

# CHAPTER FOUR

## Research Method

### 4.1 Introduction

The intention of this study was to ascertain more precisely the nature of the relationship between two constructs: meaning in life and optimism. It has been argued, (in Chapter 2), that the above-mentioned constructs may legitimately be viewed as falling within the parameters of Antonovsky's (1979, 1987) generalised resistance resources (GRRs) or, the psychological resources (PRs) of Lightsey (1996). As such it is proposed that they fall comfortably under the rubric of positive psychology (Seligman & Csikszentmihalyi, 2000).

In this chapter a description of the aim of the study, the problem statements and the hypotheses will be provided. This is followed by a discussion regarding the participants, the procedure followed and the research questionnaires, including commentary on the measuring instruments. Thereafter the research design and the data analysis will be covered. The chapter ends with a brief conclusion.

The present research project is quantitative in nature and, as such, primarily reflects the assumptions of the positivist approach to science (Neuman, 1997).

### 4.2 Aim of the study

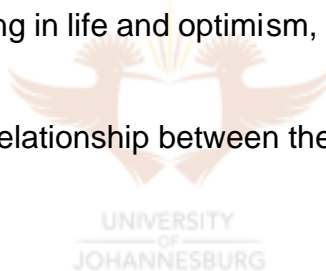
It was noted in Chapter 1 that the call had been made for psychologists to turn their attention, both theoretically and practically, to re-discovering, promoting and focusing on those factors, both intrinsic and external, to the person, that serve to facilitate people living healthier and more enriched lives. In line with this emphasis on positive psychology the broad aim of this study is to further explore

two resistance resources, meaning in life and optimism. The aims of this study include adding to the existing empirical knowledge about the personal traits that help buffer individuals against stressors, thereby leading to better health and more effective functioning and overall well-being. It is also hoped that the two constructs of interest, optimism and meaning in life may be added to the list of other salutogenic constructs already identified. Lastly, it is hoped that this study will serve to add to the momentum already gained in redirecting the focus of psychology back to health as opposed to disease.

### **4.3 Problem statements**

This study attempted to investigate the following two problems:

- Are the constructs, meaning in life and optimism, related?
- What is the nature of the relationship between the constructs meaning in life and optimism?



Regarding the problem statements the following hypotheses are proposed.

### **4.4 General hypothesis**

It is proposed that a positive correlation will be found between meaning in life and optimism. Other more specific hypotheses are also proposed. They include the following:

## **4.4.1 Specific hypotheses**

### **4.4.1.1 Hypothesis One:**

There will be a significant positive correlation between scores on the total Life Regard Index (LRI) scale (serving as an overall indicator of positive life regard or an individual's belief that he, or she, is fulfilling his, or her, positively valued life-framework or life-goal, i.e. meaning in life) and the LOT – R (indicating the individual's degree of optimism or pessimism).

### **4.4.1.2 Hypothesis Two:**

There will be a significant positive correlation between scores obtained on the Life Regard Index - Framework (FR) sub-scale (indicating the individual's ability to see his, or her, life within some perspective or context, and having derived a set of life-goals, purpose in life or life-view from this context) and the scores obtained on the Life Orientation Test – Revised (LOT – R) (which serves as a measure of optimism or, an individual's positive expectancies for the future or, pessimism).

### **4.4.1.3 Hypothesis Three:**

There will be a significant positive correlation between scores on the Life Regard Index – Fulfillment (FU) sub-scale (indicating the degree to which an individual views himself, or herself, as having fulfilled-or still in the process of fulfilling his, or her, framework or life goals) and the scores on the LOT – R scale (indicating the individual's degree of optimism or pessimism).

In addition to the above-mentioned hypotheses it was also deemed important to ascertain the relationship between the variables age, marital status, being a

witness to a serious crime, being diagnosed as being clinically depressed and the degree of commitment to one's religious belief and the constructs optimism and meaning in life. As a result of this the following hypotheses were also formulated:

#### **4.4.1.4 Hypothesis Four:**

There will be a significant positive correlation between the variable, age, and the scores obtained on the LOT – R, LRI and the FR and FU sub-scales.

#### **4.4.1.5 Hypothesis Five:**

There will be a significant positive correlation between the variable, marital status, and the scores obtained on the LOT – R, LRI and the FR and FU sub-scales.



#### **4.4.1.6 Hypothesis Six:**

There will be a significant positive correlation between the variable, witness to a serious crime, and the scores obtained on the LOT – R, LRI and the FR and FU sub-scales.

#### **4.4.1.7 Hypothesis Seven:**

There will be a significant positive correlation between the variable, diagnosed as clinically depressed, and the scores obtained on the LOT – R, LRI and the FR and FU sub-scales.

#### **4.4.1.8 Hypothesis Eight:**

There will be a significant positive correlation between the variable, commitment to religious belief, and the scores obtained on the LOT – R, LRI and the FR and FU sub-scales.

### **4.5 Participants**

The participants were sampled from the undergraduate student population of the Rand Afrikaans University in Johannesburg, South Africa. Students registered for a second year course in psychology were utilised in the study. In total 302 students participated in the study. However, not all respondents answered all the questions in the questionnaire.

Participation in the study was voluntary. However, as an incentive to participate, students were offered a bonus % to be added to their semester mark.

The sampling was non-random and, in most respects, the samples were largely homogeneous. However, in respect of nearly all the variables a few outlier features were found. For the purposes of the statistical analyses undertaken these outliers were grouped into sub-groups. More detail will be provided about this in Chapter 5.

According to the information obtained from the biographical questionnaire, the sample consisted of 302 students, 80.1% (242) of whom were female and 19.9% (60) male. The target age group was primarily within the 18 to 25 age range. People of this age have been referred to as emerging adults (Arnett, 2000). The mean age for the group was 20.84, with a standard deviation of 3.65 (n = 301). The age range was 19 years old to 50 years old. For the purposes of statistical analyses three age groups were identified and used, 19 year olds, 20 year olds and 21 years and older.

Likewise two groups were identified in respect to marital status, Single (278 or 92.1%) and Other (24 or 7.9%). In respect of ethnic group again two groups were identified, White (254 or 84.1%) and Other (48 or 15.9%). With regard to year of study the majority, 267 (88,4%) were in their second year of study, the remaining 35 (11.6%) reported that they were in first, third, fourth and other years of study. With respect to faculty registration the sample was made up of, Arts 195 (65.2%), Economics and Management 36 (12.0 %), Education and Nursing 10 (3.3%), Law 5 (1.7%), and Natural Sciences 53 17.7%). The sample did not include any students registered in the Engineering faculty. 19 (6.4%) of the sampled students reported that they had been a victim of a serious crime, whilst the balance, 280 (93.6%) stated that they had not been a victim of a serious crime. 30 (10.1%) reported that they had witnessed a serious crime, whilst 268 (89.9%) reported that they had not witnessed a serious crime. Thirteen students (4.2%) stated that they had been diagnosed as clinically depressed, the remainder, 286 (95.7%) reported that they had not been so diagnosed. Two groups were formed for religious affiliation, Christian (238 or 79.9%) and Other (60 or 20.1%) – these included all the other options offered to the respondents. In connection with commitment to the chosen religion three groups were formed, Always (174 or 58.2%), Sometimes (113 or 37.8%) and Never (12 or 4.0%).

A student sample was chosen partly due to convenience of access and also because it makes the study relatively easy to replicate in the future. This type of sample is frequently used in academic research. College or university students are the most widely used research participants in psychological studies (Rosenthal & Rosnow, in Rosnow & Rosenthal, 1996). Studies such as those of Burke, Joyner, Czech and Wilson (2000) and Chang, Maydeu-Olivares and D'Zurilla (1997) used very similar samples to the present study.

## **4.6 Procedure**

The research procedure involved first gaining permission from, and making arrangements with, the course co-ordinator to use students registered for second year psychology.

The students were informed regarding the test and testing procedure. During this session an explanation of the purpose of the study (that the researcher was doing a Masters degree and was thus required to conduct some form of research), but not the aim (that the measuring instruments were designed to ascertain the degree of optimism and meaning in life), was provided by the researcher. The participants were not made aware of the aim of the study until after they had completed all measures.

Assistance was given where necessary, to facilitate the understanding of and completion of the questionnaire in such a manner that the responses were not influenced. Once the questionnaires had been completed they were handed to the researcher.



By virtue of the highly specific nature of the sample it is acknowledged that generalizations regarding the findings of this study will be strictly limited to similar populations. We now turn to the questionnaire and measuring instruments used in the study.

## **4.7 Research questionnaires**

In order to ascertain the nature of the relationship between the two constructs of interest the respondents were required to complete a questionnaire made up of three sections in total (refer Appendix). This survey included an assessment of the participant's degree of meaning in life, as operationalized by the respondent's score on the Life Regard Index (LRI) and the person's degree of optimism, as

operationalized by the participant's score on the Life Orientation Test – Revised (LOT-R). A section, which required the respondents to provide certain biographical information, was also included.

The questionnaire was only made available in English. It was appreciated that English would be, in some cases, the student's second tongue. However, as the students are registered at a dual-medium university, it was felt that the respondents would be able to easily manage an English-only questionnaire. Assistance was, however, available in case students experienced language or translation difficulties.

The participants were all provided with both written and verbal instructions with regard to what was expected of them. These included, answering all the questions in each section, the fact that no correct or incorrect answers were required, to be as honest as possible when responding, to provide the most spontaneous answer, to work as quickly and as accurately as possible. They were also reminded, in as far as possible, not to allow the answer to one question to influence their responses to the other questions. A description of the questionnaire follows.

#### **4.7.1 Biographical questionnaire**

The biographical questionnaire was constructed so as to obtain relevant personal information about the individual respondents. Emphasis was placed on acquiring information that would allow for the testing of the hypotheses in respect of the variables of interest. The biographical questionnaire also served to identify certain features specific to the sample. It also provided an indication the composition of the whole sample so as to enable, if necessary, the exclusion of some respondents during the statistical analyses stage of the process. Finally, the respondents were required to provide certain biographical information, which, although not analysed was required in order to eliminate possible contaminating



variables. The questionnaire thus also attempted to control for extraneous variables. The information required was the following: ethnic group, current year of study, faculty student is registered in, victim (personally) of serious crime, religious affiliation and gender.

Based on the literature survey (refer Chapters 2 and 3) it was decided to test hypotheses in respect of the following, as these relate to optimism and meaning in life.

- *Age* – the student's age was required. Developmental stage, and thus age, is reported to be one factor that influences the source/s in which an individual derives meaning in life (O'Connor & Chamberlain, 1996). Debats (1999) refers to both theory and research that suggests that personal meaning/s in life vary with age.
- *Marital status* – it was thought that age and developmental stage will, to some extent, determine whether or not one is married. It is also thought that optimism may be influenced by marital status.
- *Witness to a serious crime* – South Africa is currently experiencing a period of social re-adjustment. One facet of this social re-ordering is the high level of violent crime currently evident in the country. Pereira (in Fourie, 2000) reports that in 1999 alone, 5356 serious crimes occurred for every 100 000 people in South Africa. In accordance with the Diagnostic and Statistical Manual for Mental Disorders – IV (DSM-IV) (American Psychiatric Association, 1994) criteria for Post-traumatic stress disorder, it was thought likely that people who may have been a witness to a serious crime would be less likely to feel optimistic and may experience less meaning in their lives subsequent to such an occurrence.

- *Clinical depression* – it was thought that if a person had been formally diagnosed as suffering from clinical depression by a health professional that that individual may well have less meaning in his, or her, life and also be less optimistic about the future.
- *Degree of commitment to religion* – this question was included so as to gauge the actual role that religion plays in the respondent's life, in order to refine the information obtained from the above question. Showalter and Wagener (2000) believe that belief is a source of meaning for adolescents, it was thought then that the degree of commitment of an individual would affect his, or her, degree of meaning in life.

It was necessary to obtain each participant's identity in order to allocate the incentive mark to each student's academic record. This study was, therefore, strictly speaking, not anonymous. However, it was explicitly stated that all answers would be treated with professional confidentiality.

## **4.7.2 Measuring instruments**

### **4.7.2.1 The Life Orientation Test – Revised (LOT – R)**

The Life Orientation Test – Revised (LOT - R) of Scheier, Carver and Bridges (1994) was used in this study. This is the updated version of the original Life Orientation Test (LOT) of Scheier and Carver (1985). This questionnaire measures a respondent's degree of optimism or pessimism.

The original instrument has been used in numerous studies since its development (Andersson, 1996). It is, says Marshall et al. (1992, p. 1067), "one of the most widely used indexes of dispositional optimism". Scheier, Carver and

Bridges (1994) refer to the original LOT as being the instrument of choice for optimism research.

Using a 5-point Likert-type scale the respondents are required to indicate the extent of their agreement with each item using the following response format: 0 = *strongly disagree*, 1 = *disagree*, 2 = *neutral*, 3 = *agree*, and 4 = *strongly agree*. The instructions given to the respondents specifically emphasised that they should be as honest and accurate as possible throughout the test, and that there are no right or wrong answers. The respondents are also specifically requested to try not to allow their answer on one item to influence their answers on other items (Scheier, Carver & Bridges, 1994).

The LOT-R is a short instrument consisting of 10 items. Only 6 of the 10 items are used to derive an optimism score. Of the 6 items, 3 are keyed in a positive direction, and 3 in a negative direction. Items number 3, 7 and 9 are reverse-coded before scoring so as to avoid response set bias. The scores obtained here are then summed with the respondent's scores for items 1, 4 and 10 thus providing an overall optimism score. Possible obtained scores range from 0 to 24. The remaining 4 items, (numbers 2, 5, 6 and 8) are filler items and are ignored for the purposes of calculating the individual's score.

#### **4.7.2.1.1 Psychometric properties of the Life Orientation Test – Revised (LOT – R)**

Scheier, Carver and Bridges (1994) acknowledge that shorter scales, for example, a six-item scale such as the LOT – R, may suffer certain psychometric disadvantages. However, they also note certain advantages. For instance, brevity considerably expedites ease of administration and may, as a consequence, be of great value in research settings in facilitating respondent commitment and concentration. They state that the LOT – R does not appear to have suffered, psychometrically, on account of its brevity (Scheier, Carver & Bridges, 1994).

Scheier, Carver and Bridges (1994) reported sound convergent and discriminant validity for the LOT – R. Cronbach's alpha scores, as a measure of reliability used in the development of the LOT – R, pointed toward high internal-consistency reliability. In respect of internal consistency, Scheier, Carver and Bridges (1994, p. 1074) report that item-scale correlations ranged from .43 to .63. These correlations, they say, suggests that "each item is partially measuring the same underlying construct, but not to such an extent as to be redundant with other items". They also note that the items all appear to add equivalently to Cronbach's alpha. Cronbach's alpha for all six items was .78, reflecting an acceptable level of internal consistency.

Test-retest reliability was reported as .68 (4 months), .60 (12 months), .56 (24 months) and .79 (28 months), (Scheier, Carver & Bridges, 1994). These findings indicate that the LOT – R is fairly stable over time. Test-retest reliability for the LOT – R is high. Scheier, Carver and Bridges (1994) also reported a high correlation between the original LOT and the revised instrument. They state that this correlation - in the .90's - provides no reason to suppose that the two scales would produce appreciably different findings. They feel that the two versions of the test are assessing highly similar characteristics. Predictive validity is thus thought to be adequate.

Scheier, Carver and Bridges (1994, p. 1076) note that factor analysis of the revised LOT "seem to point in the direction of a one-factor structure, but not strongly so". As for whether the LOT – R should be scored in bi-polar fashion, using one overall score; or, whether two separate scores should be computed, one for the positively-worded items and one for the negatively-worded items; they state that the data indicates that optimism and pessimism may be treated as bi-polar. However, their own position is to rely on an overall score for primary analyses, but to employ secondary analyses which then examine the positively and negatively-worded items separately (Scheier, Carver & Bridges, 1994). For

the purposes of this study only the overall LOT – R score will be used as an indicator of optimism.

#### **4.7.2.2 The Life Regard Index (LRI)**

The concept of positive life regard served as the foundation of the Life Regard Index (LRI) (Battista and Almond, 1973). Positive life regard may be defined as “an individual’s belief that he is fulfilling his/her positively valued life-framework or life-goal” (Battista & Almond, 1973, p. 409). Battista & Almond (1973, p. 411) designed the instrument in an attempt to “provide a simple, non-biased measure of meaning in life”

The LRI has 28 items that are divided into 2 sub-scales: Framework (FR) and Fulfillment (FU).

The FR sub-scale measures the extent to which the individual can perceive his, or her, life within some meaningful perspective or, the extent to which he, or she, has developed a set of life goals from this perspective.

The FU sub-scale measures the degree to which the individual sees himself, or herself, as having fulfilled or, in the process of fulfilling his, or her, goals in life (Battista and Almond, 1973; Debats, 1999).

Both sub-scales contain 14 items. Half of the items are phrased positively and half negatively. This is designed to control for response set (Battista & Almond, 1973). Although Debats, van der Lubbe and Wezeman (1993) and Debats (1999) investigated the LRI using a 3-point Likert-type scale; it has been decided to reinstate the 5-point Likert-type scale as suggested in the original form of the test (Battista & Almond, 1973). It is thought that this would make for easier comparisons between the two instruments, the LOT-R and the LRI.

#### **4.7.2.2.1 Psychometric properties of the Life Regard Index (LRI)**

Battista and Almond (1973, p. 412) report that the two LRI sub-scales, FR and FU are highly correlated with the full, Life Regard (LRI) scale (0.94 and 0.93 respectively). This, they say, implies that the total LRI score may be used as a good indicator of overall level of life regard. They also report a correlation of 0.76 between the two sub-scales, FR and FU. The high correlation between the two sub-scales, FR and FU (0.76), may imply that “either that individual's find it very difficult to retain their beliefs in a life-framework that they are unable to fulfill, or that the development of a life-framework is the limiting factor in developing meaning in life” (Battista & Almond, 1973, p. 412). They feel that the first of these propositions is the more likely but state that longitudinal studies are required to help clarify the situation.

In their preliminary findings they report that each of the three scales of the LRI (FR, FU and LRI) has a normal distribution and may thus be used to differentiate groups according to standard statistical methods (Battista & Almond, 1973). The majority of statistical techniques assume that the data have an underlying normal distribution (Botha & Engelbrecht, 1992). However, due to the lack of homogeneity in the current sample and because of uncertainty regarding the nature of the distribution of the sample, it was decided to use non-parametric procedures in analysing the data.

Debats (1999) notes that both exploratory and confirmatory factor analyses done in various studies have supported the factorial validity, and hence the theoretical structure of the LRI. Evidence of construct validity have also been reported (Debats, 1999). She cites Debats, van der Lubbe and Wezeman (1993) who demonstrated evidence for discriminant construct validity for the LRI.

Test-retest reliability was reported to be 0.94 (Battista & Almond, 1973). This is extremely high. Debats, van der Lubbe and Wezeman (1993) report test-retest reliabilities, using Spearman's *rho*, which yielded coefficients of 0.73 (FR), 0.79 (FU) and 0.80 (LRI).

In respect of internal consistency Debats, van der Lubbe and Wezeman (1993) reported Cronbach's alphas as follows: normal students, 0.75 (FR), 0.84 (FU) and 0.87 (LRI); general population, 0.84 (FR), 0.87 (FU) and 0.91 (LRI). They assert that the sub-scales appear to correlate moderately, ranging from  $r = 0.54$  to 0.68. This, they suggest, indicates that the two dimensions underlying positive life regard, FR and FU are related but not independent constructs. Debats (1990) reported a Cronbach's alpha of .86.

Battista and Almond (in Debats, 1999) assert that social desirability has been found to account for only 4% of the variance of the LRI scores.

Studies have thus reported the psychometric properties and value independence of the LRI as being satisfactory (Debats, 1999). Battista and Almond (1973, p. 413) conclude that the LRI "clearly distinguishes medical students with high and low meaning in life and validates the concept of positive life regard". On account of the above findings it was decided to use this instrument as opposed to the various other available instruments

#### **4.8 Research design and data analysis**

The study employed a survey in order to explore and describe the attitudes and beliefs of the respondents making up the sample with regard to the two constructs under investigation. This type of research design was selected as it is considered appropriate when investigating research questions involving self-reported beliefs and behaviours (Neuman, 1997).

A correlational design was used as the study was solely attempting to explore the relationship between two constructs, meaning in life and optimism. As such, no manipulation of variables or holding variables constant was necessary. The study thus simply attempted to ascertain “how variation in individuals’ relative positions on one variable are associated with variation in their relative positions on another variable” (Huysamen, 1985, p. 60). The hypothesised relationship was assumed to be linear. Due to the correlational nature of the research design no causal inferences or conclusions are possible. The discovery of a positive correlation between the two variables does not, in itself, indicate that one variable is the cause of the other. However, a major feature of correlational research is that when strong associations are found then certain predictions may be made (Goodwin, 1995).

Grimm (1993, p. 128) emphasises that even though no manipulation of variables occurs in correlational studies, this type of study “does *not* alter the fundamental characteristics of hypothesis testing”. A sample is being used, in this study, in order to make inferences about an - albeit, limited - population. As such, inferential statistics will be used. Grimm (1993) also points out that yes/no answers are given to statistical hypotheses in correlational studies, and as such, errors in inference can be made.

Pearson’s product moment correlation coefficients ( $r$ ’s) have been calculated in order to identify the precise nature of the relationship between meaning in life and optimism. Pearson’s  $r$ ’s are provided for the relationship between the LOT – R and the LRI and the LOT – R and the FR and FU sub -scales (refer Chapter 5). The discussion of these relationships is found in Chapter 6. The findings of the bivariate frequency distributions, in other words, between optimism and meaning in life and the different personal details of each respondent as acquired in the biographical part of the questionnaire are also cited (in Chapter 5). The data analysis includes detailed accounts of these findings.



To determine whether or not statistically significant differences exist in respect of the means of the different groups as far as meaning in life and optimism are concerned, *t*-tests were used.

In some cases analyses of variance have also been conducted in order to “provide an objective measure of the direction and strength of the relationship between two variables as reflected in their bivariate frequency distribution” (Huysamen, 1985, p. 63).

Ex post facto analyses were also done.

## **4.9 Conclusion**

This chapter has provided an overview of the research method used in this study. A summary of the measuring instruments used, the procedure followed, the research design, the hypotheses and the methods of data analysis used in the study have been covered.

The results of the statistical analyses will be reported in Chapter 5. The discussion of the findings will be found in Chapter 6. We shall now turn to the reporting of the results of this study.