

Sensation-seeking, locus of control and self-efficacy
correlates of adventure-based trainees: A comparative
study

HERMIAS NEL LE ROUX

Thesis presented in fulfilment of the requirements for the degree of Master of
Arts (Psychology) in the Faculty of Arts and Social Sciences at Stellenbosch



University

Supervisor: Prof A.V. Naidoo

April 2014

DECLARATION

By submitting this thesis electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

Signature:

Date: 6 February 2014

Copyright © 2014 Stellenbosch University
All rights reserved

ACKNOWLEDGMENTS

I would like to express my appreciation towards the few individuals who made this degree possible.

Firstly I would like to express my gratitude towards my supervisor, Prof. A.V. Naidoo, for all his help, patience and guidance. Without his help this degree would not have been possible, especially due to the nature of my work and being out and about in the bundus.

Secondly, thank you to my parents. Their help, motivation, guidance and prayers have made this degree possible. Without their help I would still be busy analysing the data.

Thirdly, I would like to thank André van der Burgh for showing me the true nature of sensation-seeking.

Fourthly, thank you to Prof Kidd, Dr Harvey and Mr Steel. Their help with the data analysis is much appreciated.

Lastly, thank you to all the Stellenbosch University students and the iALA students of 2012 who participated in the study.

ABSTRACT

There has been an increase in the popularity of adventure programming over the past few years, with the result that the practice of high-risk recreational activities is growing phenomenally. This study examined how students who are enrolled in a full time adventure education programme involving high-risk recreational activities would differ in terms of sensation-seeking, locus of control and self-efficacy when compared to their non-participative peers. The research group devoted a whole year towards an adventure-based gap year programme that utilises high-risk recreational activities as a core aspect of the programme's curriculum. It was hypothesised that the research group will measure higher in sensation-seeking, locus of control and self-efficacy when compared to the research equivalent group. For this cross-sectional quantitative study, the research group consisted of 25 students participating in the high-risk iALA recreational adventure programme. The research equivalent group consisted of 34 first year university students. The two sample groups were assessed in terms of their attribute differences on Zuckerman's Sensation-Seeking Scale, Sherer's General Self-efficacy Scale, and Rotter's Internal-External Locus of Control Scale.

MANOVA and ANOVA analyses were performed in order to analyse the data. The study indicated that there was a significant difference in sensation-seeking between the two samples. There was, however, no significant difference in levels of locus of control and self-efficacy between the two samples. The study's significant findings support trends in previous studies concerning greater sensation-seeking among participants of high-risk

recreation activities. Important considerations for the results obtained are provided together with implications for further research in this field.

OPSOMMING

Avontuurprogramme het die afgelope paar jaar in gewildheid toegeneem en het tot gevolg dat daar al hoe meer van hoë-risiko ontspanningsaktiwiteite gebruik gemaak word. Hierdie studie ondersoek hoe studente wat aan hoë-risiko ontspanningsaktiwiteite deelneem, verskil ten opsigte van die soeke na sensasie, lokus van kontrole en self-effektiwiteit in vergelyking met hul nie-deelnemende partneers. Die eksperimentele groep het vir 'n jaar deelgeneem aan 'n gapingsjaar-avontuurprogram met hoë-risiko ontspanningsaktiwiteite wat 'n kernaspek van die kurrikulum uitmaak. Die hipotese was dat die eksperimentele groep hoër sou meet in die soeke na sensasie, lokus van kontrole en self-effektiwiteit as die kontrolegroep. Vir die doel van hierdie kwantitatiewe studie het die eksperimentele groep uit 25 studente bestaan wat aan hoë-risiko ontspanningsaktiwiteite deelgeneem het gedurende die gapingsjaar-avontuurprogram. Die kontrolegroep het uit 34 eerstejaar universiteitstudente bestaan. Ten einde die verskil tussen die twee groepe te assesser, is Zuckerman se *Sensation-Seeking Scale*, Sherer se *General self-efficacy scale*, en Rotter se *Internal external locus of control scale* gebruik.

'n MANOVA en ANOVA is gebruik om die data te analiseer. Die studie het getoon dat daar 'n betekenisvolle verskil tussen die twee groepe was ten opsigte van die soeke na sensasie. Daar was egter geen betekenisvolle verskil in die vlakke van lokus van kontrole en self-effektiwiteit tussen die twee groepe nie. Bevindings van die huidige studie oor die soeke na sensasie het bevindings van vorige studies rakende die soeke na sensasie en hoë-risiko

ontspanningsaktiwiteite ondersteun. Belangrike afleidings kan gemaak word uit die resultate wat verkry is wat moontlikhede bied vir verdere navorsing in hierdie veld.

TABLE OF CONTENTS

DECLARATION	ii
ACKNOWLEDGEMENTS	iii
ABSTRACT	iv
OPSOMMING	vi
TABLE OF CONTENTS	viii
LIST OF TABLES	xiii
CHAPTER 1: INTRODUCTION	1
1.1 Background and context	1
1.2 Research hypothesis	6
1.3 Research aims	7
1.4 Research objectives	7
1.5 Significance of the research	7
1.6 Definitions of key terms	8
1.6.1 High-risk recreation	8
1.6.2 Sensation-seeking	9
1.6.3 Locus of control	10
1.6.3.1 External locus of control	11
1.6.3.2 Internal locus of control	11
1.6.4 Self-efficacy	12
1.7 Overview of Thesis Structure	13

CHAPTER 2:	LITERATURE REVIEW	14
2.1	Introduction	14
2.2	Adventure training	18
2.3	High-risk recreation	22
2.4	Sensation-seeking	25
2.4.1	Development of sensation-seeking	26
2.4.1.1	Preschool	26
2.4.1.2	Adolescence	26
2.4.1.3	Theoretical perspective on sensation-seeking	27
2.4.1.3.1	Thrill and adventure seeking (TAS)	27
2.4.1.3.2	Experience seeking (ES)	27
2.4.1.3.3	Disinhibition (Dis)	28
2.4.1.3.4	Boredom susceptibility (BS)	28
2.5	Self-efficacy	30
2.6	Locus of control	33
2.7	Summary	35
CHAPTER 3:	RESEARCH METHODOLOGY	36
3.1	Chapter overview	36
3.2	Research design	36
3.3	Sampling and data collection	37
3.4	Measuring Instruments	38
3.4.1	Demographic questionnaire	39

3.5	Activities Questionnaire	39
3.5.1	Sensation-Seeking Scale	39
3.5.1.1	Description	39
3.5.1.2	Psychometric properties	41
3.5.2	Rotter's Internal-External Locus of Control Scale	43
3.5.2.1	Description	43
3.5.2.2	Psychometric properties	44
3.5.3	Sherer's Generalised Self-efficacy	44
3.5.3.1	Description	44
3.5.3.2	Psychometric properties	45
3.6	Ethical considerations	46
3.7	Statistical analyses	46
CHAPTER 4:	RESULTS	48
4.1	Overview	48
4.2	Demographic data	48
4.2.1	Research group (iALA students)	49
4.2.2	Control or research equivalent group (Stellenbosch University students)	49
4.3	Psychometric properties	50

4.4	Hypotheses testing	52
4.4.1	Hypothesis 1	52
4.4.2	Hypothesis 2	55
4.4.3	Hypothesis 3	56
CHAPTER 5:	DISCUSSIONS	59
5.1	Overview	59
5.2	Demographic data	60
5.3	Research hypotheses	61
5.3.1	Hypothesis 1	61
5.3.2	Hypothesis 2	62
5.3.3	Hypothesis 3	64
5.4	Implications for Theory, Research and Practice	66
5.5	Limitations and recommendations	67
5.6	Conclusion	69
REFERENCES		71

APPENDICES:

Appendix A: Demographic Questionnaire	84
Appendix B: Activities Questionnaire	85
Appendix C: Informed Consent	99
Appendix D: Letter of Institutional Approval	102

LIST OF TABLES

Table 1	<i>Reliability Results of the Independent Variables Scales</i>	51
Table 2	<i>Descriptive and Statistical Information for Sensation Seeking Scale V (SSS-V)</i>	53
Table 3	<i>Descriptive and Statistical Information for Sherer's Generalised Self-efficacy Scale (SGSES)</i>	56
Table 4	<i>Descriptive and Statistical Information for Rotter's Internal-External Locus of Control Scale (I-E)</i>	57

CHAPTER 1

INTRODUCTION

1.1 Background and context

Adventure programming has become increasingly popular in the past few decades (Hans, 2000). In this period high-risk recreational activities have emerged from being the preserve of only professionals and “hardcore” amateurs (Creyer, Ross, & Evers, 2003) to being an accessible recreational activity of ordinary people. The activities usually associated with the term ‘high-risk recreation’ include rock-climbing, kayaking, scuba diving, abseiling, skydiving and mountaineering, to name just a few, (Ewert, 1994) where there is a fair risk of physical or even fatal injury. At the other end of the risk classification is a low-risk sport such as marathon running, where injuries do occur but the probability of fatalities is unlikely. Today’s ordinary people and amateurs are increasingly participating in these different forms of high-risk recreational activities for their own recreational and leisure purposes. The growth within the field of high-risk recreational activities has led to an increase in professionalism and professional services within the area of adventure leadership (Creyer et al., 2003). It has also led to an increase in injuries and fatalities.

People who deliberately seek out adventure and risk in a natural environment continue to provide an interesting research population (Ewert, 1994). The motivation for participating in these high-risk recreational activities is not always fully understood. Zuckerman (1979) contends that the tendency of individuals to seek sensation can serve as motivation to participate in a

variety of risk-taking activities. There have been several research studies that have supported this assumption (Brown, 1987; Hymbaugh & Garrett, 1974; Robinson, 1985; Straub, 1982; Zaleski, 1984; Zuckerman, 1979). Individuals who have a strong need for varied, novel, and complex sensations and experiences could be labelled high sensation seekers (Potgieter & Bisschoff, 1990). It is believed that the sensation-seeking motive is not a secondary motive but that it is related to biological characteristics (Zuckerman, 1974). Risk-taking tendencies are also expected to manifest in sport-participation patterns. Individuals with a strong tendency to seek sensation will be attracted to high-risk sport, whereas individuals with weaker sensation-seeking dispositions will participate in low-risk sport.

According to Ewert (1994), the limited understanding of why people participate in these high-risk activities is in part promoted by the belief that recreation behaviour is often based on anticipated rewards. Within the high-risk recreation setting, the reward is usually considered worth staking one's own life. The rewards associated with participating in high-risk recreational activities in the natural environment are easily overlooked and for the sportsperson it is usually worth taking the risk and encountering the dangers associated with the particular recreational activity. Risk-taking, according to Zuckerman (1994, p. 124), is the "appraised likelihood of a negative outcome or behaviour". A sensation-seeking person will take the necessary risk in order to experience the desired sensation whereas a person who ranks low in sensation-seeking will not necessarily value or tolerate the sensations achieved through risky activities. A person who is low in sensation-seeking

will therefore seldom consider high-risk activities as being worth the perceived risk (Zuckerman, 1994).

While the field of high-risk recreation creates a variety of interesting research topics, there is scant research available exploring high-risk recreation within the South African context. A few studies have investigated the personality attributes of students who had specifically enrolled in an adventure programme that involved several high-risk recreational activities (Schrader & Wann, 1999; Steynberg & Scholtz, 2004).

According to Hans (2000), a myriad of adventure programming studies has investigated the self-concept variable in an attempt to understand the efficacy of adventure-based programmes. Hans (2000) contends that the self-concept may be too broad a construct and too elusive to account for the changes that might take place within an individual. Hans (2000) postulated locus of control to be a more meaningful construct to use in an adventure-based programme in order to determine the changes that take place within a person. Hollenhorst (1989) found that as an individual's skills in a particular recreational activity improved, the locus of control shifted from an external to an internal sense of locus of control. The participants rather focused on themselves and made decisions based on their own internal choices, instead of on what was being said by the instructor or group leader (Schrader & Wann, 1994). Given the level of risk involved and the consequences of a negative outcome in high-risk recreation, locus of control is a crucial independent variable.

According to Sutherland and Stroot (2010), most research regarding the outcome of adventure based educational programmes focused on the

affective domain. The research has revealed that participants in adventure activities showed a positive growth self-efficacy (Sibthorp, 2003), as well as an improvement in self-confidence and self-concept (Davidson, 2001; McDonald & Howe, 1989). Therefore, it appears as if adventure programmes which include high-risk activities that attract sensation seekers do have an influence on a person's self-efficacy (Hans, 2000; Sibthorp, 2003; Sutherland & Stroot, 2010).

The development of self-efficacy interlinks well with the core components of the adventure-based education process as hypothesised by Walsh and Golins, as cited in Sibthorp (2003). As stated by Bandura (1997), self-efficacy develops through a mastery experience, vicarious experience, social persuasion, and physiological and emotional status (Sibthorp, 2003). According to the adventure education model of Walsh and Golins, a participant is placed in a situation where the participant must be able to overcome and solve certain problems. The solution of the problem leads to mastery, which in turn leads to global mastery within areas such as self-concept (Sibthorp, Paisley, Furman, & Gookin, 2008).

One of the primary goals of an adventure-based programme is to promote development within an individual. Adventure-based programmes provide the perfect setting to develop and improve participants' self-efficacy. Propst and Koesler (1998) found that feedback and mentoring are important in the development of outdoor leadership efficacy.

According to Slanger and Rudestam (1997), Bandura's theory of self-efficacy is congruent with findings which indicated that although high sensation seekers do not tend to display lower levels of anxiety, they do

experience anxiety in specific types of situations. They also assert that people will assess risk as greater in a situation in which they have no feeling of control or mastery of a situation. This can be related to as having a lower sense of self-efficacy in that specific situation. Proponents of the sensation-seeking construct (e.g., Steynberg & Scholtz, 2004; Zuckerman, 1994) believed that there is an optimal level of stimulation for people high and low in sensation-seeking and that it creates an optimal level of functioning and affect. Therefore, high sensation seekers will gain a perception of self-efficacy due to their optimal level of functioning compared to low sensation seekers. Since people high in sensation-seeking will expose themselves to more stimulating sensations when compared to low sensation seekers, they would have a greater chance of developing greater perceptions of self-efficacy in the variety of situations to which they are exposed.

Bandura (1997) proposed that people assess their self-efficacy based on their level of arousal. When a person is overly highly aroused it has a negative effect on their perception of self-efficacy. Many theorists, according to Farley (1986), believe that high sensation seekers have habitually low levels of arousal. Combined with the belief held by Bandura that the relationship between arousal and self-efficacy is negative, it would follow that there is a positive relationship between sensation-seeking and a person's perception of his or her self-efficacy.

Hence in this study, the focus will be on whether locus of control and self-efficacy can significantly differentiate between participants of a South African adventure programme consisting of high recreational activities compared to a control group of low risk participants.

1.2 Research hypothesis

The following three research hypotheses will be examined in this study:

Hypothesis 1

H1: Students enrolled in an adventure-based programme will measure higher on sensation-seeking compared to students not involved in such a programme.

Ho₁: There will be no difference between the two groups in terms of sensation-seeking.

Hypothesis 2

H2: People participating in high-risk recreational activities will measure higher in terms of self-efficacy compared to people who are not participating in high-risk recreational activities.

Ho₂: There will be no difference in self-efficacy between the two groups.

Hypothesis 3

H3: People participating in high-risk recreational activities will measure higher in internal locus of control compared to people not participating in high-risk recreational activities

Ho₃: There will be no difference in locus of control between the two groups.

1.3 Research aims

The aim of the research is to determine the degree to which locus of control, self-efficacy and sensation-seeking are significant determinants of participation in high-risk recreational activities. It is hypothesised that people who participate in high-risk recreational activities such as kayaking or scuba diving will measure higher on Zuckerman's Sensation-Seeking Scale. They will also differ in levels of locus of control and self-efficacy with higher internal locus of control and self-efficacy scores.

According to Zuckerman's Sensation-Seeking Scale (Zuckerman, 1994), there are different levels of sensation-seeking. The Sensation-Seeking Scale measures four sub-scales of sensation-seeking and determines in which areas people's sensation-seeking lie. The sub-scales are Thrill- and adventure-seeking, Disinhibition, Experience-seeking, and Boredom susceptibility (Kaliski, 1993).

1.4 Research objectives

The specific objective of the research is to determine whether people who are participants in an adventure programme involving high-risk recreational activities are likely to exhibit higher levels of sensation-seeking, locus of control and self-efficacy.

1.5 Significance of the research

While there is more than a decade of research focusing on high-risk recreation, there are few studies using a comparative design. Moreover, another unique feature of the proposed study is that it will be a first within the

South African context. The identified research group (see later section for description) participated in a new education programme run by the International Academy for Leadership through Adventure (iALA) in South Africa.

The adventure programme participants devote an entire year to adventure training and participate in a range of new high-risk recreational activities including sky-diving, scuba diving, survival and cliff jumping (<http://www.iala.co.za>). Compared to other studies such as that of Schrader and Wann (1999), the proposed study will focus upon late adolescents and their involvement in high-risk recreational activities within an adventure training setting. Rolison and Scherman (2003) identified the need for further research in terms of locus of control and its involvement in risk-taking. They assert that “in terms of college students taking risks, studies examining the locus of control generally have not incorporated risk perception or other decision-making constructs. These limitations point to the need for further research on locus of control in the area of risk-taking among adolescents” (Rolison & Scherman, 2003, p 692).

The findings of the study may alert researchers and adventure programme coordinators to take personality differences into account in assessing appetite for risk-taking among programme participants.

1.6 Definitions of key terms

1.6.1 High-risk recreation

According to Ewert (1994), risk recreation can be defined as a recreational activity containing elements of risk or danger that is usually

experienced in a natural environment. The participants' actions and abilities play an important role in how they experience the activity. Examples of risk recreation activities can include rock-climbing, kayaking, scuba diving, wilderness backpacking and white water rafting. Risk recreation differs from general recreation in that the participants deliberately seek out situations, which may test their skills and abilities against possible negative outcomes.

Yates (1992) who studied risk-taking behaviour from a social, physiological and psychological perspective, defined risk as the uncertainty associated within a certain activity. The three elements involved in risk are: 1) losses, 2) the significance of those losses, and 3) uncertainty associated with those losses. A person has the opportunity to avoid or take risks. The way in which a person responds to the possible risk depends on the person's cognitive, affective, and social development. What a person has learned from a previous situation regarding risk will also have an impact on how he or she will cope with the same situation should it occur again (Yates, 1992). Risk is said to exist whenever the outcomes of an action is not assured (Schneider, Butryn, Furst, & Masucci, 2007).

1.6.2 Sensation-seeking

The definition of sensation-seeking has evolved over the years. Since 1979 the term has been described as “a trait defined by the seeking of varied, novel, complex, and intense sensations and experiences, and the willingness to take physical, social, legal, and financial risks for the sake of such experience” (Zuckerman, 1994, p.27). The sensation seeker can be seen as a person who needs varied, novel, and complex sensations and experiences in

order to maintain an optimal level of arousal. For a person high in sensation-seeking, when a stimuli and experience becomes repetitive, it is assumed that the person will become bored and non-responsive more quickly than people lower in sensation-seeking (Zuckerman, Bone, Neary, Mangelsdorf, & Burstman, 1972). A person high in sensation-seeking is presumed to be more sensitive to inner sensations and less conforming to external forces (Schneider et al., 2007). Sensation-seeking behaviour can be seen as the outcome of a conflict between states of anxiety that vary as a function of novelty and appraised risk (Yates, 1992). As some people become more confident through experience at a given task, they may eventually push their limits and seek novel sensations. An individual's personality, genetic predispositions, and social environment are all thought to play a role in a person becoming a sensation seeker or a risk taker (Zuckerman, 1994).

1.6.3 Locus of control

Locus of control is the manner in which people perceive control in their personal lives. Locus of control can either be an internal or an external source of control. Rotter (1966), as cited by Breet, Myburgh and Poggenpoel (2010), describes locus of control as the degree to which individuals believe the things that happen to them are due to internal versus external factors (Cooper, Okamura, & McNeil, 1995). According to Breet et al. (2010), some people believe that they have no personal control over their life circumstances. They believe that control over their lives is due to an external source of power. If a person believes that he/she has no control over the circumstances of his/her life, he/she will act according to such beliefs. The

same principle applies to internal locus of control. When individuals believe they are in control over life circumstances, such individuals' behaviour and actions will reflect this stance.

The dominant type of locus of control present in a person's life often determines his or her reactions and behaviour. The dominant type of locus of control can also be used to explain the perceptions and motivation of an individual's actions.

We can differentiate between external locus of control and internal locus of control

1.6.3.1 External locus of control

A person with dominant external locus of control perceives and attributes the consequences of what happens to him/her as being independent from his/her behaviour. Such a person is convinced that anything that happens is the result of fate, chance or external powers (Breet et al., 2010).

1.6.3.2 Internal locus of control

Lang (1996, p. 192) describes the internal locus of control of a person as "a power of choice that carries with it both the freedom and the right to choose, and the burden of responsibility for one's choice". Internal locus of control develops from a conscious and active decision to accept responsibility for one's choices and to control one's feelings.

A sense of locus of control develops over time. Hopkins (1983), as cited

in Breet et al. (2010), notes that younger children are often prone to act in accordance with an external locus of control, whereas older learners will lean towards an internal locus of control. According to Anderson (cited in Breet et al., 2010) a person's sense of locus of control can change from internal to external and vice versa due to a person's experiences.

1.6.4 Self-efficacy

Self-efficacy as a theory in psychology has emerged from the work of Bandura (1997). The self-efficacy theory is concerned primarily with the role of personal cognitive factors in the triadic reciprocity model of social cognitive theory – with both the effect of cognition on affect and the effect of behaviour, affect and environmental events on cognition. The theory maintains that all processes of psychological and behavioural changes operate through the alternation of the individual's sense of personal mastery or self-efficacy (Bandura, 1997, p 7). Self-efficacy was originally defined as a rather specific type of expectancy concerned with a personal belief in the ability to perform a specific behaviour or set of behaviours which required producing an outcome. The definition has been expanded to refer to “people's beliefs about their capabilities to exercise control over events that affect their lives, and their beliefs in their capabilities to mobilise the motivation, cognitive resources, and courses of action needed to exercise control over task demands. Thus self-efficacy judgements are concerned not with the skill one has but with the judgements of what one can do with whatever skills one possesses” (Bandura, 1997, p 7).

1.7 Overview of thesis structure

In the ensuing chapter, relevant literature and theoretical perspectives of outdoor education, high-risk recreation, sensation-seeking, locus of control and self-efficacy along with the research hypotheses will be discussed (Chapter 2). In Chapter 3, the research design, data gathering and sampling selection procedures for the study, the measuring instruments used for the study and ethical considerations will be described. The results are reported in Chapter 4. Demographic information of the participants, as well as the psychometric properties of the questionnaires used for the study will be provided. This chapter will also provide the results pertinent to the hypotheses testing. The last section of the thesis, Chapter 5, presents the discussion on the findings and results as reported in Chapter 4. The chapter will also include the implications and limitations regarding the presented study. Recommendations for future studies within the area of high-risk recreation and outdoor training will also be provided.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

In the developed world, most of the population live in urban areas. The use of parks within these urban areas offers some form of substitute when mountains, forests and lakes are not accessible as a form of recreation for some of the population (Beedie & Hudson, 2003). Recreation refers to activities that take place during experiences known as leisure. Outdoor recreation is any leisure activity done outdoors. The range of outdoor leisure activities differs from gardening to racing cars or walking in the park (Priest & Gass, 1997). According to Priest and Gass (1997), in order for an activity to be classified as a leisure activity, the activity must be done voluntarily; the experience should be a state of mind; and participating in the activity is a reward on its own.

The participation in leisure and high-risk recreational activities which contain an element of danger to the participants is starting to increase worldwide (Creyer et al., 2003; Ewert & Hollenhorst, 1989). Adventure-based recreation, like other forms of wilderness experiences, creates an intense, positive and enjoyable experience for the participants. Some of the high-risk recreational activities that were once only reserved for trained professionals are now enjoyed by ordinary people as a form of recreation (Creyer et al., 2003). People tend to participate in different forms of recreational activities, some having different levels of skill and higher levels of risk involved. As the

popularity of adventure and high-risk recreational activities increase, so will the number of people participating in these activities increase. This will also create pressure on the availability of recreational and wilderness resources (Ewert, 1987). There are, however, new programmes that have developed in order to address this issue. These programmes aim to provide a service to people who would like to partake in some form of high-risk recreation.

In South Africa, there are adventure-based companies that enable people to enhance their skills in certain adventure activities. The end result for completing the programmes enables the participants to engage in these high-risk activities on their own without the need of a guide or an instructor, since they have developed their skills and proficiency in the activity.

Some of the companies available in South Africa that offer accreditation in their programmes are Venture Forth International, an accredited mountaineering school, Robertson Skydive; a skydive programme that provides training in skydiving, and Gravity Adventure, a white-water rafting company that provides training in white-water rafting and kayaking.

Recently, a new adventure programme was formed in South Africa. Developed by the International Academy of Leadership through Adventure (iALA), this adventure-based gap year programme incorporates high-risk adventure activities within the programme's curriculum (iALA, nd). The programme focuses on experiential learning within a range of adventure-based activities where most of the training of the students takes place. People participate in such adventure-based activities for a variety of reasons. Some people participate for the novel experience, some for the challenge of the

activity, and others for the sudden adrenaline rush that accompanies participating in the risk-taking.

The increased participation in high adventure recreation has been accompanied by a concomitant increase in research in the domain. Research on high-risk recreation has been quite extensively conducted in the USA, particularly over the past four decades. Several meta-analytical studies have been conducted to determine the effects that adventure programming have on participants' self-concept, locus of control and leadership. They concluded that the participants' immediate gains from these adventure programmes were followed by substantial additional gains after the programmes had ended (See studies by Ewert, 1983; Ewert & Hollenhorst, 1989; Hattie, Marsh, Neill, & Richards, 1997). One area that has attracted a lot of research interest has been the myriad of aspects of the self-concept. These studies in particular have focused on motivation (Ewert, 1994; Slanger & Rudestam, 1997), sensation-seeking (Morrongiello & Lasenby, 2006; Zuckerman, 1994), and self-esteem (Newes & Bandoroff, 2004). A review of studies in this area has also been done by Ewert and Hollenhorst (1989) and Schrader and Wann (1999). The main findings were that adventure-based activities or programmes have a positive influence on developing a participant's self-concept and create a more positively orientated internal locus of control. Currently, the use of centre-based as well as wilderness-based adventure programmes is well known for developing peoples' locus of control and self-esteem (Hans, 2000).

Despite the expanding research in this area in the USA, there is some research done within the South African context that focuses on high-risk

recreation in South Africa. Moreover, few studies have investigated the personality attributes of students who enrol in an adventure programme that specifically involves several high-risk recreational activities. A South African study by Ellis, Greffrath, Meyer and Strydom (2011) compared the personal effectiveness of 28 participants who participated in a centre-based adventure programme (CBAP) and an expedition-based wilderness programme (EBWP). In order to assess if there was a difference in the dependent variables, the researchers made use of the ROPELOC measure (Review of Personal Effectiveness and Locus of Control). The findings indicate that each of two programmes had different benefits for the participants. According to Ellis et al. (2011), EBWP participants improved mainly in terms of personal aspects measured by the ROPELOC. The CBAP participants improved mainly in the social aspects measured by the ROPELOC. While both programmes were found to be beneficial towards facilitation of personal effectiveness, the EBWP was, however, identified to have greater value for improving personal effectiveness. The influence that the wilderness environment has on the participants was found to be significant.

A recent South African study by Greffrath and Roux (2012) investigated the effect of a gap year programme that incorporated adventure-related activities on certain personal competencies. Nine out of fifteen competence-related factors measured showed a significant difference by the end the programme. Some of the competencies measured were leadership skills, motivation levels, adaptability, and self-worth.

This chapter will review the available literature that forms part of the scope of the study. The following key constructs will be discussed: adventure

training, high-risk recreational activities, sensation-seeking, locus of control and self-efficacy. An overview of the self-efficacy theory as the theoretical framework for the study will also be presented.

2.2 Adventure training

Adventure training focuses on the participant's interpersonal and intrapersonal relationships. It involves the use of adventure activities that provide the opportunity for participants to develop and learn new problem-solving skills whether individually or as a group (Priest & Gass, 1997). According to Hattie et al. (1997), making use of outdoor experiences for educational purposes has been used for centuries. They assert that Plato extolled the virtues of outdoor experiences for developing healthy bodies, which will lead to healthy souls. Plato considered that the aim of physical education was not just to focus on the physical skills that it could improve, but rather on the positive effect that it would have and the higher educational value that it would bring to people's lives.

Adventure-based training or adventure education originated from the popularity of experiential learning, which was geared to bring about positive growth, and development within a person or within a group through guided experiences. The main notion of experiential learning is to enable people to learn by reflecting on their actions (Gass, 1993). Experiential learning did not just pave the way for the development of adventure training programmes, but adventure therapy also originated from the notion of experiential learning. Adventure-based programming has increased in popularity over the past few decades (Hans, 2000) due to the role of advertising in tourism and the decline

in the belief that high-risk recreational and adventure-based programmes are tailor-made for the professionals. Ordinary people are starting to participate in these kinds of leisure activities. It is being portrayed as an alternative to the more traditional forms of recreation or leisure activities and has become more accepted in society (Beedie & Hudson, 2003; Ewert & Hollenhorst, 1989).

Adventure-based education programming incorporates the key elements of experiential education. When a person is learning by doing, he or she uses all of his or her senses and is actively engaged and immersed in the experience. In adventure-based programmes, groups of participants are placed in "real life" situations in which they must use creative problem-solving ideas to deal with the environment around them and the task at hand.

Adventure-based training can incorporate activities such as hiking or rock-climbing, or even facilitated outdoor or indoor problem-solving games. Some of the more popular activities used in adventure training are high rope courses (Priest & Gass, 1997).

As with most of the activities regarding adventure training, a level of risk will always be present in the activities. If the right amount of risk is involved within adventure activities, functional change and growth occurs in the participants (Priest & Gass, 1997). Activities usually associated with forms of high-risk recreation include skydiving, rock-climbing, mountaineering and kayaking (Creyer et al., 2003). Nowadays more and more ordinary people are starting to enjoy the leisure and recreational benefits of high-risk recreational activities. What was previously reserved for people specialising in certain high-risk recreational activities, such as skydiving, rock-climbing, mountaineering or kayaking, are now used as recreational methods pursued

over weekends by ordinary people (Creyer et al., 2003). People may undertake an adventure activity for the fun of it; some are drawn to the adrenaline rush of the risk elements involved in the recreational activity. High-risk recreational activities will be discussed and elaborated on further in this chapter.

Adventure-based activities have also been used to facilitate a range of teambuilding, educational, developmental and purposeful functions. Much of adventure education research focuses on the beneficial outcomes derived from the programmes, rather than on how these outcomes are achieved. The literature suggests that programme outcomes, such as the increase in a participant's self-concepts and interpersonal skills, are achieved as a result of a combination of programme characteristics (McKenzie, 2003; Walsh & Golins, 1976). A study by Doyle (1981), cited in Hattie et al. (1997), illustrates this finding. Doyle hypothesised that expedition members in the study would exhibit a significant change towards a more positive self-concept, a more positive internal locus of control, and increased sense of benevolence, when compared with two comparison groups. Although the research findings showed no statistically significant difference in these dependent variables, Doyle came to the conclusion that the expedition itself was an intense learning experience for the participants that they would not have found in any classroom.

There has been a myriad of studies confirming the positive benefits of participating in adventure-based educational programmes. A meta-analysis on the overall effects of adventure-based programming with adolescents revealed an average treatment effect size of 0.31 based on 43 studies and

235 effect sizes. The effect size represents a 12.2% improvement for the average adolescent as a result of participating in the programme (Hans, 2000). Findings of the study suggest that adolescents who participate in an adventure programme show an improvement in self-concept, attitude, grades and school attendance, compared to those who do not participate in such programmes.

Adventure-based training has also been found to improve psychosocial functioning by enhancing self-esteem, establishing an internal locus of control, and improving life skills in conflict resolution and problem-solving (Bloemhoff, 2006; Bosch, 2007).

In another meta-analysis study conducted to determine the effects that adventure programmes have on a variety of constructs such as self-concepts, locus of control, and leadership, Hattie et al. (1997) found that adventure-based programmes appear to be most effective at providing participants with a sense of self-regulation. The effects on most leadership, personality, and adventuresome dimensions are also substantial, but increase less substantially over time.

In a South African study, Human (2012) used adventure-based activities and experiences to facilitate the professional development of postgraduate psychology students at the University of Pretoria. The primary aim of this qualitative study was to describe the personal growth of postgraduate psychology students through an adventure-based experience as part of their professional development. Activities that were used during the study were archery, obstacle courses, sea rafting, sea kayaking, and abseiling. The study gave students the opportunity to learn about their

intrapersonal worlds and interpersonal dynamics. Human (2012) concluded from the study that the participating students showed an increase in their intrapersonal worlds, interpersonal dynamics during the adventure experience, as well as an improvement in trust and cohesion

2.3 High-risk recreation

High-risk recreation is any form of recreation involving some form of risk. Examples of recreational activities usually associated with this term are scuba-diving, parachuting, mountaineering (Schrader & Wann, 1999), abseiling, rock-climbing, storm-chasing, white-water rafting and paragliding (Creyer et al., 2003). High-risk recreational activities fall within the same spectrum as adventure-based activities used for adventure training or education. As with all activities where risks are present, participants in high-risk activities are more vulnerable to some degree of physical (minor to severe) injury or even death. The risk element involved in these high-risk recreational activities is generally the "potential loss of something of value" (Priest & Gass, 1997, p 19). The loss can either be mental, physical, social or financial. The individual can never be sure when that loss may occur and this uncertainty creates a sense of adventure within a recreational experience.

According to Castanier, Le Scanff and Woodman (2010), risk taking in sport can enable a person to reach a variety of goals by managing physiological arousal through sensation-seeking. They suggest that negative affectivity and escape from self-awareness predict a person's risk taking behaviour.

In the literature on outdoor recreational activities, there is adequate theoretical support for understanding the adventure-recreation experience of participants. Dustin et al. (1986), as cited in Atkinson and Feather (1966), suggest that outdoor recreationists participate in order to experience a sense of competence. This search for competence continues as an individual gains experience and skills (Atkinson & Feather, 1966). The more competent a person becomes in an activity, the better developed will be his/her sense of perceived self-efficacy (Bandura, 1977). A person's perceived sense of competence occurs when individual characteristics are matched with a suitably challenging opportunity. For instance, an expert white-water kayaker would likely find a slow moving river boring and not enjoyable. On the contrary, a novice paddler may find a difficult white-water river equally unpleasant, but for distinctly different reasons. One reason for this may be the possibility of different levels in sensation-seeking. The white-water kayaker may have a high level of sensation-seeking, and the slow moving river may not supply the kayaker with the necessary experience that he or she desires (Zuckerman, 1994).

A study conducted by Ewert and Hollenhorst (1989) to test the accuracy of the adventure model in predicting the personalities and activity attributes of people participating in adventure recreation, found that as a participant's experience level increases, so too will the participant show a higher skill level. This will lead to an increase in risk taking and also an increase in terms of participation. Ewert and Hollenhorst (1989) hypothesised that participants will shift towards a more private social setting and will seek out more natural environments. The participant will show an increase in

internal locus of control with respect to decision-making; motivation factors will shift towards challenge, achievement, control and risk-taking. A study using 115 students from the Ohio State University who enrolled for a programme of outdoor pursuit courses over a year, found support for Ewert and Hollenhorst's (1989) hypotheses. As the self-reported experience level of the user increased, corresponding increases occurred in the frequency of participation, skill/expertise level, and preferred level of natural environments. Social group structures shifted away from family, friends and organised groups towards solo or small group activities. The data, however, did not definitively point to a shift in motivation for participants.

Taking risks can accomplish a variety of different goals among individuals rather than the mere management of physiological arousal. Castanier et al. (2010) conducted a study with 265 high-risk sportsmen to investigate the effect that self-regulation has as a predictor of risk taking behaviour in high-risk sport. Using the Risk-taking Behaviour scale, Positive and negative emotionality inventory, Risk and excitement inventory (REI), and the Sensation-Seeking Scale (SSS-V), their hierarchical regression analysis found that high-risk sportsmen's negative emotions lead them to adopt risk-taking behaviours only if they also use escape self-awareness strategies. Castanier et al. (2010) concluded that risk-taking behaviour in high-risk sports served as a mood-regulator for participants who wished to cope with their negative mood state by turning the attention away from the self by escaping from self-awareness. The data showed that high-risk sport can serve as an escape strategy or coping mechanism regarding a negative emotional state. If people focus on their bodily sensations while in high-risk sport activities, it can

divert their attention away from their negative emotions and problems. The immediate experience of sensation would, therefore, keep negative emotions at bay, even though only temporarily (Castanier et al., 2010).

2.4 Sensation-seeking

Individuals who participate in high-risk adventure activities have been referred to as sensation seekers (Zuckerman, 1979). Sensation-seekers are adventurous people who often take great risks in order to experience the type of excitement that they crave. The need can usually be met by high-risk recreational activities such as rock-climbing, skydiving, mountaineering, or any other form of recreational activities that have a high sense of risk involved. Risk-taking behaviour usually correlates with sensation-seeking (Priest & Gass, 1997). Sensation seekers require the risk as a way of experiencing the sensation after which they hunger. The risk is usually kept to a minimum or they try to minimize the possibility of any form of risk while participating in any high-risk activity (Priest & Gass, 1997).

The term "sensation-seeking" has evolved and developed over the years. Since 1979 the term has been defined by Marvin Zuckerman as "a trait defined by the seeking of varied, novel, complex, and intense sensations and experiences, and the willingness to take physical, social, legal, and financial risks for the sake of such an experience (Zuckerman, 1994, p 27). Seen as a personality trait, people differ in terms of sensation-seeking. People low in sensation-seeking can experience a certain activity on a different level compared to a person high in sensation-seeking. According to Buss (2012), a person low in the sensation-seeking trait has little need for adventurous

stimulation or excitement. They tend to feel comfortable in situations in which they are familiar and seem not to get bored easily. People, in general, are in need of some form of excitement no matter what their level of sensation-seeking is. This is because the brain needs invigoration. According to Zuckerman (1994), low sensation seekers have different goals and values to those of high sensation seekers.

2.4.1 Development of sensation-seeking

2.4.1.1 Preschool

Sensation-seeking is a difficult trait to measure among children. According to Morrongiello and Lasenby (2006), there is a lack of reliable measures for sensation-seeking among children. Trice (2010) mentions that from an early age, it is possible to determine if a child will be high in sensation-seeking when he or she reaches the state of adolescence. This is based on choices made by the adolescent during the child development stage. Choices such as video game content and age-inappropriate movies are a good indicator at a young age. Children high in sensation-seeking tend to be more explorative towards their surroundings and become bored more easily than children low in sensation-seeking. Children high in sensation-seeking enjoy the feeling of being frightened and will engage in activities such as jumping off the swimming pool diving board or any activity that involves some sort of peril.

2.4.1.2 Adolescence

Adolescents, because of their age, have a broader spectrum of adventure-based activities to engage in. They can now engage in the same

type of activities that are freely available for adults as well. Studies regarding sensation-seeking and adolescents focused mainly on alcohol usage among adolescents (Zuckerman et al., 1972).

2.4.1.3 Theoretical Perspective on Sensation-seeking

Marvin Zuckerman, a leading scholar and pioneer in sensation-seeking (Buss, 2012), developed the theory of sensation-seeking as well as the Sensation-Seeking Scale instrument to measure this construct. The scale measures a person's level of sensation-seeking on four different sub-scales, namely, Thrill and Adventure seeking, Experience seeking, Disinhibition and Boredom susceptibility. Each of the sub-scales focuses on a different aspect of sensation-seeking and the end results show in which area of sensation-seeking a person scores the highest (Zuckerman, 1994).

2.4.1.3.1 Thrill and adventure seeking (TAS).

The items for the TAS are associated with a desire to engage in sport or any other physical high-risk activities. These activities usually provide "unusual sensations of speed or defiance of gravity", as stated by Zuckerman (1994, p 31). Activities that fall within this category are scuba diving, mountaineering, skiing and white-water rafting (Zuckerman, 1994).

2.4.1.3.2 Experience seeking (ES).

ES comprises the seeking of novel sensations and experiences. This is usually achieved through the senses and the mind. Activities consist of music, food, travel and through social oddness such as being part of a non-conventional social society (Zuckerman, 1994).

2.4.1.3.3 Disinhibition (Dis).

Disinhibition describes social activities such as parties, social drinking and sex (Zuckerman, 1994). Studies that focus on sensation-seeking usually focus on alcohol usage among students in order to determine their level of sensation-seeking.

2.4.1.3.4 Boredom susceptibility (BS).

BS is the tolerance that a person will show regarding repetitive or uninteresting activities. People high in sensation-seeking tend to avoid repetitive activities. Boredom susceptibility usually consists of repetitive experiences such as people and activities (Buss, 2012; Zuckerman, 1994).

Sensation-seeking has been found to be related to a number of risk behavioural attributes. Zuckerman (1994) found a relationship between testosterone and sensation-seeking suggesting that male sensation-seekers usually have higher levels of testosterone. Sensation-seeking has been associated with smoking initiation in non-native populations (Clayton, Segress, & Caudill, 2007; Lipkus, Barefoot, Williams, & Siegler, 1994) presumably because the novelty of smoking is attractive to individuals with higher levels of sensation-seeking; female participants high in sensation-seeking are more likely to initiate daily smoking and alcohol usage (Mrug, Gaines, Su, & Windle, 2010; Spillane, Muller, Noonan, Goins, Mitchell, & Manson, 2012). Pintrich and Schunk (1996) as cited in Sibthorp (2003) believe that the increase in self-efficacy may give adolescents the confidence to attempt drinking, smoking, sex and other risky behaviours. These kinds of behaviours are corresponding with those identified with the disinhibition sub-

scale of the sensation-seeking scale IV (Zuckerman, 1994).

According to Steynberg and Scholtz (2004), sensation-seeking is a good indicator to explain and predict the type of risk-related behaviours a person will engage in with regard to high-risk sport and danger. They conducted a study to determine how gender plays a role in the prevalence of risk-taking in sport; the Sensation-Seeking Scale was administered and found that male participants scored higher regarding risk taking behaviour than female participants.

From the sensation-seeking standpoint, participating in these kinds of activities provide the varied and novel experiences that people seek. Sensation seekers continuously search for new thrills and excitement in an attempt to escape boredom, and this is usually done by these types of high-risk sport or leisure activities (Brymer, 2010). Slanger and Rudestam (1997), however, did not find any significant correlation between sensation-seeking and high-risk sport participation among experienced sportsmen. This is due to the reason that not all people seek to maximise the risk while participating in a high-risk sport or leisure activity (Slanger & Rudestam, 1997). Schneider, Butryn, Furst and Masucci (2007) also aver that extreme sportsmen such as adventure racers aim to minimise the risk involved in order to assure their own survival and to complete the race. Sensation-seeking appears to be related to competence or self-efficacy and locus of control (Hans, 2000; Priest, 1993). This relationship will be discussed in the next two sections.

2.5. Self-efficacy

Self-efficacy, as defined by Bandura (1977), refers to people's beliefs in their abilities to exercise control over their own functioning and over events that affect their lives. Self-efficacy has been found to influence the choices people make and the causes of their actions. Self-efficacy can be seen as a specific form of self-evaluation. It can be defined as the individual's opinion or assessment of their own ability to organise their own behaviour and to be satisfied with the outcome of that behaviour (Bandura, 2002). People with an optimistic sense of self-efficacy tend to be more involved in challenging activities; they will more easily pursue their goals and will show more cognitive and affective resistance towards setbacks and obstacles that they may encounter along the way (Creyer et al., 2003). People who are low in self-efficacy are characterised by traits that undermine their performance (Steyn & Mynhardt, 2008).

Bandura (1997) avers that people with feelings of self-efficacy are willing to take risks and are able to challenge themselves because they believe they are capable of coping with the risky situation. Self-efficacy refers to a person's expectancy that is primarily concerned with their own beliefs in their ability to perform a specific behaviour in order to reach the outcome (Bandura, 1977). It is, therefore, possible to say that self-efficacy judgements are concerned not with the skills that a person has, but with judgements of what they can do with whatever skill they possess and still make a success of it (Bandura, 1977). A person high in self-efficacy will be more likely to set themselves challenging goals that require more effort and time to complete (Bandura, 1997). People will tend to participate in activities that they feel they

are competent and confident enough to participate in and will avoid activities in which they feel uncomfortable. Efficacy beliefs help determine to what extent people will participate, how much effort they are willing to expend, how long they will persevere when confronted with obstacles and how flexible they are when facing difficult situations (Schunk, 1981; Schunk, & Hanson, 1985; Schunk, Hanson, & Cox, 1987).

Miller and Byrnes's (1997) study determined that risk-taking behaviour is associated with ability beliefs. Ryan (2001) found a relationship among individuals' personality traits and their commitment to an ideal vision of their performance. He discovered that risk-taking behaviour and self-efficacy are important aspects for strategic planning, needs assessment, performance improvement and decision-making (cited in Ogunyemi and Mabekoje, 2007).

A study conducted by Cicognani and Zani (2011) focusing on sensation-seeking, self-efficacy and peer group norms during drinking, found that participants who scored higher on sensation-seeking, scored lower in self-efficacy when confronted with the notion of drinking with peers. Participants with a higher level of sensation-seeking are likely to drink more frequently and will tend to assemble with other peers due to the lower level of self-efficacy that they have in resisting group pressure.

Priest (1993) describes in a model how a typical adventure based activity, such as abseiling or mountain climbing can result in an increase in self-efficacy and create a sense of internal locus of control. Priest (1993) states that the facilitator can encourage a participant to successfully complete an activity on his/her own. Therefore, the participant determines how successfully he/she will accomplish the task. This creates a sense of

internal locus of control. The participant is in control of his/her own actions and the success of having completed the task would not be attributed to the equipment that is being used or to the facilitator, which creates a sense of external locus of control. This in the end creates a positive feedback loop within a stressful situation. The successful completion of the activity leads to a better sense of self-confidence. The successful completion also results in a positive response from the facilitator as well as from other participants. The external praise, together with the sense of internal locus of control, will bring forth feelings of joy and accomplishment. Within the new positive emotional state, the participant may perceive an increase in competence and joy, or even a greater self-confidence. Due to this new sense of self confidence the participant would want to accomplish the same activity on a greater difficulty level. Therefore, the participant is likely to select an activity with a higher level of risk and that may be more challenging, on the basis of self-efficacy beliefs (Priest, 1993).

Self-efficacy is created from information obtained from both internal and external sources, and is more complex than mere self-confidence. Self-efficacy consists of three dimensions, namely, magnitude; strength; and generality. The three dimensions determine how a person will perform. This is done through the choice that the person has regarding his willingness to participate in or avoid a certain activity. During a stressful situation, the amount of time and effort that the person is willing to spend on an activity also plays a role. Self-efficacy can influence one, two or all three of these motivated behaviours to different levels (Priest, 1993).

2.6 Locus of control

Locus of control, a concept first defined by Rotter (1966), is the degree to which an individual expects that a contingent relationship exists between their behaviour and outcomes. Locus of control refers to a person's perception of control he or she has over events that occur in his or her life. It is differentiated into internal and external locus of control.

Internal locus of control refers to the perception of negative and/or positive events as being a consequence of one's own actions and is, therefore, under personal control.

External locus of control refers to the perception of positive and/or negative events being unrelated to one's own behaviour in certain situations and is therefore beyond personal control (Rolison & Scherman, 2002). Locus of control provides an indication of how much control a person feels he or she has over the consequences of his or her decisions.

Locus of control is not a static disposition and can change throughout life. From an early age, children are endowed with an external locus of control, whereas in comparison older people will act according to a more internal locus of control (Breet et al., 2010). According to Anderson (2000) as cited in Breet et al. (2010), people with a greater internal locus of control can shift towards an external locus of control due to certain life experiences that the person might encounter.

Kohler (1996), cited in Rolison and Scherman (2002), found that adolescents with an internal locus of control knew they were taking risks in the decisions that they made, and showed a greater tendency to believe that they were safe taking such risks. Kohler also found a correlation between risk-

taking measured by the Sensation-Seeking Scale, and gender, critical thinking and locus of control.

According to Hans (2000), many studies that focused on adventure programming have looked at self-concept in order to understand what effect the programme had on the individual. It has been hypothesised that when focusing on the self-concept, the spectrum is too broad to determine what change has taken place within individuals participating in adventure programmes (Hans, 2000). Hans (2000) advises that assessing locus of control within an adventure programme will enable a more in-depth understanding of how change within an individual occurs as a result of participating in an adventure based programme.

The meta-analysis by Hattie et al. (1997) noted that the highest seven effect sizes generated seemed to centre around the theme of self-control. According to Hattie et al. (1997), locus of control was used by a variety of adventure-based programmes to determine what the outcome of the programme would be. Ewert and Hollenhorst (1989) came to the conclusion that as the participants begin to engage more in the adventure-based activities, their locus of control shifts from an external source to an internal source. The only problem regarding the above finding is that they did not use a validated psychometric measure to determine the locus of control.

Nowicki and Barnes (1973), as cited in Hans (2000), reported that studies found that an internal locus of control is positively related towards a number of variables such as achievement motivation, increase in activity engagement, level of aspiration and information seeking. People with an

internal locus of control are seen as more self-confident, less anxious and will aspire to improve their environment (Hans, 2000; Priest, 1993).

It does appear from the literature reviewed that sensation-seeking, locus of control, and self-efficacy beliefs are significant variables in research high-risk recreational behaviour.

2.7 Summary

In this chapter the salient constructs of the study, sensation-seeking, locus of control and self-efficacy were defined and described. Pertinent research studies examining these constructs were reviewed and presented to support the view that sensation-seeking enables one to determine which participants are more willing to take risks within a high-risk recreational activity or adventure based programme. Risk taking can be beneficial towards that person, because that person wants to experience something new and thrilling. As the person's self-confidence grows from the new activity, he or she will be able to enhance his or her self-efficacy. It was also concluded from studies related to adventure, that adventure-based programming can enhance a person's internal locus of control and create a better sense of self-efficacy within an adventure-based activity.

In the next chapter the research methodology of the study will be presented.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Chapter overview

This chapter focuses on the research design and the research methodology utilised by the researcher in executing the study. A description of the sampling methods, data collection and the measuring instruments used for the study will also be provided. The ethical procedures and considerations will also be discussed.

3.2 Research design

The present study made use of a quantitative, non-experimental cross sectional research design which compared the responses of a designated research group with a control or research equivalent group on a set of pencil-and-paper research questionnaires. This type of research is used to describe attributes that exist in a population, but does not seek to determine cause and effect relationships among different variables or sub-groups.

For the sampling procedure, the researcher used a convenient, available sample for the research group, and purposive sampling for the research equivalent group to obtain participants who were less involved in sports. Pencil-and-paper questionnaires were distributed among the respondents for them to complete within a group setting, in order to keep the data gathering as unvaried as possible. The questionnaire consisted of a demographic and an activities questionnaire and the measures of the study. The data obtained from the questionnaires were statistically analysed by

means of descriptive and inferential statistics and by performing multiple data analysis (MANOVA) and analysis of variance (ANOVA).

3.3 Sampling and data collection

The sample for the present study consisted of a research group and a research-equivalent group. The research group was comprised of students enrolled in the iALA adventure programme. The whole population ($n = 25$) of the iALA 2012 student cohort participated in the research project as the research group. Due to the uniqueness that the programme offers in terms of exposure to high-risk recreational activities and adventure training, iALA has created the congenial environment from which to draw the sample population.

The research equivalent or control group consisted of Stellenbosch University residence first-year students ($n = 34$) who were in the same age and developmental cohort as the iALA students. Before the researcher could approach potential respondents, ethical permission was first obtained from iALA and Stellenbosch University (SU) respectively. Students in the iALA programme were approached in a group context and informed about the nature and purpose of the intended study. As the researcher was known to them through his involvement as a facilitator in the iALA programme, specific attention was given to reassuring students about their rights not to participate without any negative consequence, their right to withdraw, and the confidentiality of the information gathered, that the data would remain anonymous.

The researcher was aware of his position as part of the staff of the iALA programme. As data was collected only on one occasion in the iALA

programme and participants were not required to identify themselves on the questionnaire, researcher influence was minimised. The questionnaires were administered within the same time frame.

For the data gathering, the participants from the iALA sample were gathered in a classroom and the questionnaires were distributed amongst the participants. The participants took approximately 20-25 minutes to complete the questionnaires. The researcher was available on site during the data gathering to handle any queries of the participants.

After permission was obtained to access students in the SU residence for the control group, the researcher worked together with the head coordinators of the four residences, who helped to distribute the questionnaires among first-year students. There were several strategies used for data gathering: students were recruited by canvassing directly in the residence; electronic invitations were also sent to the students in the residences; a meeting was scheduled for students to complete the questionnaires. The low response rate may have been due to the time in which the data was gathered. The researcher approached the University students during the examination time of the University, which could have had a negative effect on the actual response rate, as most of the students were busy preparing for the examinations.

3.4 Measuring instruments

For the study, the researcher made use of a demographic questionnaire and an activities questionnaire. The activities questionnaire consisted of three scales to measure the sensation-seeking, locus of control

and self-efficacy behaviours of the participants. Each of the three scales will be discussed under the activities questionnaire heading.

3.4.1 Demographic questionnaire

The demographic questionnaire consisted of seven questions. The purpose of the questionnaire was to gain biographical information regarding the participant's general background pertinent to the study. Participants had to indicate their age, gender, location, the institutions from which they come, and their names. The names were kept confidential by assigning a code to the questionnaire that only the researcher had access to. Participants were also asked whether they have previously participated in high-risk recreational activities, and to what extent they participated.

3.5 Activities Questionnaire

The activities questionnaire consisted of three scales assessing the three constructs of the study: the Sensation-Seeking Scale (SSS-V) (Zuckerman, 1994); Rotter's Internal-External Locus of Control Scale (Rotter, 1966), and Sherer's Generalised Self-efficacy scale (Sherer, Maddux, Mercandante, Prentice-Dunn, Jacobs, & Rogers, 1982). Each of these scales and their respective psychometric properties will be discussed below.

3.5.1 Sensation-Seeking Scale (SSS-V)

3.5.1.1 Description

When reviewing the available literature regarding sensation-seeking (Schrader & Wann, 1999; Zuckerman, 1994), the instrument used most

frequently to assess sensation-seeking, has been Zuckerman's Sensation-Seeking Scale (SSS). According to Zuckerman (1994), the SSS evolved over two decades. The scale started out as a general SSS, evolving into a multi-scale instrument. Since 1971, the SSS utilised four subscales, each of which measuring a different aspect of sensation-seeking. Since the publication of the SSS-V in 1978, the SSS-V has become the most frequently used form in order to assess sensation-seeking (Zuckerman, 1994). The SSS-V employs of a forced-choice format in order to reduce social desirable and acceptable response sets (Zuckerman, 1994). The SSS-V scale consists of a 40 item scale, which is made up of the four subscales of a maximum of 10 points for each of the four subscales and it takes a participant 12 to 25 minutes to complete (Kaliski, 1993; Zuckerman, 1994).

The four subscales including a question example of each sub-scale from the SSS-V are as follow:

- Thrill and adventure seeking (TAS).

The items for the TAS are associated with a desire to engage in sport or any other physical high-risk activities. An example of the type of TAS question "I often wish I could be a mountain climber (Zuckerman, 1994).

- Experience seeking (ES).

ES compromises the seeking of novel sensations and experiences. This is usually achieved through the senses and the mind. An example of a question that focuses on experience seeking is, according to the SSS-V, "I like some of the earthly body smells" (Zuckerman, 1994).

- Disinhibition (Dis).

Disinhibition refers to responses during social activities such as parties, social drinking and sex (Zuckerman, 1994). Questions that focus on disinhibition are questions that focus on socially unacceptable behaviour, an example would be; “I like “wild” uninhibited parties” (Zuckerman, 1994).

- Boredom susceptibility (BS).

BS refers to the tolerance that a person will show during repetitive or uninteresting activities. People high in sensation-seeking tend to avoid repetitive activities. An example of a boredom susceptibility question from the SSS-V is, “I can’t stand watching a movie that I’ve seen before” (Zuckerman, 1994).

Due to shortcomings in the original SSS, a revised version of SSS was developed. According to Zuckerman (1994), the general scale was not a satisfactory way of measuring the overall sensation-seeking factors represented in the subscales. The original length of the scale was reduced from a 72-item scale to a 40-item scale. Good internal reliabilities ranging from .83 to .86 of the SSS-V total score have been obtained. According to Zuckerman (1994), the ranges of reliabilities for the subscales were as follow, TAS, .72-.82; ES, .61-.67; Dis, .74-.78, and BS, .56-.65. The Experience-seeking (ES) was the only scale that showed a decrease in reliability when the original scale was shortened.

3.5.1.2 Psychometric properties

Ridgeway and Russell (1980) examined the psychometric properties of the SSS-V in their 1980 study. Using a sample of 336 participants in Canada,

the 40-point total score of the SSS-V was found to be moderately reliable ($\alpha = .75$). The new sub-scales ranged from .48 to .69 and intercorrelated moderately.

According to Zuckerman (2007), the test-retest reliabilities for the total scale were .94 after 3 weeks (Zuckerman, 1979). Convergent validity of the SSS has been determined by correlating it with other scales such as Myer's Thrill-seeking scale (.73) and Murray's Harm-avoidance scale (.81 for males) (Slanger & Rudestam, 1997; Zuckerman et al., 1972).

Zuckerman (2007) responded to a study by Gray and Wilson (2007) in which they tried to conduct a detailed analysis of the reliability and validity of the SSS-V based on a UK sample. According to Zuckerman (2007), the researchers did not really address the validity of the SSS-V as they claimed. From the study by Zuckerman (2007) the alpha value of the thrill and adventure seeking sub-scale was .91, experience seeking measures .80, disinhibition measures .83 and boredom susceptibility .72. Gray and Wilson (2007) deconstructed the SSS-V by making use of a Likert type response instead of the forced choice format and deleted 19 deficient items. Even after deleting the 19 questions, their data did not have any impact on the reliability of the four sub-scales which is an indication of reliability of the SSS-V (Zuckerman, 2007). The study by Cain, Jooste, Kalichman, Mthebu, Simbayi, Smith, and Vermaak (2008) indicated the reliability of the sensation-seeking scale V (SSS-V) within the South African context. The scale has an alpha of .71 indicating a moderate level of internal consistency.

3.5.2 Rotter's Internal-External (I-E) locus of control scale

3.5.2.1 Description

In order to assess the locus of control of participants, the researcher utilised the Rotter Internal-External scale (I-E). The Internal-External Locus of Control is, according to Marsh and Richards (1986), hypothesised to be a bipolar construct. A person would have an internal locus of control if such a person perceives events to be occurring due to their behaviour or personal characteristics. Locus of control will be perceived as external when events are based upon luck, fate, or the control of powerful other individuals. Therefore the individual believes that he or she has no control over his or her own life (Rotter, 1966; Schuett, 1993).

According to Schuett (1993), a large number of locus of control scales have been developed, the most popular of these scales being the Rotter Internal-External Scale (I-E). The Rotter I-E scale consists of a 29-item scale and utilises a forced-choice format. Based on the end scoring, one is able to determine whether an individual has a strong sense of internal or external locus of control. The scale generally stood up well to testing in a range of different contexts and countries with internal reliability data ranging from .65 to .79 (Harper, Oei, Mendaglio, & Evans, 1990; Lange & Tiggemann, 1981; Rotter, 1966) as cited in Rapee, Craske, Brown, and Barlow (1996).

According to Marsh and Richards (1986), the Rotter I-E is based upon the notion that the I-E construct is relatively undimensional; that the internal and external dimensions represent endpoints of the bipolar dimension; and that the use of the dichotomous forced-choice format is the most effective way to measure this construct (Marsh & Richards, 1986). Research by Marsh and

Richards (1986) found that participating in an adventure-based programme produced higher internal locus of control scores on the I-E scale. The mentioned finding supports the construct validity of the Rotter I-E scale in an adventure-based setting (Marsh & Richards, 1986).

3.5.2.2 Psychometric properties

The I-E scale was developed by Julian Rotter in order to assess a person's general expectancy regarding internal versus external locus of control. Over time, the I-E has remained one of the more popular scales in order to assess locus of control in research settings. According to Lefcourt (1991), more than 50% of the studies that focused on locus of control have made use of the I-E Scale. The I-E scale has acceptable internal reliability of .70 (Rotter, 1966).

Even though the scale was developed in the 1960s, the scale's questions are still relevant to modern society due to the generalised nature of the phrasing e.g. "There will always be wars, no matter how hard people try to prevent them."

3.5.3 Sherer's generalised self-efficacy (SGSES)

3.5.3.1 Description

The available research that focused on assessing self-efficacy made use of the general self-efficacy scale (Imam, 2007; Sherer et al., 1982). Generalised self-efficacy scales have been developed in order to determine how an individual performs competently in a diverse range of situations (Slanger & Rudestam, 1997). As stated by Chen, Gully, and Eden, (2001, p. 63), "general self-efficacy captures differences among individuals in their

tendency to view themselves as capable of meeting task demands in a broad array of contexts". According to Imam (2007), the SGSES has been the most widely used scale in order to determine a person's general self-efficacy. For this reason the researcher will make use of Sherer's generalised self-efficacy (SGSE) scale for the current study, as the scale measures a person's capability in a wide variety of situations. The SGSES (Sherer et al., 1982) is a 17-item scale, answered on a 5-point Likert-type scale. Individuals must answer the questions from 1 to 5, where 1= strongly disagree, and 5= strongly agree. The sum of the scores reflects the participant's general self-efficacy. The higher the individual scores, the more self-efficacious the person will be (Imam, 2007).

The SGSE scale was developed in order to measure an individual's "general set of expectations that the individual carries into new situations" (Imam, 2007, p. 664). According to Imam (2007), the SGSES thus determines the difference between individuals in their tendency to view themselves as capable of successfully completing task demands in a variety of settings. The SGSES was originally developed for clinical and personality research, where it was later incorporated in the organisational setting.

3.5.3.2 Psychometric properties

Chen et al. (2001) found more than 200 published studies that have cited or used the SGSES for their research. According to Imam (2007), while reviewing the various studies, Chen et al. (2001) found the internal reliability of the SGSES to be moderate to high ($\alpha = .76$ to $.89$).

Chen et al. (2001) reported high internal reliability ($\alpha = .88$ to $.91$ respectively) for SGSES in two of their studies. The test-retest reliability of the SGSES was relatively high according to Chen et al. (2001) ($r = .74$ and $.90$).

3.6 Ethical Considerations

The aim, procedures and risk of the study were described to the participants in an informed consent letter and were also verbally conveyed to the participants in the research group. The rights of the participants were also described to the participants. All information regarding or relating to the participants were kept confidential and anonymous. Participation in the study was voluntary. Before conducting the study, permission was obtained from the relevant authorities at both the two institutions whose students participated in the study. The ethical considerations for the study as well as the informed consent were created in conjunction with the Stellenbosch University's Ethical Guidelines for Research and data gathering. Upon completion of the study questionnaire, participants were entered into a random draw for a cash prize of R500.

3.7 Statistical Analyses

The researcher constructed three hypotheses in order to compare the two groups of participants on the relevant behavioural attributes. To analyse the data obtained from the scales that were relevant for the three constructed hypotheses, the researcher made use of MANOVA and ANOVA to test the three hypotheses.

A MANOVA was used to assess the first hypothesis due to the multiple variables involved in this analysis. An ANOVA was performed on the

remaining two hypotheses, to determine if there was any significant difference between the sample groups. The researcher made use of Statistica (Version 11), a computer based statistical analysis programme, to perform the relevant descriptive and inferential statistical analyses.

The results of the statistical analyses will be presented in the ensuing chapter.

CHAPTER 4

RESULTS

4.1 Overview

This study sought to ascertain whether participants who are enrolled in a high-risk recreation programme differ significantly from a control group who have low sports involvement, in terms of sensation-seeking, locus of control and self-efficacy. The results pertaining to the aim of this study are presented in this chapter. The implications of the obtained results will be discussed in the next chapter.

Participants completed a demographic and activities questionnaire with the latter section measuring sensation-seeking, locus of control and self-efficacy attributes of each participant. The data were analysed by means of Statistica (Version 11) and the confidence level of .05 was selected as a priori for tests of significance throughout the analyses. The psychometric properties of each scale as per sample group and the descriptive statistics of the demographic data of each sample group will be presented.

4.2 Demographic data

The study used a cross sectional design comparing an experimental (research) group and an equivalent control group. Students for the research group were drawn from the International Academy for Leadership through Adventure (iALA). The full cohort of iALA students ($n = 25$) served as the research group. The iALA group was identified as the research group as they

were students who had enrolled specifically for the year long programme consisting of high-risk recreational activities and adventure-based training. This is a post-matric education programme with many of the students seeing this as a gap year. The control or research equivalent group was made up of first-year students with low sports involvement from the Stellenbosch University (SU) and consisted of 34 participants ($n = 34$). The total number of participants was therefore 59 ($n = 59$). Each of the different sample group's demographic data is described below.

4.2.1 Research group (iALA students)

The iALA sample group consisted of 25 participants whose ages ranged from 18 to 21 years. The mean age was 19.2. The gender distribution for this group was as follows: four (16%) female and 17 (84%) male. Prior to enrolment in the iALA programme, 4% indicated that they had never taken part in any form of risk recreational activities, 20% took part in low-risk recreational activities and 76% indicated that they had taken part in high-risk recreational activities.

4.2.2 Control or research equivalent group (Stellenbosch University [SU] students)

The control or research equivalent group was drawn from first year students recruited at Stellenbosch University; 34 participants participated in the study. Their ages ranged from 18 to 21 years. The mean age was 20.1 years. The gender distribution for Stellenbosch is as follows: 23 (68%) were female and 11 (32%) male. Using Creyer et al's. (2003) classification of high-

risk recreational activities, 76% of the participants had not participated in any form of risk recreational activities, 5% participated in what can be classified as low-risk recreational activities, and the remaining 17% participated in high-risk recreational activities.

From the above, it is evident that a smaller percentage of participants of the research equivalent sample group took part in high-risk recreational activities prior to 2012/2013.

4.3 Psychometric properties

The Cronbach's alpha coefficient of each scale, including the four subscales of the SSS-V, was calculated in order to determine the internal consistency of the scales for this particular sample. The results (indicated in Table 1 below) range from .58 to .84. Most of the scales attained acceptable levels in terms of internal consistency (Nunnally & Bernstein, 1994), with only Boredom Susceptibility (BS) from the SSS-V scoring lower than .60..

Compared to previous studies regarding the Cronbach's alpha of the SSS scale, Zuckerman (2007) found the thrill and adventure-seeking subscale to be .91, experience-seeking measures .80, disinhibition measures .83 and boredom susceptibility .72.

For Rotter's Locus of Control Scale, an alpha of .84 was obtained. This compares favourably with Rotter's (1966) study that yielded an alpha of .70 and a South African study (Pretorius 1991) with an alpha of .72.

For Sherer's Generalised Self-Efficacy Scale, the obtained alpha coefficient was .82. In their study, Chen et al. (2001) found the internal consistency reliability of the SGSES to be moderate to high ($\alpha = .76$ to $.89$).

All scales were thus found to have moderate to high internal consistency (with the exception of the BS scale) within the South African context.

Table 1

Reliability Results of the Independent Variables Scales

Activities Questionnaire Scales	Cronbach's Alpha Coefficient
Sensation-Seeking Scale (SSS-V)	.84
Thrill and Adventure sub-scale (TAS)	.69
Experience Seeking sub-scale (ES)	.65
Disinhibition sub-scale (DIS)	.71
Boredom Susceptibility sub-scale (BS)	.58
Locus of Control Scale (I-E)	.84
Sherer's Generalised Self-Efficacy Scale (SGSES)	.82

4.4 Hypotheses testing

In order to determine how students, who are enrolled in an adventure-based programme, differ from their peers, three hypotheses were tested. Data of the two groups were compared to determine the differences on the core independent variables of the two groups. The first hypothesis focused on how the two groups differ in terms of sensation-seeking. The second hypothesis focused on group differences regarding self-efficacy. The third hypothesis focused on group differences in locus of control. In order to test all three hypotheses, a MANOVA was conducted. This is deemed to be more robust than using t-tests to assessing the three hypotheses separately (Terre Blanche, Kelly, & Durrheim, 2006; Pedhazur & Schelkin, 1991). A p-value of less than .05 needs to be obtained to indicate that there is a significant difference between the research (iALA) and the research equivalent (SU) group. The three research hypotheses and relevant analyses are presented below.

4.4.1 Hypothesis 1

H1: Students enrolled in an adventure-based programme will measure higher on sensation-seeking compared to students not involved in such a programme.

Ho₁: There will be no difference between the two groups in terms of sensation-seeking.

A MANOVA was conducted in order to determine how each sample group differed in the Sensation-Seeking Scale V (SSS-V). The SSS-V is a 40-

point scale that consists of four sub-scales of 10 points each. The four sub-scales measure a different form of sensation-seeking. The four sub-scales are as follow: Adventure and Thrill-seeking (AT), Experience-seeking (ES), Disinhibition (Dis) and Boredom Susceptibility (BS). It is theorised that the iALA students should measure higher regarding sensation-seeking given their interest in high-risk recreation. Based on the results, shown in Table 2, there is a significant difference between the two sample groups on each of the sub-scales of the SSS-V (AT: $F = 26.95$, $p = .00$; ES: $F = 3.95$, $p = .05$; DIS: $F = 6.07$; $p = .01$; BS: $F = 10.08$, $p = 00$).

Even though the iALA sample was smaller ($n = 25$) compared to the SU sample ($n = 34$), the iALA sample obtained higher mean scores on all four sub-scales of the Sensation-Seeking Scale (SSS-V), including the total score of the SSS-V (see Table 2). The Thrill and Adventure (TAS) sub-scale showed the greater difference between the two sample groups (iALA: $M = 8.48$; SU: $M = 5.79$).

Based on the MANOVA analyses, Hypothesis 1 can, therefore, be accepted. One can assert that students enrolled in an adventure-based programme are likely to measure higher on sensation-seeking compared to students not involved in such a programme. A more in-depth discussion regarding the above will be discussed in Chapter 5.

Table 2***Descriptive and Statistical Information for Sensation-seeking Scale V (SSS-V)***

Variable	Sample	Mean	SD	F	Sign. p-value
TAS	iALA	8.48	0.39	26.95	.00**
	SU	5.79	0.33		
ES	iALA	5.64	0.44	3.95	.05*
	SU	4.47	0.38		
DIS	iALA	4.48	0.47	6.07	.01*
	SU	2.94	0.40		
BS	iALA	4.36	0.39	10.08	.00**
	SU	2.70	0.33		
SSS-V	iALA	22.96	1.21	19.50	.00**
	SU	15.91	1.03		
*p < .05		**p < .01			

4.4.2 Hypothesis 2

H2: People participating in high-risk recreational activities will measure higher in terms of self-efficacy compared to people who are not participating in high-risk recreational activities.

Ho₂: There will be no difference in self-efficacy between the two groups.

An ANOVA was conducted in order to assess Hypothesis 2. The results (reported in Table 3) reveal that there appears to be no significant difference between the iALA and SU sample, $F(3,55) = 7.93, p = .68$, regarding self-efficacy.

The iALA sample ($n = 25$) was smaller compared to the SU sample ($n = 34$) but higher scores with regard to self-efficacy (iALA: $M = 63.08$; US: $M = 62.20$). However, as mentioned, the difference is not significant and therefore Hypothesis 2 cannot be retained. The null hypothesis of no difference between the groups is therefore retained.

Table 3***Descriptive and Statistical Information for Sherer's Generalised Self-efficacy Scale (SGSES)***

Variable	Sample	Mean	SD	F	Sign. p-value
SGSES	iALA	63.08	1.64	0.16	.68
	SU	62.20	1.40		

4.4.3 Hypothesis 3

The third hypothesis was also assessed by performing an ANOVA on the obtained data. The third hypothesis posits that people who participate in high-risk recreational activities are more likely to have a stronger sense of internal locus of control.

H3: People participating in high-risk recreational activities will show an internal locus of control compared to people not participating in high-risk recreational activities.

Ho₃: There will be no difference in locus of control between the two groups.

According to Rotter's Internal-External Locus of Control Scale, participants who score a high score will have an external locus of control,

compared to participants with a low score who will instead have an internal locus of control.

The scores as indicated in Table 4 show that there is a tendency towards an internal locus of control in both sample groups (iALA: $M=11.20$; US: $M = 11.79$). Once again, the iALA sample scored lower when compared to the SU sample, indicating a tendency towards internal locus of control. Notwithstanding, the differences between the two groups are not significant to confirm the stated hypothesis ($F=.39$, $p = .52$).

Table 4

Descriptive and Statistical Information for Rotter's Internal-External Locus of Control Scale (I-E)

Variable	Sample	Mean	SD	F	Sign. p-value
I-E	iALA	11.20	0.71	0.39	.52
	SU	11.79	0.61		

****p < .05**

The analyses of the research data indicate that of the three hypotheses, only hypothesis 1 could be accepted. When looking at the data, it is evident that there are differences in the group means on each of the study variables with the iALA group scoring higher than the SU sample on the sensation-seeking and self-efficacy measures, and lower for locus of control

indicating a stronger tendency towards an internal locus of control. However, the statistical analysis provides empirical support for Hypothesis 1, only that the groups differ significantly in terms of sensation-seeking behaviour.

Chapter 5 will have a more in-depth discussion of each hypothesis and will include recommendations for further studies.

CHAPTER 5

DISCUSSION

5.1 Overview

The present study aimed to determine whether students, who enrol in an adventure-based programme that involves a considerably level of high-risk recreational activities, would differ with regards to sensation-seeking, locus of control and self-efficacy from an equivalent peer group who were first year students not participating in an organised programme. From the literature that was reviewed it was hypothesised that individuals who are drawn to high-risk recreational activities may be more likely to be stimulated by physical and mental challenges (Creyer et al., 2003), pushing their personal limits (Ewert, 1994; Slinger & Rudestam, 1997), and novel situations for self-advancement (Larson, 2007; Newes & Bandoroff, 2004), and therefore exhibit higher sensation-seeking behaviour (Morrongiello & Lasenby, 2006; Zuckerman, 1994), have a more internal locus of control (Ewert & Hollenhorst, 1989; Hans, 2000; Hattie et al., 1997) and have higher self-efficacy (Creyer et al., 2003; Priest, 1993; Schunk, Hanson, & Cox, 1987).

For the study, the researcher made use of a group comparative cross sectional research design with the research group consisting of students from the International Academy for Leadership through Adventure (iALA). The iALA programme is an adventure-based gap year programme that makes use of high-risk recreational activities such as scuba dive, abseil and wilderness expeditions as a medium for their training and education. Adventure is the

core basis of the programme's curriculum. The research equivalent group selected for the study consisted of first year students from Stellenbosch University who fitted the criterion of being less inclined to participate in high-risk recreational activities.

Three primary hypotheses were evaluated comparing the two sample groups on sensation-seeking, self-efficacy and locus of control attributes. The statistical results of the testing of the three research hypotheses using MANOVA and ANOVA analyses were presented in Chapter 4, together with demographics data of the respective groups and psychometric data of the pertinent scales. This chapter will focus on the in-depth discussion of each of the three hypotheses. The implications for theory, research and practice will also be discussed, along with the limitations of the study and recommendations for further research.

5.2 Demographic Data

From the demographic data of each sample group, participants in the research group (i.e., the iALA sample) indicated that prior to enrolling in the iALA programme, 76% had been involved in high-risk recreational activities on a regular basis. The types of high-risk recreational activities included scuba diving, skydiving and abseiling. Only 17% of the total research equivalent group (i.e., the SU sample) participated in high-risk recreation prior to 2013. The mean age for the iALA sample was 19.2 years and for the SU sample 20.1 years. The groups were deemed equivalent on the basis that both were drawn from first year post matric student cohorts. Whereas the research group consisted of the entire iALA cohort, the control group was a convenient

purposive sample drawn from first year students who self-identified as being less inclined to high-risk recreational activities.

5.3 Research Hypothesis

5.3.1 Hypothesis 1

H1: Students enrolled in an adventure-based programme will measure higher on sensation-seeking when compared to students not involved in such a programme.

A MANOVA was conducted on the data to determine if Hypothesis 1 could be retained. From the results obtained from the analyses, there was a significant difference between the research and the control group in terms of sensation-seeking ($p < 0.05$). The iALA sample not only scored higher in terms of sensation-seeking compared to the SU sample, but this difference was found to be statistically significant. It is likely that given its heavy weighting of high-risk recreational activities in its curriculum, more students with higher sensation-seeking attributes are likely to be drawn to the iALA programme. This would support the contention that individuals with greater propensity for sensation-seeking, are more likely to engage in high-risk behaviour (Stelmack, 2004; Zuckerman et al., 1972).

This study was not designed to measure participants' motives for engaging in sensation-seeking activities; it merely aimed to measure the desire that a person would have to engage in sensation-seeking activities. According to Zuckerman et al. (1972), a sensation seeker is a person who needs varied, novel and complex sensations or experiences to maintain an

optimal level of arousal. When the person's needs are not met, they tend to become bored and non-responsive more quickly than a person low in sensation-seeking. Hence, it can be inferred that people who tend to enrol for an adventure-based programme, do so because they are seeking different forms of stimuli in order to maintain their optimal level of arousal (Priest & Gass, 1997). An adventure-based programme that offers a variety of different high-risk recreational activities, as part of their programme, will therefore attract sensation seekers (Brymer, 2010; Slinger & Rudestam, 1997). It was evident from the data that the participants who enrolled for the iALA programme measured higher on all four sub-scales of the Sensation-seeking Scale V (SSS-V) compared to those of the SU sample including the Thrill and Adventure sub-scale (TAS) of the SSS-V. As stated by Zuckerman et al. (1972), the TAS items show a desire to engage in outdoor activities and sports and have a form of danger and risk involved. They may have implications for education programmes with those individuals higher in sensation-seeking opting perhaps not to choose mainstream education programmes that do not include any risk activity in the curriculum.

5.3.2 Hypothesis 2

H2: People participating in high-risk recreational activities will measure higher in terms of self-efficacy when compared to people who are not participating in high-risk recreational activities.

From the literature reviewed, there is evidence that high risk taking behaviour is associated with a sense of higher self-efficacy as risk taking

behaviour tends to reinforce a sense of mastery and confidence (Brody, Hatfield & Spalding, 1988; Chen et al., 2001; Llewellyn, Sanchez, Asghar, & Jones (2008). One would therefore assume that there would be a difference between the iALA and SU samples. From the data analyses in the present study, it became evident that there is no significant difference amongst the two groups. The ANOVA indicated that although the iALA sample did show a higher mean score for self-efficacy compared to the SU sample, there was no significant statistical difference. Consequently, the research hypothesis could not be accepted. The SGSE's scale used in order to assess the self-efficacy between the two samples has been used by a number of previous studies (Imam, 2007).

Whereas generalised self-efficacy scales have been developed in order to determine how an individual performs competently over a variety of tasks (Chen et al., 2001) in diverse range of situations (Slanger & Rudestam, 1997), a context specific measure to assess self-efficacy within sports or outdoor situations may have been more appropriate in the current study. However, as stated by Bandura (1997), an individual can have a stronger sense of self-efficacy in one activity and can show a lower sense of self-efficacy in another activity. A person high in self-efficacy will more likely set themselves challenging goals that require more effort and time to complete. Bandura (1997) indicated that efficacy beliefs are situationally specific; that is, efficacy beliefs depend on the situation or context relative to the action or task to be performed. Hence a recreation or outdoor specific self-efficacy scale should therefore have been considered as opposed to a generalised measure. It can also be that as both groups involved tertiary levels students, there was a base

level of self-efficacy present that would have been different if the control group had been drawn from a group of individuals who were not in an academic programme.

Koocher (1971) reported from his study that the acquisition of a leisure or sport skill leads to a significant increase in perceived physical self-efficacy. As the adventure-based programme is mostly high-risk recreational orientated and participants' physical and fitness levels have an influence on their performance, the researcher would suggest that should there be further studies regarding self-efficacy and high-risk recreational activities, that physical self-efficacy should be measured instead of general self-efficacy. As suggested by Schrader and Wann (1999), the use of high-risk recreational activities can provide an individual with an increase in perceived physical self-efficacy.

5.3.3 Hypothesis 3

H3: People participating in high-risk recreational activities will measure higher on internal locus of control when compared to people not participating in high-risk recreational activities

Locus of control has been found to be an important variable in adventure programme participation (Hans, 2000; Kohler, cited in Rolison and Scherman, 2002). Kohler found that individuals with an internal locus of control knew they were taking risks in the decisions that they made, and showed a greater tendency to believe that they were safe taking such risks.

As sensation-seeking is a strong indication of people participating in

high-risk recreational activities, one would therefore assume that the iALA sample would have a stronger sense of internal locus of control compared to that of the SU sample. From the data analysis, although the iALA group scored higher in the direction of internal locus of control (note that on the Rotter Scale lower scores mean stronger internal locus of control), both sample groups had a strong sense of internal locus of control, as both sample groups' mean scores were within the 11 to 12 point range. More importantly, there was no significant statistical difference between the two groups on their locus of control scores. Hence the research hypothesis could not be supported. The results, however, are in line with Ewert and Hollenhorst's (1989) findings: the participants of the adventure-based programme did manifest an internal locus of control orientation. It could thus have been expected that the control group, being university students, would also exhibit general internal locus of control given their academic achievement.

It should also be noted that the Rotter Scale is a generalised (not situation specific) measure of locus of control. Johnstone (1999) found that the Rotter Scale measures generalised expectancies for internal versus external control of reinforcement, rather than specific attributions in a specific context. She advised that locus of control should be measured within the scope of the particular phenomenon under study. Furthermore, Hans (2000) contended that locus of control was a dynamic outcome variable in an adventure programmes and required a more in-depth understanding of how change within an individual occurs as a result of participating in an adventure based programme. A more context specific measure such as McAuley, Duncan, and Russel's (1992) Revised Causal Dimension Scale is

recommended by Johnstone (1999) to measure locus of causality in particular defined contexts.

5.4 Implications for Theory, Research and Practice

The findings of the study do not fully support the hypothesised tendencies as gleaned from the literature reviewed for the study. As discussed above, the non-significant results obtained (Hypotheses 2 and 3) may be a function of two influences: 1) the control group (SU sample) not being adequately different from the research group by virtue of also being a student group. It can be argued that reaching tertiary education would presuppose a degree of (general) self-efficacy and internal locus of control in both groups; it is also noted that the SU sample had a higher proportion of women participants which may have been a factor, and 2) the measures selected for the study should be more context specific rather generalised measures of the constructs under study. In this regard, the Revised Causal Dimension Scale (McAuley et al., 1992) and the Physical Self-Efficacy Scale in a competitive sport setting (McAuley, McAuley, & Gill, 1983) may be more suitable measures for locus of causality and self-efficacy to be used in future research in this domain.

Zuckerman's (1994) Sensation-Seeking Scale also needs to be re-assessed. The scale creates the opportunity for participants to aspire to participating in some activities as opposed to actually participating. For example, 'I would like to kayak', but if given the opportunity, would the participant really kayak, or does it only serve as an aspiration to what he/she would wish to achieve. The question can be asked: Can one really measure a

sense of sensation-seeking from pure aspiration?

The findings of the present study would therefore propose the following considerations for future research:

- The use of more situation specific measures for evaluating the independent variables of the study as opposed to generalised measures
- More cautious selection and delineation of the control group criteria
- The use of qualitative research methodologies and mix method approaches to provided triangulation for enhanced investigations and analyses
- The need to adopt a grounded theory approach to develop new theorising about the motives for attraction and participation in high-risk recreation activities

5.5 Limitations and recommendations

Several limitations have been identified regarding the study. One of the biggest limitations of the study was its cross-sectional design. The design only provided results indicative of a certain point in time. Consequently, the findings did not focus on change in the attributes under study over a period, or assess causal interaction among the different variables. A longitudinal study or quasi experimental design may provide a more suitable expansion of the current focus.

Another limitation was that of the acquired small sample size, both with the research and the research equivalent group. The research group consisted of 25 participants, which was the full population of the iALA sample.

This was due to the number of students available who had enrolled for the iALA programme. Having a larger sample size could have been a crucial factor in the significance testing of hypotheses 2 and 3.

The researcher also encountered a low response rate from the research equivalent sample. Attention needs to be given to accessing students through alternatives means such as the electronic platform to improve access and response rate.

A further limitation pertained to the sampling method. Given the logistical problems in accessing the research equivalent group, the researcher made use of convenience sampling. This will invariably impede the ability to generalise the findings beyond the scope of the current study.

An additional limitation was that the research equivalent group consisted of a higher proportion of female students; this may have been a factor in the results obtained in the study as gender differences have been found in previous studies (Steynberg & Scholtz, 2004).

For future research, a larger scale pre- and post-test quasi-experimental study should be conducted. Then the same variables could be measured using context specific measuring instruments. This would enable the researcher to determine how the research group measured before being exposed to high-risk recreational activities and what effects these activities had on the sample that was exposed for the duration of the programme. It can be hypothesised that the research group would show an increase in self-efficacy and an increase in internal locus of control when administering the same scales after one year. A more sophisticated research design with more suitable context specific measuring instruments will enhance the causative

findings of the interplay between sensation-seeking, locus of control and self-efficacy.

Qualitative studies should also be considered to focus on what are the motivations behind joining such a programme; what are the personal and career benefits or outcomes of participating in such a programme? It may well be that students enrol in such gap year adventure programmes because mainstream educational curricula are not providing opportunity for sufficient personal and physical challenge. Further research can also be done with regard to the various new adventure-based programmes that appear to be increasing within the South African market. What are the evaluative experiences and career pathways that are linked or inspired by having participated in such a programme? How do these programmes utilise adventure as a medium for personal growth to occur within the programme?

Given the increasing numbers of people participating in these programmes, research to fully understand the nature and impact of such programmes is needed to shape the meaningful development of adventure with education in ways that also safeguard the well-being and risk taking behaviour of the participants.

5.6 Conclusion

Over the past few years there has been a sharp increase in interest in the adventure field. Adventure-based recreation creates an intense, positively enjoyable experience for participants. There is also an increase in participation in high-risk recreational activities that was once only reserved for professionals of the specific activity. Within the South African context, more

research is needed on the topic regarding people who participate in such high-risk recreational activities (e.g., scuba diving, sky-diving and abseiling) and particularly students enrolled in such an adventure based educational programme. The present study served as a way forward for new research in the South African context with regard to adventure and psychology. The results of the study confirmed that students drawn to adventure based programmes and activities are higher on sensation-seeking behaviour than their age equivalent peers at university level. Further studies with more sophisticated methodology, design and instrumentation were identified to evaluate how locus of control and self-efficacy may interact with sensation-seeking behaviour in high-risk recreation. Hopefully further qualitative research will also be stimulated to better understand the adventure/recreation/psychology interface and the benefits that it holds for individuals and communities.

REFERENCES

- Anderson, C. A. (2000). Violence and aggression. *Encyclopaedia of Psychology*, 8:163. New York: Oxford University Press.
- Atkinson, J. W., & Feather, N. T. (Eds.) (1966). *A theory of achievement motivation* (Vol. 66). New York: Wiley.
- Bandura, A. (2002). Social cognitive theory in cultural context. *Applied Psychology*, 51(2), 269-290.
- Bandura, A. (1997). *Self-efficacy: The Exercise of Control*. W.H. New York: Freeman Company.
- Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215
- Beedie, P., & Hudson, S. (2003). Emergence of mountain-based adventure tourism . *Annals of Tourism Research*, 30(3), 625-643.
- Bloemhoff, H. J. (2006). The effect of an adventure-based recreation programme (ropes course) on the development of resiliency in at-risk adolescent boys confined to a rehabilitation centre. *South African Journal for Research in Sport, Physical Education and Recreation*, 28(1), 1-11.
- Bosch, R. (2007). *The perceptions of adolescents of an adventure-based education programme* (Doctoral dissertation, Stellenbosch: University of Stellenbosch).
- Breet, L., Myburgh, C., & Poggenpoel, M. (2010). The relationship between the perception of own locus of control and aggression of adolescent boys. *South African Journal of Education*, 30(4), 511-526.

- Brody, E. B., Hatfield, B. D., & Spalding, T. W. (1988). Generalization of self-efficacy to a continuum of stressors upon mastery of a high-risk sport skill. *Journal of Sport and Exercise Psychology, 10*(1), 32-44.
- Brown, M. R. (1987). Satiation tendencies and sensation-seeking among high and low- sport groups. *Dissertation Abstracts International, 40*. 152.
- Brymer, E. (2010). Risk taking in Extreme Sports: A phenomenological perspective. *Annals of Leisure Research, 13*(1-2), 218-238.
- Buss, A. H. (2012). *Pathways to Individuality: Evolution and Development of Personality Traits*. Washington, DC: American Psychological Association.
- Cain, D., Jooste, S., Kalichman, S. C., Mthebu, J., Simbayi, L. C., Smith, G., & Vermaak, R. (2008). Randomized trial of a community-based alcohol-related HIV risk-reduction intervention for men and women in Cape Town South Africa. *Annals of Behavioral Medicine, 36*(3), 270-279.
- Castanier, C., Scanff, C. L., & Woodman, T. (2010). Who takes risks in high-risk sports? A typological personality approach. *Research Quarterly for Exercise and Sport, 81*(4), 478-484.
- Cicognani, E., & Zani, B. (2011). Alcohol Use among Italian University Students: The Role of Sensation-seeking, Peer Group Norms and Self-Efficacy. *Journal of Alcohol and Drug Education, 55*(2), 17-36.
- Chen, G., Gully, S. M., & Eden, D. (2001). Validation of a new general self-efficacy scale. *Organizational Research Methods, 4*(1), 62-83.
- Clayton, R. R., Segress, M. J., & Caudill, C. A. (2007). Sensation-seeking: a commentary. *Addiction, 102*(2), 92-94.

- Cooper, H., Okamura, L., & McNeil, P. (1995). Situation and personality correlates of psychological well-being: Social activity and personal control. *Journal of Research in Personality, 29*(4), 395-417.
- Creyer, E., Ross, W., & Evers, D. (2003). Risky recreation: an exploration of factors influencing the likelihood of participation and the effects of experience. *Leisure Studies, 22*(3), 239-253. doi: 10.1080/026143603200068000.
- Davidson, L. (2001). Qualitative research and making meaning from adventure: A case study of boys' experiences of outdoor education at school. *Journal of Adventure Education & Outdoor Learning, 1*(2), 11-20.
- Doyle, W.E. (1981). An Outdoor-challenge experience and the effective development of college students (Doctoral dissertation, University of Massachusetts, 1981). *Dissertation Abstracts International, 42* (3), 1022A-1023A.
- Dustin, D., Mcavoy, L., & Berk, L. (1986). Promoting recreation self. *Journal of Parks and Recreation Administration, 4*(4). 43-52.
- Ellis, S., Greffrath, G., Meyer, C., & Strydom, C. (2011) Centre-based and expedition-based (wilderness) adventure experiential learning regarding personal effectiveness: an explorative study. *Leisure Studies, 30*(3), 345-364.
- Ewert, A. W. (1983). *Outdoor adventure and self-concept: A research analysis*. College of Human Development and Performance, Department of Recreation and Park Management, Center of Leisure Studies, University of Oregon.

- Ewert, A. (1987). Research in outdoor adventure: Overview and analysis. *Bradford Papers Annual*, 2, 15-28.
- Ewert, A. W. (1994). Playing the Edge Motivation and Risk Taking in a High-Altitude Wilderness Like Environment. *Environment and Behavior*, 26(1), 3-24.
- Ewert, A., & Hollenhorst, S. (1989). Testing the Adventure Model: Empirical Support for a Model of Risk Recreation. *Journal of Leisure Research*, 21(2), 124-139.
- Farley, F. (1986). The Big T in personality. *Psychology Today*, 20, 44–52.
- Gass, M. A. (1993). *Adventure Therapy: Therapeutic applications of adventure programming*. Dubuque Iowa: Hunt Publication Company.
- Gray, J. M., & Wilson, M. A. (2007). A detailed analysis of the reliability and validity of the sensation-seeking scale in a UK sample. *Personality and Individual Differences*, 42(4), 641-651.
- Greffrath, G., & Roux, C.J. (2012). The effect of a gap year with selected adventure-related activities on certain personal competence-related factors on school graduates. *African Journal for Physical, Health Education, Recreation and Dance*, December (Supplement 1:2), 460-473.
- Hans, T. A. (2000). A meta-analysis of the effects of adventure programming on locus of control. *Journal of contemporary psychotherapy*, 30(1), 33-60.
- Harper, H., Oei, T. P. S., Mendalgio, S., & Evans, L. (1990). Dimensionality, validity, and utility of the I-E scale with anxiety disorders. *Journal of Anxiety Disorders*, 4, 89-98.

- Hattie, J., Marsh, H. W., Neill, J. T., & Richards, G. E. (1997). Adventure education and Outward Bound: Out-of-class experiences that make a lasting difference. *Review of Educational Research*, 67(1), 43-87.
- Hollenhorst, S. (1989). Testing the Adventure Model: Empirical Support for a Model of Risk Recreation. *Journal of Leisure Research*, 21(2), 124-139.
- Hopkins, J. R. (1983). *Adolescence: The transitional years*. New York: Academic Press.
- Hymbaugh, K., & Garrett, J. (1974). Sensation-seeking among skydivers. *Perceptual and Motor Skills*, 38(1), 118-118.
- Human, L. (2012). Adventure-based experiences during professional training in psychology: a follow-up study. *South African Journal of Psychology*, 42(4), 586-597.
- iALA (nd). Retrieved from www.iala.co.za on 15 January 2013.
- Imam, S. S. (2007). Sherer et al. General Self-Efficacy Scale: Dimensionality, internal consistency, and temporal stability. In *Proceedings of the Redesigning Pedagogy: Culture, Knowledge and Understanding Conference, Singapore*.
- Johnstone, F. (1999). *An enquiry into the causal attributions and locus of control of battered women*. Unpublished master's thesis. University of the Western Cape, Bellville.
- Kaliski, S. Z. (1993). *Sensation-seeking, Impulsivity, and Violence in Schizophrenics Found Unfit to Stand Trial*. Human Sciences Research Council.

- Kohler, M. P. (1996). Risk-taking behavior: A cognitive approach. *Psychological Reports, 78*(2), 489-490.
- Koocher, G. P. (1971). Swimming, competence, and personality change. *Journal of Personality and Social Psychology, 18*, 275-278.
- Lang, V. O. (1996). Facilitating personal growth in self and others. Pacific Grove: Brooks/Cole.
- Lange, R. V., & Tiggemann, M. (1981). Dimensionality and reliability of the Rotter I-E locus of control scale. *Journal of Personality Assessment, 45*, 398-406.
- Lefcourt, H. M. (1991). Locus of control. In J. P. Robinson, P. R. Shaver, & L. S. Wrightsman (Eds.), *Measures of personality and social psychological attitudes* (pp. 413–499). New York: Academic Press.
- Lipkus, I. M., Barefoot, J. C., Williams, R. B., & Siegler, I. C. (1994). Personality measures as predictors of smoking initiation and cessation in the UNC Alumni Heart Study. *Health Psychology, 13*(2), 149-155.
- Llewellyn, D. J., Sanchez, X., Asghar, A., & Jones, G. (2008). Self-efficacy, risk taking and performance in rock climbing. *Journal of Personality and Individual Differences, 45*(1), 75-81.
- Marsh, H. W., & Richards, G. E. (1986). The Rotter locus of control scale: The comparison of alternative response formats and implications for reliability, validity, and dimensionality. *Journal of Research in Personality, 20*(4), 509-528.
- McAuley, E., Duncan, T. E., & Russell, D. W. (1992). Measuring causal attributions: The revised causal dimension scale (CDSII). *Personality and Social Psychology Bulletin, 18*(5), 566-573.

- McAuley, E., McAuley, D., & Gill, D.L. (1983). Reliability and validity of the Physical Self-Efficacy Scale in a competitive sport setting. *Journal of Sport & Exercise Psychology*, 5, 410-418.
- McDonald, R. G., & Howe, C. Z. (1989). Challenge/initiative recreation programs as a treatment for low self-concept children. *Journal of Leisure Research*, 21(3), 242-253.
- McKenzie, M. (2003). Beyond “the outward bound process:” Rethinking student learning. *Journal of Experiential Education*, 26(1), 8-23.
- Miller, D. C., & Byrnes, J. P. (1997). The role of contextual and personal factors in children's risk taking. *Developmental Psychology*, 33(5), 814.
- Morrongiello, B. A., & Lasenby, J. (2006). Finding the daredevils: development of a sensation-seeking scale for children that is relevant to physical risk taking. *Accident Analysis & Prevention*, 38(6), 1101-1106.
- Mrug, S., Gaines, J., Su, W., & Windle, M. (2010). School-level substance use: effects on early adolescents' alcohol, tobacco, and marijuana use. *Journal of Studies on Alcohol and Drugs*, 71(4), 488-501.
- Newes, S., & Bendoroff, S. (2004). What is adventure therapy. In S. Newes and S. Bendoroff (eds.), *Coming of age: The evolving field of adventure therapy* (pp 1-30). CO: Association for Experiential Education.
- Nowicki, S., & Barnes, J. (1973). Effects of a structured camp experience on locus of control orientation. *The Journal of Genetic Psychology*, 122, 247-252.

- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw- Hill.
- Ogunyemi, B., & Mabekoje, S. O. (2007). Self-Efficacy, emotional stability and mental health as predictors of risk taking behaviour among Nigerian university undergraduates: implications for human development. *IFE Psychologia*, 15(1), 173-192.
- Pedhazur, E. J., & Schmelkin, L. P. (1991). *Measurement, design, and analysis: an integrated approach*. Hillsdale: Erlbaum.
- Pintrich, P. R., & Schunk, D. H. (1996). *Motivation in education: Theory, research, and practice*. Engelwood Cliff, NJ: Prentice Hall.
- Potgieter, J., & Bisschoff, F. (1990). Sensation-seeking among medium and low-risk sports participants. *Perceptual and Motor Skills*, 71, 1203-1206.
- Pretorius, T. (1991). *Psychological Research*. Bellville: University of the Western Cape.
- Priest, S. (1993). A new model for risk taking. *Journal of Experiential Education*, 16, 50-60.
- Priest, S., & Gass, M. A. (1997). *Effective Leadership in Adventure Programming*. Human Kinetics, Champaign, IL.
- Propst, D. B., & Koesler, R. A. (1998). Bandura goes outdoors: Role of self-efficacy in the outdoor leadership development process. *Leisure Sciences*, 20(4), 319-344.

- Rapee, R. M., Craske, M. G., Brown, T. A., & Barlow, D. H. (1996). Measurement of perceived control over anxiety-related events. *Behavior Therapy, 27*(2), 279-293.
- Ridgeway, D., & Russell, J. A. (1980). Reliability and validity of the Sensation-Seeking Scale: Psychometric problems in Form V. *Journal of Consulting and Clinical Psychology, 48*(5), 662-664.
- Robinson, D. W. (1985). Stress seeking: Selected behavioral characteristics of elite rock climbers. *Journal of Sport Psychology, 7*(4), 400-404.
- Rolison, M.R., & Scherman, A. (2003). College student risk-taking from three perspectives. *Adolescence, 38*(152), 689-704.
- Rolison, M. R., & Scherman, A. (2002). Factors influencing adolescents' decisions to engage in risk behavior. *Adolescence, 37*, 585–596.
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological monographs: General and applied, 80*(1), 1-28.
- Ryan, W. (2001). The relationship of some personality and individual characteristics with an individual's commitment to an ideal vision for performance improvement. *Performance Improvement Quarterly, 14*(3), 117 – 132.
- Schneider, T. A., Butryn, T. M., Furst, D. M., & Masucci, M. A. (2007). A qualitative examination of risk among elite adventure racers. *Journal of Sport Behavior, 30*(3), 330-357.
- Schrader, M. P., & Wann, D. L. (1999). High-risk recreation: the relationship between participant characteristics and degree of involvement. *Journal of Sport Behavior, 22*(3), 426-441.

- Schuett, M. A. (1993). Refining measures of adventure recreation involvement. *Leisure Sciences, 15*(3), 205-216.
- Schunk, D H. (1981). Modeling and attributional effects on children's achievement A self-efficacy analysis. *Journal of Educational Psychology 73*, 93-105.
- Schunk, D. H., & Hanson, A. R. (1985). Peer models: Influence on children's self-efficacy and achievement. *Journal of Educational Psychology, 77*(3), 313-322.
- Schunk, D. H., Hanson, A. R., & Cox, P. D. (1987). Peer-model attributes and children's achievement behaviors. *Journal of Educational Psychology, 79*(1), 54-61.
- Sherer, M., Maddux, J. E., Mercandante, B., Prentice-Dunn, S., Jacobs, B., & Rogers, R. W. (1982). The self-efficacy scale: Construction and validation. *Psychological reports, 51*(2), 663-671.
- Sibthorp, J. (2003). An empirical look at Walsh and Golins' adventure education process model: relationships between antecedent factors, perceptions of characteristics of an adventure education experience, and changes in self-efficacy. *Journal of Leisure Research, 35*(1), 80-106.
- Sibthorp, J., Paisley, K., Furman, N., & Gookin, J. (2008). Long-term impacts attributed to participation in wilderness education: preliminary findings from NOLS. In *Coalition for Education in the Outdoors Ninth Biennial Research Symposium, USA* (pp. 115-117).

- Slanger, E., & Rudestam, K. E. (1997). Motivation and disinhibition in high risk sports: Sensation-seeking and self-efficacy. *Journal of Research in Personality, 31*(3), 355-374.
- Spillane, N. S., Muller, C. J., Noonan, C., Goins, R. T., Mitchell, C. M., & Manson, S. (2012). Sensation-seeking predicts initiation of daily smoking behavior among American Indian high school students. *Addictive Behaviors, 37*(12), 1303-1306.
- Stelmack, R. M. (2004). On Personality and arousal: a historical perspective on Eysenck and Zuckerman. In R. Stelmack (ed.), *On the Psychobiology of personality: Essays in honor of Marvin Zuckerman* (p.17-28). San Diego, CA: Elsevier, Inc.
- Steynberg, L., & Scholtz, G.J.L. (2004). Sensation-seeking, gender and sport participation among South African students. *S.A. Journal for Research in Sport, Physical Education and Recreation, 25*(2), 67-76.
- Steyn, R., & Mynhardt, J. (2008). Factors that influence the forming of self-evaluation and self-efficacy perceptions. *South African Journal of Psychology, 38*(3), 563-573.
- Steynberg, L., & Scholtz, G. J. (2004). Sensation-seeking, gender and sport participation among South African students. *South African Journal for Research in Sport, Physical Education and Recreation, 25*(2), 67-76.
- Straub, W. F. (1982). Sensation-seeking among high and low-risk male athletes. *Journal of Sport Psychology, 4*(3), 246-253.
- Sutherland, S., & Stroot, S. (2010). The impact of participation in an inclusive adventure education trip on group dynamics. *Journal of Leisure Research, 42*(1), 153-176.

- Terre Blanche, M., Durrheim, K., & Painter, D. (Eds.). (2006). *Research in Practice: Applied methods for the social science*. Cape Town: University of Cape Town Press.
- Trice, A. D. (2010). Sensation-seeking and video choice in second grade children. *Personality and Individual Differences*, 49(8), 1007-1010.
- Walsh, V., & Golins, G. (1976) *The exploration of the Outward Bound process*. Denver, CO: Colorado Outward Bound. (ERIC Document Reproduction Service No. ED 144754).
- Woodman, T., Hardy, L., Barlow, M., & Le Scanff, C. (2010). Motives for participation in prolonged engagement high-risk sports: An agentic emotion regulation perspective. *Psychology of Sport and Exercise*, 11(5), 345-352.
- Yates, J. (1992). *Risk-taking behavior*. New York: John Wiley.
- Zaleski, Z. (1984). Sensation-seeking and risk-taking behaviour. *Personality and Individual Differences*, 5(5), 607-608.
- Zuckerman, M. (1974). The sensation-seeking motive. *Progress in Experimental Personality Research*, 7, 79-149.
- Zuckerman, M. (1979). *Sensation-seeking: Beyond the optimal level of arousal*. Hillsdale, NJ: Erlbaum.
- Zuckerman, M. (1994). *Behavioral expressions and biosocial bases of sensation-seeking*. Cambridge: Cambridge University Press.
- Zuckerman, M. (2007). The sensation-seeking scale V (SSS-V): Still reliable and valid. *Personality and Individual Differences*, 43(5), 1303-1305.

Zuckerman, M., Bone, N. R., Neary, R., Mangelsdorf, D., & Burstman, B.

(1972). What is the sensation seeker? *Journal of consulting and clinical psychology*, 39(2), 308-321.

APPENDIX A

SECTION A: DEMOGRAPHIC QUESTIONNAIRE

BIOGRAPHICAL QUESTIONNAIRE

Sex:		
Name:		
Age:		
Location:		
Please mark with a cross (X) from which institution you are:		
iALA		Stellenbosch University
Have you participated prior to 2013 in any forms of high-risk recreational activities such as scuba diving, skydiving and kayaking to just name a few? (Indicate with a cross (X)).		
YES		NO
Which forms of adventure activities have you participated in prior to 2013?		
-		
-		
-		
-		
-		
-		
-		
-		

APPENDIX B**SECTION B: ACTIVITIES QUESTIONNAIRE****Directions:**

Each of the items below contains two choices, A and B. Please indicate (circle) on your answer sheet which of the choices most describes your likes or the way you feel. In some cases you may find items in which both choices describe your likes or feelings. Please choose the one which better describes your likes or feelings. In some cases you may find items in which you do not like either choice. In these cases mark the choice you dislike least. Please try to answer each item. It is important you respond to all items with only one choice, A or B. We are interested only in your likes or feeling, not in how others feel about these things or how one is supposed to feel. There are no right or wrong answers as in other kinds of tests. Be frank and give your honest appraisal of yourself.

1.	A.	I like "wild" uninhibited parties.
	B.	I prefer quiet parties with good conversation.
2.	A.	There are some movies I enjoy seeing a second or even a third time.
	B.	I can't stand watching a movie that I've seen before.
3.	A.	I often wish I could be a mountain climber.
	B.	I can't understand people who risk their necks climbing mountains.
4.	A.	I dislike all body odours.
	B.	I like some for the earthly body smells.
5.	A.	I get bored seeing the same old faces.
	B.	I like to comfortable familiarity of everyday friends.
6.	A.	I like to explore a strange city or section of town by myself, even if it means getting lost.
	B.	I prefer a guide when I am in a place I don't know well.
7.	A.	I dislike people who do or say things just to shock or upset others.

	B.	When you can predict almost everything a person will do and say he or she must be a bore.
8.	A.	I usually don't enjoy a movie or play where I can predict what will happen in advance.
	B.	I don't mind watching a movie or a play where I can predict what will happen in advance.
9.	A.	I have tried marijuana or would like to.
	B.	I would never smoke marijuana.
10.	A.	I would not like to try any drug which might produce strange and dangerous effects on me.
	B.	I would like to try some of the new drugs that produce hallucinations.
11.	A.	A sensible person avoids activities that are dangerous.
	B.	I sometimes like to do things that are a little frightening.
12.	A.	I dislike "swingers" (people who are uninhibited and free about sex).
	B.	I enjoy the company of real "swingers".
13.	A.	I find that stimulants make me uncomfortable.
	B.	I often like to get high (drinking liquor or smoking marijuana).
14.	A.	I like to try new foods that I have never tasted before.
	B.	I order the dishes with which I am familiar, so as to avoid disappointment and unpleasantness.
15.	A.	I enjoy looking at home to movies or travel slides.
	B.	Looking at someone's home movies or travel slides bores me tremendously.
16.	A.	I would like to take up the sport of water skiing.
	B.	I would not like to take up water skiing.
17.	A.	I would like to try surf boarding.

	B.	I would not like to try surf boarding.
18.	A.	I would like to take off on a trip with no pre-planned or definite routes or timetable.
	B.	When I go on a trip I like to plan my route and timetable fairly carefully.
19.	A.	I prefer the “down to earth” kinds of people as friends.
	B.	I would like to make friends in some of the “far out” groups like artists or “punks”.
20.	A.	I would not like to learn to fly an airplane.
	B.	I would like to learn to fly an airplane.
21.	A.	I prefer the surface of the water to the depths.
	B.	I would like to go scuba diving.
22.	A.	I would like to meet some persons who are homosexual (men or women).
	B.	I stay away from anyone I suspect of being “gay or lesbian”.
23.	A.	I would like to try parachute jumping.
	B.	I would never want to try jumping out of a plane with or without a parachute.
24.	A.	I prefer friends who are excitingly unpredictable.
	B.	I prefer friends who are reliable and predictable.
25.	A.	I am not interested in experience for its own sake.
	B.	I like to have new and exciting experiences and sensations even if they are a little frightening, unconventional or illegal.
26.	A.	The essence of good art is in its clarity, symmetry of form and harmony of colours.
	B.	I often find beauty in the “clashing” colours and irregular forms of modern paintings.
27.	A.	I enjoy spending time in the familiar surroundings of home.

	B.	I get very restless if I have to stay around home for any length of time.
28.	A.	I like to dive off the high board.
	B.	I don't like the feeling I get standing on the high board (or I don't go near it at all).
29.	A.	I like to date members of the opposite sex who are physically exciting.
	B.	I like to date members of the opposite sex who share my values.
30.	A.	Heavy drinking usually ruins a party because some people get loud and boisterous.
	B.	Keeping the drinks full is the key to a good party.
31.	A.	The worst social sin is to be rude.
	B.	The worst social sin is to be a bore.
32.	A.	A person should have considerable sexual experience before marriage.
	B.	It's better if two married persons begin their sexual experience with each other.
33.	A.	Even if I had the money I would not care to associate with flight rich persons like those in the "jet set".
	B.	I could conceive of myself seeking pleasures around the world with the "jet set".
34.	A.	I like people who are sharp and witty even if they do sometimes insult others.
	B.	I dislike people who have their fun at the expense of hurting the feelings of others.
35.	A.	There is altogether too much portrayal of sex in movies.
	B.	I enjoy watching many of the "sexy" scenes in movies.
36.	A.	I feel best after taking a couple of drinks.
	B.	Something is wrong with people who need liquor to feel good.
37.	A.	People should dress according to some standard of taste, neatness,

		and style.
	B.	People should dress in individual ways even if the effects are sometimes strange.
38.	A.	Sailing long distances in small sailing crafts is foolhardy.
	B.	I would like to sail a long distance in a small but seaworthy sailing craft.
39.	A.	I have no patience with dull or boring persons.
	B.	I find something interesting in almost every person I talk to.
40.	A.	Skiing down a high mountain slope is a good way to end up on crutches.
	B.	I think I would enjoy the sensations of skiing very fast down a high mountain slope.

SENSE OF CONTROL

For each question select the statement that you agree with the most. Circle A or B on your answer sheet.

1.	A.	Children get into trouble because their parents punish them too much.
	B.	The trouble with most children nowadays is that their parents are too easy with them.
2.	A.	Many of the unhappy things in people's lives are partly due to bad luck.
	B.	People's misfortunes result from the mistakes they make.
3.	A.	One of the major reasons why we have wars is because people don't take enough interest in politics.
	B.	There will always be wars, no matter how hard people try to prevent them.
4.	A.	In the long run people get the respect they deserve in this world.
	B.	Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
5.	A.	The idea that teachers are unfair to students is nonsense.
	B.	Most students don't realize the extent to which their grades are influenced by accidental happenings.
6.	A.	Without the right breaks one cannot be an effective leader.
	B.	Capable people who fail to become leaders have not taken advantage of their opportunities.
7.	A.	No matter how hard you try some people just don't like you.
	B.	People who can't get others to like them don't understand how to get along with others.
8.	A.	Heredity plays the major role in determining one's personality.
	B.	It is one's experiences in life which determine what they're like.
9.	A.	I have often found that what is going to happen will happen.
	B.	Trusting fate has never turned out as well for me as making a decision to

		take a definite course of action.
10.	A.	In the case of the well prepared student there is rarely if ever such a thing as an unfair test.
	B.	Many times exam questions tend to be so unrelated to course work that studying in really useless.
11.	A.	Becoming a success is a matter of hard work, luck has little or nothing to do with it.
	B.	Getting a good job depends mainly on being in the right place at the right time.
12.	A.	The average citizen can have an influence in government decisions.
	B.	This world is run by the few people in power, and there is not much the little guy can do about it.
13.	A.	When I make plans, I am almost certain that I can make them work.
	B.	It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
14.	A.	There are certain people who are just no good.
	B.	There is some good in everybody.
15.	A.	In my case getting what I want has little or nothing to do with luck.
	B.	Many times we might just as well decide what to do by flipping a coin.
16.	A.	Who gets to be the boss often depends on who was lucky enough to be in the right place first.
	B.	Getting people to do the right thing depends upon ability. Luck has little or nothing to do with it.
17.	A.	As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
	B.	By taking an active part in political and social affairs the people can control world events.

18.	A.	Most people don't realize the extent to which their lives are controlled by accidental happenings.
	B.	There really is no such thing as "luck."
19.	A.	One should always be willing to admit mistakes.
	B.	It is usually best to cover up one's mistakes.
20.	A.	It is hard to know whether or not a person really likes you.
	B.	How many friends you have depends upon how nice a person you are.
21.	A.	In the long run the bad things that happen to us are balanced by the good ones.
	B.	Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
22.	A.	With enough effort we can wipe out political corruption.
	B.	It is difficult for people to have much control over the things politicians do in office.
23.	A.	Sometimes I can't understand how teachers arrive at the grades they give.
	B.	There is a direct connection between how hard I study and the grades I get.
24.	A.	A good leader expects people to decide for themselves what they should do.
	B.	A good leader makes it clear to everybody what their jobs are.
25.	A.	Many times I feel that I have little influence over the things that happen to me.
	B.	It is impossible for me to believe that chance or luck plays an important role in my life.
26.	A.	People are lonely because they don't try to be friendly.
	B.	There's not much use in trying too hard to please people, if they like you, they like you.
27.	A.	There is too much emphasis on athletics in high school.
	B.	Team sports are an excellent way to build character.

28.	A.	What happens to me is my own doing.
	B.	Sometimes I feel that I don't have enough control over the direction my life is taking.
29.	A.	Most of the time I can't understand why politicians behave the way they do.
	B.	In the long run the people are responsible for bad government on a national as well as on a local level.

SELF-EFFICACY

Please choose which one option describes you best.

1.	When I make plans, I am certain I can make them work.		
	A.	1	strongly disagree
	B.	2	Disagree
	C.	3	no disagreement/agreement
	D.	4	Agree
	E.	5	strongly agree
2.	One of my problems is that I cannot get down to work when I should.		
	A.	1	strongly disagree
	B.	2	Disagree
	C.	3	no disagreement/agreement
	D.	4	Agree
	E.	5	strongly agree
3.	If I can't do a job the first time I keep trying until I can		
	A.	1	strongly disagree
	B.	2	Disagree
	C.	3	no disagreement/agreement
	D.	4	Agree
	E.	5	strongly agree
4.	When I set important goals for myself, I rarely achieve them.		
	A.	1	strongly disagree
	B.	2	Disagree
	C.	3	no disagreement/agreement

	D.	4	Agree
	E.	5	strongly agree
5.	I give up on things before completing them.		
	A.	1	strongly disagree
	B.	2	Disagree
	C.	3	no disagreement/agreement
	D.	4	Agree
	E.	5	strongly agree
6.	I avoid facing difficulties.		
	A.	1	strongly disagree
	B.	2	Disagree
	C.	3	no disagreement/agreement
	D.	4	Agree
	E.	5	strongly agree
7.	If something looks too complicated, I will not even bother to try it.		
	A.	1	strongly disagree
	B.	2	Disagree
	C.	3	no disagreement/agreement
	D.	4	Agree
	E.	5	strongly agree
8.	When I have something unpleasant to do, I stick to it until I finish it.		
	A.	1	strongly disagree
	B.	2	Disagree
	C.	3	no disagreement/agreement

	D.	4	Agree
	E.	5	strongly agree
9.	When I decide to do something new, I go right to work on it.		
	A.	1	strongly disagree
	B.	2	Disagree
	C.	3	no disagreement/agreement
	D.	4	Agree
	E.	5	strongly agree
10.	When trying to learn something new, I soon give up if I am not initially successful.		
	A.	1	strongly disagree
	B.	2	Disagree
	C.	3	no disagreement/agreement
	D.	4	Agree
	E.	5	strongly agree
11.	When unexpected problems occur, I don't handle them well.		
	A.	1	strongly disagree
	B.	2	Disagree
	C.	3	no disagreement/agreement
	D.	4	Agree
	E.	5	strongly agree
12.	I avoid trying to learn new things when they look too difficult for me.		
	A.	1	strongly disagree
	B.	2	Disagree
	C.	3	no disagreement/agreement

	D.	4	Agree
	E.	5	strongly agree
13.	Failure just makes me try harder		
	A.	1	strongly disagree
	B.	2	Disagree
	C.	3	no disagreement/agreement
	D.	4	Agree
	E.	5	strongly agree
14.	I feel insecure about my ability to do things.		
	A.	1	strongly disagree
	B.	2	Disagree
	C.	3	no disagreement/agreement
	D.	4	Agree
	E.	5	strongly agree
15.	I am a self-reliant person.		
	A.	1	strongly disagree
	B.	2	Disagree
	C.	3	no disagreement/agreement
	D.	4	Agree
	E.	5	strongly agree
16.	I give up easily.		
	A.	1	strongly disagree
	B.	2	Disagree
	C.	3	no disagreement/agreement

	D.	4	Agree
	E.	5	strongly agree
17.	I do not seem capable of dealing with most problems that come up in life.		
	A.	1	strongly disagree
	B.	2	Disagree
	C.	3	no disagreement/agreement
	D.	4	Agree
	E.	5	strongly agree

Thank you for your co-operation. It is highly appreciated.

APPENDIX C: INFORMED CONSENT

Sensation-seeking, locus of control and self-efficacy correlates of adventure-based trainees: A comparative study

Aim of the study

I am a Masters student in the Psychology Department at Stellenbosch University. I am doing research on behavioural attributes connected with participation in adventure sport activities. The aim of the study is to determine whether students who are participating in high-risk recreational activities on an almost a daily basis, will differ in levels of sensation-seeking, locus of control and self-efficacy, when compared to students not partaking in high-risk recreational activities. I will be collecting data from students in the iALA programme and from Stellenbosch University.

Procedures during the study

In order to obtain the required information, the researcher will make use of the following procedures.

A questionnaire consisting out of two parts: The first part asks for basic demographic information such as age, sex and level of participation in adventure sports. The second part consists out of three short questionnaires measuring a different aspect of behaviour. The first is an activities questionnaire, the second measures your sense of being in control of aspects of your life, and the third measures your sense of self-efficacy.

The questionnaires will be handed out to each participant during a group session and it will take not more than 30 minutes to complete.

Permission to do the research has been given by each institution's management.

Risks regarding the study

No form of risk is involved in completing the questionnaires or the interview. Should you as a participant feel in anyway discomfort during the questionnaires, interviews and/or reflection, you have the right to leave the study.

Participants' Rights

As a participant in this study, you should be aware of your rights:

1. Your co-operation is purely voluntary.
2. Anonymity will be maintained on all levels at all times- your name will not be used in the report.
3. Confidentiality regarding the participants as well as the data gained from the study shall be maintained at all times. Only the researcher will have access to the data which will be kept in a password protected file.
4. No risk shall arise from the study.
5. You as participant have the right to ask any questions about the research.
6. All the participants' information such as the questionnaires and other confidential information will be kept in a safe place and only the researcher will have access to these materials. The information will be analysed in a private and all the materials will be destroyed after completion of the study.
7. If you feel in anyway uncomfortable in taking part, or by taking further part in the study, you do have the right to leave the study without any consequences, and all information gathered shall be destroyed.

Should you have any questions or concerns regarding the research and all the above please feel free to speak to the researcher regarding the matter.

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study.

If you have questions regarding your rights as a research participant, contact Maryke Hunter-Hüsselmann (mh3@sun.ac.za; 021 808 4623) at the Division for Research Development or my supervisor, Prof. A. V. Naidoo (avnaidoo@sun.ac.za; 021 8083441).

My own contact details are:

Hermias le Roux Email: hn.leroux@icloud.com Telephone: 0824617752.

On completion of the research, the Masters Dissertation will be accessible at Stellenbosch University. I can also provide you with a summary of the study.

Participant

Date

Researcher

Date

APPENDIX D: LETTER OF INSTITUTIONAL APPROVAL



iALA – INTERNATIONAL ACADEMY FOR LEADERSHIP THROUGH ADVENTURE

To whom it may concern
Research Ethics Committee
University of Stellenbosch

Re; RESEARCH UNDERTAKEN BY HERMIAS LE ROUX

iALA Events (Pty) Ltd is the holder company that runs a GAPYEAR program. We hereby confirm the approval for research to be done by Hermias le Roux with the following topic;

Project Title: Sensation seeking, locus of control, and self-efficacy correlates of adventure-based trainees: A comparative study

Applicant: Hermias Nel le Roux

Nature of Study: MA Psychology

Date: March 2012

The iALA's students of 2012 were used in the intended study.

Regards

Jan Heenop

(Managing Director iALA)



Tel: (27) 082 552 875

Fax: 0867 663 003

PO Box 570, Stillbay, 6674

www.iala.co.za