table 40a **Comparison between matric points and major indecision for male students**

Major

Matric Points	Decided	Somewhat Decided	Undecided	Total
10-20	0	2.0	0	**2.0**
21-30	18.9	21.6	18.2	**58.8**
31-40	10.8	11.5	6.8	**29.1**
41-48	7.4	1.4	1.4	**10.1**
Total	**37.2**	**36.5**	**26.4**	**100**

The results of this comparison for the females in Table 40b show that 56,7% of the total had matric points between 21 and 30. 22.9% were **somewhat decided** about their majors. 19.0% were **undecided** and 14.8% were **decided**. There was little difference between males and females for this comparison. The majority had matric points between 21 and 30 and seemed to be **somewhat decided** about their majors.

Table 40b. **Comparison between matric points and major indecision for female students**

Major

Matric Points	Decided	Somewhat Decided	Undecided	Total
10-20	1.9	1.9	1.9	**5.7**
21-30	14.8	22.9	19.0	**56.7**
31-40	9.5	14.3	4.3	**28.1**
41-48	6.7	1.9	1.0	**9.5**
Total	**32.9**	**41.0**	**26.2**	**100**

The comparison between **matric points and CDS** for males was significant ($p < .0192$; $C = .30465$). Once again, the majority of the males had points between 21 and 30. 25.0% were **decided** about their choice of vocation, while 23.6% were **undecided**. Of the 29,1% who had points between 31 and 40, 16.2% were **decided** (Table 41).

Table 41. **Comparison between matric points and CDS scores for males**

CDS

Matric Points	Decided	Some Decided	Undecided	Total
10-20	0	1.4	0.7	**2.0**
21-30	25.0	10.1	23.6	**58.8**
31-40	16.2	6.8	6.1	**29.1**
41-48	7.4	0	2.7	**10.1**
Total	**48.6**	**18,2**	**33.1**	**100**

A total of 48.6% were **decided,** with their points ranging from 21 to 48. In the relationship between matric points and CDS, the majority of the males also had points between 21 and 30 but with a slightly higher percentage who were **decided** about their vocation than their

majors. This implied that the students were more **decided** about their vocation than their majors. In addition, those who had 31 to 40 points appeared to be more **decided** about their choice of vocation than those students with lower points.

4.7.2.2 Population groups

The relationship between the **population groups and matric points** was very significant ($p < .0000$; $C = .55978$). Table 42 shows that the majority (57.7%) of the students from the different population groups had between 21 and 30 points, 28.4% had 31 to 40 points and 9.7% had 41 to 48 points. Among the African students 51.0% had 21 to 30 points, 16.4% had 31 to 40 points and 4.2% had 10 to 20 points. The majority of the Indian students, that is, 11.4% had 31 to 40 points, while 9.2% had 41 to 48 points. The White students had points ranging from 21 to 48. It was noted that there were no African students with points between 41 and 48. In contrast to this 9.2% of the Indian students had 41 to 48 points. There were no Indian students with less than 21 points.

Table 42. **Comparison between matric points and population groups**

Matric points

Population	**10 - 20**	**21 - 30**	**31 - 40**	**41 - 48**	**Total**
African	4.2	51.0	16.4	.0	**71.6**
Coloured	0	0	0.3	.0	**0.3**
Indian	0	6.4	11.4	9.2	**27.0**
White	0	0.3	0.3	0.6	**1.1**
Total	**4.2**	**57.7**	**28.4**	**9.7**	**100**

In response to Question 3.2 which asked: "Did the number of matric points you obtained determine which degree you were to follow?", the majority of the African and Indian students responded in the affirmative. The White students indicated that it did not determine their choice of degree. Table 43 provides the figures for this relationship and shows that

43.8% of the African students gave a positive response while 27.5% did not. In contrast, 15.7% of the Indian students gave a positive response while 11.6% did not.

Table 43. **The influence of matric points on the choice of degree for population groups**

(Q3.2)

Population Group	Yes	No	Total
African	43.8	27.5	**71.3**
Coloured	0.3	0	**0.3**
Indian	15.7	11.6	**27.3**
White	0	1.1	**1.1**
Total	**59.8**	**40.2**	**100**

The relationship between **matric points and the three levels of educational indecision** was significant for Indian students only ($p < .0138$; $C = .33823$). The majority of the students (42.3%) had between 31 and 40 points. Those with matric points between 31 and 40 comprised 18.6% who were **decided** about their majors and 16,5% who were **tentatively decided**. Table 44 shows that 54.6% of the total were **decided,** with their matric points ranging from 21 to 48. 36.1% of the total were **tentatively decided**.

Table 44. **Relationship between matric points and the three levels of educational indecision for Indian students**

Q4.3

Matric Points	Decided	Tentatively Decided	Undecided	Total
21 - 30	10.3	12.4	1.0	**23.7**
31 - 40	18.6	16.5	7.2	**42.3**
41 - 48	25.8	7.2	1.0	**34.0**
Total	**54.6**	**36.1**	**9.3**	**100**

4.7.2.3 Language groups

The following relationships were significant for the English speaking students: matric points with levels of educational indecision ($p < .0050$, $C = .54061$); matric points and major indecision ($p < .0097$, $C = .52010$); and matric points and CDS ($p < .0073$, $C = .52903$). In the first relationship the majority of the English speaking students (50.0%) had matric points between 41 and 48. 44.4% of this percentage said that they were **decided** about their majors. A total of 36.1% had 31 to 40 points. 13.9% of this total were **tentatively decided** about their majors. Table 45 (Appendix 4) indicates that 58.3% of the total were **decided** about their majors, with matric points ranging from 21 to 48. The higher the points, the more **decided** the students appeared to be.

In the relationship between **matric points and major indecision** for English speaking students, 41.7% of the students were **decided** about their majors, with matric points between

41 and 48. This was slightly lower than the figures in the previous relationship. Those who had 31 to 40 points made up 36.1% of the total. Table 46 (Appendix 4) shows that 19.4% of this total were **somewhat decided** about their majors, a figure slightly higher than those figures in the previous comparison.

The results for the relationship between **matric points and CDS** are contained in Table 47 (Appendix 4), which indicates that 36.1% of the English speaking students were **decided** about their vocation, with matric points between 41 and 48. This is a smaller figure than the two previous relationships. In other words, there were more students with 41 to 48 points who were **undecided** about their vocation than majors. This meant that the English speaking students had a higher level of vocational indecision than educational indecision, with points between 41 and 48. The results indicate that 19.4% who had 31 to 40 points were **undecided** about their vocation, a higher figure than 5.6% in the same category in the previous relationship.

For the Xhosa speaking students the relationship between matric points and CDS was significant ($p < .0363$; $C = .48702$). A total of 78.8% of the students had 21 to 30 points. 39,4% of this total were **undecided** about their vocation, while 30.3% were **decided** about their choice of vocation. The results in Table 48 (Appendix 4) show that there were more students who were **undecided** than **decided**.

4.7.3 Analysis of the most influential factor in choosing a career (question 4.6)

The analyses of the factors influencing the choice of a career were carried out according to gender, population and language groups. The frequencies for the total sample showed that 27.4% of the sample indicated that interests and hobbies was the most influential factor in choosing a career. This was the highest percentage followed by 19.3% who said that research into the occupation was the most influential factor. 14.1% were of the opinion that school subjects and experiences at school was the most influential factor in choosing a career. It was interesting to note that the students did not consider matric results to be the most influential factor in choosing a career.

4.7.3.1 **Gender**

According to both males and females the single most influential factor in choosing a career was interests and hobbies (question 4.6i). 15.8% of female students and 11.4% of male students indicated that interests and hobbies was the most influential in choosing a career. According to gender, the second most influential factor was research into the occupation (19.3%) followed by school subjects and experiences at school (14.2%).

4.7.3.2 **Population groups**

The results showed that the majority of students (27.4%) from the different population groups felt that interests and hobbies was the most influential factor in choosing a career followed by research into the occupation (19.3%) and then school subjects and experiences at school (14.1%).

The highest percentage of African students that is, 20.1% thought that interests and hobbies was the most influential factor in choosing a career. The second highest response from the African students was for research into the occupation (12.5%) followed by school subjects and experiences at school (10.6%).

The majority of the Indian students (7.1%) indicated that interests and hobbies was the single most influential factor, while 6.0% said that research into the occupation was most influential.

The overall results indicated that interests and hobbies was the most influential factor in choosing a career, followed by research into the occupation and school subjects and experiences at school.

4.7.3.3 **Language Groups**

Among the language groups 14.9% of the Zulu speaking students indicated that interests and hobbies was the single most influential factor in choosing a career. Zulu speaking students rated schools subjects and experiences at school as the second most influential factor (7.1%) and research into the occupation as third (6.8%).

The English, Xhosa, Hindi, Tamil and Telegu speaking students also indicated that interests and hobbies was the most influential factor in choosing a career (combined percentage of 9.7%). The English and Hindi speaking students rated research into the occupation as the second most influential factor (4.3%). The Xhosa and Telegu speaking students said that school subjects and experiences at school was the second most influential factor (1.7%). Those students belonging to the group who spoke "other" languages said that research into the occupation was the most influential factor in choosing a career (3.3%), matric results was rated second (1.9%) and interests and hobbies was third.

4.7.4 **Factors influencing indecision (question 4.7)**

The results for this question showed that the majority of the students (70%) responded in the negative to the reasons outlined for their indecision. None of the reasons listed in the questionnaire influenced their indecision. The students did not give their own reasons for their indecision.

4.7.4.1 Gender

There were no gender differences in response to question 4.7. Both males and females said that the reasons given for indecision were not applicable to them.

4.7.4.2 Population groups

There were two relationships that were significant for population groups. The first relationship between **population groups** and **question 4.7c** was significant ($p < .0132$). Although the majority of the African students (62.8%) and Indian students (22.1%) responded in the negative to the question: "Were you undecided about your career because you were confused?", there appeared to be a significant relationship. Some of the students said that they were confused and were therefore undecided about their careers.

The second relationship between **population groups** and **question 4.7d** yielded a significant result ($p < .0191$) where 68.0% of the African and 23.3% of the Indian students responded in the negative to the question: "Were you undecided about your career because you were accepted at various institutions?". There were more Indian than African students who were undecided because they were accepted at various institutions.

4.7.4.3 Language groups

There was a strong relationship between **language groups** and **question 4.7d** ($p < .0057$). In this relationship most of the students indicated that they were not undecided because they were accepted at various institutions. Although the majority responded in the negative to question 4.7d, there were some students who affirmed that they were undecided about their career because they were accepted at various institutions. Comparatively, there were more Hindi speaking students than English speaking students who were undecided because they were accepted at various institutions.

4.7.5 Influencers in career decision-making (question 4.8)

This section examined the degree of importance of certain influencers in career decision-making. The statistical analysis for the total sample revealed that information about careers, information about job opportunities and information about yourself were **very important** influencers in career decision-making. The responses to questions 4.8b, 4.8d and 4.8a were very high, that is, 82.7%, 81.7% and 73.2% respectively.

Information about finance and admission criteria were **important** and information about employers was **not so important** in career decision-making.

4.7.5.1 Gender

There were no significant differences between male and female students for the question on important influencers in career decision-making. However, both males and females (82.7%) indicated that information about careers was **very important**. 81.7% felt that information about job opportunities was **very important**, and 73.1% noted that information about yourself was **very important**.

4.7.5.2 Population groups

There were significant results for the relationship between the different **population groups** and **question 4.8**. Question 4.8a showed the strongest relationship ($p < .0142$) where the majority of the African students (48.3%) and 23.5% of the Indian students reported that information about yourself was **very important** as an influencer in career decision-making.

The results appear in Table 49a. 73.2% of all the population groups indicated that information about yourself was **very important**.

Table 49a. **Degree of importance of "information about yourself" as an influencer in career decision-making for population groups**

"Information about Yourself"

Population Groups	Very Important	Important	Not so Important	Total
African	48.3	17.6	5.3	**71.2**
Coloured	0.3	0	0	**0.3**
Indian	23.5	3.9	0	**27.4**
White	1.1	0	0	**1.1**
Total	**73.2**	**21.5**	**5.3**	**100**

There was some relationship between **question 4.8d** and **population groups** ($p < .0516$). The results show that 81.7% of all the population groups indicated that information about job opportunities was **very important**. 56.1% of the African students felt that information about job opportunities was **very important**. The results in Table 49b indicate that 24.8% of the Indian students responded likewise.

Table 49b. **Degree of importance of "information about job opportunities" as an influencer in career decision-making for population groups**

"Information about job opportunities "

Population Groups	Very Important	Important	Not so Important	Total
African	56.1	13.9	1.6	**71.7**
Coloured	0.3	0	0	**0.3**
Indian	24.8	1.9	0.3	**27.0**
White	0.5	0.5	0	**1.1**
Total	**81.7**	**16.3**	**1.9**	**100**

There was a significant result for the relationship between **question 4.8e** and **population groups**. Table 49c shows that 54.4% of all the population groups felt that admission criteria as a factor was **very important**, while 37.2% said that it was **important**. Among the African students 34,7% indicated that this factor was **very important,** while 30.0% found it to be **important** in career decision-making. Among the Indian students 18.6% felt that admission criteria was **a very important** factor in career decision-making, while 6.9% said that it was **important**.

Table 49c. **Degree of importance of "admission criteria" as an influencer in career decision-making for population groups**

"Admission Criteria"

Population Groups	Very Important	Important	Not so Important	Total
African	34.7	30.0	6.7	**71.4**
Coloured	0.3	0	0	**0.3**
Indian	18.6	6.9	1.7	**27.2**
White	0.8	0.3	0	**1.1**
Total	**54.4**	**37.2**	**8.3**	**100**

Although the relationship between **population groups** and **question 4.8b** was not significant there was a very high percentage (82.5%) of students who said that information about careers was **very important**. The overall results for population groups from the students show that information about careers had the highest percentage (82.5%) response. Information about job opportunities had a response of 81.7% and information about yourself had a response of 73.2%. They were rated as **very important** influencers in career decision-making.

4.7.5.3 **Language groups**

There was one significant relationship between **question 4.8a** and **language groups** ($p < .0456$). The majority of the students of all the language groups indicated that information about yourself was **very important** in career decision-making. 9.2% of the English speaking students felt that information about yourself was **very important**. 30.7% of the Zulu speaking students, 6.7% of the Xhosa speaking students, 3.9% of the Sotho speaking students and 8.7% of the Hindi speaking students said that information about yourself was **very important**. Information about yourself was chosen as **very important** in career decision-making by all the language groups. The totals in Table 50 (Appendix 4) reflect that this represented 73.2% of the responses which included 21.5% who felt that it was **important**.

Although the relationships between language groups and information about careers, and language groups and information about job opportunities were not significant, they received high percentage responses as **very important** influencers. A total of 82.5% of the students said that information about careers was **very important** and 81.7% said that information about job opportunities was **very important**. Among the language groups information about careers was rated the highest, information about job opportunities was rated second and information about yourself was rated third.

The analysis of the results for question 4.8 according to gender, population and language groups indicate that the students' responses were consistent in the choice of important influencers in career decision-making. According to gender, population and language groups, information about careers was **very important** and the first choice among the students.

Information about job opportunities and information about yourself were also rated as **very important** influencers in career decision-making and they were second and third choices among the students.

B. QUALITATIVE DATA

Interviews were conducted to gather qualitative data to supplement the information obtained through the questionnaire and CDS. 25 students in total were interviewed.

The first question in the interview was: **"Did the choice of subjects at school determine totally or partially what you were going to study at university?"**. The majority of the students that is, 52% responded in the affirmative to this question. They said that their school subjects determined to a large extent what they were going to study at university. Many of the students were studying a Bachelor of Science degree because they wanted eventually to enrol in the Health Sciences. Their matric results did not allow them to do this directly.

There were those students who wanted to study a Bachelor of Commerce degree but could not pursue the degree because they did not have mathematics at matric level or did not pass mathematics in matric. These students were compelled to take the Bachelor of Administration degree or Bachelor of Arts degree and their choice was influenced by the choice of subjects at school. The responses to this question in the interview were similar to the results obtained for questions 4.6 in the questionnaire where students indicated that "school subjects and experiences at school" was a very influential factor in choosing a career.

The responses to the second question indicated that **many students were not aware of anything that would prevent them from choosing the career they wanted to follow**. 60% of the students responded that they were not aware of anything that could prevent them from choosing the career they wanted to follow. Those who answered "yes" to this question felt that **finance** was a major problem for them. They said that the lack of finance could prevent them from choosing the career they wanted to follow. One student said that: "the lecturer is making me dislike the course and this would prevent me from doing what I want to do".

Students took various steps in arriving at their decisions to take a particular course or degree. They consulted friends, guidance teachers, people at Career Centres and relatives about what they wanted to do. Some students went to places of interest, for example, they visited hospitals and got information about medicine, psychiatry and physiotherapy. There were those who did not have any information at all to make an informed decision. They heard about a course and decided on their own that it would be the correct one for them. The majority of the students said that they had some consultation which helped them to make a choice.

The **cultural background** of students did not seem to have a strong influence on the choice of their degree or career. 80% of the students said that their cultural background did not influence the choice of their degree or career. Students who indicated that their cultural background was important attributed this to their belonging to a particular group. For example, one student said that because "most Tsongo people help other people", he wanted to choose a degree that would enable him to help his community. Other students felt that because they belonged to "a disadvantaged group" they wanted a degree that would give them "a better job and better life".

The **influence of personal values** was quite strong in the choice of a career. Many students stated that "a good education" was important to them because it would help them to get "a good job", which in turn would enable them "to have a good life". They would be able "to take care and provide for their families and make them happy". Some students felt that their value "to be successful in life" influenced them to choose a particular career. Also, the value "of having a better life" and "helping other people" influenced them in choosing their careers.

The **expectations** of teachers, principals, relatives, pastors in the church and parents influenced the choice of their careers. Many students said that their community expected them to go into the medical field, health sciences, law, teaching and the field of commerce. Some could not go into medicine because their matric results did not qualify them to do so. They were therefore doing a B.Sc. degree with the intention of going into medicine or the health sciences.

The last question in the interview asked about the **influence of genetic factors** in the choice of careers. Students were asked whether gender influenced their choice of career and 68% responded in the negative. This was similar to the responses obtained in the questionnaire for questions 4.2. and 4.4. Those students who said that gender did influence their choice of career provided the following reasons: "because I am female I am not allowed to do woodwork"; "being a Muslim female I am not allowed to be a physiotherapist"; "I once thought about being a male nurse but my community does not respect me for doing that", and "I wanted to prove that females can do engineering".

The majority of the students felt that a physical handicap should not really be a hindrance in pursuing a particular career. Many students said that they should be allowed to pursue whatever career they desired. Some students indicated that having a physical handicap like blindness could prevent one from becoming an optometrist, just as having one arm and one leg could prevent one from working as an underground mining engineer.

The interviews supplemented and expanded on the responses received in the questionnaires. They gave the researcher a richer understanding of the decision-making process employed by students and the reasoning behind the choice of their majors and careers. It also provided insight into the high levels of educational and vocational indecision among students.

The following chapter will cover a discussion of the results and concludes with recommendations. The shortcomings of this study and suggestions for further research will also be outlined.

CHAPTER 5

DISCUSSION

The main purpose of this study was to investigate the relationship between **educational indecision** (indecision about majors) and **vocational indecision** (indecision about careers) with respect to gender and cultural differences. The ensuing discussion will be contextualised within the results that were significant for gender and cultural differences.

This study was inspired by the findings of Bergeron and Romano (1994) and Krumboltz *el al* (1976). It has gone a step further by investigating not only gender differences in educational and vocational indecision, but also cultural differences. A limited number of South African studies (Oosthuizen, 1991; Smith, 1993; and Watson and Stead, 1994) included culture as a variable relating to educational and vocational indecision. This study investigated cultural differences by examining differences between population and language groups. As far as the researcher is aware this is the first study to investigate language group differences as a cultural variable. The discussion in this chapter will be presented in the same order as the results, namely, gender, population groups and language groups.

The findings for the total sample will be discussed first. The discussion for the population groups will focus mainly on the African and Indian students because of the low numbers in the other groups. Empty cells and unequal cell sizes produced little or no significant results for the White and Coloured students.

The information gathered through the biographical questionnaire and interviews is reported as a true reflection of the students' attitudes and opinions. The Career Decision Scale was used to measure vocational indecision and it was found to be a reliable instrument. This suggests that the results of the study are reliable and have certain implications for the career decision-making process.

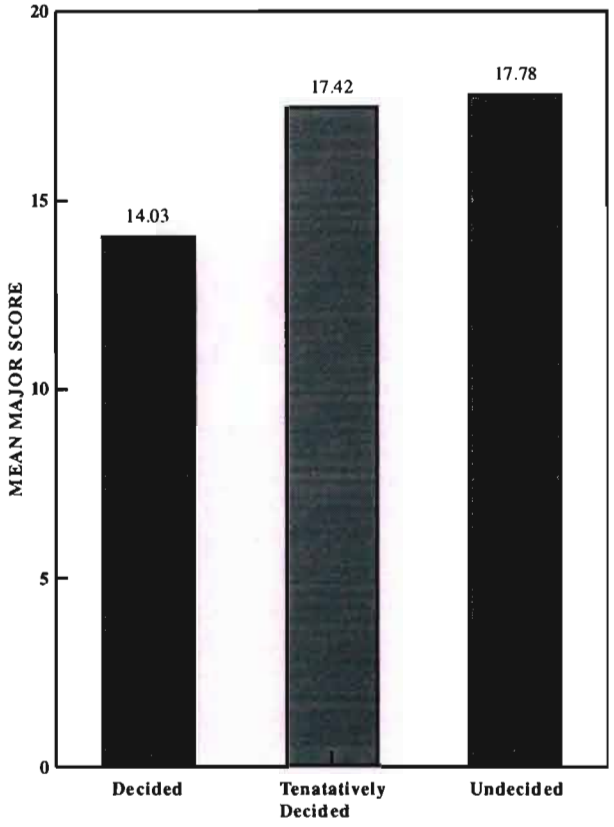
5.1 TOTAL SAMPLE

The Chi-square analysis for the total sample between the three levels of educational indecision and the three levels of vocational indecision yielded significant results. The results show that the levels of educational and vocational indecision were high among the students. This is similar to the results reported by Bergeron and Romano (1994), that the Chi-square test between the three levels of educational indecision and the three levels of vocational indecision showed a strong relationship. This suggests that there is a strong relationship between educational indecision and vocational indecision.

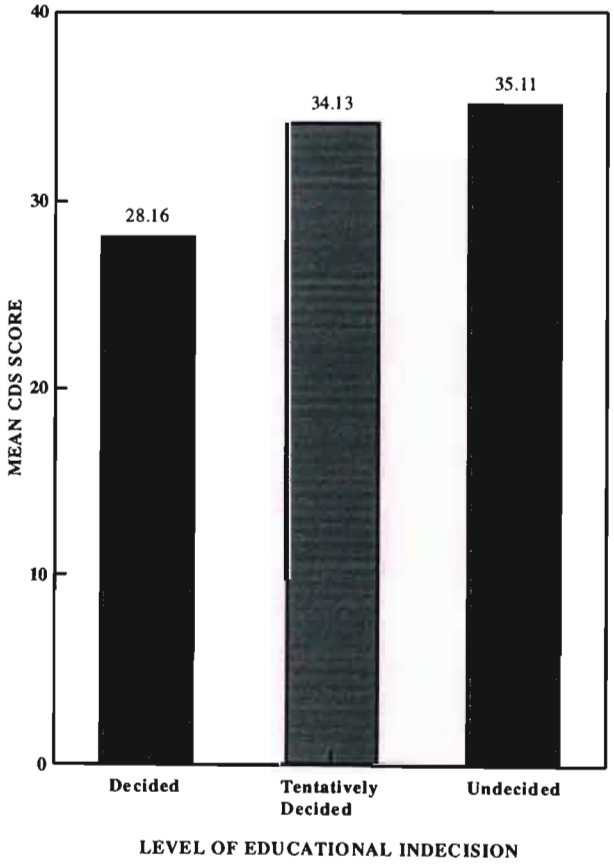
The relationships between the three levels of educational indecision and major indecision; the three levels of educational indecision and CDS scores; the three levels of vocational indecision and major indecision; the three levels of vocational indecision and CDS scores and major indecision and CDS scores, all yielded significant results ($p < .0000$ for all the relationships).

According to the results in Tables 2, 3, 4 and 5 students were more **undecided** about their majors than their vocation. This might be attributed to the lack of available information about degrees and courses. It also suggests that students are more aware of different occupations but less aware of degrees and courses leading to a career path.
Examination of the results in Tables 4a, 4b and 4c show that when the students reported being **decided** about their majors, they reported the same level of decision concerning their career choice.

The **one-way ANOVA** interactions between the three levels of educational indecision and major indecision yielded significant results. Examination of the mean major scores shows that students who were **undecided** scored higher on the mean major scores and those who were **decided**, scored lower. There was a major difference between the mean scores for **decided** and **undecided**. The results are shown in Graph 1. Similarly, the interaction between the three levels of educational indecision and CDS scores shows that those students who were **undecided** about their vocation scored higher on the mean CDS scores. The difference between the mean scores in this interaction between **decided** and **undecided** was also high.

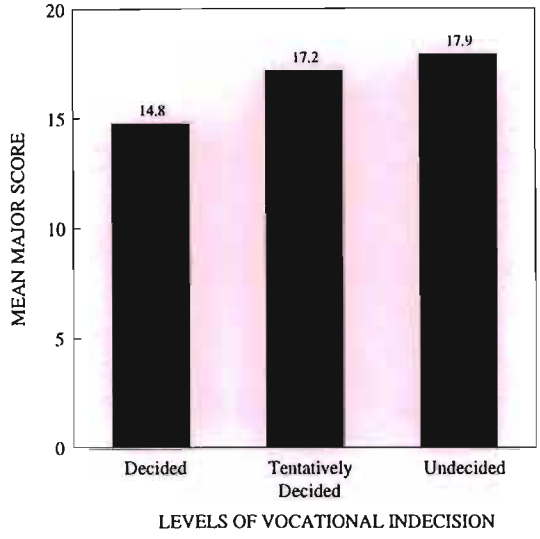


Graph 1: Mean MAJOR score for each level of Educational Indecision



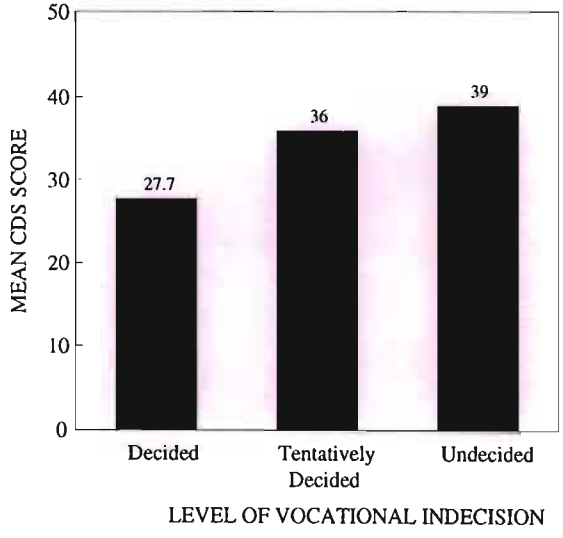
Graph 2: Mean CDS score for each level of Educational Indecision

The results are represented in Graph 2. The results for the one-way interaction between the three levels of vocational indecision and major scores (Graph 3) indicated that those students who reported being **undecided** about their vocation had the highest mean major score.



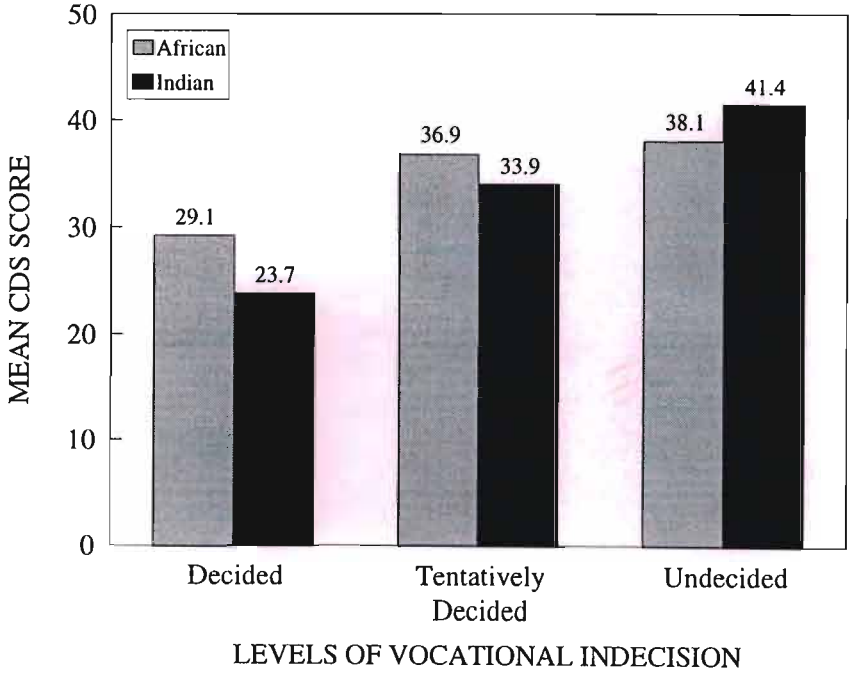
Graph 3: Mean MAJOR score for each level of Vocational Indecision

In the interaction between the three levels of vocational indecision and CDS scores those students who were **undecided** about their vocation also had the highest mean CDS scores. There was a major difference between the mean scores for **decided** and **undecided** in this interaction. The results are shown in Graph 4.



Graph 4: Mean CDS score for each level of Vocational Indecision

The **two-way ANOVA** interaction with population groups and the three levels of vocational indecision together with CDS as the dependent variable, yielded a significant result. The results shown in Graph 5 indicate that African students who were **undecided** about their vocation had the highest mean CDS score. The same result was obtained for the Indian students. Those students who were **undecided** about their vocation had the highest mean CDS score. The difference between the population groups was that the Indian students who were **undecided** had a higher mean CDS score than the African students. The Indian students were therefore more **undecided** about their vocation than the African students. The "t" test for this interaction showed that there was a strong and significant relationship between African and Indian students for the **decided** group. The tests were not significant for the **tentatively decided** and **undecided** groups.



Graph 5: Mean CDS scores of African and Indian respondents for each level of Vocational Indecision

The **three-way ANOVA** interaction with gender, population groups and the three levels of vocational indecision together with CDS as the dependent variable, yielded significant results. There were significant inter-group and intra-group differences. African males who were **tentatively decided** about their vocation had the highest mean CDS score while African

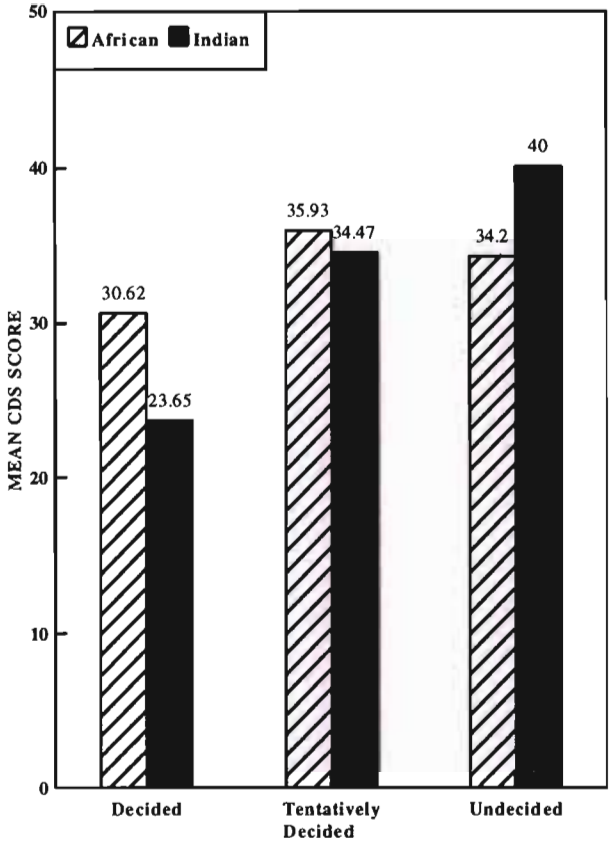
females who were **undecided** about their career had the highest mean CDS score. This implied that there was a difference between African males and females. African females were more **undecided** about their career than African males.

Indian male students who were **undecided** about their career had the highest mean CDS score and Indian females who were **undecided** had the highest mean CDS score. The difference between Indian males and females was that the females had a higher mean CDS score than the males. This implied that the females were more **undecided** than the males.
In comparing the results for the African and Indian students it was found that African males were **tentatively decided** with a mean CDS score of 35.93, and Indian males were **undecided** with a mean CDS score of 40.00. This showed that the Indian males were more **undecided** about their vocation than the African male students. The results are presented in Graph 6. The results of the "t" test for this interaction confirmed the significant difference between African and Indian male students for CDS scores.

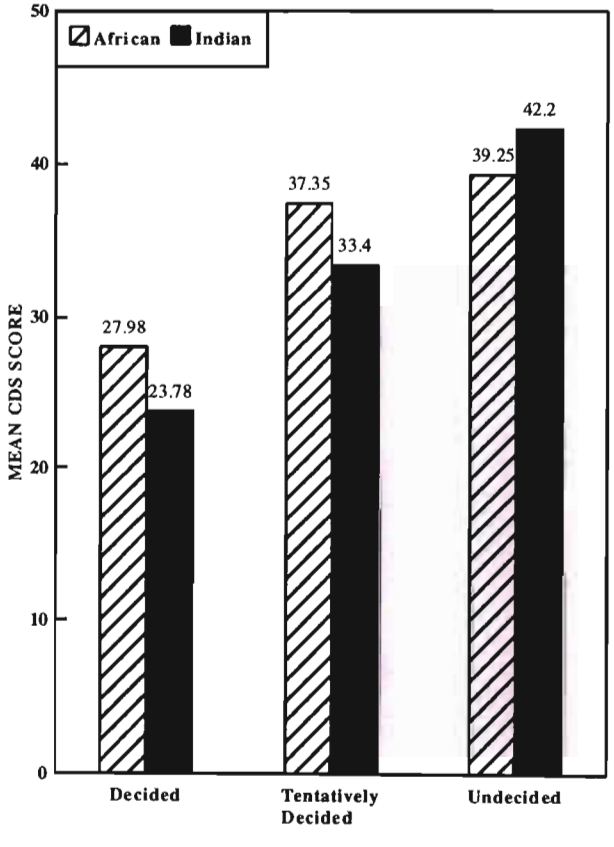
The results of the comparison between African females and Indian females in Graph 7 indicate that African females had a lower mean CDS score of 39.25 compared to a score of 42,20 for the Indian females. This implied that Indian females were more **undecided** about their vocation than the African females.
The ANOVA interactions showed very clear gender and cultural differences.

5.2 GENDER DIFFERENCES

A review of the literature shows that studies of the relation between gender and career decidedness of adolescents have produced mixed results. Kishor (1981) reported that males were more career decided than females. In contrast, Vondracek *et al* (1990) found that females were more career decided than males. Some studies found no gender differences (Lunneborg, 1978; Niece and Bradley, 1979). South African research has not investigated gender differences adequately to establish the relation between gender and career decidedness (Oosthuizen, 1991; Smith, 1993; Watson and Stead, 1994). Smith (1993) obtained significant results for Black South African students only, reporting that the males were more career decided than the females. His sample was drawn from technikon students and comprised 90% White English speaking students.



Graph 6: Mean CDS scores of African and Indian males for each level of Vocational Indecision



Graph 7: Mean CDS scores of African and Indian females for each level of Vocational Indecision

The results in Tables 13, 14, 15 and 16 show that there were more females than males who were **decided**. The comparisons were not significant for gender.

5.2.1 Educational and Vocational Indecision

The Chi-square tests concerning educational and vocational indecision yielded significant results. Gender differences were found. In the comparison between **the three levels of educational indecision and the three levels of vocational indecision**, the results show that there were more male than female students who were **decided.** The same results were obtained for the relationships between **the three levels of educational indecision and major indecision**, and **the three levels of educational indecision and CDS**. The results were conclusive on gender differences, which were evident. The relationships between **the three levels of vocational indecision and major indecision; the three levels of vocational indecision and CDS** and **major indecision and CDS**, all yielded significant results and reflected gender differences. The male students appeared to be more **decided** than the female students.

The study by Kishor (1981) found that more male high school seniors were decided on a career than females. Bergeron and Romano (1994) reported that they did not find gender differences for educational and vocational indecision. The explanation proffered for this was that the measures used in the their study assessed gender-neutral activities. Educational and vocational indecision were assessed by questions relating to the three levels of educational indecision and the three of vocational indecision included in the biographical questionnaire. No measuring tool was used in the study. The same method of assessing educational and vocational indecision was used in the present study. However, the author of this study argues that if the measure was measuring gender-neutral activities then the differences found in the responses of male and female students in this study must be indicative of clear gender differences.

A possible explanation for the gender differences in this study could be the historical gender bias that has existed in educational and vocational pursuits of males and females in this country. For a long time females were not given the opportunity to further their education nor were they allowed to enter into occupations that were dominated by males. This is

especially true for the African students. Also, in this study the majority of the students came from a disadvantaged educational background, which could have had an effect on their levels of indecision. The lack of career information and limited access to information could be a factor in causing high levels of anxiety and indecision concerning career choices. Cook (in Fouad, 1994) suggests that men and women differ in their career choices and in the ways they work. She suggests that men and women view occupational achievement and interpersonal relationships differently.

5.2.2 Factors influencing career decision-making

Factors such as parent's educational levels, matric points, finance, admission criteria and information about careers were identified by the researcher as important influencers in the career decision-making process. These factors were included in the biographical questionnaire and student responses were elicited in terms of the degree of influence of the factors on educational and vocational indecision. There were significant results for some of the relationships that were investigated.

5.2.2.1 Parent's educational level

Parent's educational levels were investigated as a contributory factor in career decision-making. Young and Friesen (1992) found that parents have a strong and active role in influencing children's career choices. Major factors in parental influence were responsibility, autonomy, communication, support, encouragement, direction and guidance.

Some of the significant relationships in this study highlight the role of parent's educational level as it affects the main variables. The results for male students regarding **major indecision and father's level of education** was significant. In this relationship there were more males who were **decided** rather than **undecided** about their majors. The fathers' educational levels ranged from below standard 6 to standard 10 and above. **Major indecision and mother's educational level** was also significant for male students only. The male students were equally **decided** and **somewhat decided** about their majors. The educational levels of the mothers ranged from standard 10 and above to below standard 6. The findings suggest that the higher the level of education of the parents, the more **decided** the students were, and the lower the educational level of the parents, the more **undecided**

the students were.

5.2.2.2 Matric points

Another factor that was investigated was the influence of matric points on the career decision-making process. The findings show that there were significant relationships between matric points and major indecision for males and females. The majority of the males had between 21 and 30 points and were **somewhat decided** about their majors. The results were the same for the females. There were no gender differences in this relationship.

The relationship between matric points and CDS scores was significant for the male students only. Male students with higher points were more **decided** about their vocation compared to those students with lower points.

5.2.2.3 Other factors

Both males and females indicated that the most influential factor in choosing a career was interests and hobbies. There were no gender differences in response to this question. Students rated research into the occupation as their second choice and school subjects and experiences at school as their third choice.

There were no significant differences between males and females regarding important influencers in career decision-making. Both males and females considered information about careers, information about job opportunities and information about yourself as **very important** influencers.

5.3 CULTURAL DIFFERENCES: POPULATION GROUPS

There was an uneven distribution of the different population groups in the sample. A higher proportion of Indian and African students in the student population resulted in a disproportional distribution in the sample. In spite of this uneven distribution, the results were significant for many of the cross tabulations that were carried out. The different languages, except for "Afrikaans", were well represented . There were no Afrikaans speaking students in the sample. The findings for the language groups will cover the significant results for all the groups included in the sample.

5.3.1 Educational and Vocational Indecision

The Chi-square test between **population groups and major indecision** yielded significant results ($p < .0008$). The relationships between population groups and the three levels of educational indecision, the three levels of vocational indecision, and CDS were not significant. However, the Chi-square tests between **degree of certainty about choice of career and the three levels of educational indecision, the three levels of vocational indecision, major indecision and CDS scores,** were all significant in relation to population groups. The overall results indicate that the Indian students were more **certain and decided** about their choice of vocation.

The results showed distinct differences between African and Indian students in the relationship between **the three levels of educational indecision and the three levels of vocational indecision**. In comparing the results the African students were more **decided** about their vocation than their majors. The reverse was true for the Indian students.

In the relationship between **the three levels of educational indecision and major indecision** there was a higher percentage of Indian students who were **decided** about their majors. Indian students showed higher levels of vocational indecision, whereas African students showed higher levels of educational indecision.

The results for the relationship between **the three levels of educational indecision and CDS scores** were conclusive and confirmed that Indian students showed a higher level of vocational indecision than African students.

The findings also indicate distinct differences between the population groups in the relationship between **the three levels of vocational indecision and major indecision**. Indian students reported a higher level of vocational indecision than African students. Also, a strong relationship between major indecision and CDS scores for Indian and African students produced clear and conclusive results regarding cultural differences. When compared to the African students, almost twice the percentage of Indian students were **decided** about their majors in this relationship, where the results indicate a high level of educational indecision for Indian students, this is not as high as for African students. Vocational indecision was

higher for African students than Indian students.

The overall results indicate that African students exhibited higher levels of educational indecision. The reverse is true for the Indian students. This difference could be attributed to the fact that Indian students might be better informed about degrees and courses. The limited resources producing career information or the complete lack of information in the African communities could account for their high levels of indecision concerning choice of majors and career. From the researcher's observations and experiences in counselling first-entry students at the university, a possible explanation for the high levels of vocational indecision among the Indian students could be the wide range of career options to which they are be exposed. In contrast, African students are limited in their range of options: they have fewer options to choose from and make up their minds earlier than the Indian students.

5.3.2 Factors influencing career decision-making

Significant results were found for some of the relationships relating to the different factors for the population groups.

5.3.2.1 Parent's educational level

The relationship between parent's educational levels and educational and vocational indecision was investigated in relation to the main variables.

The findings show that there were no strong relationships between **the three levels of educational and vocational indecision and father's and mother's educational levels** for African students. This finding could be explained by the low educational levels of African parents. The results show that the majority of the African parents had an educational level of standard 6 and below. It is also possible that the majority of African parents do not have a strong influence on the career choices of their children.

There was a significant relationship between **the three levels of educational indecision and mother's level of education** for Indian students. It was found that the higher the mother's level of education, the greater was the tendency for the students to be **decided** about their majors. This finding suggests that the mothers rather than the fathers of Indian students,

have a greater influence on the education of their children. It has been observed by the researcher that more mothers than fathers call the Careers Counselling Unit for career information and to make general enquiries.

5.3.2.2 Matric points

Matric points was an important influencing factor in the career decision-making process. The majority of the African and Indian students said that the number of matric points determined their choice of degree. However, there were no significant relationships between matric points and levels of educational and vocational indecision for African students. This suggests that matric points for African students is not as important as other factors in their career choices.

The relationship between **matric points and the three levels of educational indecision** was significant for Indian students. The majority of the Indian students who indicated that they were **decided** about their majors had points ranging from 21 to 48. Most of the students who were **decided** had between 41 and 48 points. This implied that the higher the points, the more **decided** the students were about their majors. This finding also suggests that for Indian students, matric points had a greater influence on the choice of degree and majors than choice of vocation.

5.3.2.3 Other factors

According to the different population groups interests and hobbies was the most influential factor in choosing a career. They rated research into the occupation as second choice and school subjects and experiences at school third.

The African and Indian students felt that interests and hobbies was most influential in choosing a career. There were no significant differences among the population groups.

There was a significant difference between African and Indian students in the response to the question: "Were you undecided about your career because you were accepted at various institutions?". There were more Indian students than African students who were decided, because they were accepted at more than one institution. This suggests that more Indian than

African students applied to more than one institution. Although the results were significant for the different population groups regarding important influencers in career-decision making, there were no significant differences between the groups.

African and Indian students felt that information about yourself was **very important** as an influencer in career decision-making. This influencer indicated the strongest relationship for the different groups. In terms of the percentage responses for the population groups the results show that information about careers was the first choice as **very important** influencer. Information about job opportunities and information about yourself were also chosen as **very important** influencers and were second and third choices.

5.4 CULTURAL DIFFERENCES: LANGUAGE GROUPS

5.4.1 Educational and Vocational Indecision

The Chi-square tests yielded significant results, showing significant differences among the language groups. Major indecision among the language groups was high. Zulu speaking students reported high levels of indecision in comparison to the other groups. The majority of the Zulu speaking students were **somewhat decided** and **undecided** rather than **decided** about their majors. The other language groups showed lower levels of major indecision.

The relationship between **language groups and CDS** was significant, with important differences among the groups. The majority of the Zulu speaking students were more **undecided** than **decided** about their vocation. The results were the same for Xhosa speaking students. All the other language groups were more **decided** than **undecided** about their vocation. A comparison of the results for the different groups indicates that there were more students who were **decided** about their vocation than their majors. At the same time there were more students in all the language groups who were **undecided** about their vocation than their majors (compare Tables 26 and 27).

The Chi-square test yielded significant results for the relationship between **degree of certainty** and **major indecision** for the English and Hindi speaking students. There were differences between the groups. The results show that the majority of the English and Hindi

speaking students were **certain** about their career choice and **decided** about their majors. Most of the Zulu speaking students were **certain** about the choice of career and **somewhat decided** about their majors.

The relationship between the **degree of certainty about choice of career** and **CDS** was significant for the English, Zulu and Hindi speaking students. The English speaking students reported the same level of decision concerning their choice of majors and vocation. However, there was a higher percentage of English speaking students in this relationship who were **undecided** about their vocation. The Zulu speaking students were more **undecided** than **decided** about their vocation, and they reported similar levels of decision and indecision concerning their choice of majors and vocation. There were more Zulu speaking students who were **somewhat decided** about their majors than their vocation.

The relationship between **the three levels of educational indecision** and **the three levels of vocational indecision** was significant for the English, Zulu and Xhosa speaking students. There were significant differences among the language groups. There was a higher percentage of English speaking students who were **decided** about their majors as opposed to their vocation, but there was also a higher level of indecision concerning choice of majors than choice of vocation. Zulu speaking students were more **decided** about their vocation than their majors. However, a comparison of the results for English and Zulu speaking students indicates a lower percentage of Zulu speaking students (16.5%) who were **undecided** about their majors as compared to English speaking students (18.9%). The results are reflected in Tables 28a and 28b. The results of the Xhosa speaking students indicated that they were more **decided** about their vocation than their majors. There was a higher percentage of Xhosa speaking students (18.8%) who were **undecided** about their majors. In comparing Tables 28a, 28b and 28c it was noted that Zulu speaking students represented the lowest percentage who were **undecided** about their majors.

The relationship between **the three levels of educational** and **major indecision** was significant for the English, Zulu and Hindi speaking students. Major scores and the responses to the three levels of educational indecision for the English speaking students showed similar levels of decision concerning the choice of majors. The results for the Zulu

speaking students were different. The three levels of educational indecision indicated a higher percentage of students who were **decided** about their majors than shown by major scores.

A comparison of the results of major indecision for the English and Zulu speaking students shows that 27.5% of the Zulu speaking students were **decided** about their majors, as compared to 54.1% of the English speaking students (Tables 29a and 29b). The Hindi speaking students reported similar levels of decision for major scores and the three levels of educational indecision. However, major indecision scores showed a higher percentage (18.2%) who were **undecided** about their majors. This was higher than the 9.1% who were **undecided** according to the three levels of educational indecision (see Table 29d). The Tamil speaking students comprised the highest percentage of students who were **decided** about their majors according to major scores. The responses of the Tamil speaking students to the three levels of educational indecision indicated that a very high percentage (45.5%) were **tentatively decided** about their majors. This was the highest among the language groups.

The relationship between **the three levels of educational indecision and CDS** was significant for the English and Zulu speaking students. The findings show significant differences between the groups. There were more English speaking students who were **decided** about their majors than their vocation. Compared to the Zulu speaking students, there were more English speaking students who were **decided** about their majors and vocation. Zulu speaking students were more **decided** about their majors than their vocation. Zulu speaking students exhibited higher levels of indecision, which was evident by the 26.4% who indicated that they were **decided** about majors and vocation. The results in Table 30b show that a total of 44.9% were **decided** about their majors compared to 39.9% who were **decided** about their vocation. The percentage of vocational indecision was high for the Zulu speaking students, where a total of 44,9% indicated that they were **undecided** about their vocation. This implied that the Zulu speaking students were more **undecided** about their vocation than their majors. The results were similar for the English speaking students where a total of 27.0% were **undecided** about their vocation, compared to 18.9% who were **undecided** about their majors.

The relationship between **the three levels of vocational indecision** and **major indecision** was

significant for the English, Zulu and Hindi speaking students. There were differences between the language groups where the English speaking students seemed to be more **decided** about their majors than their vocation. The Zulu speaking students were more **decided** about their vocation than their majors. Zulu speaking students also showed a higher level of major indecision than vocational indecision (59.3% and 27.7% respectively). Hindi speaking students were more **decided** about their vocation than their majors.

In comparing the results of the three language groups the percentage of students in the cell **decided** was the highest for Hindi speaking students (compare Tables 31a, 31b and 31c). Zulu speaking students had the highest percentage for **undecided** concerning major indecision.

Significant results and differences were found for the relationship between **the three levels of vocational indecision** and **CDS** for the English, Zulu, Hindi and Tamil speaking students. The CDS scores for the English speaking students indicate that they were more **decided** about their vocation than the three levels of vocational indecision. The results for the Zulu speaking students for the three levels of vocational indecision indicated a higher percentage who were **decided** about their vocation than their CDS scores. This contrasted with the results obtained for the English speaking students. CDS scores and the three levels of vocational indecision showed the same level of decision concerning the choice of vocation for Hindi speaking students. There was a high percentage (63.6%) in the cell denoting **decided** for Tamil speaking students. This implied that the level of vocational decision was high for Tamil speaking students. For both CDS scores and the levels of vocational indecision, a total of 68.2% reported that they were **decided** about their vocation.

In comparing the CDS scores of the language groups it was noted that the Tamil speaking students had the highest percentage in the cell **decided,** while the Zulu speaking students had the highest for **undecided.** Tamil speaking students exhibited the same level of decision for CDS scores and the three levels of vocational indecision. There were no Tamil speaking students who were **undecided** according to the three levels of vocational indecision.

The Chi-square test for the relationship between **major indecision** and **CDS** yielded

significant results for the English, Zulu, and Hindi speaking students. English speaking students showed the same level of vocational indecision and major indecision. A total of 54.1% were **decided** about their vocation, and 54.1% were **decided** about their majors (see Table 33a). There was a higher percentage of Zulu speaking students who were **decided** about their vocation rather than their majors. The total percentages for the Zulu speaking students were lower than the total percentages for the English speaking students. This implied that there were more English than Zulu speaking students who were **decided** about their majors and vocation. Hindi speaking students were more **decided** about their vocation than their majors. The students who spoke "other" languages were also more **decided** about their vocation than their majors.

A comparison of the results for the language groups (see Tables 33a, 33b, 33c and 33d) indicates that the English speaking students had the highest percentage in the cell **decided** for major indecision and CDS scores. Zulu speaking students had the highest for **undecided** regarding major indecision. The overall results for the language groups show that the levels of educational and vocational indecision were high among the groups.

5.4.2 Factors influencing career decision-making

5.4.2.1 Parent's educational level

The relationship between the three levels of **educational indecision** and **mother's level of education** was significant for the Hindi speaking students. The majority of the students indicated that they were **decided** about their majors, with most of the mothers at an educational level of standard 10. This finding suggests that mothers of Hindi speaking students had a greater influence on the choice of majors for their children than the fathers. The higher the educational level of the mother, the higher was the level of educational decision.

A strong relationship existed between **the levels of vocational indecision** and **mother's educational level** for the English speaking students. Once again, mothers of English speaking students seemed to exercise greater influence than fathers on the career choice of their children. This finding indicates that the higher the level of mother's education, the

lower was the level of vocational indecision among the English speaking students.

The relationship between **CDS** and **father's educational level** was significant for the Xhosa speaking students. This relationship implied that in the case of these students, the fathers seem to have greater influence than mothers on the career choice of their children. A very high percentage of 56.5% were **undecided** about their vocation. 30.4% of this total reported that their fathers had an educational level of standard 10, and standard 10 and above. There were more Xhosa speaking students who were **undecided** than **decided**. In this relationship the higher the father's level of education, the higher was the level of vocational indecision. This finding could not be explained. The same relationship for the Tamil speaking students showed that there was a higher percentage of students who were **decided** about their vocation, with the fathers at an educational level of standard 10, and standard 10 and above. There was therefore a major difference between the Xhosa and Tamil speaking students. The influence of fathers on the career choice of Tamil speaking students appeared to be positive because the higher the level of the father's education, the more **decided** the students were.

5.4.2.2 Matric points

The relationship between **matric points** and **CDS** was significant for the English and Xhosa speaking students. The results showed that there was a higher percentage of English speaking students who were **decided** about their vocation, as compared to Xhosa speaking students. For the English speaking students the majority of the students who were **decided** had 41 to 48 points, whereas the majority of the Xhosa speaking students had 21 to 30 points. This implied that the students with higher matric points were more **decided** about their vocation than students with lower matric points. This was evident from a comparison of the results for the English and Xhosa speaking students represented in Tables 47 and 48 in Appendix 4. The results for the Xhosa speaking students showed that 39.4% who had matric points between 21 and 30 the total percentage for **undecided** was 48.5%. The Xhosa speaking students were more **undecided** than **decided** about their vocation.

The relationships between matric points and major indecision, and matric points and CDS for English speaking students showed the same level of decision about majors and vocation. However, there were more students with matric points between 41 to 48 who were **decided**

about their majors rather than their vocation. They therefore showed a higher level of vocational indecision than educational indecision, with matric points between 41 to 48.

5.4.2.3 Other factors

Slight differences were found among the language groups in the way they rated the single most influential factor in career decision-making. All the language groups reported that interests and hobbies was the single most influential factor. However, there were differences in the second and third choices. Zulu speaking students rated school subjects and experiences at school as their second choice and research into the occupation as the third choice. The English and Hindi speaking students rated research into the occupation as their second choice. The Xhosa and Telegu speaking students had the same second choice as the Zulu speaking students.

There was a strong relationship between the language groups and question 4.7d. There were more Hindi speaking students than English speaking students who were **undecided** because they were accepted at various institutions.

Examination of the responses for the important influencers in career decision-making showed that the relationship between **4.8a and language groups** was slightly significant ($p < .0456$). This finding suggests that the majority of the students of all the language groups considered information about yourself **very important** as an influencer in career decision-making. The responses for the other influencers were higher. Although these relationships were not significant, the majority of the students felt that information about careers, as well as information about job opportunities, were **very important**. These were the first and second choices.

When analysed according to gender, population and language group, information about careers was **very important** as an influencer in career decision-making and was the first choice of the students. Information about job opportunities and information about yourself were also rated as **very important** and were second and third choices among the students.

The qualitative data gathered during the study supplemented the information gained through

the biographical questionnaire and CDS. The students re-iterated the importance of the choice of **school subjects and experiences at school** and the strong influence it has on career choices. Many of the students felt that the number of matric points was not as important in career decision-making as **school subjects and experiences at school**. The students also emphasized the influence of **interests and hobbies** and **research into the occupation** on the career decision-making process. This has implications for educational programmes at school. Students should be encouraged at an early stage to investigate possible career paths and options, and to have relevant experiences in the work place pertaining to the careers in which they are interested. Krumboltz *et al* (1976) recommend that educational environments provide career-decision making resources which will help develop decision-making skills in students at the school level. These resources should be tailored to the entering level of the students and should be made interesting and pertinent to them. It is suggested that the resources include career information about occupations, simulated job experiences, opportunities to talk with people in various occupations and opportunities to work for short periods of time in a real work environment, which would allow close association with people in practice.

Another factor that is often ignored in the career decision-making process is the "values" of students. The students emphasized the role of their "values" in the decisions that they make. It is important that teachers, counsellors and parents take cognizance of these "values" in helping them to make the correct choices. It would be erroneous to assume that all African, Coloured, White and Indian students value the same things and ascribe to the same belief systems. As the results have indicated, students from different cultural backgrounds have different "values", which in turn have varying degrees of influence on their lives and decisions. The students were proud of their racial, ethnic and cultural backgrounds and emphasized the importance of taking these into account in the decision-making process. The life styles, values and world views of students cannot be ignored in the process of career decision- making.

5.5 RECOMMENDATIONS

The present study has shown that there is a significant relationship between educational and vocational indecision. It was also found that the levels of educational and vocational

indecision were high among first-entry university students. On the basis of the findings of the study the following recommendations are made:

1. Effective career development programmes should be compulsory in the school and university curriculum. There is a need for more vocational information at the secondary school level as well as for first-entry university students. The implication of this recommendation is that there is a critical need for closer liaison between university and school. This can only be done with sufficient resources and personpower. The present situation at the University of Durban-Westville does not allow for outreach programmes and there is no community liaison. It is recommended that the university management address this matter urgently because the high percentage of indecision among the students has serious economic consequences for both students and the institution.

2. It is recommended that the University of Durban-Westville re-examine its admission criteria and give more serious consideration to the student's ability to do a particular kind of job, the student's past experiences, and the level of interest that the student has developed in a particular field of study and work. The present admissions policy of the university does not give every student a fair and equal chance to enter the university. The Indian students feel that good matric points will guarantee them a place at university. Over the past few years many students have experienced great disappointment when their good results did not guarantee them a place at university. In the present study, matric points was not considered to be an important factor in the choice of a degree or career by many students. This was true mainly for the African students. Other factors such as interests and hobbies, research into the occupation, school subjects and experiences at school were considered to be more important. The perception among African students has been that matric points is **the** criterion for university admission. As a result the notion has been that if you do well in a subject the points for that subject will be doubled. The University of Durban-Westville has an admissions policy where certain subject symbols are doubled in terms of entrance requirements for African students. This gives students a false sense of hope and many students who are admitted on this basis struggle with their studies in the first year. African students should be encouraged and motivated to perform well in all

subjects rather than in one subject. Given this context at the University of Durban-Westville, this study recommends a review of its current admissions policy.

3. It is recommended that all first-entry students have career counselling before enroling for the academic year. First-entry students who choose incorrect courses and degree in the first year create a problem by restricting places for prospective new students. The first-entry students who have failed their first year then consider transferring to another faculty. This does not give new students the opportunity to enrol because places are reserved for returning students. Career development programmes should thus be made compulsory for new students. This would assist students in making more informed choices.

4. A final recommendation of this study is that the university provide the finances for an effective orientation programme for all first-entry students. It should also consider having an open day for parents of prospective students so that the university management give parents the opportunity of getting first hand career information for their children as well establishing a friendly relationship with the institution. In this way students, parents and the community will develop a better image of the university.

5.6 LIMITATIONS OF THE STUDY

One of the limitations in the present study was the low numbers of Coloured and White students in the sample. This resulted in a skewed distribution and affected the cell sizes in the statistical analyses. The computational analyses and results therefore focused on the African and Indian students. This did not allow adequate analyses of cultural differences relating to all the population groups.

Gender differences were calculated for the total sample and the different population groups only. Intra-group calculations were limited to the few ANOVA tests. Additional analyses within the different population and language groups would be germane to a richer understanding of the specific interactions between the variables. The findings suggest that educational and vocational indecision interact in a complex way for gender and culture.

Generalising the findings of this study should be exercised with caution. The findings were limited to the first-entry students in the faculties of Commerce and Science. Further research involving all first-entry students could overcome this limitation.

Another limitation was the lack of a properly validated instrument to measure major indecision. Although the Likert-type scale was sufficient for the purposes of this study, an empirically tested measure could produce more reliable results. This calls for further research in developing a validated instrument for major indecision.

While the present study did establish the relationship between educational and vocational indecision and the levels of indecision, replication is necessary to confirm the gender and cultural differences that were found. This study was the first of its kind in South Africa to investigate language group differences, and replication would be necessary for further insight into the complex process of career decision-making in relation to educational and vocational indecision.

5.7 CONCLUSION

Krumboltz (1992) states that indecision is associated with negativity and is synonymous with uncertainty, doubt, hesitation, bewilderment and vagueness. It is because of this negativity that those who are **undecided** suffer pangs of anxiety. He suggests that indecision or undecidedness should be seen as something positive and that positive terminology such as **openmindedness, considering multiple options** and **keeping alternatives open** should be used to describe the construct of indecision. The positive aspects of this construct are captured in the words of Callanan and Greenhaus (in Krumboltz, 1992, p.240): "...the consequences of career indecision are not invariably negative, just as the consequences of career decidedness are not invariably positive". Krumboltz thus sees fit to emphasize the concept of **learning** in his Social Learning Theory of Career-Decision Making. He claims that past learning contributes to career choice and that counsellors and clients have the power to influence the nature of subsequent learning experiences (Krumboltz and Jackson, 1993).

The objectives of the present study were successfully achieved. Levels of educational and

vocational indecision were identified in relation to gender and culture. There was a significant and strong relationship between educational and vocational indecision. Students who reported being **decided** on their majors reported the same level of decision about their vocation. However, students also reported being **decided** on their majors and being **undecided** on their vocation. The reverse was also true for students who were **decided** about their vocation, but were **undecided** about their majors. These differences were found in relation to the variables of gender, population and language groups. There were significant differences relating to gender and culture concerning educational and vocational indecision.

It was not the intention of this study to propose a new theory of career decision-making, but rather to add to the body of knowledge of vocational development postulated in the literature. It is hoped that the conclusions of this study about the influence of major factors on the complex process of career decision-making both educationally and vocationally, are enlightening. Certainly, they could inform policy makers at the university, education planners and career counsellors, encouraging them to be more responsive to student development especially at secondary and tertiary levels.

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APPENDICES

CAREER DECISION MAKING

APPENDIX 1

QUESTIONNAIRE

This questionnaire has been designed to gather information from first year students to help understand the uncertainties experienced in career decision-making. It is also designed to investigate the relationship between indecision about majors and vocational indecision. The information will be used to enhance the career development process and help students with their choice of degrees, majors and vocations.

To ensure confidentiality and privacy, you are **not** required to give your name. The questionnaire will take you about **twenty minutes** to complete. Questions must be answered as fully as possible. Please attempt to answer all the questions.

Thank you for participating. Your contribution will help in providing a better service for prospective students.

PLEASE PLACE A CROSS IN THE APPROPRIATE BLOCK

1. BIOGRAPHICAL DETAILS

1.1. **Age (at last birthday)**

under 18	18 yrs.	19 yrs.	20 yrs.	above 20

1.2. **Sex:** Male ☐ Female ☐

1.3. **Population Group:**

African	Coloured	Indian	White	Other

1.4. **Mother Tongue:**

English	Afrikaans	Zulu	Xhosa	Sotho

Hindi	Tamil	Telegu	Gujerati	Other(please specify)_____

##########

2. FAMILIAL FACTORS

2.1. Father's level of education:

Std. 10 & above	Std. 10	Std. 6	Below Std. 6

2.2. Mother's level of education:

Std. 10 & above	Std. 10	Std. 6	Below Std. 6

2.3. Father's occupation: _____

2.4. Mother's occupation: _____

##########

3. SITUATIONAL FACTORS

3.1. How many matric points did you have? Calculate your points using the following scale:

	A	B	C	D	E	F	
HG:	8	7	6	5	4	2	
SG:	6	5	4	3	2	1	TOTAL POINTS =

3.2. Did the number of matric points you obtained determine which degree you were to follow?

yes	no

4. INDIVIDUAL AND PSCHO-SOCIAL FACTORS

4.1. How certain are you that your career choice is the correct one?

very certain	certain	a little uncertain	not at all certain

4.2. Did your **GENDER** have an influence on the **choice of majors**?

yes	no

4.3. In terms of the choice of **majors**, are you

a) decided upon your majors?

b) tentatively decided upon your majors?

c) undecided about your majors?
(Please circle the appropriate letter)

4.4. Did your **GENDER** influence the choice of your **career**?

yes	no

4.5. In terms of a **career** are you

a) decided upon a career?

b) tentatively decided upon a career?

c) undecided on a career?
(Please circle the appropriate letter)

4.6. What has been the single **most** influential factor in choosing your career? **(cirle one only)**

a) finance
b) father's occupation
c) mother's occupation
d) teacher's choice
e) influence of friends
f) your matric results
g) your community's influence
h) your school subjects and experiences at school
i) your interests and hobbies
j) part-time job experiences
k) research into the occupation

4.7. Were you undecided about your career because **(please circle those applicable to you)**

a) you did not have enough information to make a decision?
b) you had too many choices?
c) you were confused?
d) you were accepted at various institutions?
e) you wanted to be with your friends?
f) your results were not good enough?
g) other reasons (please specify) _____

_____

_____

_____

_____

4.9. In your opinion, how important are the following influencers in career decision-making? **(please tick the appropriate column)**

	very important	important	not so important
a) information about yourself			
b) information about careers			
c) information about employers			
d) information about job opportunities			
e) admission criteria			
f) information about finance			

5. DECISION/INDECISION ABOUT COURSES AND MAJORS

Please read through the statements below and indicate how closely each item describes you in your thinking about your majors by marking the appropriate number on the scale 0 to 3. If the item describes you **very well mark "3"**; if it **seems to describe you mark "2"** ; if it **is somewhat like you mark "1"** and if **it does not describe you at all mark "0"**. **Please mark one answer to each item and answer all items. (Mark with a tick or cross)**.

	0 NOT AT ALL LIKE ME	1 SOMEWHAT LIKE ME	2 VERY MUCH LIKE ME	3 EXACTLY LIKE ME
1. I have decided on my majors & feel comfortable with it.				
2. Several majors have equal appeal to me. I had/am having a difficult time deciding among them.				
3. I thought I knew what I wanted to do as my majors, but recently I found out that it would not be possible for me to pursue it. I've had to start looking for other possible majors.				
4. I know what majors I would like to do, but I don't know what careers it can lead to that would satisfy me.				
5. I need more information about my courses before I decide on my majors.				
6. I am certain about my majors and I know what career is right for me.				

	0 NOT AT ALL LIKE ME	1 SOMEWHAT LIKE ME	2 VERY MUCH LIKE ME	3 EXACTLY LIKE ME
7. I am sure about my majors but I do not know what career to follow.				
8. I have decided on a career but I do not know what majors to choose.				
9. I am uncertain about my majors and career.				

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE.

udw sb/96

	0 Not at all like me	1 Only slightly like me	2 Very much like me	3 Exactly like me
1. I have decided on a career & feel comfortable with it. I also know how to go about implementing my choice.				
2. I have decided on a course of study & feel comfortable with it.				
3. If I had the skills or the opportunity I know what I would be, but this choice is really not possible for me. I haven't given much consideration to any other alternatives, however.				
4. Several careers have equal appeal to me. I had/am having a difficult time deciding among them.				
5. I know I will have to go to work eventually, but none of the careers I know about appeal to me.				
6. I know what I'd like to be, but I'd be going against the wishes of some-one who is important to me if I did so. Because of this I had/am having difficulty in making a career decision. I hope I can find a way to please them and myself.				
7. Until now, I haven't given much thought to choosing a career. I feel lost when I think about it because I haven't had many experiences in making decisions on my own & I don't have enough infomation to make a career decision.				
8. I feel discouraged because everything about choosing a career seems so 'if- y' & uncertain; I feel discouraged, so much so that I'd like to put off making a decision for the time being.				
9. I thought I knew what I wanted for a career, but recently I found out that it would not be possible for me to pursue it. I've had to start looking for other possible careers.				

	0 Not at all like me	1 Only slightly like me	2 Very much like me	3 Exactly like me
10. I want to be absolutely certain that my career choice is the "right" one, but none of the careers I know about seem ideal to me.				
11. Having to make a career decision bothers me. I'd like to make a decision quickly & get it over with. I wish I could take a test that would tell me what kind of career I should pursue.				
12. I know what course I would like to do, but I don't know what careers it can lead to that would satisfy me.				
13. I have difficulty making a career choice because I don't know what my abilities are.				
14. I don't know what my interests are. A few things "turn me on" but I'm not certain that they are related in any way to my career possibilities.				
15. So many things interest me & I know I have the ability to do well regardless of what career I choose. It's hard for me to find just one thing that I would want as a career.				
16. I have decided on a career, but I'm not certain how to go about implementing my choice. What do I need to do to make my decision become a reality.				
17. I need more information about what different occupations are like before I can make a career decision.				
18. I think I know what job I'd like to have, but I feel I need some additional support for it as a choice for myself.				

APPENDIX

APPENDIX 3

QUESTIONS FOR INTERVIEW

1. Did the choice of subjects at school determine totatly or partially what you were going to study at university? **(Please explain)**

2. Is there anything that you are aware of that can prevent you from choosing the career you want to follow? If so, state what it is.

3. What steps did you take to come to your decision and who are the people you consulted along the way?

4. Did your cultural background or values influence your choice of degree or career? Please describe how.

5. Did the expectations of your community influence the choice of your degree/career? Please explain.

6a) Do you think that genetic factors such as cultural group, gender, and physical characteristics (such as physical handicaps) have an influence on career choice?

b) How did it influence you?

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APPENDIX 4

Table 45. **Relationship between matric points and three levels of educational indecision for English speaking students**

Q4.3

Matric points	Decided	Tentatively decided	Undecided	Total
21-30	2.8	8.3	2.8	**13.9**
31-40	11.1	13.9	11.1	**36.1**
41-48	44.4	2.8	2.8	**50.0**
Total	**58.3**	**25.0**	**16.7**	**100**

Table 46. **Relationship between matric points and major indecision for English speaking students**

Major

Matric points	Decided	Somewhat decided	Undecided	Total
21-30	2.8	11.0	0	**13.9**
31-40	11.1	19.4	5.6	**36.1**
41-48	41.7	5.6	2.8	**50.0**
Total	**55.6**	**36.1**	**8.3**	**100**

Table 47. **Relationship between matric points and CDS for English speaking students**

CDS

Matric points	Decided	Somewhat decided	Undecided	Total
21-30	5.6	8.3	0	**13.9**
31-40	13.9	2.8	19.4	**36.1**
41-48	36.1	8.3	5.6	**50.0**
Total	**55.6**	**19.4**	**25.0**	**100**

Table 48. **Relationship between matric points and CDS for Xhosa speaking students**

CDS

Matric points	Decided	Somewhat decided	Undecided	Total
21-30	0	6.1	0	**6.1**
31-40	30.3	9.1	39.4	**78.8**
41-48	3.0	3.0	9.1	**15.2**
Total	**33.3**	**18.2**	**48.5**	**100**

Table 50. **Degree of importance of "information about yourself" as an influencer in career-decision making for the different language groups**

"Information about yourself"

Language group	Very important	Important	Not so important	Total
English	9.2	1.1	0	**10.3**
Zulu	30.7	12.0	4.5	**47.2**
Xhosa	6.7	2.2	0.3	**9.2**
Sotho	3.9	0.8	0.3	**5.0**
Hindi	8.7	0.6	0	**9.2**
Tamil	4.2	2.0	0	**6.1**
Telegu	0.6	0.3	0	**0.8**
Gujerati	1.4	0	0	**1.4**
Other	7.8	2.5	0.3	**10.6**
Total	**73.2**	**21.5**	**5.3**	**100**