

**THE RELATIONSHIP BETWEEN LOCUS OF CONTROL AND  
ACADEMIC ACHIEVEMENT AMONG AT RISK STUDENTS**

**BY**

**MARTHINA JACOBA KIRCHNER**

**SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF**

**MA (RESEARCH PSYCHOLOGY)**

**IN THE**

**FACULTY OF HUMANITIES**

**AT**

**THE UNIVERSITY OF PRETORIA**

**SUPERVISORS: PROF. J.B. SCHOEMAN**

**PROF A-L DE BOER**

**JULY 2003**

This study is dedicated to my  
husband, Oskar and my  
daughter, Sabine

## **ACKNOWLEDGEMENTS**

I wish to extend my deepest appreciation to the following people without whose assistance and support this research project would have been impossible:

Professor Johan Schoeman, my supervisor, for his meticulous direction, invaluable advice and patience.

Professor Ann-Louise De Boer, my supervisor, for her constructive criticism, assistance in gathering data and cheerful encouragement.

My husband Oskar for his loving support and patience during a time when it seemed this project was never going to come to fruition. My mother, for encouragement and years of support

My daughter Sabine who never complained about her mother's endless hours in front of the computer.

## SUMMARY

### THE RELATIONSHIP BETWEEN LOCUS OF CONTROL AND ACADEMIC ACHIEVEMENT AMONG AT RISK STUDENTS

by

Marna Kirchner

Supervisors : Professor J.B. Schoeman  
Professor A-L De Boer  
Department : Psychology  
Degree : MA (Research Psychology)

The main aim of this study was to determine whether the locus of control construct could be used to predict academic success. The study differentiated between short-term academic success (successful completion of the first year of study) and long-term academic success (successful completion of pre-graduate degree). Both generalised and domain specific locus of control measurements were used to determine which of these correlate with academic success. A further aim was to investigate the role of self esteem and level of defensiveness in the relationship between locus of control and academic achievement.

Four measurement instruments were administered to an effective sample of 53 first year students at the University of Pretoria. The measurement instruments were the Internal, Powerful other and Chance Scales (Levenson, 1981), the Multi-dimensional, Multi-attributitional Causality Scale (Lefcourt, 1981), the Social Desirability Scale (Crowne & Marlowe, 1960) and the Rosenberg Self-Esteem Scale (Rosenberg,

1965). The statistical analyses consisted of descriptive statistics and correlational analyses.

Analysis of the data showed no significant correlation between locus of control and academic achievement for the group as a whole but did show a significant positive correlation between long-term academic success and generalised internality among black students. The data further showed a significant negative correlation between self esteem and long-term academic success. Self esteem correlated positively with an external orientation in both black and white students. The only significant predictor of academic success among white students was social desirability.

#### **KEY WORDS**

Academic success

Chance expectation

Domain specific locus of control

Educational disadvantage

General locus of control

Level of defensiveness

Powerful other

Predictors of academic success

Reinforcement

Self esteem

## TABLE OF CONTENTS

<b>CHAPTER 1</b>	<b>1</b>
<b>INTRODUCTION</b>	<b>1</b>
<b>1.1 INTRODUCTION</b>	<b>1</b>
<b>1.2 MOTIVATION</b>	<b>3</b>
<b>1.3 CLARIFICATION OF TERMS</b>	<b>4</b>
1.3.1 LOCUS OF CONTROL: INTERNAL - EXTERNAL	4
1.3.2 COMPONENTS OF LOCUS OF CONTROL: INTERNAL, POWERFUL OTHER AND CHANCE/FATE ORIENTATION	5
1.3.3 GENERAL VERSUS DOMAIN SPECIFIC LOCUS OF CONTROL	5
1.3.4 LEVELS OF DEFENSIVENESS AND SELF ESTEEM	5
1.3.5 ACADEMIC ACHIEVEMENT	7
<b>1.4 AIM OF THE STUDY</b>	<b>8</b>
<b>1.5 HYPOTHESES</b>	<b>8</b>
<b>1.6 OVERVIEW OF THE STUDY</b>	<b>9</b>
1.6.1 SAMPLE	9
1.6.2 OPERATIONALISATION OF CONCEPTS	9
1.6.3 DATA ANALYSIS	10
1.6.4 PROCEDURE	10
<b>1.7 SUMMARY</b>	<b>10</b>
<b>CHAPTER 2</b>	<b>11</b>
<b>THE THEORETICAL FOUNDATION OF THE LOCUS OF CONTROL CONCEPT</b>	<b>11</b>
<b>2.1 INTRODUCTION</b>	<b>11</b>
<b>2.2 SOCIAL LEARNING THEORY AND LOCUS OF CONTROL</b>	<b>11</b>
<b>2.3 LOCUS OF CONTROL AS A MULTI-DIMENSIONAL CONSTRUCT</b>	<b>14</b>

2.3.1 COMPONENTS OF THE LOCUS OF CONTROL CONSTRUCT: INTERNAL, POWERFUL OTHER AND CHANCE EXPECTATIONS	15
2.3.1.1 CULTURAL ISSUES AND LOCUS OF CONTROL	16
2.3.1.2 LOCUS OF CONTROL AND ACADEMIC ACHIEVEMENT	18
<b>2.4 GENERAL LOCUS OF CONTROL VERSUS DOMAIN SPECIFIC LOCUS OF CONTROL</b>	<b>21</b>
<b>2.5 LEVELS OF DEFENSIVENESS AND SELF ESTEEM</b>	<b>23</b>
<b>2.6 SUMMARY</b>	<b>25</b>
<b>CHAPTER 3</b>	<b>25</b>
<b>RESEARCH METHOD</b>	<b>25</b>
<b>3.1 INTRODUCTION</b>	<b>25</b>
<b>3.2 RESEARCH DESIGN</b>	<b>25</b>
3.2.1 VARIABLES	26
3.2.2 SAMPLE	26
3.2.3 PROCEDURE	27
<b>3.3 OPERATIONALISATION OF CONCEPTS</b>	<b>27</b>
3.3.1 CRITERION VARIABLE	27
3.3.2 PREDICTOR VARIABLES	28
3.3.2.1 THE INTERNALITY, POWERFUL OTHERS AND CHANCE SCALES	28
3.3.2.2 THE MULTIDIMENSIONAL - MULTI-ATTRIBUTIONAL CAUSALITY SCALES (MMCS)	31
3.3.2.3 MARLOWE - CROWNE SOCIAL DESIRABILITY SCALE (MCSDS)	34
3.3.2.4 THE ROSENBERG SELF ESTEEM SCALE (SES)	35
<b>3.4 STATISTICAL PROCEDURES</b>	<b>37</b>
3.4.1 THE MANN-WHITNEY U TEST	38
3.4.2 SPEARMAN RANK-ORDER CORRELATION	39
3.4.3. PARTIAL CORRELATIONS	39
<b>3.5 SUMMARY</b>	<b>40</b>

<b>CHAPTER 4</b>	<b>41</b>
<b>RESULTS</b>	<b>41</b>
<b>4.1 INTRODUCTION</b>	<b>41</b>
<b>4.2. DESCRIPTIVE STATISTICS OF THE SAMPLE</b>	<b>41</b>
4.2.1. RACE	41
4.2.2. GENDER	42
4.2.3 AGE	42
4.2.4 HOME LANGUAGE	42
<b>4.3. DESCRIPTIVE STATISTICS OF THE DEPENDENT VARIABLE</b>	<b>43</b>
<b>4.4. THE DIFFERENCES BETWEEN THE SAMPLES</b>	<b>45</b>
<b>4.5 THE INDEPENDENT VARIABLES</b>	<b>47</b>
<b>4.6. THE DIFFERENCES BETWEEN THE SAMPLES</b>	<b>47</b>
4.6.1 SPEARMAN RANK-ORDER CORRELATION COEFFICIENTS	49
4.6.2. PARTIAL CORRELATION COEFFICIENTS	51
<b>4.7. SUMMARY</b>	<b>56</b>
<b>CHAPTER 5</b>	<b>57</b>
<b>INTERPRETATION</b>	<b>57</b>
<b>5.1 INTRODUCTION</b>	<b>57</b>
<b>5.2 CHARACTERISTICS OF THE SAMPLE</b>	<b>58</b>
<b>5.3 DESCRIPTIVE STATISTICS OF THE DEPENDENT VARIABLE</b>	<b>59</b>
<b>5.4 DESCRIPTIVE STATISTICS OF THE SCORES OF THE MEASURING INSTRUMENTS</b>	<b>60</b>
5.4.1 THE I, P, C SCALES	60
5.4.2 THE MMCS	61
5.4.3 THE SES	63
5.4.4 THE MCSDS	63
5.4.5 CONCLUSION	63



<b>5.5 RELATIONSHIPS BETWEEN THE VARIABLES</b>	<b>63</b>
5.5.1 COMPARISON OF WHITE AND BLACK SAMPLES	<b>63</b>
5.5.1 THE RELATIONSHIP BETWEEN SHORT-TERM AND LONG-TERM ACADEMIC SUCCESS	<b>66</b>
5.5.2 THE RELATIONSHIP BETWEEN ACADEMIC SUCCESS AND LOCUS OF CONTROL	<b>66</b>
5.5.3. THE RELATIONSHIP BETWEEN ACADEMIC SUCCESS, LOCUS OF CONTROL AND SELF ESTEEM	<b>68</b>
5.5.4. THE RELATIONSHIP BETWEEN ACADEMIC SUCCESS, LOCUS OF CONTROL AND DEFENSIVENESS	<b>70</b>
5.5.5 THE EFFECT OF THE MEDIATING VARIABLES: SELF ESTEEM AND DEFENSIVENESS	<b>72</b>
5.5.6 SUMMARY	<b>73</b>
<b>CHAPTER 6</b>	<b>75</b>
<b>CONCLUSION AND RECOMMENDATIONS</b>	<b>75</b>
<b>6.1. CONCLUSION</b>	<b>75</b>
<b>6.2 RECOMMENDATIONS FOR FURTHER RESEARCH</b>	<b>77</b>
<b>REFERENCES</b>	<b>80</b>
<b>APPENDIX A: QUESTIONNAIRES</b>	<b>88</b>

## LIST OF TABLES

<b>TABLE 3.1</b>	Normative Data for the MMCS Achievement Scale	35
<b>TABLE 3.2</b>	Normative Data for the SES Scale	38
<b>TABLE 4.1</b>	Age distribution	44
<b>TABLE 4.2</b>	Home language distribution	45
<b>TABLE 4.3</b>	Results for the first year of study	46
<b>TABLE 4.4</b>	Long-term success rate of black and white students	47
<b>TABLE 4.5</b>	Mann-Whitney U-test results on the I,P,C Scales, MMCS (Internal, External) scores, the SES and the MCSDS scores with successful and unsuccessful students	48
<b>TABLE 4.6</b>	Mann-Whitney U-test results on the measurement scales with race as the grouping variable	48
<b>TABLE 4.7</b>	Distribution of scores on the various measuring instruments	49
<b>TABLE 4.8</b>	Kolmogorov-Smirnov test of normality for white sample	50
<b>TABLE 4.9</b>	Kolmogorov-Smirnov test of normality for black sample	50
<b>TABLE 4.10</b>	Spearman rank order correlations for the white respondents	52
<b>TABLE 4.11</b>	Spearman rank order correlations for the black respondents	53
<b>TABLE 4.12</b>	Partial correlation coefficients for white respondents controlling for social desirability	54
<b>TABLE 4.13</b>	Partial correlation coefficients for black	

	respondents controlling for social desirability	55
<b>TABLE 4.14</b>	Partial correlation coefficients for white respondents controlling for self esteem	56
<b>TABLE 4.15</b>	Partial correlation coefficients for black respondents controlling for self esteem	56
<b>TABLE 4.16</b>	Partial correlation coefficients for white respondents controlling for self esteem and social desirability	57
<b>TABLE 4.17</b>	Partial correlation coefficients for black respondents controlling for self esteem and social desirability	58

**LIST OF FIGURES**

<b>FIGURE 4.1</b>	Racial composition	43
<b>FIGURE 4.2</b>	Gender composition	44
<b>FIGURE 4.3</b>	Success with undergraduate studies	46

## CHAPTER 1

### INTRODUCTION

#### 1.1 INTRODUCTION

South African universities are currently facing the challenges of transformation. Since the arrival of the new political dispensation in South Africa in 1994, institutions have had to democratize rapidly in order to ensure that their student bodies reflect the racial composition of the South African community. The democratization process brings about mounting pressure to admit formerly excluded groups in increasing numbers.

However, due to the historically segregated nature of South African schools, coupled with unequal provision of facilities and resources, a large number of students are regarded as educationally disadvantaged and therefore at risk of failure. Educationally disadvantaged students are generally those students who attend/ed previously non-white schools and who do not have adequate opportunities to develop their academic potential (Schochet, 1994; Zaaiman, Van der Flier & Thijs, 1998). The increasing demand for tertiary education by these students, brings to the fore the importance of identifying and selecting students, who, despite their educational disadvantage, have the potential to succeed.

Zaaiman *et al* (1998) identified the following issues with regard to selection procedures for tertiary education: The increasing numbers of applicants seeking tertiary education, identifying students who despite educational disadvantage have the potential to succeed, the heterogeneous nature of student populations, and the lack of validated selection instruments and policies.

In terms of the number of applicants, Nunns and Ortlepp (1994:201) state that “unless greatly increased resources are forthcoming for universities in the near future, the short-term results will be a diminishing number of places....” This underlines the importance of accurate selection and prediction procedures that ensure that only those students with the potential to succeed academically are selected. The cost (financially and in terms of manpower wastage) of not selecting accurately and of accepting students who fail, is simply too high.

In the previous educational dispensation only matriculation results were used as admission criteria. Symbols obtained in the matriculation examination were combined into a single rating (m-score) on which selection decisions were based. However, the inferior education received by students in previously non-white schools caused significant problems, because the results of advantaged students could not be fairly and equally compared to those of disadvantaged students. Research (De Boer & Van Aardt 1998; De Boer & Van Rensburg 1997; Nunns & Ortlepp 1994; Skuy, Zolezzi, Mentis, Fridjhon & Cockcroft 1996) established that, for educationally disadvantaged students, the m-score alone is not an adequate predictor of academic success. In fact Mitchell and Fridjhon (1987) found that the percentage of variance of university performance explained by matriculation results was only approximately twenty percent.

Although inadequate, the m-score has thus far played an important role in the admission of first year students. At present a new assessment document, the Further Education and Training Certificate is being developed. Although, it has not yet been finalized, it seems that in the future, matriculation results will not be available anymore as single subject figures. This means that the m-score will become obsolete.

## 1.2 MOTIVATION

Within the above context, the challenge is to develop alternative measures of selection that do not rely exclusively on matriculation results, but that would afford both educationally advantaged and disadvantaged deserving students equal opportunity to be selected for placement at a university.

Zaaiman *et al* (1998:98) states that an effective selection mechanism is one that - despite educational disadvantage - “will select a high percentage of successful students and reject as few as possible of the students who could have been successful if they had been selected.” A survey of the relevant literature indicates that such a selection mechanism should constitute a variety of criteria. By using such multiple selection methods one could compensate for educational disadvantage, take cultural differences into consideration and start validating new selection criteria and procedures.

In an attempt to start investigating which factors should be included into a selection battery, a study by De Boer and Van Aardt (1998) concludes that admission tests should include language ability, analytical skills as well as personality factors such as locus of control. The conclusion that personality factors should be included in an admission battery is supported by Highbee and Dwinell (1990) who also suggest that non-intellective factors may be related to the success of academically disadvantaged students.

The University of Pretoria is currently collaborating with the University of Cape Town to refine the use of the Placement Tests in English for Educational Purposes (PTEEP), developed by Yeld (1998) for the selection of first year students. The PTEEP emphasizes language ability, especially verbal reasoning and numerical proficiency and thus partly

addresses the previously mentioned, language and analytical skills. However, personality factors relevant to academic success still need to be investigated. This study investigates the relevance of the use of a locus of control measure for selection purposes.

Locus of control, which can generally be divided into internal control and external control, can be defined as the degree of control individuals believe they have over the outcome of certain situations (Rotter, 1966). It is believed that an internal locus of control is positively, and an external locus of control, negatively, related to academic achievement (Findley & Cooper 1983; Kalechstein & Nowicki 1997; Lefcourt 1976; Phares 1976; Stipek & Weisz 1981).

### **1.3 CLARIFICATION OF TERMS**

#### **1.3.1 LOCUS OF CONTROL: INTERNAL - EXTERNAL**

The concept 'locus of control' derives from social learning theory (Rotter, 1954). In his 1966 monograph, J.B. Rotter defined locus of control as the degree of control that individuals believe they have over the outcome of certain situations. Rotter (1966: 1) describes it as follows: "When a reinforcement is perceived by the subject as following some action of his own but not being entirely contingent upon his action, then ... it is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding him ... we have labeled this a belief in external control. If the person perceives that the event is contingent upon his own behaviour or his own relatively permanent characteristics, we have termed this a belief in internal control." Thus, the person who believes that he/she has control over his/her life is internally controlled. The person who believes that he/she is controlled by luck, chance, fate or powerful others is externally controlled. These basic beliefs serve as the point of departure for this study.



### **1.3.2 COMPONENTS OF LOCUS OF CONTROL: INTERNAL, POWERFUL OTHER AND CHANCE/FATE ORIENTATION**

Levenson (1972) took issue with Rotter's (1966) broad classification of external control. Rotter (1966) classified all those who believe they are controlled by luck, chance, fate and powerful others as externals, without differentiating between them. Levenson (1972:261) argues that "people who believe the world is unordered (chance) would behave and think differently from people who believe the world is ordered but that powerful others are in control. In the latter case a potential for control exists." Levenson consequently developed a three dimensional scale (Internal, Powerful Others, and Chance Scale - I,P,C Scale ) to measure locus of control. The scale is used in this study.

### **1.3.3 GENERAL VERSUS DOMAIN SPECIFIC LOCUS OF CONTROL**

An overview of the literature (Carton & Nowicki 1997; Findley & Cooper 1983; Kalechstein & Nowicki 1997; Stipek & Weitz 1981) indicates that the characteristics of the measure of locus of control, specifically, the instruments' generality or specificity with regard to the behaviour being measured may mediate the relationship between this behaviour and locus of control. A general measure of locus of control measures a person's average locus of control attributes over many different situations. As such, using a generalized measure in a specific situation may lead to poor prediction, whereas an instrument devised to measure locus of control in a specific situation, such as academic achievement, may allow for more accurate prediction.

### **1.3.4 LEVELS OF DEFENSIVENESS AND SELF ESTEEM**

Several authors (Heaven, Stones & Rajab 1984; Howcroft 1990; Lay & Wakstein 1985) have stated that black university students seem to display higher levels of self esteem than white students even when they do not achieve academic success. A possible explanation for the

discrepancy in the self esteem of black and white students may be found in Howcroft's (1990:32) findings regarding black students' self esteem and the levels of defensiveness employed to maintain self esteem. Howcroft (1990) defines this defensiveness as "an irrational pretence at self-value, a self protective device designed to reduce anxiety and enhance a sense of security." It was found (Howcroft, 1990) that black university students display high levels of defensiveness in order to maintain positive feelings about themselves. Levels of defensiveness thus may have an important mediating effect on the relationship between self esteem and academic achievement.

Due to the previously established positive relationship between self esteem and locus of control (Hillman, Wood & Sawilowsky, 1992), it is hypothesized that black students' level of defensiveness may also have a mediating effect on the relationship between locus of control and academic achievement.

It is important, at this stage, to include an explanatory note regarding the references in this study to black and white students. The current discourse on the racial labels attributed to people suggests that race is a social construct and as such has little meaning (Wright, quoted from the internet: [www.afn.org/~dks/race/wright.html](http://www.afn.org/~dks/race/wright.html). on 5 February 2003 From the article One drop of blood in The New Yorker, 1994). However, 'race' has for so long been the dominant explanatory concept with regard to the South African population and still occupies such an important space in the social structure of the country (Foster & Louw-Potgieter, 1991) that simply discarding its use will be to deny the racial complications with which the country is currently struggling. It was mentioned previously that disadvantaged students come mainly from previously non-white schools where for historical reasons they have received inferior education. Furthermore, Wright (1994) states that "race, in the common understanding, draws upon differences not only of skin colour and physical attributes, but also of language, nationality and religion", thus of

cultural differences. Levenson's classification of locus of control into three dimensions raises the question of whether there may be a cultural difference in the way people perceive the controlling agencies in their lives. It is for these two reasons (inequality of education and cultural differences) that the differentiation between black and white students is made in this study, however, this is done in full acknowledgement of the current thinking regarding the construct of race.

### **1.3.5 ACADEMIC ACHIEVEMENT**

The subjects used in this study were students who were regarded as academically at-risk based on the entrance criterion operative at the time (m-score lower than 11). These students were allowed entrance on an m-score of lower than 11, as well on their scores on the PTEEP, provided that they followed the extended first year programme. This programme was designed to assist them by reducing the number of subjects usually required in the first year and by providing specialized tuition (known as the INZ course) which included language instruction, study skills training as well as computer skills training. Thus, the first year consisted of the compulsory INZ course as well as two major first year subjects. If students passed this year they were allowed to continue with the rest of the subjects required for the successful completion of their degrees.

Based on these facts, it was decided to use two criteria for academic success in this study. The first is that students must have successfully completed their first year of study. This implies that they have passed the INZ course as well as one major first year subject. The long-term criterion is that, three years later, they must have either completed the requirements for their degrees or be fully on track to do so in the fourth year.

#### **1.4 AIM OF THE STUDY**

The aim of this research is to determine whether the construct of locus of control can be used to predict academic success and to find variables (level of defensiveness and self esteem) that may influence this relationship. It further aims to determine whether the various components of the construct differentiates between students from different racial groups and compares the usefulness of a general and domain specific locus of control questionnaire for the prediction of academic success.

#### **1.5 HYPOTHESES**

The hypotheses are set out at this point with the realization that there has not yet been adequate discussion of the terminology used. The variables referred to in these hypotheses will be further discussed in chapter two. The main and sub-hypotheses of the study are as follows:

**Hypothesis 1:** Locus of control is related to academic achievement in a tertiary educational setting:

- 1.1. An internal orientation is positively related to academic achievement
- 1.2. An external powerful other orientation is positively related to academic achievement, but less so than an internal orientation
- 1.3. An external chance orientation is negatively related to academic achievement

**Hypothesis 2:**

- 2.1. A locus of control measure specifically applicable to academic achievement will predict academic success better in the long-term

2.2. A general locus of control measure will predict academic achievement better in the initial phase of tertiary education

**Hypothesis 3:** Black and white students in a tertiary educational setting do not differ with regard to locus of control

**Hypothesis 4:** There is a significant positive relationship between self esteem and academic achievement.

**Hypothesis 5:** Level of defensiveness has a mediating effect on the relationship between locus of control and academic achievement for black students

**Hypothesis 6:** Level of defensiveness is negatively related to academic achievement in black students

## **1.6 OVERVIEW OF THE STUDY**

### **1.6.1 SAMPLE**

The sample consisted of those first year students who enrolled in the INZ-programme as discussed above at the University of Pretoria in 1999. This group of students included some students who did not complete their matriculation certificates in South Africa and for whom no m-scores were available. It also included a small number of students who enrolled and failed their first year pre-1999. These two groups of students were excluded from analyses to ensure homogeneity of the sample. This left a group of 53 students who were used in this study.

### **1.6.2 OPERATIONALISATION OF CONCEPTS**

The concepts used in the study were measured in the following way:

2. **Locus of control** - generalised: The Internal, Powerful Other and Chance Scale (I,P,C Scales) (Levenson, 1981), which is a general measure of locus of control.

3. **Locus of control** – domain specific: The Multi-Dimensional, Multi-Attributional Causality Scale (MMCS) (Lefcourt, 1981), which is domain specific and pertaining to academic success.

- **Levels of Defensiveness:** The Social Desirability Scale (MCSDS) (Crowne & Marlowe, 1960).
- **Self Esteem:** The Rosenberg Self-Esteem Scale (SES) (Rosenberg, 1965).

### 1.6.3 DATA ANALYSIS

The data analyses employed in the study will be discussed in detail in chapter 3.

### 1.6.4 PROCEDURE

The test battery was administered to the students in one session within the first month of the academic year by the researcher. The students were informed that participating in the testing was voluntary and the procedure of completing the test battery was explained. Students' end of year marks and progress marks after four years of study were then analysed in conjunction with the results from the test battery.

### 1.7 SUMMARY

The background and objectives of this study were introduced in this chapter. The following chapter will provide the theoretical framework for the study and will set out the hypotheses. Chapter three deals with the methodological issues relevant to the study and chapter four presents the results of the study. Thereafter, the results are interpreted and discussed and recommendations made in chapter 7.

## CHAPTER 2

### THE THEORETICAL FOUNDATION OF THE LOCUS OF CONTROL CONCEPT

#### 2.1 INTRODUCTION

The locus of control concept, first introduced by Julian Rotter (1954), has its roots in the social learning theory. In this chapter, locus of control and its relationship with academic achievement is explained through the use of the main assumptions of the social learning theory.

The chapter further examines the influence of several variables on the achievement-control relationship. Firstly, methodological issues regarding the measurement of locus of control are discussed. These are the issues surrounding Rotter's original conception of locus of control as two ends of a continuum with external control on the one end and internal control on the other as well as the characteristics of the measure of locus of control.

Findings regarding the influence of race, specifically the results of the few South African studies which examined this relationship are summarized and an attempt made to clarify the role of this variable in the achievement - control relationship.

Lastly, an examination of the possible mediating effects of defensiveness and self esteem are undertaken.

#### 2.2 SOCIAL LEARNING THEORY AND LOCUS OF CONTROL

Social learning theory focuses on the interaction between individuals and their meaningful environments. Howard (1996) discussing this concept, argues that this interaction involves the individual engaging in specific

behaviours to gain specific rewards or to avoid possible frustrations present in the environment. He proposes that the probability of such a behaviour occurring is related to the individual's expectancy that the behaviour will gain reinforcement and that the reinforcement has value to the individual.

According to Rotter (1966) people who expect to be able to influence their reinforcements or goals through their own actions are internally controlled. People who expect not to be able to influence their reinforcements or goals are externally controlled.

Thus, in order to determine the probable academic behaviour of a student, one must consider two issues:

- The student's expectancy for the occurrence of a reinforcement or goal (academic achievement), and
- The reinforcement value that this goal holds for the student.

Within social learning theory, expectancy is defined as "the probability held by the individual that a particular reinforcement will occur as a function of a specific behaviour on his part in a specific situation or situations. Expectancy is independent of the value or importance of the reinforcement" (Rotter, 1954: 107).

What is of importance here is the subjective nature of expectancy. A person's expectation that reinforcement will occur is based on his/her subjective interpretation of past experiences and this subjective interpretation determines behaviour in new situations. Thus, when situations are perceived as being similar to each other, expectancies would generalize from one situation to the next. In concrete terms, a student may expect to pass (reinforcement) a specific subject if he/she works hard (specific behaviour) because he/she has already passed a test in that subject (specific situation), as well as passed at school



(similar situation). An individual's locus of control (belief in internal or external control) is an example of a generalized expectancy.

The question of when a person would behave according to a generalized expectancy now arises. Phares (1976: 23) stated that "it is in the ambiguous condition that perceived locus of control as a problem solving generalized expectancy can best be demonstrated. Presumably the lack of explicit situational cues allows the subject to react in (his/her) own characteristic fashion - as an internal or an external". For a first year student, university is an example of such an ambiguous situation. The student is unsure of his/her success in this new, confusing environment and is forced to fall back on his/her characteristic way of behaviour.

The second issue that needs to be considered is the reinforcement value of a goal. Within social learning theory reinforcement value refers to the possibility of an increase in the occurrence of an event due to the occurrence of a specific behaviour that was principally engaged in because of the value that the individual placed in the reinforcement. Thus, the value that a student places on passing the year will influence his or her decision to work hard or not.

Reinforcement value and expectancy are closely linked. According to social learning theory a specific behaviour (studying) results in a reinforcement (passing an examination) of the expectation that this specific behaviour will, in future, lead to this specific reinforcement. The individual will repeat the behaviour if the reinforcement is deemed valuable enough. In this way a behaviour–reinforcement sequence is set up that serves to either strengthen or weaken an expectancy. When the reinforcement is seen as contingent upon the person's own behaviour (internal control), expectancy is increased and when the reinforcement is seen as contingent upon something or someone else (external control), an expectancy is weakened. Rotter (1966) believes that, in most

situations, individuals with an internal locus of control behave differently from those with an external locus of control.

### **2.3 LOCUS OF CONTROL AS A MULTI-DIMENSIONAL CONSTRUCT**

As previously stated, Rotter (1966) predicted that an internal locus of control would be positively related to academic achievement and that an external locus of control negatively related to academic achievement. However, the research on the relationship between locus of control and academic behaviour would probably not have been as prolific as it is if the relationship was as simple as stated above.

In an attempt to summarise findings of studies that involved locus of control and academic achievement Findley and Cooper (1983) reviewed 204 studies published before 1983. They concluded that locus of control and academic achievement is significantly positively related and that the relationship is small to medium. Kalechstein and Nowicki (1997), following up on the Findley and Cooper (1983) study, analyzed 80 studies completed after 1983 and also concluded that there is a positive relationship between locus of control and academic achievement.

The majority of the studies reviewed by these authors concentrated on white middle class subjects and it thus seems that for this category of respondent at least, Rotter's assumptions hold true. However, inconsistent results are found in studies using unique populations such as the South African and African American populations. In a South African study on black marketers, Coetzer and Schepers (1997) found a significant relationship between externality and work performance. In contrast, Mwamwenda and Mwamwenda (1986) found no difference between Transkeian students and South African white students. Although the research is contradictory, it is possible that South African black students may have a more external orientation – due to their cultural beliefs - but that this does not necessarily mean that they

perceive less control over their environment than do white students. (The cultural beliefs that may foster an external orientation is discussed in paragraph 2.3.1.1 under the heading 'cultural issues and locus of control').

Graham (1994:79), reviewing 12 studies of adults or student populations in which locus of control of African Americans were related to other variables concludes that none of the studies "shows unequivocally that internality ...leads to more positive motivational outcomes." Findley and Cooper (1983) also found non-significant correlations between locus of control and academic achievement in this population.

### **2.3.1 COMPONENTS OF THE LOCUS OF CONTROL CONSTRUCT: INTERNAL, POWERFUL OTHER AND CHANCE EXPECTATIONS**

In light of the findings discussed above, other variables that could possibly throw light on the relationship between locus of control and academic behaviour need to be included in the study.

One such variable could to be the components of the locus of control construct. Regis (1990) states that "the original uni-dimensional construct of internal-external control posited by Rotter has been found wanting in practice." Dyal (1984:260) agrees, saying, "some of the inconsistencies in the predictive power of locus of control for academic achievement variables may have been due to the fact that all of these studies failed to differentiate the total I-E score into separate factors."

Graham (1994:79) noticed that all but one study reviewed by her used the Rotter I-E scale to measure locus of control. She concluded that the "simple internal-external dichotomy was not adequate to capture the relationship between control and other motivationally relevant variables." In this research, Levenson's (1972) I, P and C Scales are used in this study in an effort to find more clarity regarding students' perceptions of control and how this correlates with academic achievement.

It is important to consider two issues with regard to the components of the locus of control construct. The first is whether or not people of all cultures regard the controlling agencies in their lives similarly and secondly whether being either internally or externally controlled implies higher or lower academic success.

### **2.3.1.1 Cultural issues and locus of control**

The literature is fairly conclusive about the existence of a significant positive relationship between an internal locus of control and academic success as far as white middle class European-Americans is concerned. However, research using uni-dimensional scales with other population groups is inconclusive.

Dyal (1984), for example, found that of eighteen studies, twelve found blacks to be more external and six found no reliable difference between whites and blacks. Findley and Cooper (1983) concluded that there is no significant difference in the locus of control expectancies of blacks and whites, but did warn that their sample of studies involving blacks was small. Graham (1994:77) concluded that “there are just as many studies that do not show greater externality among blacks as studies that do, and this pattern is evident in all three decades in which these studies were carried out”.

Although South African studies on the topic are scarce, the same inconclusive results are evident. Moodley, Rajab and Ramkissoon (1979) found no difference between whites and blacks while Riordan (1981) found no difference between liberal English speaking students and blacks. However, in the latter study, conservative Afrikaans speaking whites were more internal than both blacks and liberal English speaking students. Mwamwenda and Mwamwenda (1986) comparing locus of control of Transkeien students with South African white students also found no difference.

Despite these inconclusive results, there seems to be a pervasive impression that blacks are more externally controlled than whites. This view is based on the collective nature of the culture of black South Africans. Tabane (1980:2-3) describes the culture of black South Africans:

“The typical black child is born into an extended kind of family in which the term relatives refer to more than just natural parents and their immediate families. (Relatives) have a status equal to that of the natural father, mother, brothers, and sisters. The group mind starts evolving at a very early age and continues to impact itself on the individual’s growth and development throughout his life. In the traditional way of life strong affiliative habits are encouraged and it is found that the communal norms strongly outweigh individual norms. The affiliation orientation is further influenced by the fact that in most cases the entire tribe can be traced back to the same ancestral origin.”

Coupled with this collective culture is a belief in spiritual forces. Verster (1988) says:

“In the traditional societies of Sub-Saharan Africa, thought and action are governed by a pervasive consciousness of the spiritual forces that give meaning and individuality to both the living and the dead. According to traditional African Philosophy, the pursuit of harmony and solidarity between members of a group through a personal relationship of subordination to the spiritual life forces that operate through beings, is a prime motive for behaviour.”

The foregoing discussion might create the impression that black culture inevitably produces in its members an external locus of control. However, evidence of a collective culture and a belief in spiritual forces should not be taken as evidence of an external orientation. To do so, would be to ignore the very far reaching social changes that have taken place in South Africa.

Tabane (1980), for example, states that urban blacks cannot be described in terms of a collective culture anymore and Verster (1988:147) emphasizes that there has been a disruption of traditional beliefs by the forces of “imperialism, industrialization, urbanization, education and western acculturation.” In South Africa, one should keep in mind that there have been major political changes since 1994 and that black students would have been affected by them. These changes afforded black students access to opportunities to obtain academic success through their own efforts and thus to perceive control over their own outcomes. Lefcourt (1976:25) states that, “perceived control is positively related to access to opportunity. Those who are able through position and group membership, to attain more readily the valued outcomes that allow a person to feel personal satisfaction are more likely to hold internal control expectancies.” Students who are now able to gain access to university studies would be able to feel such personal satisfaction and it is thus likely that such a student would be more internally controlled than one who has had no such opportunity.

### **2.3.1.2 Locus of control and academic achievement**

The second issue deriving from the first is whether being internally controlled – as opposed to being externally controlled is linked to higher academic success - whether access to a tertiary institution should be denied based on externality.

As discussed previously, there is a considerable body of research which suggests that in a Western context an internal orientation is related to academic success. Persons with an internal locus of control seem to show more overt striving for achievement than persons with an external locus of control (Erlund, 1984; Rotter, 1971). Lefcourt (1983) argues that students who believe they can influence the outcome of their work are more likely to be motivated in academic studies. Furthermore, persons

with an internal orientation seem to be more cognitively active (Erlund, 1984).

This does not mean, however, that an external orientation should be taken as evidence that a student will be less successful academically. Gurin, Gurin, Lao and Beattie (1969:33) state that "...focusing on external forces may be motivationally healthy if it results from assessing one's chances for success against systematic and real external obstacles rather than the exigencies of an overwhelming, unpredictable fate." They conclude that black students who are more aware of discrimination and who blame the system for their problems – thus, who have an external view – have higher aspirations than those who blame themselves – thus, those who have an internal orientation.

In a developing country like South Africa, the separation between personal and political control is particularly important. Niles (in Lefcourt, 1984) discusses the relevance of considering the ways in which individuals are controlled and made to feel powerless by both forces of chance or fate and powerful others. In a society like South Africa, which is experiencing rapid social change, competition for resources is fierce and there is a sharp division between those who have resources and those who do not have resources. There may thus be real oppression of groups of people which could lead to a feeling of being controlled by others. "Having an external view of the controlling agencies in many South Africans' lives is probably more based on fact than on personal subjective views. As such, recognizing that others do have control over their lives in some situations, but not discounting personal control in other situations, may be an important adaptive behaviour for many South Africans, including students" (Niles in Lefcourt, 1984:249). Today, despite the political, social, economic and educational changes that have taken place since 1994, Niles' observation of the reality of the social situation in South Africa is still relevant as many of the legacies of the past still prevail.

The findings discussed above lead researchers to question the validity of combining luck, fate, chance, and powerful others all under the heading of external control as Rotter has done. As discussed, research undertaken with the specific goal of taking different ideological beliefs and changing situations into consideration indicates that viewing locus of control as a unidimensional construct may be incorrect.

Reacting to conflicting results, Levenson (1972) developed a multi-dimensional view of locus of control in which she divided external control into reinforcement due to fate, chance, or luck and into reinforcement due to powerful others. She (Levenson, 1981:15) argues that in the latter case there is a potential for control: "it is quite conceivable that a person who believes in control by powerful others may also perceive enough regularity in the actions of such people as to believe that he/she can obtain reinforcements through purposeful action."

This implies that one needs to be careful not to simply assume that internality will automatically lead to academic success. It may be possible for a person who believes in external powerful others to perceive enough control over his/her life to also be successful.

Prociuk and Breen (1974:94), after using Levenson's scale to investigate the relationship between control and study habits and academic performance, concluded that their investigation supported Levenson's...

"differentiation of control into powerful others and chance dimensions and provide a possible explanation for the lack of significant findings in earlier research on locus of control and academic achievement. ...any potential grade point average differences between internals and externals may have been attenuated as a result of the differential levels of academic performance of individuals who perceive reinforcements to be controlled by powerful others as opposed to chance, luck, or fate."



Prociuk and Breen (1974) also found that those with an internal orientation were academically more successful than those with a powerful other orientation who were, in turn, more successful than those with a chance, luck, or fate orientation. This forms the basis for hypothesis 1 as given in paragraph 1.5.

Based on these findings it seems important that when working in a heterogeneous population, such as the South African one, the locus of control construct should be regarded as multi-dimensional. The differentiation between different types of external expectancies is important as it may have differential influences on subjects' academic success. Levenson's (1972) I, P, and C Scales are, therefore, used in this study to ensure that external beliefs are differentiated into a belief in powerful others on the one hand and a belief in chance, luck, or fate on the other.

#### **2.4 GENERAL LOCUS OF CONTROL VERSUS DOMAIN SPECIFIC LOCUS OF CONTROL**

According to Social learning theory, considering the situation in which people find themselves is important as behaviour does not occur within a vacuum. Rotter, Chance and Phares (1972) explain that a person reacts selectively to both internal and external stimuli in a way that is consistent with his/her unique experiences. Thus, as mentioned earlier, a person's previous interpretations of experiences can become generalized so that new experiences are interpreted in the same way. The social learning theory assumption is that generalized expectancies would have greater and specific expectancies, lesser, impact at the beginning of a situation in which the participants have little or no experience and that the reverse should be true as experience is gained (Carton & Nowicki, 1997). This is because, in a new situation, a person does not know what to expect and

has to fall back on previous experiences in the same or similar situations.

Implicit in this assumption, and relevant to this specific study, is the question whether a first year student regards the university situation as new and unfamiliar or whether he/she sees it only as a continuation of school. The student's view of this situation would affect his/her academic success in the following way: It could for example be expected that a student would generalize his/her academic experiences from one academic situation to the next. Thus, he/she, based on experiences in the school situation, may expect that studying hard would lead to passing the year. In this case it could be expected that a specific locus of control measure would predict academic success better than a generalized one.

However, it is also possible that the university situation may be vastly different from a first year student's school experience, in which case the student would depend on a characteristic way of behaviour, so that a general measure would be the best predictor of academic success.

Rotter (1966: 21) himself identified this as a variable to be included into any consideration of the influence of locus of control on academic achievement. He said that "...in the highly structured academic achievement situation, there is probably more specificity determining response than in other kinds of situations". Thus, an instrument devised to measure locus of control in a specific situation such as academic achievement probably allows for more accurate prediction.

The literature seems to be divided on the issue: Carton and Nowicki (1997) as well as Stipek and Weitz (1981) concluded from their studies that specific measures do not predict academic behaviour better than generalized ones. In contrast to these findings Findley and Cooper (1983) concluded that specific measures are associated with larger

effects. They did, however, warn that their studies considered mostly the Crandall Intellectual Achievement Responsibility Questionnaire (IARQ) and that this may have influenced their results.

The difficulty in coming to a conclusion regarding the efficacy of a domain specific test versus a generalized test may be due to the fact that no studies could be found that used the tests comparatively with the same population. To this end, the instruments used to measure locus of control of reinforcement in this study are Levenson's (1972) Internal, Powerful Other, and Chance Scales which is a general measure and the Multi-Dimensional, Multi-Attributional Causality Scale (Lefcourt, Von Baeyer, Ware, & Cox, 1979) which is specific for academic achievement amongst university students.

## **2.5 LEVELS OF DEFENSIVENESS AND SELF ESTEEM**

As stated before, the literature (Carton & Nowicki, 1997; Findley & Cooper, 1983; Kalechstein & Nowicki, 1997; Katz, 1967; Munro, 1979) is fairly conclusive about there being a positive correlation between locus of control and academic achievement in middle class, white, European students. However, the picture seems much less clear when other populations are involved (Graham, 1994; Gurin, Gurin, Lao & Beattie, Hillman, Wood & Sawilowsky, 1992; Holliday, 1985; Howerton, Enger, & Cobbs, 1993; 1969; Riordan, 1981; Stipek & Weisz, 1981). Findings in these studies range from there being a positive relationship between internal control and achievement to there being a negative relationship between these two variables.

The relationship between locus of control and self esteem may clarify the picture. Dyal (1984) states that there have been consistently significant albeit small, positive correlations between self esteem and locus of control.

However, there seems to be differences between the self esteem of white students and that of black students. Whereas white students' self esteem ratings correlate with their achievements, black students show elevated levels of self esteem with regard to their academic success. South African studies conducted by Heaven, Stones and Rajab (1984), Howcroft (1990) and Lay and Wakstein (1985) indicate that Black students show high levels of academic and global self-esteem. In an overview of 18 studies of academic self esteem, Graham (1994) found that, in the majority of the studies, despite achieving badly academically, blacks consistently have higher self esteem ratings than whites. Hillman, Wood and Sawilowsky (1992) also found that external, under-achieving black students have higher self esteem than their white counterparts.

There may thus be other variables that influence self esteem. Howcroft (1990) investigated the possibility that defensive maneuvers used to maintain self esteem may be such a variable and used the Marlowe – Crowne Social Desirability Scale to measure this. It was found there are higher levels of social desirability in black university students than in white students.

Levels of defensiveness thus seem to have an important confounding effect on the relationship between self esteem and academic achievement as it affects the authenticity of self esteem. Because of the previously established positive relationship between self esteem and locus of control, it is hypothesized that a black students' level of defensiveness may also have a confounding effect on the relationship between locus of control and academic achievement. The foregoing discussion forms the basis for hypotheses 4, 5 and 6.

This study is an attempt to determine the relationship between levels of defensiveness (social desirability), self esteem and both general and domain specific locus of control and to determine whether these variables have an influence on academic achievement.

## **2.6 SUMMARY**

Although the literature is clear about a correlation between the locus of control construct and academic achievement in Western contexts, there are certain variables that influence this relationship and their role must be understood before the construct can be used for prediction purposes. The variables addressed in this study are the components of locus of control, the generality versus specificity of the measurement instrument used as well as the race of the respondent. An effort is also made to investigate the possible influence of self esteem and levels of defensiveness as measured by social desirability on locus of control.

## **CHAPTER 3**

### **RESEARCH METHOD**

#### **3.1 INTRODUCTION**

In its reliance on a quantitative methodology, standardised measurement instruments and statistical analysis, the study falls within the positivist tradition. It seeks to investigate whether the locus of control construct mediated by level of defensiveness and self esteem can be used to predict academic success.

Within this framework, this chapter discusses the research design, operationalisation of concepts, measurement instruments and data analyses.

#### **3.2 RESEARCH DESIGN**

The study is non-experimental in nature and employs a correlational design. The goal of correlational research is to measure the strength of the relationships between variables in order to predict one variable from

the other. Correlational research is non-experimental and thus does not allow for causal inferences. It is nonetheless appropriate in a study that aims at investigating relationships between the locus of control construct and short-term and long-term academic achievement.

### **3.2.1 VARIABLES**

The predictor variable refers to what is usually understood to be the independent variable. In this study an attempt is made to determine the interactive relationship between locus of control, level of defensiveness and self esteem and the criterion variable.

The criterion variable (dependent variable) is the variable that we are trying to understand. In this study, short-term and long-term academic success is the criterion variable.

### **3.2.2 SAMPLE**

The sample consisted of first year students who enrolled for the extended academic programme in the Faculty of Humanities at the University of Pretoria in 1999. Only those students who did not have the acceptable m-score (11 or higher) for direct admittance to an academic programme in the Faculty of Humanities and who achieved an acceptable rating on the PTEEP were allowed to enroll for this course.

In order to keep the sample as homogeneous as possible, some students from the original sample were excluded from the study. Only the results from students who enrolled as first year students for the first time in 1999 and who completed their matriculation year in South Africa were analysed.

### **3.2.3 PROCEDURE**

The study was conducted in the Faculty of Humanities at the University of Pretoria. Students completed the test battery during January 1999 in the first month after the start of the academic year. The test battery was completed in one session. The students were informed that participating in the testing was voluntary and the procedure of completing the test battery was explained.

## **3.3 OPERATIONALISATION OF CONCEPTS**

### **3.3.1 CRITERION VARIABLE**

The criterion variable in this study is academic success, which is operationalised in the following way:

Two measurements of academic success were included into the study. There were a number of different subjects taken by each student. Courses were furthermore a mixture of semester and year courses, which makes it impossible to judge the degree of difficulty of each student's course. The only subjects shared by all students were those relevant to the extended course, called the INZ course. An inherent requirement of their degrees was that students had to pass their INZ course as well as one other subject at the end of the first year of study. This was the first criterion. In order to differentiate between students who just made the grade and those who fared very well, results were divided into students who didn't pass the INZ course, those who passed the INZ course alone, those who passed the INZ course plus one subject and those who passed the INZ course plus two subjects. In the data analyses (see chapter 4) this is indicated as "Results 1999".

The second measure was a longer term one and consisted of whether or not students completed their under-graduate degrees successfully or

were about to complete it at the end of 2002. Inclusion of this measurement ensures a longitudinal view and allows judgement of the prediction value of the locus of control construct over the longer term. In the data analyses (see chapter 4) this is indicated as “Successful/Unsuccessful”.

### **3.3.2 PREDICTOR VARIABLES**

The following predictor variables were examined:

#### **3.3.2.1 The Internality, Powerful Others and Chance Scales**

##### **Description**

These scales, developed by Levenson (1972) represent a multidimensional view of the locus of control construct. It separates Rotter's (1966) unidimensional view of the control construct into three dimensions in that it differentiates between internality and two types of external control: control by powerful others and control by fate, chance, or luck.

The scales are a reconceptualization of Rotter's I-E Scale (1966). They, therefore, comprise of items adapted from the I-E Scale as well as items specifically created to assess the expectancy for control in the three dimensions.

The Internality (I) Scale measures the extent to which people believe that they have control over their own lives. The Powerful Other (P) Scale measures the extent to which people believe that powerful others control their outcomes. The Chance, Luck, or Fate (C) Scale measures people's beliefs about chance control (Levenson, 1981).



The three subscales, which are presented as a unified scale of 24 items, each consists of 8 items written in a 7-point Likert format. The Likert scale ranges from -3 (strongly disagree) to +3 (strongly agree). Each item is worded in the first person to ensure a personal-ideological distinction. This ensures that statements are phrased in such a way as to pertain only to the person answering. It does not ask how people feel in general, but how the individual feels him/herself.

Subject's responses to each item are added. A constant of 24 is added to eliminate negative values so that the range of scores per subscale lies between 0 and 48.

### **Normative Data**

Levenson (1981) presents extensive norms for her scale based on the results of studies including non-American samples (Japanese and German), psychiatric patients, alcoholics, prisoners, cancer patients, spinal cord injury patients, students and activists. Based on the results of these studies, Levenson (1981) presents the means for the Internality subscale as ranging from the low 30's to the low 40's, with standard deviations of approximately 7. The modal mean is 35. The means for the Powerful Other subscale range from 18 to 26, with a standard deviation of 8.5. The modal mean is 20. The means for the Chance subscale range from 17 to 25 with a standard deviation of 8. The modal mean is 18.

### **Reliability**

Levenson (1981) reports Kuder-Richardson reliabilities of .64 for the I Scale, .77 for the P Scale and .78 for the C Scale for a sample of 152 students. Similar estimates were found by Wallston, Wallston and DeVellis (1978) for an adult sample consisting of 115 subjects (I = .51, P = .72, and C = .73) as well as by Levenson (1973) for a sample of subjects consisting of hospitalized psychiatric patients (I = .67, P = .82, and C = .79) Thus inter-item reliability is moderately high. Levenson

(1981) explains that this is to be expected as items are drawn from a variety of situations.

Levenson (1973) obtained split-half reliabilities of .62 for the I Scale, .66 for the P Scale, and .64 for the C Scale. Thus item equivalence reliability is also moderately high.

Levenson (1973) found test-retest reliabilities of between .60 and .79 over a week-long period. Levenson (1973) also reported on unpublished test-retest reliabilities reported by other researchers. These researchers obtained test-retest reliability scores of .66 and .85 for the I Scales, .62 and .91 for the P Scales, and .73 and .65 for the C Scales respectively. Thus temporal stability ranges from moderate to high.

### **Validity**

One would expect the P - and C Scales to converge together as both measure external expectancies, but not to converge with the I Scale which measures internal expectancies. This expectation is confirmed in results of studies reported on by Levenson (1981). In these studies the P and C Scales are slightly to moderately correlated with correlations ranging from .4 to .6. Correlations of the P and C Scales with the I Scale in these studies were minimal ranging from -.25 to .19.

Concurrent validity of the P and C Scales as measures of an external control orientation has been confirmed by comparison studies involving Rotter's I-E Scale. The I-E Scale correlates positively with The P and C Scales with correlations ranging between .22 to .25 and .43 to .56 respectively. It should be kept in mind however that correlations with the P Scale are very low.

Levenson (1981) also reports on comparative studies investigating the relationship between the I, P and C Scales and the California Personality Inventory (CPI) and the Sixteen Personality Factor Questionnaire

(16PF). The I Scale is positively related to sociability and the C Scale is negatively related to a sense of wellbeing and responsibility in the CPI. The P Scale is positively related to suspiciousness, and the C Scale to guilt proneness on the 16PF.

The I, P, and C Scales have been validated against several criterion measures. Prociuk and Breen (1974: 94) used the I, P, and C Scales to examine the relationship between control and study habits/attitudes and academic performance. Their results supported the prediction of a positive correlation between the criterion measures and internal control and a negative correlation between the criterion measures and chance expectations. The researchers concluded that their results “...support Levenson’s differentiation of control into powerful others and chance dimensions and provide a possible explanation for the lack of significant findings in earlier research on locus of control and academic achievement. (With the I-E Scale) any potential grade point average differences between internals and externals may have been attenuated as a result of the differential levels of academic performance of individuals who perceive reinforcements to be controlled by powerful others as opposed to chance, luck, or fate.”

### **Conclusion regarding the I, P, C Scales**

The multidimensional I, P, and C Scales were developed out of a belief that, in addition to internality, it is crucial to differentiate between two types of external control - a belief in powerful others and a belief in chance control. Levenson (1981: 53) states that “research findings in many areas - development, health, cognition, psychological adjustment, achievement, and interpersonal behaviour - support the usefulness of the tripartite differentiation.”

### **3.3.2.2 The Multidimensional - Multi-attributational Causality Scales (MMCS)**

#### **Description**

The Multidimensional-Multi-attributional Causality Scales were developed by Lefcourt, Von Baeyer, Ware and Cox (1979) in order to accommodate earlier empirical work as well as Rotter's (1966) own thoughts, that suggested that domain specific instruments would measure control expectancies better in specific areas than general measures. Lefcourt *et al.* (1979: 288) state that "specific expectancies are assumed to be more powerful predictors of criteria related to those expectancies than are generalized expectancies." Thus, the scale is specifically designed for use with students and is goal-specific with regards to achievement and affiliation.

The scale comprises two sets of 24 items each. The two sets concern achievement and affiliation respectively. For this study, only the items relating to achievement were used since there was a limited amount of time available for testing. Each set of 24 items is further subdivided into two sets containing 12 items each concerning success and failure items. "Within each 12-item set, there are four attributions composed of three items each. These consist of ability and effort as the internal attributions and luck and context as the external attributions. Thus there are three items concerning ability as an explanation for success and three items pertaining to ability as an explanation of failure in achievement, likewise for effort, luck, and context" (Lefcourt in Robinson, Shaver & Wrightsman, 1991: 454). Each item is scored in a five-point Likert format with a possible range of scores between 0 and 96. High scores indicate an external orientation. In the data analyses (see chapter 4) this is indicated as "Internal" and "External".

### **Normative Data**

Lefcourt, von Bayer, Ware and Cox (1979) report the following normative data for the Achievement Scale.

Table 3.1: Normative data for the MMCS Achievement scale

	MALE (n=102)		FEMALE (n=98)	
	<b>M</b>	<b>SD</b>	<b>M</b>	<b>SD</b>
Ability	14.4	3.4	15.0	3.5
Effort	18.3	3.0	18.1	3.8
Context	13.4	4.0	12.6	3.7
Luck	12.0	4.3	11.6	4.6
Internality	32.7	5.0	33.1	5.3
Externality	25.3	6.5	24.2	7.1
Success	18.2	4.8	17.6	5.2
Failure	22.5	5.7	21.5	6.1
Total achievement	<b>40.7</b>	<b>8.0</b>	<b>39.1</b>	<b>9.1</b>

### Reliability

Lefcourt *et al.* (1979) reports the following internal consistency measures: Cronbach alphas ranging between .58 and .80 for achievement externality. Scores for achievement internality range from between .50 and .77 and for achievement externality between .66 and .88.

Lefcourt (1981) further reports corrected Spearman - Brown split - half correlations ranging from .67 to .76 for achievement. Final Spearman – Brown split-half correlations for the total locus of control scale was .79. Lefcourt (1981) felt that given the rather heterogeneous nature of the larger scales, these magnitudes can be considered reasonable.

Temporal stability has been assessed with time lags between each application of the test ranging from one week to four months. Test-retest correlations for the achievement scale range between .51 and .62.

### **Validity**

Lefcourt *et al.* (1979) report correlations that are positive, significant and of variable magnitudes when correlated with Rotter's I-E Scale. They range from .23 to .62 for the Achievement scale. Lefcourt *et al.* (1979) state that "while the magnitude is such that the variance in common rarely exceeds 11%, the achievement MMCS - especially the achievement - externality subscale - can be said to suffer from social desirability effects".

Validity studies reported on by Lefcourt (1981) have found listening behaviour and social interaction skills to be correlates of the affiliation scale while behaviour and affective responses in achievement tasks are related to the achievement scale.

### **Conclusions regarding the MMCS**

Lefcourt *et al.* (1979) concludes that initial evidence offers support for the use of a goal specific locus of control scale but cautions that care should be taken to use it only with its intended target population namely, university students.

### **3.3.2.3 MARLOWE - CROWNE SOCIAL DESIRABILITY SCALE (MCSDS)**

#### **Description**

The scale was developed as an improvement of the Edwards Social Desirability Scale which contained items mainly related to pathological behaviour (Paulhus in Robinson, Shaver & Wrightsman, 1991). The

Marlowe-Crowne Social Desirability Scale, in contrast focuses on ordinary personal and interpersonal behaviours.

The scale consists of 33 items which describe desirable but uncommon behaviours (e.g. willingness to admit mistakes) or undesirable but common behaviours ( e.g. not paying for services). There are 18 items keyed in the true direction and 15 in the false direction to which respondents respond with either 'true' or 'false'. Scores range from 0 to 33, with higher scores representing a higher need for approval.

### **Normative Data**

Paulhus (in Robinson, Shaver & Wrightsman, 1991) provides the following normative data: Means obtained in several studies range from 12.3 to 16.4 and standard deviations range from 4.3 to 6.8.

### **Reliability**

The studies summarized above report alpha coefficients ranging between .73 and .88. A test-retest correlation of .88 was obtained by Crowne and Marlowe (1964) with a time lapse of one month.

### **Validity**

Crowne and Marlowe (1960) intended the original scale as a measure of social desirability. Their studies published in 1964, however, shows that the scale in fact taps an underlying construct, namely, need for approval. Thus, although this scale has been shown to also measure need for approval it can still be used to determine social desirability as "the scale taps predominantly the factor of social desirability" (Paulhus in Robinson, Shaver & Wrightsman, 1991: 29)

## **3.3.2.4 The Rosenberg Self Esteem Scale (SES)**

### **Description**

This scale is an attempt to achieve a unidimensional index of global self esteem and is based on the Guttman model. It was specifically developed to facilitate ease of administration and economy of time. It is a short scale, which consists of 10 items, five phrased in a positive direction and five phrased in a negative direction. Each item is rated on a four-point scale ranging from strongly agree to strongly disagree.

### Normative Data

Oelofse (1996) in a summary of studies using the SES provides the following normative data:

Table 3.2: Normative data for the SES

Sample	Mean	SD
US Undergraduates	34.2	4.47
US Undergraduates (Black)	33.7	4.82
US Undergraduates (White)	32.4	4.68
US Undergraduates (Asian)	28.2	4.96

### Reliability

Two week test-retest reliability scores for two small college samples showed reliability coefficients of  $r = .85$  and  $r = .88$  (Chubb, Fertman & Ross, 1997). Blascovitch and Tomaka (in Robinson, Shaver & Wrightsman, 1991) further report Cronbach alphas of  $.77$  and  $.88$ . They also report test-retest correlations of  $.85$  after a two week interval and of  $.82$  after a one week interval.

### Validity

Rosenberg's (1965) study with 5 000 American adolescents provided considerable evidence for the test's construct validity derived from theoretical relationships between self esteem and depression, self esteem and psychophysiological indicators and self esteem and peer group reputation. Rosenberg (1965) also discusses the relationships



between self esteem and various aspects of psychological functioning, interpersonal attitudes, peer group participation and leadership, as well as occupational values and aspirations, which rendered further evidence of the scale's construct validity. Rosenberg (1965: 17-18) states "we explicitly attempted to select items which openly and directly dealt with the dimension under consideration" and concludes that there is little doubt that the items generally deal with a favourable or unfavourable attitude toward oneself.

Robinson and Shaver (in Chubb, Fertman & Ross, 1997) demonstrated convergent validity with the Coopersmith Self Esteem Inventory. The scales correlated at  $r = .60$ .

### **Conclusion regarding the SES**

It is clear from the discussion above that the Rosenberg Self Esteem Scale's reliability and validity has been established. Its ease of use, administration and scoring makes it an ideal tool to use for the purposes of this study.

### **3.4 STATISTICAL PROCEDURES**

Both parametric and non-parametric statistical procedures were used in this study. Although this is unusual it became necessary due to the following factors. Kolmogorov-Smirnov test results as well as visual inspection of the population distribution graphs showed slightly irregular normality distributions. This coupled with the fact that sample sizes for this study are fairly small, motivated the decision to use the non-parametric Mann-Whitney U test and Spearman rank-order correlation coefficients.

Partial correlations, a parametric statistic, were then used to investigate the role of the mediating variables, social desirability and self esteem, in the relationship between locus of control and academic performance.

Social desirability and self esteem were first partialled out separately after which both variables were partialled out together. The use of partial correlations became necessary as there is no relevant equivalent non-parametric method available. Although, as previously stated, sample sizes were small and assumptions of normality were not fully met, consultation with experts on the use of statistics, suggested that these assumption violations were not so serious that it ruled out the use of partial correlations.

The Mann-Whitney U test, the Spearman rank-order correlation coefficient and partial correlations as they were applied in this study will now be discussed in more detail.

### **3.4.1 THE MANN-WHITNEY U TEST**

The Mann-Whitney U test was performed in order to determine whether there was a significant difference between, first, successful and unsuccessful students' academic performance and the independent variables, and then, black and white students' academic performance and the independent variables.

According to Siegel (1956) the Mann-Whitney U test is the most powerful of the non-parametric tests and is a suitable alternative to the t-test. While the t-test assumes homogeneous variances, normal distributions and acceptably large sample sizes, the Mann-Whitney U test remains applicable if these assumptions can not be fully met. Although the Mann-Whitney U test is not as powerful as the t-test, Siegel (1956:126) states that "the power efficiency of the Mann-Whitney U (test) approaches 95% for even moderate sized samples which makes it an excellent alternative for the t-test".

The Mann-Whitney U test "is a test statistic that reflects the differences between the sums of ranks of two groups, corrected for the influence of

sample sizes” (Diekhoff, 1992:152). Steps in determining the Mann-Whitney U include combining and rank-ordering the scores from lowest to highest so that the lowest score is ranked 1, the next higher score, 2, and so on. All tied scores receive the same rank which is equal to the average of the position of the raw scores. The value of U is then determined using a specific formula.

### **3.4.2 SPEARMAN RANK-ORDER CORRELATION**

The Spearman rank-order correlation can be used for data that deviate from normalcy. A value of -1 through 0 to +1 describes the relationships between the variables. The sign determines the nature of the relationship. A perfect positive relationship is indicated by +1, whereas a perfect negative relationship is indicated by -1. A zero relationship between variables is indicated by a 0.

Siegel (1956) reports that in comparison with the parametric correlation, the Pearson  $r$ , the power–efficiency of the Spearman rank-order correlation is approximately 91%.

### **3.4.3. PARTIAL CORRELATIONS**

According to Hair, Anderson Tatham and Black (1998) a partial correlation coefficient is a value that indicates the strength of the relationship between a dependent variable and an independent variable when the effect of another independent variable is held constant. In this study, it is necessary to determine the mediating effects of levels of defensiveness and self esteem on the relationship between locus of control and academic achievement. Therefore levels of defensiveness and self esteem need to be held constant to determine the correlations between the other variables.

Both first-order and second-order partial correlations were determined. A first-order partial correlation is used when the correlation between two

variables is determined while holding the effect of a single third variable constant. In this study, the effect of, first, social desirability and then self esteem will be held constant. A second-order partial correlation is used when the effects of two variables are held constant. Here, the effects of both social desirability and self esteem will be held constant to determine the correlations between the various measures of locus of control and academic performance.

### **3.5 SUMMARY**

In pursuing the main aim of this study, determining the predictive value for the selection of students of the locus of control construct and the effect of level of defensiveness and self esteem, the research method, measuring instruments and statistical procedures were discussed. The results of the study will be reported in chapter four.

## CHAPTER 4

### RESULTS

#### 4.1 INTRODUCTION

This chapter first presents the descriptive statistics regarding the sample, after which the descriptive results pertaining to the dependent variable, long and short-term academic performance, and the independent variables are presented. This is followed by the results pertaining to the various hypotheses stated in Chapter 1.

#### 4.2. DESCRIPTIVE STATISTICS OF THE SAMPLE

The sample consisted of 53 first year students who were enrolled for the INZ– programme at the University of Pretoria in 1999. Their biographical details are as follows:

##### 4.2.1. RACE

Figure 4.1 reflects the racial composition of the sample, indicating that black students (33 = 62.3%) were in the majority.

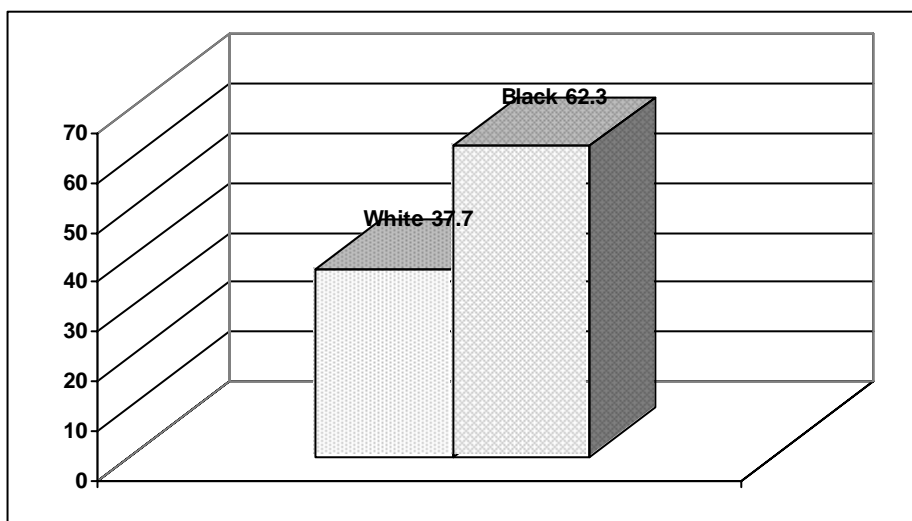


Figure 4.1: Racial composition

#### 4.2.2. GENDER

Figure 4.2 indicates that approximately two thirds (35 = 66%) of the students were female.

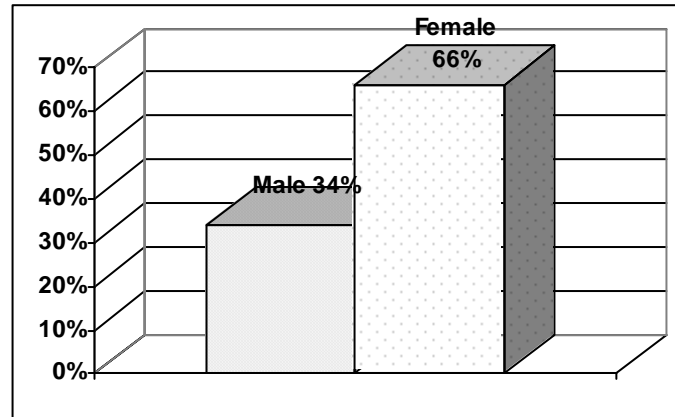


Figure 4.2: Gender Composition

#### 4.2.3 AGE

The samples' age distribution is provided in table 4.1. The majority of respondents (38 = 71.7%) were twenty years old or younger. Of the respondents 20.8% (n = 11) were between 21 and 22 years of age, while only 3.8% (n = 2) respectively were between the ages of 23 and 24 and 25 or older.

Table 4.1: Age distribution

Age	Frequency	Percentage
17 - 18	14	26.4
19 - 20	24	45.3
21 - 22	11	20.8
23 - 24	2	3.8
25+	2	3.8
<b>Total</b>	<b>53</b>	<b>100</b>

4.2.4

HOME

## LANGUAGE

Table 4.2 indicates that the single largest group of respondents (32.1%; n = 17) were Afrikaans speaking, followed by North Sotho (15.1%; n = 8) and Tswana (13.3%; n = 7).

Table 4.2: Home Language distribution

Language	Frequency	Percentage
Afrikaans	17	32.1
English	4	7.5
Ndebele	3	5.7
North Sotho	8	15.1
South Sotho	1	1.9
Swazi	2	3.8
Tsonga	1	1.9
Tswana	7	13.3
Xhosa	4	7.5
Zulu	4	7.5
Other	2	3.8
Total	53	100.0

### 4.3. DESCRIPTIVE STATISTICS OF THE DEPENDENT VARIABLE

Table 4.3 provides the academic results at the end of the respondents' first year of study. Respondents needed to pass the INZ course plus at least one major first year subject in order to continue with their second year of study. Table 4.3 shows that 41.5% (n = 22) of the students failed

their first year. Twenty four and a half percent ( $n = 13$ ) of respondents passed the INZ course plus one subject, while 34% ( $n = 18$ ) passed the INZ course plus two subjects.

Table 4.3: Results for the first year of study

Result	Frequency	Percentage
Failed INZ course	15	28.3
Passed INZ course only	7	13.2
Passed INZ course + 1 subject	13	24.5
Passed INZ course + 2 subjects	18	34
Total	53	100

Figure 4.3 reports on the respondents' long-term academic success.

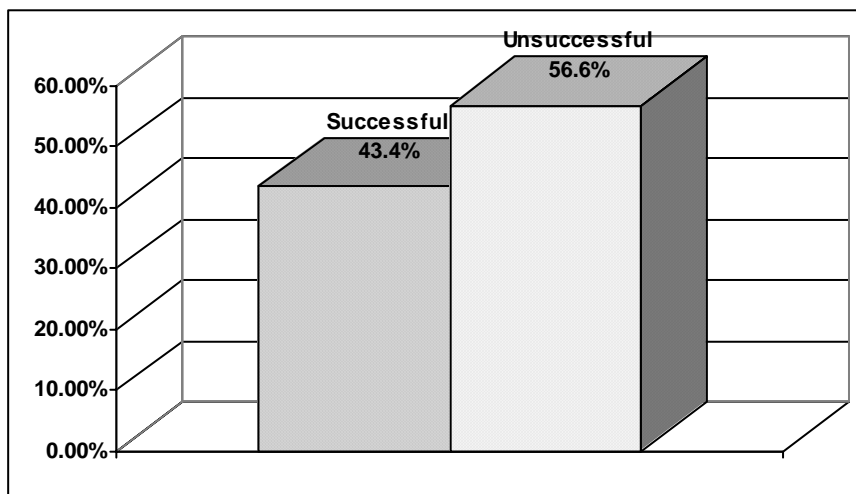


Figure 4.3: Success with undergraduate degrees

Respondents who have either completed their degrees or were about to complete their degrees at the end of the year 2002 were regarded as successful. Figure 4.3 indicates that by 2002 less than half (43.4%;  $n = 31$ ) of the students completed or were about to complete, their pre-graduate studies successfully.



Table 4.4 is an indication of the black and white students' long-term academic success. A chi-square test indicated that these differences were not significant even though it seems that more black than white students were successful in the long run.

Table 4.4: Long-term success rate of black and white students

	Successful	Unsuccessful
White students	30.0	70.0
Black students	42.4	57.6

#### 4.4. THE DIFFERENCES BETWEEN THE SAMPLES

In order to test the hypotheses and to determine the differences between the samples a decision regarding the use of parametric versus non-parametric statistics needed to be reached. The decision to use the non-parametric Mann-Whitney U test and Spearman rank-order correlations was influenced by the small sample sizes, the slightly irregular shape of population distributions and a display of slight heteroscedacity in the data.

The convention at this point of a study would be to provide the descriptive statistics for the independent variables. However, on inspection, no significant differences between the independent variables were found when successful and unsuccessful respondents for the total sample were compared with each other. This result can be seen in table 4.5 which presents the Mann-Whitney U test results for the various independent variables.

Table 4.5: Mann-Whitney U test results on the IPC Scales, MMCS (Internal, External) scores, the SES and MMCS scores with successful and unsuccessful students.

Measurement	U-value	2-tail significance
I	242.500	0.065
P	330.000	0.787
C	318.500	0.634
Internal	278.000	0.229
External	290.000	0.323
SES	301.000	0.427
MCSDS	255.000	0.105

This finding was contrary to expectation and on further reflection, it was thought that the respondents' racial backgrounds may influence the relationship between the independent variables and academic success.

When the Mann-Whitney U test was performed with race as the grouping variable the following results were obtained:

Table 4.6: Mann-Whitney U test results on the measurement scales with race as the grouping variable.

Measurement	U-value	2-tail significance
I	168.500	0.003*
P	228.500	0.062**
C	194.000	0.012*
Internal	134.500	0.000*
External	261.00	0.205
SES	183.500	0.007*
MCSDS	444.500	0.116

\*  $P < 0.05$ ; \*\*  $P < 0.10$

Table 4.6 indicates that there are significant differences in the general measure of locus of control (I,P,C Scales), the academic internal locus of control scale as well as the SES for black and white students. (The P scale showed a tendency towards significance with  $p < 0.10$ ).

This finding suggested a change of focus of the study to concentrate on the way the independent variables operate with regard to the academic results within the two racial groups respectively, rather than to whether

the sample as a whole was either successful or unsuccessful academically.

Thus, from this point forward, the results will be reported to reflect the findings as it relates to black and white respondents respectively.

#### 4.5 THE INDEPENDENT VARIABLES

Table 4.7 presents an analysis of the distribution of scores on the various measuring instruments. In all the instances where the Mann-Whitney U test showed significant differences, the black students obtained higher scores than the white students. The mean scores obtained for the various measures in this study will be compared with the mean scores obtained in other published studies in the next chapter.

Table 4.7: Distribution of scores on the various measuring instruments

Sample	Measuring Instrument	Mean	Std. Dev.
White sample (n= 20)	I	33.30	4.231
	P	15.25	6.958
	C	15.95	8.300
	Internal	32.35	4.626
	External	18.45	6.517
	SES	28.70	4.256
	MCSDS	16.35	3.452
Black sample (n = 33)	I	37.36	4.788
	P	19.06	6.605
	C	21.61	9.021
	Internal	39.03	6.013
	External	21.73	8.460
	SES	31.33	3.452
	MCSDS	18.85	4.445

#### 4.6. THE DIFFERENCES BETWEEN THE SAMPLES

In order to investigate the normality of the distributions the Kolmogorov – Smirnov test was employed. Tables 4.8 and 4.9 shows that the population distributions are normal except in the cases of the C scale for

the white sample and the P scale and the External scale for the black sample. The C scale for the white sample and the P scale for the black sample show a slight tendency towards deviation from the norm while the External scale for the black sample shows a more severe deviation from the norm. Thus, on the whole, the assumption of normality is satisfied except for slight deviations in three instances. Due to the small sample sizes it was deemed prudent to confirm the finding by a visual inspection of the normality plots. Visual investigation of the plots confirmed this finding and showed that the deviation was due to some outliers in the C and P scales and flatness in the distribution on the External scale. Based on these findings it was decided to employ the non-parametric Mann–Whitney U test and the Spearman rank-order correlation. The Mann-Whitney U test results have already been reported in section 4.4.

Table 4.8 :Kolmogorov-Smirnov test of normality for white sample

	<b>Statistic</b>	<b>df</b>	<b>Significance</b>
I	.095	20	.200
P	.093	20	.200
C	.171	20	.126
Internal	.106	20	.200
External	.102	20	.200
SES	.145	20	.200
MCSDS	.101	20	.200

Table 4.9 :Kolmogorov-Smirnov test of normality for black sample

	<b>Statistic</b>	<b>df</b>	<b>Significance</b>
I	.085	33	.200
P	.133	33	.149
C	.085	33	.200
Internal	.091	33	.200
External	.172	33	*.015
SES	.120	33	.200
MCSDS	.110	33	.200

#### 4.6.1 SPEARMAN RANK-ORDER CORRELATION COEFFICIENTS

The Spearman rank-order correlation coefficients ( $r_s$ ) were used to determine the correlations between the variables. The results for the white sample are reflected in table 4.10

There is a positive correlation between results at the end of the first year of study and final academic success ( $p < 0.01$ ). There are further positive correlations ( $p < 0.05$ ) between social desirability and long-term academic success and between self esteem and an external locus of control ( $p < 0.05$ ) and a chance orientation ( $p < 0.05$ ). Negative correlations are obtained between a chance orientation and a powerful other orientation ( $p < 0.05$ ). An external locus of control correlates negatively with a powerful other orientation ( $p < 0.01$ ) as well as with a chance orientation ( $p < 0.05$ ). Self esteem (SES) correlates negatively with a generalized internal orientation ( $p < 0.05$ ). Social desirability (MMCS) correlates negatively with generalized internality ( $p < 0.05$ ), an academic internal locus of control ( $p < 0.05$ ) and self esteem ( $p < 0.05$ ).

No statistically significant correlations are evident between the dependent variables and either generalized or academic internality for white respondents.

Table 4.10: Spearman Rank order correlations for white respondents (n = 20)

	Succ/Unsucc	Results 1999	I	P	C	Internal	External	SES	MCSDS
<b>Succ/Unsucc</b>	1.000	.704	.204	-.080	-.266	.160	-.301	.285	.506
<b>Results 1999</b>	.704**	1.000	-.031	.119	.166	-.023	.274	-.262	-.290
<b>I</b>	.204	-.031	1.000	.276	.104	-.357	.170	-.379	-.457
<b>P</b>	-.080	.119	.276	1.000	-.502	-.270	-.698	.286	.276
<b>C</b>	-.266	.166	.104	-.502*	1.000	-.201	-.488	.561	.198
<b>INTERNAL</b>	.160	-.023	-.357	-.270	-.201	1.000	-.097	-.122	-.470
<b>EXTERNAL</b>	-.301	.274	.170	-.698**	-.488*	-.097	1.000	.624	.334
<b>SES</b>	.285	-.262	-.379*	.286	.561**	-.122	.624**	1.000	-.428
<b>MCSDS</b>	.506*	-.290	-.457*	.276	.198	-.470*	.334	-.428*	1.000

\*Correlation is significant at the .05 level (1 tailed)

\*\*Correlation is significant at the .01 level (1 tailed)

With regard to black students, table 4.11 indicates a positive correlation between first year academic success and eventual academic success ( $p < 0.01$ ). There is also a positive correlation between generalized internality and long-term academic success ( $p < 0.05$ ), however generalized internality correlates negatively with first year results ( $p < 0.05$ ). Table 4.11 further shows a negative correlation between a chance orientation and generalized internality ( $p < 0.01$ ). There is a negative correlation between an academic external orientation and a chance orientation ( $p < 0.01$ ). Self esteem correlates negatively with long-term academic success ( $p < 0.05$ ) and positively with an academic external orientation ( $p < 0.05$ ). It correlates positively with a chance orientation ( $p < 0.05$ ). Lastly, social desirability has a positive correlation with academic externality ( $p < 0.05$ ).

Table 4.11: Spearman Rank-order correlations for black respondents (n = 33)

	Succ/Unsucc	Results 1999	I	P	C	Internal	External	SES	MCSDS
Succ/Unsucc	1.000	.606**	.311	.003	-.112	.128	-.087	-.361	.042
Results 1999	.606**	1.000	-.299	.143	.049	.157	.129	.144	-.103
I	.311*	-.299*	1.000	-.183	-.453	-.274	-.144	.046	.009
P	.003	.143	-.183	1.000	-.142	-.041	-.022	-.039	.059
C	-.112	.049	-.453**	.142	1.000	-.185	-.636	.368	.065
INTERNAL	.128	.157	-.274	-.041	-.185	1.000	-.133	.167	-.018
EXTERNAL	-.087	.129	-.144	-.022	-.636**	-.133	1.000	.379	.302
SES	-.361*	.144	.046	-.039	.368*	.167	.379*	1.000	-.189
MCSDS	.042	-.103	.009	.059	.065	-.018	.302*	-.189	1.000

\*Correlation is significant at the .05 level (1 tailed)

\*\*Correlation is significant at the .01 level (1 tailed)

#### 4.6.2. PARTIAL CORRELATION COEFFICIENTS

Partial correlation is a form of multivariate analysis and “deals with the residual relationship between two variables where the common influence of one or more other variables have been removed” (Ferguson, 1976:453). One of the aims of this study is to investigate how social desirability and self esteem mediate the relationship between academic success and locus of control. Using the partial correlational method, the effect of first, social desirability, then self esteem and lastly both social desirability and self esteem have been removed. The resulting correlations are reported in the following tables. They will be discussed in comparison to the Spearman rank-order correlations.

Table 4.12 shows that, for the white respondents, there is still a positive correlation ( $p < 0.05$ ) between long-term success and results at the end of the first year of study with the effect of social desirability removed. There is still a negative correlation between a chance orientation and powerful other orientation ( $p < 0.05$ ). While the Spearman rank-order correlations

showed no significant correlation between an academic internal orientation and any other variable, when the effect of social desirability was removed, a significant negative correlation between academic internality and a powerful other orientation ( $p < 0.05$ ) became evident. The negative correlations between externality and a powerful other orientation and chance orientation ( $p < 0.05$ ) are still evident but externality now also correlates negatively with internality ( $p < 0,05$ ). Self esteem still correlates negatively with a general internal orientation ( $p < 0.05$ ) and positively with a chance orientation and academic externality ( $p < 0,05$ ).

Table 4.12: Partial correlation coefficients for white respondents controlling for social desirability

	Results 1999	Succ/ Unsucc	I	P	C	Internal	External	SES
<b>Results 1999</b>	1.0000	.6596	.1128	.0150	-.412	.0188	.1523	-.1631
<b>Succ/Unsucc</b>	.6596*	1.0000	-.0485	.0906	-.0989	-.570	-.1455	-.0291
<b>I</b>	.1128	-.0485	1.0000	.2644	.1302	-.1075	.1595	-.3912
<b>P</b>	.0150	.0906	.2644	1.0000	-.4795	-.6006	-.6596	.3399
<b>C</b>	-.0412	-.0989	.1302	-.4795*	1.000	-.3062	-.6598	.5554
<b>INTERNAL</b>	.0188	-.0570	-.1075	-.6006*	-.3062	1.0000	-.3378	.1482
<b>EXTERNAL</b>	.1523	-.1455	.1595	-.6596*	-.6598*	-.3378*	1.0000	.6467
<b>SES</b>	-.1631	-.0291	-.3912*	.3399	.5554*	.1482	.6467*	1.0000

\*Correlation is significant at the .05 level (1 tailed)

Table 4.13, which deals with the partial correlation coefficients for black students when social desirability is controlled shows that the significant positive relationship between long-term academic success and first year results ( $p < 0.05$ ) still holds. The negative correlation between generalized internality and short-term results ( $p < 0.05$ ) still holds but the previous positive relationship between generalized internality and long-term academic success remains positive, but is not significant anymore. There are still significant negative correlations between a chance



orientation and generalized internality ( $p < 0.05$ ) as well as between externality and a chance orientation ( $p < 0.05$ ). The correlations between self esteem and the other variables show the same pattern as reported in table 4.11.

Table 4.13: Partial correlation coefficients for black respondents controlling for social desirability

	Results 1999	Succ/Unsucc	I	P	C	Internal	External	SES
Results 1999	1.0000	.6506	-.2924	.2118	-.0407	.1191	.0895	.2285
Succ/Unsucc	.6506*	1.0000	.2780	-.0461	-.0400	.1191	-.0705	-.3859
I	-.2924*	.2780	1.0000	-.1633	-.4164	-.2777	-.1123	-.0487
P	.2118	-.0461	-.1633	1.0000	-.1057	-.0340	-.0398	-.0500
C	-.0407	-.0400	-.4164*	-.1057	1.0000	-.1829	-.6085	.4397
INTERNAL	.1191	.1191	-.2777	-.0340	-.1829	1.0000	-.1570	.1222
EXTERNAL	.0895	-.0705	-.1123	-.0398	-.6085*	-.1570	1.0000	.3448
SES	.2285	-.3859*	-.0487	-.0500	.4397*	.1222	.3448*	1.0000

\*Correlation is significant at the .05 level (1 tailed)

When the effect of self esteem is removed in the white sample, table 4.14 indicates that the overall patterns of all significant relationships remain the same except for the following: Where there was no significant correlation between academic internality and any other variable, there now exists a negative correlation between academic internality and a powerful other orientation ( $p < 0.05$ ). Further, whereas a significant negative correlation existed between social desirability and generalized internality, there is now no significant relationship between these two variables.

Table 4.14: Partial correlation coefficients for white respondents controlling for self esteem

	Results 1999	Succ/Unsucc	I	P	C	Internal	External	MCSDS
Results 1999	1.0000	.6779	.1105	-.0281	-.1483	-.1088	.0555	-.2113
Succ/Unsucc	.6779*	1.0000	.1261	.0416	-.1405	.1934	-.1758	.4876
I	.1105	.1261	1.0000	.1655	-.0942	-.3107	-.1340	-.3269
P	-.0281	.0416	.1655	1.0000	-.3734	-.4798	-.6098	.0681
C	-.1483	-.1405	-.0942	-.3734*	1.000	-.2167	-.4723	.0405
INTERNAL	-.1088	.1934	-.3107	-.4798*	-.2167	1.0000	-.2914	-.4931
EXTERNAL	.0555	-.1758	-.1340	-.6098*	-.4723*	-.2914	1.0000	-.0252
MCSDS	-.2113	.4876*	-.3269	.0681	.0405	-.4931*	-.0252	1.0000

\*Correlation is significant at the .05 level (1 tailed)

Table 4.15 indicates that there have been no changes in the general pattern of relationships between the variables for the black group when controlling for self esteem.

Table 4.15: Partial correlation coefficients for black respondents controlling for self esteem

	Results 1999	Succ/Unsucc	I	P	C	Internal	External	MCSDS
Results 1999	1.0000	.6295	-.3107	.2051	.0711	.1514	.2015	-.0898
Succ/Unsucc	.6295*	1.0000	.3204	-.0288	-.2550	.0784	-.2516	.0957
I	-.3107*	.3204*	1.0000	-.1612	-.4878	-.2861	-.1324	.0020
P	.2051	-.0288	-.1612	1.0000	-.1422	-.0405	-.0578	-.0015
C	.0711	-.2550	-.4878*	-.1422	1.0000	-.1447	-.5285	.0340
INTERNAL	.1514	-.0784	-.2861	-.0405	-.1447	1.0000	-.1174	-.0021
EXTERNAL	.2015	-.2516	-.1324	-.0578	-.5285*	-.1174	1.0000	.2878
MCSDS	-.0898	.0957	.0020	-.0015	.0340	-.0021	.2878*	1.0000

\*Correlation is significant at the .05 level (1 tailed)

Table 4.16 shows that the removal of the effects of both social desirability and self esteem in the white sample has had the following influences on the relationships between the variables:

There is still a positive relationship between long-term academic results and first year results ( $p < 0.05$ ). The significant negative correlation between a chance orientation and a powerful other orientation does not exist anymore. There now also exists a significant negative relationship between academic internality and a powerful other orientation ( $p < 0.05$ ). The pattern of relationships between academic externality and a powerful other orientation and a chance orientation ( $p < 0.05$ ) remains the same.

Table 4.16: Partial correlation coefficients for white respondents controlling for self esteem and social desirability

	Results 1999	Succ/Unsucc	I	P	C	Internal	External
Results 1999	1.0000	.6736	.1944	-.0436	-.1606	-.0055	.0622
Succ/Unsucc	.6736*	1.0000	-.0403	.0859	-.1384	-.0620	-.2155
I	.1944	-.0403	1.0000	.1519	-.1138	-.1818	-.1332
P	-.0436	.0859	.1519	1.0000	-.3718	-.5916	-.6131
C	-.1606	-.1384	-.1138	-.3718	1.0000	-.2723	-.4739
INTERNAL	-.0055	-.0620	-.1818	-.5916*	-.2723	1.0000	-.3208
EXTERNAL	.0622	-.2155	-.1332	-.6131*	-.4739*	-.3208	1.0000

\*Correlation is significant at the .05 level (1 tailed)

For black respondents the positive relationship between long-term academic results and first year results remain significant ( $p < 0.05$ ) as do the pattern of relationships between generalized internality and results at the end of the first year and long-term academic results. The significant negative correlations ( $p < 0.05$ ) between a chance orientation and internality and between externality and a chance orientation remain. These findings are reflected in table 4.17.

Table 4.17: Partial correlation coefficients for black respondents controlling for self esteem and social desirability

	Results 1999	Succ/ Unsucc	I	P	C	Internal	External
Results 1999	1.0000	.6263	-.3121	.2061	.0684	.1522	.1841
Succ/Unsucc	.6263*	1.0000	.3221	-.0291	-.2531	.0785	-.2351
I	-.3121*	.3221*	1.0000	-.1612	-.4881	-.2861	-.1377
P	.2061	-.0291	-.1612	1.0000	-.1423	-.0405	-.0608
C	.0684	-.2531	-.4881*	-.1423	1.0000	-.1449	-.5419
INTERNAL	.1522	.0785	-.2861	-.0405	-.1449	1.0000	-.1233
EXTERNAL	.1841	-.2351	-.1377	-.0608	-.5419*	-.1233	1.0000

\*Correlation is significant at the .05 level (1 tailed)

In summary, controlling for either social desirability or self esteem, or both, did not have a major impact on the relationship between the various measures of locus of control and short-term or long-term academic achievement.

#### 4.7. SUMMARY

The statistical analyses of the data were reported in this chapter. The chapter started with the presentation of the descriptive statistics for the sample and the dependent variable. This was followed by a discussion of the differences between the samples. The last part of the chapter presented the correlational analyses of the data. The main findings in this regard were: First year success correlated highly with long-term success. In the white sample there were no significant relationships between the various measures of locus of control and academic achievement, either in the short-term or long-term. Social desirability was positively related to long-term academic success. Controlling for social desirability and self esteem did not have a significant impact on the relationships.

In the black sample generalised internality showed a negative correlation with short-term academic results. Self esteem also correlated negatively with long-term success. Controlling for social desirability did not result in a change in the relationships. When self esteem was partialled out a significant positive correlation between generalised internality and long-term success became evident. There was no change in the relationships when both social desirability and self esteem were partialled out.

The discussion of the results in light of the literature review presented in chapter 2 will follow in chapter 5.

## **CHAPTER 5**

### **INTERPRETATION**

#### **5.1 INTRODUCTION**

The results reported in Chapter 4 will be interpreted and discussed in this chapter. The characteristics of the sample will be commented on very briefly followed by a discussion of the descriptive statistics of the variables. Although the full correlational matrices were reported in chapter 4, for the sake of comprehensiveness, the discussion of the

correlational analyses will concentrate on the hypotheses stated in Chapter 1.

## **5.2 CHARACTERISTICS OF THE SAMPLE**

As stated in Chapter 1, the original group enrolled for the INZ programme consisted of a very heterogeneous group of students. Some students did not complete their matriculation certificates in South Africa and could thus not be compared with South African students as their school experiences were different. These students were excluded from the sample for this study.

There were further some students who enrolled at the university pre - 1999 who could not be considered as 'true' first year students who were undergoing their very first experiences of under-graduate study. These students were also excluded. This was important to ensure that the assumption that generalized expectancies (such as those that can be measured by Levenson's (1972) I,P,C Scales), have greater impact at the beginning of a new situation, and specific expectancies (such as those that can be measured with Lefcourt's (1981) MMCS), greater impact later on, could be investigated. This step would aid in the investigation of hypotheses 2.1 and 2.2 which state that a locus of control measure specifically applicable to academic achievement will predict academic success better in the long-term and a general measure will predict success better in the short-term.

These exclusions left a relatively small sample of 53 respondents, 37.7% (n=20) of whom were white and 62.3% (n=33) of whom were black. As discussed in chapter 4, the small number of students in each group impacted on the decisions regarding the type of statistical analysis to be performed.

The exclusions further ensured a more homogeneous sample. The majority of students (71.7%,  $n = 38$ ) were younger than 20 years of age. Eighty five percent ( $n=17$ ) of students in the white sample spoke Afrikaans as their home language while 90.9% ( $n=30$ ) of the black sample spoke one of the official black languages. Of these students 45.5% ( $n = 15$ ) spoke either North Sotho or Tswana at home.

### **5.3 DESCRIPTIVE STATISTICS OF THE DEPENDENT VARIABLE**

It was reported in Chapter 1 that the students who attended the INZ programme were students who obtained an m-score lower than 11, which means that they did not qualify for entrance as a mainstream first year student. Table 4.3 and figure 4.3 confirm the findings by De Boer and Van Aardt (1998), De Boer and Van Rensburg (1997), Nunns and Ortlepp (1994) and Skuy *et al* (1996), reported on in Chapter 1, that the m-score alone is an inadequate predictor of academic success for educationally disadvantaged students. While a total of 56.6% ( $n=30$ ) of the students in this study eventually failed to obtain their under-graduate degrees, more than half of the students (58.5%,  $n=31$ ) successfully completed their first year of study and 43.4% ( $n=23$ ) eventually either completed or were about to complete their under-graduate degrees. Although the number of students who eventually obtained their degrees or were about to obtain their degrees is low, it should be kept in mind that these were students who, based on their m-scores, would not have been allowed access to the university in the first place. These findings underline the importance of employing relevant selection instruments to ensure that deserving disadvantaged students are given the opportunity to obtain tertiary education, but that resources should not be wasted on students who are unlikely to succeed.

## **5.4 DESCRIPTIVE STATISTICS OF THE SCORES OF THE MEASURING INSTRUMENTS**

### **5.4.1 THE I, P, C SCALES**

Levenson (1981) in her presentation of the norms for the I, P, C scales, presented the mean for the Internality subscale ranging from the low 30's to the low 40's with the modal mean at 35. The standard deviation is approximately 7. The means, reported in table 4.7, obtained for both the white and black groups in this study compare well with these norms. The mean for the white group was 33.3 (std. dev. = 4.231), while the mean for the black sample was 37.36 (std. dev. = 4.788). This falls within the range provided by Levenson (1981).

Table 4.7 further indicates that both black and white respondents were more internal than external. This was found on both the generalized and the domain specific locus of control measures. Based on the literature (Findley & Cooper, 1983; Kalechstein & Nowicki, 1997), this finding was expected for the white students. However, as far as black students are concerned, the opinion that black South Africans generally hold an external view based on a belief in spiritual forces and the collective nature of their culture, as discussed in Chapter 2, was not confirmed. Lefcourt's (1976) finding that perceived control is positively related to access to opportunity, is relevant here. These students were, based on their m-scores, not going to be able to continue with tertiary education. The fact that they have been able to obtain university entrance – even if only through the extended INZ programme – may have rendered them more likely to perceive personal control over their outcomes and thus score high on the scales measuring internality. It must also be borne in mind that the black students were exposed to a western educational system and that acculturation most likely contributed to the development of an internal orientation.



According to Levenson (1981) the means for the Powerful Other Scale (P) range from 18 – 26 with a standard deviation of 8.5 and a modal mean of 20. The mean (15.25) for the white group is slightly lower than this but with a standard deviation of 6.958, still falls within the range specified by Levenson (1981). The mean of 19.06 (std. dev. = 6.605) for the black group is very close to the modal mean of 20.

The means for the Chance subscale range from 17 to 25 with a standard deviation of 8 and a modal mean of 18 (Levenson, 1981). Once again the white sample shows a mean of 15.95 (std. dev. = 8.300) which is slightly lower than Levenson's (1981) norm, but still within the range. The black group's mean of 21.61 (std. dev = 9.021) also falls within the normative range.

#### **5.4.2 THE MMCS**

The scores on the Internal and External scales for both black and white samples compliment the findings on the I, P, C, Scales. On the whole, both black and white respondents scored higher on internality than on externality with the black sample scoring higher on internality as well as externality than the white sample, but only the difference in internality was statistically significant (see table 4.6).

Lefcourt *et al* (1979) report means of 32.7 (std dev. = 5.0) for males and of 33.1 (std. dev. = 5.3) for females on the Internal scale. The internal scores for the white sample compares well with these norms. However, the black sample's mean score of 39.03 (std. dev. = 6.013) is higher than the norm. This may be due to the fact that the MMCS is domain specific and measures perceived control with regard to academic ability. It should be remembered that these students were allowed entrance based on their m-scores (which, although low, were high enough to put them in an area where they deserved consideration for entrance) together with their results on the entrance test (PTEEP). These personal

efforts - obtaining an m-score which allowed them to be considered as well as scoring high enough on the entrance test - may have left them with the feeling that they are able to control their academic outcomes.

It is also possible that factors inherent in the educational system as well as socio-economic factors contributed to this finding. In the researcher's personal experience as a teacher, black students are often left alone in the classroom setting due to teacher absenteeism, which implies that they have to master their academic work on their own. Students' parents are further often either illiterate or only semi-literate and are unable to assist their children with homework, which again forces the child to learn on his or her own. These factors may have contributed to the black students' greater internal orientation.

The normative data for the External scale gives a mean score of 25.3 (std. dev. = 6.5) for males and 24.2 (std. dev. = 7.1) for females. The mean scores for both the black (M=21.73; std. dev.=8.460) and the white (M=18.45; std. dev.=6.517) sample in this study fall within this range, although the white sample's mean is slightly low. This corresponds with the findings on the I, P, C Scales where the white sample scored lower on the Powerful other and Chance scales.

In conclusion, the obtained means and standard deviations for the I, P, C Scales and the Internal and External Scales fall within the ranges specified by the normative data. The only exception is the mean score on the Internal Scale for the black sample. This exception can, however, be accounted for. On the whole, it seems that both black and white students are more internal than external, but that the black students scored higher on internality than the white students.

### **5.4.3 THE SES**

The means obtained in other studies using the SES (Table 3.2) range from 28.2 to 34.2 with standard deviations from 4.47 to 4.96. The means and standard deviations obtained in this study compare well with these findings. The white sample has a mean of 28.70 (std. dev. = 4.256). The mean for the black sample is 31.33 (std. dev. = 3.452).

### **5.4.4 THE MCSDS**

Paulhus (in Robinson, Shaver & Wrightsman, 1991) report mean scores on the MCSDS ranging from 12.3 to 16.4 with standard deviations ranging from 4.3 to 6.8. The mean obtained for white respondents in this study compare well with this data. A mean of 16.35 (std. dev. = 3.452) was obtained. The mean of 18.85 (std.dev. = 4.445) for the black sample is higher than the norm but still within its range.

### **5.4.5 CONCLUSION**

The overall impression one gains from comparing the means and standard deviations of the students who participated in this study with international studies, is that there are not major differences. This lends support for the multicultural usefulness of these scales. This is, however, a tentative conclusion that needs to be further investigated through meta-analyses that compare the functioning of the scales in different cultural contexts.

## **5.5 RELATIONSHIPS BETWEEN THE VARIABLES**

### **5.5.1 COMPARISON OF WHITE AND BLACK SAMPLES**

The Mann-Whitney U test results for the total sample reported in Table 4.5 indicates no significant differences between the long-term successful and unsuccessful groups for either the general I, P, C Scales or the domain specific Internal and External scales of the MMCS. Thus, when

taken as a group, the students' locus of control is not related to their academic achievement, which means that the hypothesis that locus of control is positively related to academic achievement, can not be supported for the group as a whole. This finding is contrary to expectation but the attempt to understand it raised some interesting points which pointed the way to further, more fruitful investigation of the data.

When discussing this finding with the personnel responsible for the implementation of the INZ programme, it became clear that they saw definite differences in the behaviour of black and white students. It seemed that the black students were more committed to the course, attended classes more often and seemed more interested in the subject matter than the white students. Treating the sample as one group would thus seem to be denying real differences between black and white students. Although the original intention of the study was not to investigate the effect of locus of control and the mediating variables along racial lines, the data and experiential knowledge indicated that it is important to do so in order to understand the relationship between locus of control and academic performance in this group better.

When the respondents were divided into a black and a white group, to test the hypothesis that there is a significant relationship between race and locus of control, the Mann-Whitney U test results (Table 4.6) showed significant differences between the groups on all the scales of the general locus of control measurement as well as on the Internal scale of the MMCS. It also showed a significant difference on the SES.

With regard to internality, black students scored higher than white students on both the generalised internality scale and the domain specific internality scale. As discussed in paragraph 5.4.2 and 5.5.1, this may be due to the black students' perception that it was due to their own efforts (obtaining a high enough m-score through personal effort and

passing the PTEEP) that they obtained university entrance. These achievements may have left them feeling that they can control their outcomes. The white students did not value the INZ course with the same regard as the black students and realized that their personal efforts were not good enough to allow them access to the mainstream courses, which may have lead them to feel less in control than the black students.

The same pattern is evident when one investigates the external locus of control scores. Black students were more external than white students on the generalised measure of externality as well as on the domain specific measure. This is probably due to the collective nature of their culture as discussed in paragraph 2.3.1.1.

The Mann-Whitney U test results further indicate a significant difference with regard to the self esteem scores. Table 4.7 indicates that the black students scored higher on the SES than the white students. This confirms the findings by Graham (1994), Heaven, Stones and Rajab (1984), Howcroft (1990) and Lay and Wakstein (1985) that black students show higher academic and global self esteem than white students. The previous discussion of the different perceptions of their own efforts in being allowed to enter the INZ course may also be relevant here. Black students may not have expected to be able to gain university entrance at all as they had to contend with educational disadvantage. The fact that they did manage to gain entrance may have left them feeling very self-confident. The white students on the other hand probably did not feel the same pride in gaining entrance to an extended course intended for educationally disadvantaged students.

These findings were further investigated using correlational analyses, which will now be discussed.

### **5.5.1 THE RELATIONSHIP BETWEEN SHORT-TERM AND LONG-TERM ACADEMIC SUCCESS**

Tables 4.10 and 4.11 clearly shows that there is a substantial positive relationship between short and long-term academic results for both white ( $r_s=0.704$ ;  $p<0.01$ ) and black ( $r_s = 0.606$ ;  $p<0.01$ ) students. This emphasizes the importance of the first year of study. If students manage to successfully complete the first year of their degrees they stand a good chance of completing the whole degree. This fact suggests that support, such as that offered through the INZ course is crucial for success.

### **5.5.2 THE RELATIONSHIP BETWEEN ACADEMIC SUCCESS AND LOCUS OF CONTROL**

Spearman rank-order correlations (Tables 4.10) show that there is no significant correlation between any of the locus of control scales and either long-term or short-term academic results for the white respondents. However, for the black respondents, table 4.11 shows a significant positive correlation ( $r_s = 0.311$ ;  $p<0.05$ ) between Internality (I) and long-term academic success and a significant negative correlation ( $r = -0.299$ ;  $p<0.05$ ) between Internality and short-term academic results. Thus, although an internal orientation does not seem to be a significant predictor of academic success in the short-term, it is significant for long-term academic success as far as black students are concerned.

An investigation of the basic premise of Social Learning Theory regarding the nature of reinforcement as it pertains to locus of control may serve to explain the difference between the white and black samples. A reinforcement can be described as an event that changes behaviour in some observable way by either increasing or decreasing the potentiality of its occurrence (Rotter, 1966). Internal reinforcement can be regarded as a person's perception that an event has occurred that has either positive or negative value. Whether an event has positive or negative value can be determined by investigating the effect of the

event on the resultant behaviour. If an event increases the potential for a response it is a positive reinforcement. If it decreases the potential for a response it has a negative value. If the fact that these students have been allowed to attend the INZ programme is seen as an event with reinforcement value, the above-mentioned comments regarding the students' behaviour may be indicative of the event's positive or negative value.

It should be kept in mind that the INZ course was intended for students who could be regarded as educationally disadvantaged. Although all the students had m-scores lower than 11, the white students could not really be regarded as educationally disadvantaged. All the white students came from schools that were well-staffed and received education on a par with white students who did manage the required m-scores for the mainstream first year courses. It is conceivable that the expectation of these students would have been to be allowed into university as a mainstream student and not as one who needs special assistance and an extended programme to be able to obtain a degree. The fact that they were allowed into university under these circumstances placed them at the bottom of the pile of white first year students. This may have caused them to regard it as a negative event. As such it had a negative value which may have resulted in the previously described negative behaviour. Although these students presented an internal orientation, the negative value of the INZ course did not result in behaviour conducive to academic success to the degree that it resulted in a significant correlation between internality and academic success.

In contrast to the white students, gaining university access probably had very different implications for the black students. These students could be regarded as educationally disadvantaged and managed to gain entrance despite this disadvantage, which placed them at the top of the pile of black applicants for university admission. Gaining access to tertiary education through the INZ course, thus, probably held positive

reinforcement value for black students and may have lead them to perceive more personal control over their academic outcome. This could account for the black students' higher scores on the measures of internality and the correlation between long-term success and Internality.

The negative correlation between Internality and short-term academic results for the black students was not expected. Levenson's (1981) Internality scale is a measure of generalized internality rather than domain specific internality and based on social learning theory, the assumption was that a generalized expectancy would have more impact at the beginning of a situation and less as experience is gained. The fact that no significant correlation exists between the domain specific Internal scale of the MMCS and academic success, either on the short-term or the long-term suggests that students regard the academic situation at university differently from the academic situation at school, which means that the successful students depend on a characteristically internal way of behaviour that is not domain specific. This finding does not support the hypothesis that a locus of control measure specifically applicable to academic achievement will predict academic success better in the long-term than a general measure.

### **5.5.3. THE RELATIONSHIP BETWEEN ACADEMIC SUCCESS, LOCUS OF CONTROL AND SELF ESTEEM**

Table 4.10 shows no statistically significant correlation between self esteem and academic success for white students but there is a substantial positive correlation between self esteem and a chance expectation ( $r_s = 0.561$ ;  $p < 0.01$ ) and between self esteem and an external orientation on the MMCS scale ( $r_s = 0.624$ ;  $p < 0.01$ ). High self esteem is further negatively correlated with Internality ( $r_s = -0.379$ ;  $p < 0.05$ ). This finding may be explained when the basic assumptions of attribution theory is taken into account. Myers (1988) explains that



people tend to attribute their successes to their own ability and effort and their failure to external factors such as bad luck. This provides support for the notion of self-serving bias in the attributions people make, i.e. making external attributions for negative outcomes allows people to protect and enhance their self esteem (Franzoi, 2003). It should be kept in mind that this specific group of white students is not comparable to white students in general as they just barely managed to gain access to university and had to contend with the blows to their self esteem of having to enroll into the extended programme and to be classified as educationally disadvantaged. Those students with a chance or external expectation, who were thus able to believe that their poor academic matriculation outcomes resulted from bad luck or fate could more easily maintain high self esteem than those students who believed that it was their own efforts that put them there. This finding is supported by Lefcourt's (1976:85) statement that externals are "more likely to shift about in their judgements and evaluations, and more ready to denigrate tasks or to blame other persons for their failures" than internals. This also suggests that students with an internal orientation may be more able to proportion blame realistically than students with an external orientation. This will be discussed in more depth in section 5.5.4.

The results for the black students correspond with those for the white students in that higher self esteem correlates positively with C ( $r_s = 0.368$ ;  $p < 0.05$ ) and the External scale of the MMCS ( $r_s = 0.379$ ;  $p < 0.05$ ) although the correlations are smaller. This replicates findings reported on by Dyal (1984) which found a significant positive correlation between externality and self esteem in black students. The previous discussion of the assumptions of attribution theory is also relevant here.

Table 4.11, further indicates that among the black respondents there is a significant negative correlation ( $r_s = -0.361$ ;  $p < 0.05$ ) between self esteem and academic success. The higher the student's self esteem, the lower his or her long-term academic success. Based on the

literature, as discussed in chapter 2, the expectation was that higher self esteem should correlated with better academic results.

Franzoi's (2003) discussion of social comparison may be relevant in explaining this finding. It may be that the black students compare their academic accomplishments with those of other students and if they are outperformed, it may lead to a negative self esteem. The assertion by Baron and Byrne (2003) that self-perception is reciprocal may also be relevant here. Baron and Byrne (2003) maintain that negative evaluation by the group may lead to negative evaluation of the self. It is possible that subtle forms of racism and prejudice may exist in this, largely white university which may have a negative effect on the self esteem of black students. It is possible that, for the black students, working hard may be a way of overcoming low self esteem. The data for this study does not provide sufficient evidence to make this conclusion with confidence. However, the relationship between defensive maneuvers and academic success could be investigated in a future study.

#### **5.5.4. THE RELATIONSHIP BETWEEN ACADEMIC SUCCESS, LOCUS OF CONTROL AND DEFENSIVENESS**

One of the aims implicit in including social desirability into the study was to investigate whether students engage in defensive maneuvers to maintain their self esteem. The negative correlation ( $r_s = -0.428$ ;  $p < 0.05$ ) between the MCSDS and self esteem suggests that this is not true for the white students. The fact that there is a negative correlation between Internality ( $r_s = -0.457$ ;  $p < 0.05$ ) and the MCSDS scores, and the Internal scale ( $r_s = -0.470$ ;  $p < 0.05$ ) and the MCSDS scores, may suggest that this finding is relevant to students who hold an internal orientation. It seems that students with an internal orientation do not need to present themselves in a favourable light. This finding was expected as students high on internality do not need to engage in defensive behaviour to maintain high self esteem.

The opposite seems to be true for black students where high levels of defensiveness correlate positively ( $r_s = 0.302$ ;  $p < 0.05$ ) with an external orientation in an academic context (Table 4.11). Externals' tendency to consistently place blame for failure outside themselves (Lefcourt, 1976) may come at the cost of having to engage in defensive behaviour to maintain their self esteem.

There is a substantial positive correlation ( $r_s = 0.506$ ;  $p < 0.05$ ) between social desirability and long-term academic success for the white students. This finding could be explained in light of Rotter's (1966; 112) discussion of external reinforcement and Crowne's and Marlowe's (in Rotter, Chance & Phares, 1972) statement regarding the development of the MCSDS. Rotter (1966) defined an external reinforcement as an event or act that has predictable reinforcement value for the group or culture to which a person belongs. That the influence of the culture to which a person belongs is important is confirmed by Crowne and Marlowe (in Rotter, Chance & Phares, 1972:251) who said that "in the development of the MCSDS social desirability was defined more broadly to refer to the need of (respondents) to obtain approval by responding in a culturally appropriate and acceptable manner." Thus, those students who wish to obtain such approval and thus score high on the MCSDS are probably more likely to engage in behaviour conducive to obtaining a culturally desirable goal, such as tertiary education, than students low in social desirability. It may be that for the white students, the obtainment of a degree had such strong external reinforcement value and their need for approval by their significant group had been so strong, that it played an important motivating role in their eventual academic success.

### **5.5.5 THE EFFECT OF THE MEDIATING VARIABLES: SELF ESTEEM AND DEFENSIVENESS**

No unexpected changes appeared with the removal of the effect of self esteem (Table 4.14) in the white group. Although the previously significant correlation between MCSDS and Internality disappeared, there is still a negative correlation of approximately the same magnitude between social desirability and the Internal scale on the MMCS. Self esteem further does not seem to affect the relationship between social desirability and long-term academic success as the correlation between the two variables dropped only slightly.

The removal of the effect of social desirability (Table 4.12) in the white sample similarly did not result in any major changes of the correlations between the variables except for a substantial negative correlation ( $r_s = -0.60$ ;  $p < 0.05$ ) between internality on the MMCS and a powerful other orientation. The reasons for this finding were not immediately apparent and warrant further investigation.

Removal of the effects of both self esteem and social desirability (Table 4.16) once again does not significantly change the relationship between the variables. As before, no significant relationship exists between academic success and locus of control.

For the black respondents, removal of the effect of self esteem (Table 4.15) did not result in any changes in the relationship between short – and long-term academic success and Internality, except that the negative correlation between Internality and short-term results increased slightly, which still indicates that regardless of self esteem, these students depended on their characteristically internal view of the world.

The removal of the effects of social desirability (Table 4.13) reduced the correlation between long-term academic success and Internality from  $r_s$

= 0.311 ( $p < 0.05$ ) to a non-significant coefficient of  $r_s = 0.278$ . This reduction was negligible and was thus not regarded as important.

### **5.5.6 SUMMARY**

In this chapter the nature of and possible reasons for the relationships between the dependent variable – academic success – and the independent variable – locus of control – were discussed. The mediating effect of self esteem and defensiveness was also explored.

The means and standard variations obtained in this study corresponded with those published in other studies. Some of the stated hypotheses in Chapter one were confirmed while others were found not to be valid.

Hypothesis 1.1 which stated that internal locus of control is positively related to academic achievement was not supported for the white sample, but was supported for the black sample with regard to long-term academic success. With regard to short-term academic success, the opposite was found to what was expected.

Hypothesis 1.2 that an external powerful other orientation is positively related to academic achievement but less so than an internal orientation was not supported. Although small positive correlations exist between the variables, they were not significant.

Hypothesis 1.3 that an external chance orientation is negatively related to academic achievement was supported with regard to long-term academic results in both black and white students. However, the correlations were not found to be significant.

Hypothesis 2.1, that a locus of control measure specifically applicable to academic achievement will predict academic success better than a general measure was not supported. In fact it was found that the

generalised measure is more valuable as far as black students are concerned. This measure was further found to relate to long-term academic success rather than short-term success.

Hypothesis 3 was not supported by the findings which indicate that there is a significant relationship between race and locus of control. While no significant correlations between race and locus of control was found for the white group, internality was found to correlate positively with long-term academic success and negatively with short-term academic success.

Hypothesis 4 was not supported by the research. No positive correlation could be detected between academic achievement and self esteem. There was a negative correlation between academic achievement and self esteem in black students.

Hypotheses 5 and 6 were also not confirmed. Level of defensiveness was not found to mediate the relationship between locus of control and academic achievement for black students, neither was it negatively related to academic achievement in black students. Rather unexpectedly, it was found that level of defensiveness was positively related to long-term academic success in white students.

## Chapter 6

### CONCLUSION AND RECOMMENDATIONS

#### 6.1. CONCLUSION

The primary aim of this study was to determine whether the locus of control construct is related to academic success and to investigate how self esteem and defensiveness influence the relationship between locus of control and academic success. The study further aimed to determine whether the components of locus of control differentiates between black and white students and whether the distinction between generalized and domain specific measures should be taken into account in the development of selection criteria for first year students.

Previous studies (Findley & Cooper, 1983; Kalechstein & Nowicki, 1997) conducted with white respondents found a positive correlation between an internal locus of control and academic achievement. The results of studies that concentrated on groups such as black Americans, black South Africans and various minority groups have yielded inconclusive results. While some of these studies found a positive correlation between locus of control and academic success others found no such relationship (see paragraphs 2.3 and 2.3.1.1).

This study highlighted the importance of taking cultural differences into consideration when developing selection criteria for students from heterogeneous backgrounds. No significant correlation was found between locus of control and academic success in the group as a whole. It was only once the behavioural and motivational differences between black and white students in this sample were realized, and the statistical analyses adapted to reflect this that useful information could be obtained.

No significant correlation between either the general or domain specific locus of control measurements and academic results could be found for the white students. Although this finding was unexpected, closer examination of these specific students' behaviour throughout their first year of study lead to the conclusion that the conditions under which they entered the university as well as the negative value attached to attending the INZ programme probably negated the effect of their primarily internal orientation. Thus, this does not necessarily mean that locus of control has no predictive value for white students, but rather that due to the unique circumstances, these students could not be considered representative of the general white, first year student population.

A further consideration should be that both the black and white samples (but the white sample especially) were very small and the homogeneity of the students within each sample probably resulted in some attenuation of range which implies a reduction in the correlation coefficients.

For the black students the present study confirmed a positive correlation between an internal locus of control and long-term academic success. The finding of a correlation between a generalized measure of internality (I) indicates that for the black students in an extended university programme measures specifically applicable to academic achievement are not as useful as general measures.

The only variable with a significant positive correlation with long-term academic success for the white students was level of defensiveness. A substantial positive correlation was obtained between long-term academic success and a need to appear socially acceptable. This is probably due to the strong positive associations with obtaining tertiary education. These associations may serve as a strong enough motivator to be successful for those students with a high need to appear socially acceptable.



The role of self esteem seems complex. In both the black and white samples, self esteem correlated positively with a chance/external orientation. In the black group it correlated negatively with academic success. Thus, it seems that in the black group, when self esteem is associated with an external locus of control, this is negatively related to academic success. Although no significant correlation was found between self esteem and academic success in the white sample, self esteem's substantial positive relationship with externality in this group, may point to a similar conclusion as for the black group.

## **6.2 RECOMMENDATIONS FOR FURTHER RESEARCH**

- a) Despite the current discourse which asserts that race is a social construct which is primarily associated with issues such as power and socio-economic status, this study clearly showed that taking race, when it refers to cultural and motivational differences between groups, into consideration is crucial in the South African context. Graham's (1994:59) comprehensive literature review concluded that the "main goal of much of the research has been to simply compare mean differences between blacks and whites on the degree of internality." Such comparative studies are of little value as they contribute little to an understanding of the reasons for the differences. Thus, while future studies should include a race/culture variable, it should not simply be comparative in nature, but should strive to understand how cultural variables influences academic success and how it influences variables such as locus of control.
- b) The study showed that understanding the reinforcement value of academic success as it relates to the racial/cultural backgrounds of students is crucial. Although not stated, this study made the implicit assumption that the simple fact of a students' presence at university presupposes the positive reinforcement value of

academic success. It was found that even though the white students showed a predominantly internal orientation, this did not result in a positive correlation with academic success despite overwhelming research evidence that it should do so. It was consequently posited that this unexpected finding was due to the unmeasured influence of reinforcement value. It is thus recommended that reinforcement value be included as a variable in future research on the relationship between locus of control and academic success.

- c) The findings relating to the locus of control construct in the white sample contradicted the considerable body of research that suggests a positive relationship between an internal locus of control and academic success. Apart from the previously mentioned influence of reinforcement value, the nature of the sample should also be taken into account. These students were enrolled for a specialized programme that afforded them the opportunity to gain access to university based on supposed educational disadvantage. As such, neither the white, nor the black respondents could be considered as representative of the general first year student body. Future research should attempt to include a more representative sample of students.
- d) Descriptive statistics highlighted that the majority of the white students spoke Afrikaans as a home language while the majority of black students spoke one of the official black languages. Yet, the measuring instruments were administered in English. This may have been a factor in the results as it is possible that students attached different interpretations to the items in the measuring instruments. It is thus recommended that questionnaires should be translated to eliminate the confounding effect of misinterpretation of the meaning of questions/statements.

- e) The study indicated that locus of control has no significant positive relationship with academic success in the short-term. It would thus be important for future studies to adopt a longitudinal approach to ensure effective evaluation of the construct's effect.

## REFERENCES

- Baron, R.A. & Byrne, D. (2003). *Social Psychology*. Boston: Allyn & Bacon.
- Carton, J.S. & Nowicki, S. (1997). Antecedents of individual differences in locus of control of reinforcement: a critical review. *Genetic, Social and General Psychology Monographs*, **120**, 31-81
- Chubb, N.H., Fertman, C.I. & Ross, J.L. (1997). Adolescent Self Esteem and Locus of Control: A longitudinal study of gender and age differences. *Adolescence*, **32**, (125), 113-129.
- Coetzer, E.L. & Schepers, J.M. (1997). Die verband tussen lokus van beheer en die werksprestasie van swart bemarkers in die lewensversekeringsbedryf. *Tydskrif vir Bedryfsielkunde*, **23** (1), 34-41.
- Crowne, D.P. & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology*, **24** (4), 349-354.
- Crowne, D.P. & Marlowe, D. (1964). *The Approval Motive*. New York: Wiley.
- De Boer, A. & Van Rensburg, M.C.J. (1997). Underprepared students in the Faculty of Arts: burden or boon? A preliminary report. *South African Journal of Ethnology*, **20** (4), 159-164.
- De Boer, A. & Van Aardt, C. (1998). Project initiative 2100 – a development programme: findings and insights. *South African Journal of Ethnology*, **21** (2), 55-59.

- Diekhoff, G. (1992). *Statistics for the Social and Behavioural Sciences: Univariate, Bivariate, Multivariate*. Dubuque, IA: Wm. C. Brown Publishers.
- Dyal, J.A. (1984). Cross-cultural research with the locus of control construct. In H.M. Lefcourt (Ed.). *Research with the Locus of Control Construct (Vol. 3)*. New York: Academic Press.
- Erlund, C.J. (1984). *Human Potential Seminar: Its effects upon grade point average and other selected characteristics of community/junior college students*. Doctoral dissertation. East Texas University.
- Ferguson, G.A. (1976). *Statistical Analysis in Psychology and Education (4<sup>th</sup> Ed.)*. New York: McGraw-Hill.
- Findley, M.J. & Cooper, H.M. (1983). Locus of control and academic achievement: a literature review. *Journal of Personality and Social Psychology*, **4** (2), 419-427.
- Foster, D. & Louw-Potgieter, J. (1991). *Social Psychology in South Africa*. Isando: Lexicon.
- Franzoi, S.L. (2003). *Social Psychology*. Boston: McGraw-Hill.
- Graham, S. (1994). Motivation in African Americans. *Review of Educational Research*, **64** (1), 55-117.
- Gurin, P., Gurin, G., Lao, R. & Beattie, M. (1969). Internal-external control in the motivational dynamics of Negro youth. *Journal of Social Issues*, **25**, 29-54.
- Hair, J.F., Anderson, R.E., Tatham, R.L. and Black, W.C. (1998). *Multivariate Data Analysis*. New Jersey, Prentice Hall.

- Heaven, P., Stones, C. & Rajab, D. (1984). Levels of achievement motivation in South Africa. *The Journal of Social Psychology*, **122**: 277-278.
- Highbee, J.L. & Dwinell, P.L. (1990). Factors related to the academic success of high risk freshman: Three case studies. *College Student Journal*, **24** (4) 380-386.
- Hillman, S.B., Wood, P.C. & Sawilowsky, S.S. (1992). Externalisation as a self protective mechanism in a stigmatized group. *Psychological Reports*, **70**, 641-642.
- Holliday, B.G., 1985. Differential effects of children's self-perception and teacher's perceptions on black children's academic achievement. *Journal of Negroe Education*, **54**, p.71 – 81.
- Howard, D.E. (1996). The relationship of internal locus of control and female role models in female college students. Doctoral Dissertation. University of Texas at [www.dianehoward.com/relationship-internet-locus.htm](http://www.dianehoward.com/relationship-internet-locus.htm)
- Howcroft, G. (1990). The self-esteem of black university students. *South African Journal of Sociology*, **21** (1), 1-36.
- Howerton, D.L., Enger, J.M. & Cobbs, C. R. (1993). Locus of control and achievement for at-risk adolescent black males. *The High School Journal*, Feb/Mar. 210-214.
- Kalechstein, A.D. & Nowicki, S. (1997). A meta-analytic examination of the relationship between control expectancies and academic achievement: An 11-year follow-up to Findley and Cooper. *Genetic, social and General Psychology Monographs*, **123** (1), 27-56.

- Katz, I. (1967). Some motivational determinants of racial differences in intellectual achievements. *International Journal of Psychology*, **2** (1), 1-12.
- Lay, R. & Wakstein, J. (1985). Race, academic achievement and self-concept of ability. *Research in Higher Education*. **22** (1), 43-64.
- Lefcourt, H.M. (1976). *Locus of Control: Current Trends in Theory and Research*. New Jersey: Erlbaum.
- Lefcourt, H.M. (1981). *Research with the Locus of Control Construct. Volume 1: Assessment Methods*. New York: Academic Press.
- Lefcourt, H.M. (Ed). (1983). *Research with the Locus of Control Construct: Volume 2: Development and Social Problems*. New York: Academic Press.
- Lefcourt, H.M. (Ed). (1984). *Research with the Locus of Control Construct: Volume 3*. New York: Academic Press.
- Lefcourt, H.M. (1991). Locus of control. In J. Robinson, P. Shaver & N Wrightsman (Eds.). *Measures of Personality and Social Psychological Attitudes (Vol 1)*. San Diego: Academic Press.
- Lefcourt, H. M., Von Baeyer, C. L., Ware, E. E. & Cox, D. J. (1979). The Multidimensional-Multiattributonal Causality Scale: The development of a goal specific locus of control scale. *Canadian Journal of Behavioural Science*, **11** (4), 286-304.
- Levenson, H. (1972). Distinctions within the concept of internal-external control. Paper presented at the 80<sup>th</sup>. American Psychological Association Convention, Washington.

- Levenson, H. (1973). Multidimensional Locus of Control in Psychiatric Patients. *Journal of Consulting and Clinical Psychology*, **41**, 397-404.
- Levenson, H. (1981). Differentiating among internality, powerful others and chance. In H.M. Lefcourt (Ed.), *Research with the Locus of Control Construct* (Vol. 1). New York: Academic Press.
- Mitchell, G. & Fridjhon, P. (1987). Matriculation examinations and university performance. *South African Journal of Science*, **83**, 555-559.
- Moodley, S., Rajab, D. & Ramkissoon, R.D. (1979). Internal-external control among South African students: A cross-cultural study. *South African Journal of Psychology*, **9**, 145-147.
- Munro, D. (1979). Locus of control attribution: Factors among blacks and whites in Africa. *Journal of Cross-Cultural Psychology*, **10**, 157-172.
- Mwamwenda, T. & Mwamwenda, B. (1986). Transkeian students' locus of control and academic achievement. *Psychological Reports*, **62**, 555-560.
- Myers, D.G. (1988). *Social Psychology* (2<sup>nd</sup>. Ed.). New York: McGraw-Hill.
- Nunns, C. & Ortlepp, K. (1994). Exploring predictors of academic success in Psychology 1 at Wits University as an important component of fair student selection. *South African Journal of Psychology*, **24** (4), 201 - 207
- Oelofse, E. (1996). The nomological network of sense of coherence: The role of general, social and collective self-concept. Masters thesis. Pretoria: University of Pretoria.
- Phares, E.J. (1976). *Locus of Control in Personality*. Morristown NJ: General Learning Press.



- Prociuk, T.J. & Breen, L.J. (1974). Locus of control, study habits and attitudes, and college academic performance. *The Journal of Psychology*, **88**, 91-95.
- Regis, D. (1990). Self concept and conformity in theories of health education. School of Education: University of Exeter at [www.ex.ac.uk/~dregis/phd/7b.html](http://www.ex.ac.uk/~dregis/phd/7b.html)
- Riordan, Z.V.A. (1981). Locus of Control in South Africa. *Journal of Social Psychology*, **115**, 159-168.
- Robinson, J.P., Shaver, P.R. & Wrightman, L.W. (Eds.). (1991). Measures of Personality and Social Psychological Attitudes. Volume 1. San Diego: Academic Press.
- Rosenberg, M. (1965). Society and the Adolescent Self Image. Princeton: Princeton University Press.
- Rotter, J.B. (1954). Social Learning Theory and Clinical Psychology. New Jersey: Prentice-Hall.
- Rotter, J.B. (1966). Generalised expectancies for internal versus external control of reinforcement. *Psychological Monographs*, **80** (1), 1-28.
- Rotter, J.B. (1971). External control and internal control. *Psychology Today*, **5**, 37-59.
- Rotter, J.B. (1972). Generalised expectancies for internal versus external control of reinforcement. In Rotter, J.B., Chance, J.E. & Phares, E.J. (Eds.). Applications of Social Learning Theory of Personality. New York: Holt, Rinehart and Winston

- Rotter, J.B., Chance, J.E. & Phares, E.J. (1972). Applications of Social Learning Theory of Personality. New York: Holt, Rinehart and Winston.
- Shochet, I.M. (1994) The moderator effect of cognitive modifiability on a traditional undergraduate admissions test for disadvantaged black students in South Africa. *South African Journal of Psychology*, **24**(4), 208 – 215.
- Siegel, S. (1956). Nonparametric Statistics for the Behavioural Sciences. New York: McGraw-Hill.
- Skuy, M., Zolezzi, S., Mentis, M., Fridjohn, P. & Cockroft, K. (1996). Selection of advantaged and disadvantaged South African students for university admission. *South African Journal of Higher Education*, **10** (1), 110-118.
- Stipek, D.J. & Weisz, J.R. (1981). Perceived personal control and academic achievement. *Review of Education Research*, **51**, 101-137.
- Tabane, A. (1980). The socio-cultural background of the black South African and its impact on business development. Unpublished Masters Thesis. Pretoria: UNISA
- Verster, J.M. (1988). Cognitive competence in Africa and models of information processing: A research prospectus. In E.B. Hunt, J. W. Berry & S.H. Irvine (Eds.). *Indigenous Cognition: Functioning in Cultural Context*.
- Wallston, K.A., Wallston, B.S., & DeVellis, R. (1978). Development of the Multidimensional Health Locus of Control (MHLC) scales. *Health Education Monographs*, **6**, 160-170.

Wright, quoted from the internet: [www.afn.org/~dks/race/wright.html](http://www.afn.org/~dks/race/wright.html). on 5 February 2003 From the article One drop of blood in The New Yorker, 1994

Yeld, N. & Haeck, W (1997) Educational Histories and Academic Potential: can tests deliver? *Assessment and Evaluation in Higher Education*, **22** (1), 5–16.

Zaaiman, H., Van der Flier, H. & Thijs G.D. (1998). Selecting South African Higher Education Students: Critical Issues and Proposed Solutions. *South African Journal of Higher Education*. **12** (3), 96-101.

**APPENDIX A: QUESTIONNAIRES**

Please read each of the following statements carefully and respond by circling the answer of your choice. There are no right or wrong answers to any of these statements; we are interested in your honest opinions.

1. Student number: \_\_\_\_\_

2. Age in years: \_\_\_\_\_

3. Gender:

Male	Female
------	--------

4. Please indicate your home language:

Afrikaans
English
Ndebele
North - Sotho
South - Sotho
Swazi
Tsonga
Tswana
Xhosa
Zulu
Other (specify)

5. Which subjects are you studying this year:


5. Please indicate the name of the area where you spent most of your time as a child:

\_\_\_\_\_

6. How would you characterize this area:

Urban (city/large town)	Semi - urban (small town)	Rural
-------------------------	---------------------------	-------

7. Please indicate the name of the secondary school you attended:

\_\_\_\_\_

8. Please indicate the name of the area in which your secondary school is situated:

\_\_\_\_\_

9. How would you characterize this area:

Urban (city/large town)	Semi-urban (small town)	Rural
-------------------------	-------------------------	-------

Below is a series of attitude statements. Each represents a commonly held opinion. Read each statement carefully.  
 Then indicate the extent to which you agree or disagree by circling the number following each statement.  
 Give your opinion on every statement. If you find that the numbers to be used in answering do not adequately reflect your opinion, use the one that is closest to the way you feel.

	strongly disagree	disagree somewhat	slightly disagree	slightly agree	agree somewhat	strongly agree
1. Whether or not I get to be a leader depends mostly on my ability.	-3	-2	-1	+1	+2	+3
2. To a great extent my life is controlled by accidental happenings.	-3	-2	-1	+1	+2	+3
3. I feel like what happens in my life is mostly determined by powerful people.	-3	-2	-1	+1	+2	+3
4. Whether or not I get into a car accident depends mostly on how good a driver I am.	-3	-2	-1	+1	+2	+3
5. When I make plans, I am almost certain to make them work.	-3	-2	-1	+1	+2	+3
6. Often there is no chance of protecting my personal interests from bad luck happenings.	-3	-2	-1	+1	+2	+3
7. When I get what I want, It's usually because I'm lucky.	-3	-2	-1	+1	+2	+3
8. Although I might have good ability, I will not be given leadership responsibility without appealing to those in positions of power.	-3	-2	-1	+1	+2	+3
9. How many friends I have depends on how nice a person I am.	-3	-2	-1	+1	+2	+3
10. I have often found that what is going to happen will happen.	-3	-2	-1	+1	+2	+3
11. My life is chiefly controlled by powerful others.	-3	-2	-1	+1	+2	+3
12. Whether or not I get into a car accident is mostly a matter of luck.	-3	-2	-1	+1	+2	+3
13. People like myself have very little chance of protecting our personal interests when they conflict with those of strong pressure groups.	-3	-2	-1	+1	+2	+3
14. It's not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune.	-3	-2	-1	+1	+2	+3
15. Getting what I want requires pleasing those people above me.	-3	-2	-1	+1	+2	+3

16. Whether or not I get to be a leader depends on whether I'm lucky enough to be in the right place at the right time.	-3	-2	-1	+1	+2	+3
17. If important people were to decide they didn't like me, I probably wouldn't make many friends.	-3	-2	-1	+1	+2	+3
18. I can pretty much determine what will happen in my life.	-3	-2	-1	+1	+2	+3
19. I am usually able to protect my personal interests.	-3	-2	-1	+1	+2	+3
20. Whether or not I get into a car accident depends mostly on the other driver.	-3	-2	-1	+1	+2	+3
21. When I get what I want, it's usually because I worked hard for it.	-3	-2	-1	+1	+2	+3
22. In order to have my plans work, I make sure that they fit in with the desires of people who have power over me.	-3	-2	-1	+1	+2	+3
23. My life is determined by my own actions.	-3	-2	-1	+1	+2	+3
24. It's chiefly a matter of fate whether or not I have a few friends or many friends.	-3	-2	-1	+1	+2	+3

Please indicate the extent to which you agree or disagree with each of the following statements.

	Disagree				Agree
1. When I receive a poor grade I usually feel that the main reason is that I haven't studied enough for that course.	0	1	2	3	4
2. My enjoyment of a social occasion is almost entirely dependent on the personalities of the other people who are there.	0	1	2	3	4
3. If I were to receive low marks it would cause me to question my academic ability.	0	1	2	3	4
4. Making friends is a funny business; I sometimes have to chalk up my successes to luck.	0	1	2	3	4
5. If I did not get along with others it would tell me that I hadn't put much effort into the pursuit of social goals.	0	1	2	3	4
6. Some of the times that I had gotten a good grade in a course it was due to the teacher's easy grading scheme.	0	1	2	3	4
7. It seems to me that failure to have people like me would show my ignorance in interpersonal relationships.	0	1	2	3	4
8. Sometimes my success on exams depends on some luck.	0	1	2	3	4
9. In my case, the good results I receive are always the direct result of my efforts.	0	1	2	3	4
10. No matter what I do some people just don't like me.	0	1	2	3	4
11. The most important ingredient in getting good grades is my academic ability.	0	1	2	3	4
12. Often chance events can play a large part in causing	0	1	2	3	4

rifts between friends.					
13. Maintaining friendships requires real efforts to make them work.	0	1	2	3	4
14. In my experience, once a professor gets the idea you're a poor student your work is much more likely to receive poor grades than if someone else handed it in.	0	1	2	3	4
15. It seems to me that getting along with people is a skill.	0	1	2	3	4
16. Some of my lower grades have seemed to be partially due to bad breaks.	0	1	2	3	4
17. When I fail to do as well as expected in school it is often due to a lack of effort on my part.	0	1	2	3	4
18. Some people can make me have a good time even when I don't feel sociable.	0	1	2	3	4
19. If I were to fail a course it would probably be because I lacked skill in that area.	0	1	2	3	4
20. In my experience, making friends is largely a matter of having the right breaks.	0	1	2	3	4
21. When I hear of a divorce I suspect that the couple did not try enough to make their marriage work.	0	1	2	3	4
22. Some of my good grades may simply reflect that these were easier courses than most.	0	1	2	3	4
23. I feel that people who are often lonely are lacking in social competence.	0	1	2	3	4
24. I feel that some of my good grades depend to a considerable extent on chance factors, such as having the right questions show up in the exam.	0	1	2	3	4
25. Whenever I receive good grades, it is always because I have studied hard for that course.	0	1	2	3	4
26. Some people just seem predisposed to dislike me.	0	1	2	3	4
27. I feel that my good grades reflect directly on my academic ability.	0	1	2	3	4
28. I find that the absence of friendships is often a matter of not being lucky enough to meet the right people.	0	1	2	3	4
29. In my case, success at making friends depend on how hard I work at it.	0	1	2	3	4
30. Often my poorer grades are obtained in courses that the professor has failed to make interesting.	0	1	2	3	4
31. Having good friends is simply a matter of one's social skill.	0	1	2	3	4
32. My academic low points sometimes make me think I was just unlucky.	0	1	2	3	4
33. Poor grades inform me that I haven't worked hard enough.	0	1	2	3	4
34. To enjoy myself at a party I have to be surrounded by others who know how to have a good time.	0	1	2	3	4
35. If I were to get poor grades I would assume that I lacked ability to succeed in those courses.	0	1	2	3	4

36. If my marriage were a long happy one, I'd say that I must just be very lucky.	0	1	2	3	4
37. In my experience, loneliness comes from not trying to be friendly.	0	1	2	3	4
38. Sometimes I get good grades only because the course material was easy to learn.	0	1	2	3	4
39. In my experience, there is a direct connection between the absence of friendship and being socially inept.	0	1	2	3	4
40. Sometimes I feel that I have to consider myself lucky for the good grades I get.	0	1	2	3	4
41. I can overcome all obstacles in the path of academic success if I work hard enough.	0	1	2	3	4
42. It is almost impossible to figure out how I have displeased some people.	0	1	2	3	4
43. When I get good grades it is because of my academic competence.	0	1	2	3	4
44. Difficulties with my friends often start with chance remarks.	0	1	2	3	4
45. If my marriage were to succeed it would have to be because I worked at it.	0	1	2	3	4
46. Some low grades I've received seem to me to reflect the fact that some teachers are just stingy with marks.	0	1	2	3	4
47. It is impossible for me to maintain close relations with people without my tact and patience.	0	1	2	3	4
48. Some of my grades have been a function of bad luck, being in the wrong course at the wrong time.		1	2	3	4

Please indicate the extent to which you agree or disagree with the following statements

	Strongly disagree	Disagree	agree	Strongly agree
1. On the whole I am satisfied with myself.	1	2	3	4
2. At times I think I am no good at all.	1	2	3	4
3. I feel that I have a number of good qualities.	1	2	3	4
4. I am able to do things as well as most other people.	1	2	3	4
5. I feel I do not have much to be proud of.	1	2	3	4
6. I certainly feel useless at times.	1	2	3	4
7. I feel that I am a person of worth, at least on an equal footing with others.	1	2	3	4
8. I wish I could have more respect for myself.	1	2	3	4



9. All in all, I am inclined to feel that I am a failure.	1	2	3	4
10. I take a positive attitude toward myself.	1	2	3	4

Read each statement and decide whether the statement is true or false as it pertains to you.

1. Before voting I thoroughly investigate the qualifications of all the candidates.	True	False
2. I never hesitate to go out of my way to help someone in trouble.	True	False
3. It is sometimes hard for me to go on with my work if I am not encouraged.	True	False
4. I have never intensely disliked anyone.	True	False
5. On occasion I have had doubts about my ability to succeed in life.	True	False
6. I sometimes feel resentful when I don't get my way.	True	False
7. I am always careful about my manner of dress.	True	False
8. My table manners at home are as good as when I eat out in a restaurant.	True	False
9. If I could get into a movie without paying and be sure I was not seen, I would probably do it.	True	False
10. On a few occasions, I have given up doing something because I thought too little of my ability.	True	False
11. I like to gossip at times.	True	False
12. There have been times when I have felt like rebelling against people in authority even though I knew they were right.	True	False
13. No matter who I'm talking to, I'm always a good listener.	True	False
14. I can remember "playing sick" to get out of something.	True	False
15. There have been occasions when I took advantage of someone.	True	False
16. I'm always willing to admit when I make a mistake.	True	False
17. I always try to practice what I preach.	True	False
18. I don't find it particularly difficult to get along with loudmouthed, obnoxious people.	True	False
19. I sometimes try to get even, rather than forgive and forget.	True	False
20. When I don't know something I don't at all mind admitting it.	True	False
21. I am always courteous, even to people who are disagreeable.	True	False
22. At times I have really insisted on having things my own way.	True	False

23. There have been occasions when I have felt like smashing things.	True	False
24. I would never think of letting someone else be punished for my wrongdoings.	True	False
25. I never resent being asked to return a favour.	True	False
26. I have never been irked when people expressed ideas very different from my own.	True	False
27. I never make a long trip without checking the safety of my car.	True	False
28. There have been times when I was quite jealous of the good fortune of others.	True	False
29. I have almost never felt the urge to tell someone off.	True	False
30. I am sometimes irritated by people who ask favours of me.	True	False
31. I have never felt that I was punished without cause.	True	False
32. I sometimes think when people have a misfortune they only got what they deserved.	True	False
33. I have never deliberately said something that hurt someone's feelings.	True	False