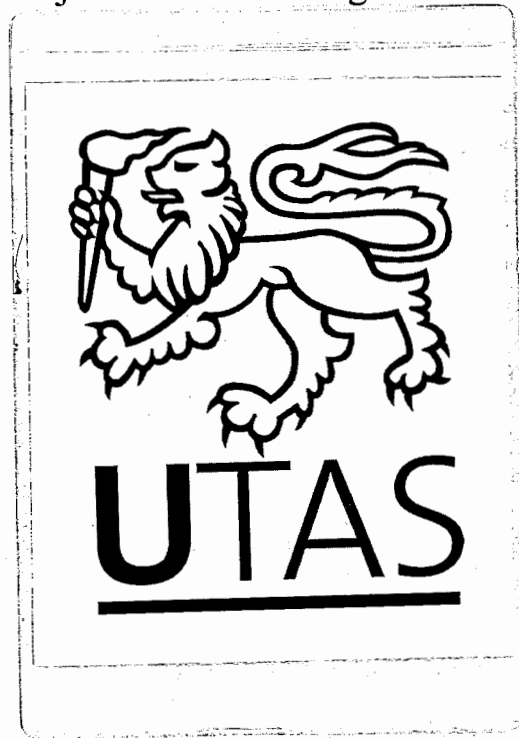


“No man is happy who does not think himself so”:
The Subjective Well-Being of adolescents



By

Karena[^]Jessup

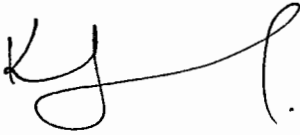
A dissertation submitted in fulfilment of the degree of Doctor of Philosophy

Faculty of Education
University of Tasmania, Hobart

August 2006

Declaration

This thesis contains no material that has been accepted for a degree or diploma by the University or any other institution, except by way of background information and duly acknowledged in the thesis. To the best of my knowledge and belief no material previously published or written by another person except where due acknowledgement is made in the text of the thesis.



Karena Jessup
16th August 2006

Authority of Access

This thesis may be made available for loan and limited copying in accordance with the Copyright Act 1968.

Acknowledgements

First and foremost I would like to thank Drs Jane Watson and Des Fitzgerald. Without the two of you I would never have been able to complete this work. I appreciate your dedication and professionalism so much. Thank you. To Thao Le, Richard Coleman, and Margaret Barrett: Thank you so much for your support, help, and tissues. Thanks to the AHEWP team, Julianne Moss for telling me about the PhD opportunity, and Joan Abbott–Chapman for reading the thesis for me. To the students who participated in the study and their parents/guardians and teachers to whom I owe much: Thank you. Thanks also to the administration staff and principals of the Tasmanian high schools and to Tim Doe and Daniel White for their support. To Bill Edmunds, Denis Donovan, Frank Van Nieuwkuyk, Terry Hynes, Wayne Blazeley, Lynette Brennan, Tracy Brennan and girls: I could not have done it without you, literally. I appreciate all the phone calls you made, all the kilometres you drove, and all the envelopes you licked. Thank you. To Barbara Trewin, Brian Graetz, and Arda Cunningham at the Australian Consortium of Social and Political Research Inc. (ACSPRI): Thank you for the services that you provide, they have helped me greatly. Thank you also for your support and encouragement.

To the level 5 girls – Annaliese, Jane, Noeleine, and Sarah: 0 weeks and 0 days to go!!! Thank you for being great friends, lunch buddies, caring listeners, and fantastic work colleagues. Thanks to Mum and Dad for your love, support, and patience, and for telling me I could do anything I wanted. To Ben, I love you. Thank you for everything. You are a great friend, husband, support, encourager, cook, and cleaner. What's next?

Aristotle believed that humans were creatures whose lives were a process of moving toward an end. That there must be one final end of all ends. For Aristotle this was happiness. Subjective Well-Being is defined as an empirically-based examination of the causes and correlates of happiness, and is concerned with evaluations of well-being from the subject's perspective. Subjective Well-Being consists of two components – one cognitive (Life Satisfaction), and one affective (Positive and Negative Affect) – and it is these three concepts that constitute the three dependent variables in this study. It is proposed in this dissertation that there is a need to expand existing knowledge regarding the Subjective Well-Being of adolescents, and to see if past results can be confirmed with a large, Australian sample. In this study, the independent variables of personality and psychosocial variables are considered, as well as institutional experiences and competencies, mental health, risk behaviours and beliefs, life events, and goals and life planning.

The dissertation centres on a sample of 2094 Grade 8 and Grade 10 students drawn from 73 schools in Tasmania, across government, Catholic and non-government sectors. Data were gathered as part of the Adolescent Health, Education, and Well-Being Project, which was funded by the Australian Research Council at the University of Tasmania, with the Tasmanian Department of Education and the Tasmanian Department of Health and Human Services as Industry Partners.

Three separate regression analyses were conducted on the dependent variables of Life Satisfaction, Positive Affect, and Negative Affect, and three different sets of predictors were found. This finding confirmed previous suppositions that the three components of Subjective Well-Being should be assessed separately (Diener, 1984, 1995).

The following variables were found to be significant predictors of Life Satisfaction: Confidence, Coping, Family Functioning, Suicide Ideation, Parent's Marital Status, Idealism, Mental Health, Confidence at Getting Desired Job, Family Finances, Internal Influences on Goal Setting, Number Of Close Friends, and Family Attachment. Internal Influences on Goal Setting, Coping, Confidence, and Confidence at Getting Desired Job were also significant predictors of Positive Affect, as were Extracurricular Activities, Benefits From Friendship, Benefits From Sport, Average Hours Spent Playing Sport per Week, Self-Assessed Success in Studies of Society and Environment (SOSE), and Voice. Mental Health was a predictor of Negative Affect as well as Life Satisfaction. External Influences on Goal Setting, Goal Ambivalence, Risk Acceptance, Neuroticism, and Involuntary Contact with Government Agencies were also significant predictors of Negative Affect. Variables that did not contribute significantly to the regression equations are also discussed. Partial correlations were conducted to assess the impact of the shared variables in the regression equations with interesting results. Limitations of the study, implications drawn from the results and suggestions for further research are also discussed.

DECLARATION	I
AUTHORITY OF ACCESS	I
ACKNOWLEDGEMENTS	II
ABSTRACT	III
CHAPTER 1: INTRODUCTION.....	1
1.1 BACKGROUND TO THE THESIS RESEARCH	1
1.2 AIMS OF THESIS RESEARCH AND KEY RESEARCH QUESTIONS.....	2
1.3 METHODOLOGY.....	6
1.4 THESIS STRUCTURE	6
1.5 CONCLUSION	7
CHAPTER 2: LITERATURE REVIEW	9
2.1 INTRODUCTION.....	9
2.2 DEFINITIONS OF DEPENDENT VARIABLES	11
2.2.1 Life Satisfaction	11
2.2.2 Positive and Negative Affect	12
2.2.3 Interrelationships Among the Dependent Variables.....	12
2.3 LIFE SATISFACTION AND ADOLESCENTS.....	16
2.3.1 Demographics	17
2.3.2 Personality.....	20
2.3.3 Psychosocial	21
2.3.4 Institutional Experiences and Competencies	23
2.3.5 Mental Health	25
2.3.6 Health and Risk Behaviours	28
2.3.7 Life Events.....	29
2.3.8 Summary of Life Satisfaction and Adolescents.....	30
2.4 POSITIVE AND NEGATIVE AFFECT AND ADOLESCENTS	31
2.4.1 Demographics	31
2.4.2 Psychosocial	33
2.4.3 Institutional Experiences and Competencies	34
2.4.4 Mental Health	34
2.4.5 Risk Behaviours	34
2.4.6 Life Events.....	35
2.4.7 Summary of Positive and Negative Affect and Adolescents.....	36
2.5 LIMITATIONS OF RESEARCH INTO ADOLESCENT SUBJECTIVE WELL-BEING.....	37
2.6 THE PERSONALITY MODEL.....	39
2.6.1 Limitations to the Personality Model	43
2.7 THE LIFE EVENTS MODEL	44
2.7.1 Limitations of Life Events Model	47
2.8 THE INSTITUTIONAL EXPERIENCES AND COMPETENCIES MODEL	47
2.8.1 Family.....	47
2.8.2 Friends	49
2.8.3 School	51
2.8.4 Limitations to the Institutional Experiences and Competencies Model	51
2.9 THE GOAL MODEL.....	52
2.9.1 Limitations of the Goal Model.....	54
2.10 CONCLUSION	55
CHAPTER 3: METHODOLOGY.....	56
3.1 INTRODUCTION.....	56
3.2 THEORETICAL FRAMEWORK	56
3.3 THEORY CONSTRUCTION	57
3.4 RESEARCH DESIGN	60
3.4.1 Background of the AHEWP	60
3.4.2 Aims of the AHEWP	61
3.4.3 The Significance of the AHEWP	61

3.4.4 The Outcomes of the AHEWP	62
3.4.5 The Structure of the AHEWP	63
3.5 QUESTIONNAIRE CONSTRUCTION	63
3.5.1 Advantages and Disadvantages of Questionnaires	64
3.5.2 Principles of Question Design	64
3.5.3 Question Content	65
3.5.4 Wording Questions	65
3.5.5 Question Responses	66
3.5.6 General Questionnaire Format	69
3.5.7 Designing the Questionnaire	70
3.6 QUESTION SELECTION IN THE AHEWP	71
3.6.1 Dependent Variables	73
3.6.2 Independent Variables	75
3.7 GAINING ETHICS COMMITTEE APPROVAL	80
3.7.1 Tasmanian Department of Education Ethics Approval	80
3.7.2 University of Tasmania Southern Social Sciences Ethics Committee Approval	80
3.8 PILOT STUDY	82
3.8.1 Pilot Study Procedure	83
3.8.2 Pilot Study Sample	84
3.8.3 Student Responses	85
3.9 FINAL ADMINISTRATION	87
3.9.1 Final Administration Instruments	87
3.9.2 Questions Added After the Pilot Study	88
3.9.3 Final Administration Sample	88
3.9.4 Final Administration Procedure	89
3.10 LIMITATIONS OF THE THESIS RESEARCH	90
3.11 DATA ANALYSIS METHODS	91
3.11.1 Dealing with Missing Data	91
3.11.2 Exploratory Factor Analysis	92
3.11.3 Univariate Analysis	95
3.11.4 Bivariate Analysis	96
3.11.5 Partial Correlation	96
3.11.6 Multiple Regression	98
3.11.7 Statistical Multiple Regression	99
3.11.8 Assumptions of Regression	100
3.11.9 Limitations of Regression	101
3.12 CONCLUSION	101
CHAPTER 4: DATA PREPARATION AND UNIVARIATE ANALYSIS RESULTS	103
4.1 INTRODUCTION	103
4.2 DATA PREPARATION	103
4.2.1 Collapsed Response Categories	103
4.2.2 Summed Scales	104
4.2.3 Factor Scales	104
4.3 FACTOR SCALE RESULTS	105
4.3.1 Dependent Variables	105
4.3.2 Independent Variables	106
4.4 NORMALITY OF THE DATA	115
4.5 UNIVARIATE RESULTS	117
4.5.1 Dependent Variables	117
4.5.2 Independent Variables	119
4.6 CONCLUSION	149
CHAPTER 5: BIVARIATE, PARTIAL CORRELATION, AND MULTIPLE REGRESSION RESULTS	150
5.1 INTRODUCTION	150
5.2 BIVARIATE RESULTS	150
5.2.1 Correlations Among the Dependent Variables	151
5.2.2 Correlations Among Independent Variables	152

5.3 LIFE SATISFACTION RESULTS.....	152
5.3.1 Bivariate Correlation Results.....	152
5.3.2 Pre-Regression Partial Correlation Results	159
5.3.3 Regression Results	164
5.4 POSITIVE AFFECT RESULTS	170
5.4.1 Bivariate Correlation Results.....	170
5.4.2 Regression Results	175
5.5 NEGATIVE AFFECT RESULTS.....	180
5.5.1 Bivariate Correlation Results.....	180
5.5.2 Regression Results	184
5.6 POST-REGRESSION PARTIAL CORRELATION RESULTS.....	189
5.7 CONCLUSION	193
CHAPTER 6: DISCUSSION	194
6.1 INTRODUCTION.....	194
6.2 FACTOR ANALYSIS RESULTS.....	195
6.3 LIFE SATISFACTION RESULTS.....	197
6.3.1 Demographics	198
6.3.2 Personality.....	198
6.3.3 Psychosocial	199
6.3.4 Institutional Experiences and Competencies	200
6.3.5 Mental Health	203
6.3.6 Risk Behaviours and Beliefs	203
6.3.7 Life Events.....	204
6.3.8 Goals and Life Planning	204
6.4 POSITIVE AFFECT RESULTS	205
6.4.1 Demographics	205
6.4.2 Personality.....	206
6.4.3 Psychosocial	206
6.4.4 Institutional Experiences and Competencies	206
6.4.5 Mental Health	208
6.4.6 Risk Behaviours and Beliefs	208
6.4.7 Life Events.....	209
6.4.8 Goals and Life Planning	209
6.5 NEGATIVE AFFECT RESULTS.....	209
6.5.1 Demographics	210
6.5.2 Personality.....	211
6.5.3 Psychosocial	211
6.5.4 Institutional Experiences and Competencies	211
6.5.5 Mental Health	212
6.5.6 Risk Behaviours and Beliefs	212
6.5.7 Life Events.....	213
6.5.8 Goals and Life Planning	213
6.6 POST-REGRESSION PARTIAL CORRELATION RESULTS.....	213
6.7 CONCLUSION	215
CHAPTER 7: CONCLUSION	217
7.1 INTRODUCTION.....	217
7.2 BACKGROUND TO THE RESEARCH AND KEY RESEARCH QUESTIONS	217
7.3 ADDRESSING THE RESEARCH QUESTIONS	219
7.4 SUGGESTIONS FOR FUTURE RESEARCH	230
7.5 SIGNIFICANCE AND CONTRIBUTIONS OF RESEARCH FINDINGS	232
7.6 FINAL THOUGHTS	233
REFERENCES.....	235

Chapter 1: Introduction

No man is happy who does not think himself so.

– Marcus Aurelius (121 AD – 180 AD)

Over the centuries many philosophers and academics have held varying views on what constitutes happiness, and the value to be found in the pursuit of happiness. Still, questions remain unanswered: How happy are people across the life span? What are the possible predictors of happiness? This thesis seeks to address questions such as these by examining the happiness of adolescents. Happiness is conceptualised as Subjective Well-Being, which requires that the assessment of well-being come from the respondent's perspective. A need exists to examine people's personal assessments of their well-being and what makes them happy, rather than relying upon externally imposed evaluations. Hence the aptness of the Marcus Aurelius quote found above: "No man is happy *who does not think himself so*" [italics added].

1.1 Background to the Thesis Research

In recent years a great deal of attention has been given to research that centres on adolescents. This attention has come from professionals in a wide variety of fields. What has also been established is the importance of thorough enquiry and debate into the actual nature of adolescence (Heaven, 2001). This is recognised in the justification of the Adolescent Health, Education, and Well-Being Project (AHEWP) (Hogan, Carmichael, Crowley, & Easthope, 2000) within which the research central to this thesis was embedded. The AHEWP was a collaborative project funded by the Australian Research

Council at the University of Tasmania, with the Tasmanian Department of Education and the Tasmanian Department of Health and Human Services as Industry Partners.

Assessing the health and overall well-being of Australian adolescents is important in the examination of the nature of adolescence and this was central to the aims of the AHEWP. Assessments of health in adolescents via conventional methods (e.g., hospital admissions) have concluded that Australian adolescents are relatively healthy (Brown, 1994; Court, 1994; Mather, 1996; Moon, Meyer, & Grau, 1999; Patton, 1999; all as cited in Hogan et al., 2000), but conventional assessments ignore a number of important issues. Relying on records of hospital admissions, for example, rather than population surveys underestimates real morbidity rates for this age group (Hogan et al., 2000). Researchers have also recently identified high rates of adolescent risk behaviours, morbidities, and diminished overall well-being, which are associated with health and well-being (Eckersley, 1999; Mather, 1996; Moon et al., 1999; Patton, 1999; all as cited in Hogan et al., 2000). Findings have highlighted a number of concerns regarding adolescent health and overall well-being, especially for remote and rural Australia, including increased levels of participation in risk behaviours, high and increasing levels of mental health problems, and high levels of injury, infectious disease, and criminal activity. There is also substantial evidence that problems in adolescence continue into adulthood (Hogan et al., 2000). Drawn from the many potential facets of adolescent health and well-being, this thesis focuses on happiness as conceptualised as Subjective Well-Being.

1.2 Aims of Thesis Research and Key Research Questions

Academics in the last half-century have generally undertaken the task of studying happiness empirically. This research has resulted in the construction of the concept of Subjective Well-Being, which examines possible causes and correlates of happiness. Subjective Well-Being refers to a person's

evaluation of his or her life, with this evaluation consisting of both affective and cognitive components, and is concerned with evaluations of well-being from the respondent's perspective. An illustration by Diener (1998) highlights the importance of the respondent's perspective: An "objective" viewer, or outsider, may look at a respondent and evaluate his or her life as unfortunate. A psychologist may look at the same respondent and evaluate him or her as mentally ill. If the respondent, however, looks at his or herself and evaluates life as going well, he or she has a high level of Subjective Well-Being. The way in which people evaluate their own lives deserves to be recognised (Diener, 1998).

The affective component of Subjective Well-Being is composed of Positive and Negative Affect (sometimes called Pleasant and Unpleasant Affect), both of which are reflective of internal states. Positive and Negative Affect measure the amount of pleasant and unpleasant emotion a person feels. The cognitive component of Subjective Well-Being is an evaluation of a person's satisfaction with life (Life Satisfaction), which can be either positive or negative. This can be either a global evaluation of a person's life or judgements of satisfaction in a number of important domains (for example, work or family life). It is important to note the inclusion of Positive Affect and positive aspects of Life Satisfaction in the conceptualisation of Subjective Well-Being. Subjective Well-Being does not just focus on the absence of psychopathological symptoms or avoiding misery: People must also experience positive satisfaction with life and positive emotions (Diener, 1998; Emmons & Diener, 1985a; Schlosser, 1990; Warr, Barter, & Brownbridge, 1983; Watson, Clark, & Tellegen, 1988).

Research into the subjective indicators of well-being (such as Life Satisfaction, personality and self-esteem) arose when researchers did not obtain the results they expected when looking at objective life circumstances as indicators of well-being (such as health, income, and marital status). Founded on significant research, such as Wilson's avowals of happiness (1967), researchers had expected objective factors, such as income, marital status, socio-economic status, age, health, and religion, to have a significant

impact on a person's level of happiness. Objective indicators, however, were generally found to have only a small influence on a person's level of Subjective Well-Being (e.g., Andrews & Withey, 1976; Brickman, Coates, & Janoff-Bulman, 1978; Campbell, Converse, & Rodgers, 1976).

Subjective Well-Being research has been disadvantaged somewhat by inconsistencies and confusion with regard to terminology. Subjective Well-Being is used in the literature interchangeably with satisfaction, quality of life, overall or general well-being, and psychological well-being, for example, although these terms are not synonymous (Andrews & Robinson, 1991; Greenspoon & Saflofske, 1997). Most commonly Subjective Well-Being is interchanged with quality of life and overall well-being but both differ from Subjective Well-Being by their objective assessment of life conditions as constituting well-being (e.g., income and marital status). Quality of life is concerned with an individual's life circumstances, and is usually a summed total of a number of measurable, objective life conditions, such as physical health, marital status, and income (Hogan & Lamb, 2001). Quality of life and well-being can range from societal well-being to the evaluation of individuals or groups (Felce & Perry, 1995), whereas Subjective Well-Being has very defined borders. It is important to highlight that in this thesis well-being (measured as Life Satisfaction, Positive Affect, and Negative Affect) is subjective: The possible correlates or predictors of well-being, however, can be either objective or subjective (Diener, 1984). There are varying degrees of subjectivity and, of course, data from some questions (e.g., "I have what I want in life") are more subjective than others. In this study, all data gathered have come from students, including data from variables that might traditionally be measured objectively and may not come from the respondent (e.g., income data can be derived from employment contracts). All data used, therefore are to some degree subjective – even data on an ostensibly objective variable such as parent's marital status.

Most of the research in the area of Subjective Well-Being has focussed on the correlates and causes of Subjective Well-Being in adult or young adult populations. Few researchers have examined the nature of Subjective Well-

Being with adolescents. Although traditional theorists of adolescent development believed that the period of adolescence was a time of turmoil and angst where adolescents were caught between childhood and adulthood, this belief has recently been questioned by some researchers (Coleman, 1980; Heaven, 2001; Leung & Zhang, 2000; Noller & Patton, 1990; Noom, Dekovic, & Meeus, 1999; Steinberg, 1990). As a result some psychologists have moved away from studying the negative experiences of adolescents towards a more positive approach, for which the concept of Subjective Well-Being is apt. Huebner and Dew (1996) concluded that the tripartite model of Subjective Well-Being found with adults – Life Satisfaction, Positive Affect, and Negative Affect – holds with adolescents. At the same time, however, Huebner and colleagues noted the lack of research into adolescent Subjective Well-Being (Ash & Huebner, 2001; Dew & Huebner, 1994; Gilman & Huebner, 1997; Gilman et al., 2000a, 2000b; Huebner, 1991a, 1991b; Huebner & Dew, 1995, 1996; Huebner et al., 1998; Huebner et al., 2000; Valois et al., 2001).

The early research into the Subjective Well-Being of adolescents has experienced some limitations. The majority of studies have examined either the cognitive or affective components of Subjective Well-Being and not the two together. Some findings discussed in the literature review (Chapter 2) are based on only one study and therefore need to be examined further. Other findings need further testing due to the use of unrepresentative samples in studies. Although variables that have been found to be significant to the Subjective Well-Being of adults need to be tested with adolescents, it is also necessary to consider possible predictors that are more suited to this age group. These possible predictors can be identified through an examination of the adolescent literature. Further, the studies that have examined adolescent Subjective Well-Being have mostly utilised bivariate analysis: The use of multivariate techniques would assist Subjective Well-Being researchers by giving a more complete picture of adolescent Subjective Well-Being. Further research is hence needed to explore the complex nature of the relationship of the possible predictors to Subjective Well-Being in adolescents. With this background in mind, and from a reading of the adolescent Subjective Well-

Being literature, the following research questions were developed for this study (Figure 1.1).

1. What is the level of Subjective Well-Being of Tasmanian adolescents?
2. Are previous correlational findings supported in a larger and more representative sample?
3. What are other possible correlates and predictors of adolescent Subjective Well-Being? Is there a relationship between Life Satisfaction, Positive and Negative Affect, and domains important to adolescents (family, friends, school, for example)?

Figure 1.1. Research Questions for Current Study.

1.3 Methodology

Within the quantitative component of the AHEWP – and therefore this dissertation – respondents were not seen to be active in constructing their happiness. They were not directly asked what made them happy. Assessments of happiness in the thesis research were gathered through a deductive reasoning process. Happiness was assessed by the measurement of observable constructs from which underlying concepts are inferred. The quantitative nature of the research central to this dissertation is located inside a positivistic framework. Sarantakos (1993) stated that all quantitative methods are based on either a positivist or neopositivist philosophy.

1.4 Thesis Structure

The thesis is divided into six chapters. Chapter 2 contains the review of the literature, which addresses the structure of Subjective Well-Being, and past research on the Life Satisfaction, Positive Affect and Negative Affect of adolescents. Next, limitations of existing research into adolescent Subjective Well-Being are discussed, and research questions for the thesis reiterated. Last, theories are presented that may assist in acquiring a deeper understanding of the nature of adolescent Subjective Well-Being. In Chapter 3, Methodology, the theoretical framework of the thesis is discussed

as well as a model of theory construction. Next, information on the research design and questionnaire construction is presented, including the construction of the questionnaire used in this study. Particulars on gaining ethics approval and conducting the pilot study are then given, followed by information on the final questionnaire, sample, and limitations of the study. The chapter concludes with a discussion of data analysis techniques used in the thesis.

Chapter 4 details the preparation of the data and initial univariate analysis and is seen as a bridge between the preparation for the survey administration and the final analysis. Issues of data normality are also discussed. Chapter 5 presents the bivariate, pre-regression partial correlation, multiple regression, and post-regression results, and is organised by dependent variable. Summaries are given of the correlates with each dependent variable as well as the resultant regression equations. In Chapter 6 the results presented in Chapter 5 are discussed in detail. Findings from the current study are related to past adolescent Subjective Well-Being research as well as research in the field that is subsequent to that covered in the literature review. Again, the findings are organised around each dependent variable. The concluding chapter (Chapter 7) gives a background to the research, presents the key research questions, and applies the findings of the current study to each of these questions. Suggestions for future research are given, and the significance and contributions of the thesis research are summarised.

1.5 Conclusion

The Subjective Well-Being of adolescents is an important area of research that has been largely neglected. As Phillips (1993) stated, those involved with adolescents have “lost track” of adolescents’ affective experiences and it is an important task to build their holistic health and lifetime competencies. This thesis contributes substantially to the field by taking Huebner and Dew’s (1996) tripartite model and studying the affective experiences of adolescents. The thesis examines both the cognitive and affective components of Subjective Well-Being, and the relationships among these variables.

The study of Subjective Well-Being has important social and educational implications. It is the goal of most education systems to improve the lives of their students, and acquiring knowledge of the causes and correlates of adolescent Subjective Well-Being can assist in this task (Leung & Zhang, 2000). The outcomes of studying Subjective Well-Being can also be useful in informing social policy formation, needs assessment, and the evaluation of social programs (Frisch, Cornell, Villanueva, & Retzlaff, 1992). As well, Subjective Well-Being research can assist researchers following the recent change in the health and well-being area with an increase in interest in looking at the positive aspects of both health and well-being, and a focus on prevention rather than treatment (Greenspoon & Saflofske, 1997). The World Health Organisation recognised in 1964, for example, that health is composed of more than the absence of disease. It is important that society moves to “build health, rather than the implicit slogan that has wagged the last two millennia, *fight sickness*” (Cowen, 1991, p. 404). The thesis contributes significantly by presenting a well-rounded model of health and well-being that focuses on positive aspects, not only deficiencies, thus assisting in the “building of health.” The thesis contributes significantly to the field by adding to the existing knowledge of the causes and correlates of Subjective Well-Being that can be examined for their potential contribution to prevention. The identification of these variables, for example, will allow those whose work centres around adolescents and those who create policy for adolescents to focus on changing aspects of adolescents’ lives that will potentially raise their levels of Subjective Well-Being. The identification of such variables will also assist in the creation of policy that has meaningful applications for adolescents.

Chapter 2: Literature Review

2.1 Introduction

It is a widely held view that the experience of adolescence is a negative one: a time of turmoil and angst. Early theorists of adolescent development (e.g., Erikson, 1968) believed that this turmoil was produced when adolescents sought to be independent while still under the control of their families: They are caught between childhood and adulthood (Heaven, 2001). The transition from childhood to adolescence was thought to be difficult, but this hypothesis and the amount of turmoil and angst that researchers thought adolescents experience, have been cast into some doubt (Coleman, 1980; Heaven, 2001; Leung & Zhang, 2000; Noller & Patton, 1990; Noom et al., 1999; Steinberg, 1990). Some psychologists have hence moved away from studying the negative experiences of adolescence towards a more positive approach, which has led to the development and steady growth of research over the past 20 years into both the nature and correlates of Subjective Well-Being. Only a small amount of research in this area, however, has been conducted with adolescents. This chapter reviews the current literature on the nature and correlates of happiness for adolescents, as well as discussing the limitations of existing research. The research questions are presented, and theories that may help identify correlates and predictors of adolescent Subjective Well-Being are discussed.

As discussed in Chapter 1, Subjective Well-Being is an empirically-based examination of the causes and correlates of happiness, which is centred on a person's own evaluation of his or her life. Subjective Well-Being, therefore, is concerned with evaluations of well-being from the respondent's perspective. The evaluation of a person's Subjective Well-Being consists of both affective and cognitive elements. The affective component of Subjective

Well-Being is composed of Positive and Negative Affect, both of which are reflective of internal states. The cognitive component of Subjective Well-Being is an evaluation of a person's satisfaction with life. This can be either a global evaluation of a person's life as a whole or judgements of satisfaction in a number of important domains (for example, work or family life).

As mentioned in Chapter 1, the area of Subjective Well-Being originated from a traditional view of well-being as measured by objective life circumstances. Founded on significant research, such as Wilson's (1967) avowals of happiness, researchers expected variables such as income and marital status to have a significant effect on well-being. Researchers, however, did not obtain the results they expected, with objective indicators having only a small affect on Subjective Well-Being (Andrews & Withey, 1976; Brickman et al., 1978; Campbell et al., 1976).

A review of the Subjective Well-Being literature by Diener, Suh, Lucas, and Smith (1999) examined the subsequent research on the variables highlighted by Wilson as important to happiness. They concluded that researchers have not found a direct affect of objective health on Subjective Well-Being, and although self-reported health was associated with Subjective Well-Being, people's perceptions of their health were influenced by their personalities. They found the affects of income on Subjective Well-Being to be small, with increases in income not associated with increases in Subjective Well-Being, and national income changes not associated with higher Subjective Well-Being, although national wealth and Subjective Well-Being were correlated. Diener et al. (1999) also concluded that religion and Subjective Well-Being were correlated, married people reported higher levels of Subjective Well-Being, age did not affect Subjective Well-Being, gender did not affect Subjective Well-Being, and job satisfaction was correlated with Life Satisfaction. Education was found to be correlated with Subjective Well-Being, although intelligence was not.

The work of Andrews and Withey (1976), Campbell et al. (1976), and Brickman et al. (1978) demonstrate this point further. Andrews and Withey

(1976) assessed the influence of demographic factors on Subjective Well-Being using 10 variables (e.g., race, gender, and age) and found that these variables accounted for only 8% of the variance in Subjective Well-Being. Likewise, Campbell et al. (1976) found that only 17% of a person's satisfaction with life could be predicted from the same variables. In a study of 22 major lottery winners, 29 paralysed accident victims, and a control group of 22, Brickman et al. (1978) aimed to explore the relativity of happiness. They reported that lottery winners were no happier than the control group on reports of both present happiness and estimations of future happiness. Remarkably, paraplegics, although less happy in the present, did not differ in estimations of future happiness from either the control group or the lottery winners.

Most of the research in the area of Subjective Well-Being has focussed on the correlates and causes of Subjective Well-Being in adult populations, with few researchers examining the nature of Subjective Well-Being with adolescents. The tripartite model of Subjective Well-Being found with adults – Life Satisfaction, Positive Affect, and Negative Affect – has been found to hold with adolescents (Huebner & Dew, 1996). Few studies, however, have examined all three components together, with most research focussing on either Life Satisfaction or affect.

2.2 Definitions of Dependent Variables

This thesis follows the conceptualisation of Diener and adheres to the tripartite model of Subjective Well-Being including Life Satisfaction, Positive Affect, and Negative Affect. These three variables comprise the dependent variables that are the focus of this study.

2.2.1 Life Satisfaction

Life Satisfaction has widely been defined as a global assessment of a person's quality of life (Dew & Huebner, 1994). A person who was satisfied with his or her life would be warm, sociable, and active, with a positive view of the

self, little anxiety and criticism of others (Emmons & Diener, 1985a). Life Satisfaction judgements can be both global and domain-specific.

2.2.2 Positive and Negative Affect

Positive Affect is defined as pleasant emotions or feelings such as joy and happiness, as well as warmth, “surge” (sudden increases in energy), and social boldness (Emmons, 1985). People with high levels of Positive Affect would be high in energy, have full concentration and find engagement pleasurable (Watson et al., 1988). They would also be extraverted, active, enthusiastic, and managerial-autocratic, and have cooperative interpersonal styles. There have been few attempts to define exactly what constitutes low Positive Affect. Tellegen (1985) offered the broad definition of the “absence of pleasurable engagement” (p. 690).

Negative Affect is defined as unpleasant emotions or feelings such as sadness and fear, “tendermindedness,” guilt proneness and tension (Emmons, 1985). Costa and McCrae (1980) describe Negative Affect as “general emotionality, anger and poor inhibition of impulse” (p. 672). A person with high levels of Negative Affect would be emotionally reactive, sensitive interpersonally, tense, worrisome, impulsive, aggressive and distrustful. As with Positive Affect, there are few definitions of low Negative Affect. Tellegen (1985) broadly defined low Negative Affect as non-unpleasant engagement.

2.2.3 Interrelationships Among the Dependent Variables

Life Satisfaction, Positive Affect, and Negative Affect can interact in many ways but are largely independent. Research by Andrews and Withey (1976) into the influence of social indicators on well-being first found that Life Satisfaction was a separate entity from, and only moderately correlated with, both Positive and Negative Affect (Andrews & Withey, 1976; Campbell et al., 1976; Emmons & Diener, 1985b; Lucas, Diener, & Suh, 1996). In validating the Students’ Life Satisfaction Scale (SLSS) with a representative sample of

266 students aged 14 to 19, Huebner (1991c) found that ratings of global Life Satisfaction could be differentiated from ratings of affective states with children and adolescents aged 7 to 14. This finding was confirmed through factor analysis using principal axis factoring. Lucas et al. (1996) replicated this finding in a study of the discriminant validity of Life Satisfaction, Positive Affect, and Negative Affect. Using a multitrait–multimethod matrix method, the researchers analysed data from three separate studies conducted with psychology students. Lucas et al. (1996) found that Life Satisfaction could be discriminated from Positive Affect and Negative Affect, and that Positive and Negative Affect are not “opposite poles on the same continuum” (p. 626), but clearly distinguishable, and in many cases, only slightly correlated. They concluded by encouraging future researchers to “feel confident that they are measuring different constructs” (p. 627).

It was once the case that Subjective Well–Being researchers would define Positive Affect and Negative Affect as the opposing ends of the same spectrum: Experiencing Positive Affect meant a lack or absence of Negative Affect. Bradburn first suggested that affect is not a unidimensional construct in 1965 (Bradburn & Caplovitz, 1965). Bradburn created a 10–item scale, which consisted of 5 items to measure Positive Affect and 5 to measure Negative Affect. His studies found that the correlation between the two dimensions of affect was very low. He also found that Positive Affect and Negative Affect related differently with external variables. If the two dimensions of affect correlated with different variables, then it was highly likely that they were separate constructs. As Diener (1998) concluded, if a person can experience both high Positive Affect and high Negative Affect it does not make sense to view people who experience high levels of Positive Affect as opposite to those who experience high levels of Negative Affect.

Warr et al. (1983) examined the structure of Positive and Negative Affect in a study of 190 undergraduates from the University of Sheffield, who held a variety of majors. The median age of the sample was 20–years–of–age. Their findings supported Bradburn’s hypothesis that Positive Affect and Negative Affect were independent. They noted, however, that this might be the case

only when affect is measured in the manner suggested by Bradburn (1969). Warr et al., (1983) changed the scoring system of the affect scale to measure the *proportion* of time a person felt the emotions listed in the scale and found that the two dimensions of affect were then intercorrelated.

Further research into the area supported the theory that Positive Affect and Negative Affect are independent and virtually uncorrelated. In a study of 458 University of Illinois psychology undergraduates, Diener and Emmons (1985) used their own Positive and Negative Affect scale to test the independence of the two constructs. After conducting a factor analysis on the data they found a very clear factor structure separating Positive Affect from Negative Affect. They went on to explore this further with a cross-cultural sample and the addition of a time period. The results found were similar to those of the first study: Over a long period of time (e.g., one year) Positive Affect and Negative Affect were found to be relatively independent. Over a shorter period of time however (e.g., one month), the two types of affect were moderately inversely related. One of the implications of the independence of Positive Affect and Negative Affect is that people can experience both high levels of Positive Affect and Negative Affect, or low levels of Positive Affect and Negative Affect. This has had important consequences regarding the measurement of the two constructs: The two should be assessed separately for example.

Diener, Larsen, Levine, and Emmons (1985) helped to clarify the independent relationship between Positive Affect and Negative Affect partially when they considered the *frequency* of affect separately from the *intensity* of affect. Diener et al., (1985) found that there was an inverse relationship between the frequency of Positive Affect and frequency of Negative Affect – the more frequently people experienced Positive Affect the less they experienced Negative Affect. They also found that there was a positive relationship between the intensity of Positive Affect and the intensity of Negative Affect a person experiences. That is, a person who experiences Positive Affect intensely also experiences Negative Affect intensely – he or she will be a person who experiences high highs and low lows. Diener et al. (1985) also found that the independence of the two facets of affect depended on the

duration of the time span being measured. If a person rated his or her average affective state over a period of several weeks or more, the positive relationship between the intensity of Positive and Negative Affect mediated the inverse relationship between the frequency of Positive and Negative Affect. This results in the two affective states appearing independent.

The distinction between the frequency and intensity of Positive and Negative Affect is important in assessing a person's level of Subjective Well-Being. Chamberlain (1988) and Diener, Sandvik, and Pavot (1991) recommended that affect intensity should not be considered when assessing Subjective Well-Being. They argued that intensity has not been found to be related to differences in overall happiness or Life Satisfaction and cannot be measured as accurately as affect frequency. Diener et al. (1991) stated that it is not necessary for respondents to refer to affect intensity in reporting their happiness levels – the frequency of affect is enough.

After substantial research in the area, affect independence is still debated (Reich, Zautra, & Potter, 2001). In 1988, Holland Benin, Stock, and Okun studied Positive and Negative Affect using a maximum-likelihood approach. They noted in a review of the literature that when affect measures other than Bradburn's were used, results on the independence of Positive and Negative Affect were inconsistent. They re-examined the relationship using maximum-likelihood loadings to create the scales and found the two scales were not independent but moderately correlated (between -0.33 and -0.49). Research by Green, Goldman, and Salovey (1993) argued that independence between the two factors only occurs when measurement error is uncontrolled. After controlling for measurement error the estimates of the relationship between Positive and Negative Affect was $-.85$. Diener (1995) points out that the definition of "independence" has been a limitation of past research that has hindered solving the issue. Independence may mean a number of things: That Positive and Negative Affect do not correlate at all, that Positive and Negative Affect do not correlate inversely the way one might expect, or that treating Positive Affect and Negative Affect as separate constructs explains more variance than a single construct. Diener (1984) highlights other

complicating factors in analysing the relationship, such as the emotions that are being measured and whether the measures are verbal or non-verbal.

Diener concluded that Positive Affect and Negative Affect are separable but not orthogonal and that complete independence should not be expected. He also recommended that Positive and Negative Affect should be assessed separately (Diener, 1984, 1995). This finding has been supported in studies with children and adolescents as well (Huebner, 1991c).

2.3 Life Satisfaction and Adolescents

Very few studies have examined the Life Satisfaction of adolescents (Heaven, 1990). Dew and Huebner (1994) attribute the lack of research into adolescents and Life Satisfaction “in part to the absence of reliable and valid measures of Life Satisfaction with adolescents” (p. 186). Two instruments have been designed to measure the Life Satisfaction of children and adolescents specifically. They are the Perceived Life Satisfaction Scale (PLSS) (Adelman, Taylor, & Nelson, 1989; Smith, Adelman, Nelson, Taylor, & Phares, 1987), and the Students’ Life Satisfaction Scale (SLSS). The PLSS has yet to have its reliability established. There are questions regarding its researcher-imposed domains (Pavot, Diener, Colvin, & Sandvik, 1991). An Australian instrument created by Cummins (1997) measures “subjective quality of life” rather than Subjective Well-Being, although the two terms seem to be used interchangeably. The ComAol-S5 measures both objective and subjective quality of life by domains and is not designed specifically to measure global Life Satisfaction in adolescents. The SLSS has been shown to be a reliable measure of Life Satisfaction for preadolescents, and preliminary research conducted by Huebner has found it a reliable measure for adolescents (Dew & Huebner, 1994).

In conflict with some adolescent development theories and widely held views, most research states that adolescents view their lives moderately positively. Huebner and colleagues have reported moderately high levels of Life

Satisfaction for American adolescents ranging from Grade 5 to 12 (Dew & Huebner, 1994; Gilman & Huebner, 1997; Gilman et al., 2000a, 2000b; Huebner, 1991a, 1991b; Huebner & Dew, 1996; Huebner et al., 1998; Huebner, et al., 2000; McCullough, Huebner, & Laughlin, 2000). This finding has also been supported by studies with Portuguese students (Neto, 1993) and Chinese students living in Hong Kong (Leung & Zhang, 2000).

Some studies, however, have found differing results. In a study of 5032 students from Grades 9 through to 12, Valois et al. (2001) found that a substantial number of American students at public high schools reported dissatisfaction with their lives. Adelman et al. (1989) also stated that students were reporting low levels of Life Satisfaction in their study. In a study of 152 students with a mean age of 15.89, Ash and Huebner (2001) reported that students were experiencing a moderate level of Life Satisfaction. Conversely, Young, Miller, Norton, and Hill (1995) reported very high levels of Life Satisfaction in their study of 640 adolescents aged 12 to 16.

2.3.1 Demographics

Results on the affect of demographic variables on Life Satisfaction have generally shown mixed results. Studies conducted on the relationship between age and Life Satisfaction have found Life Satisfaction to be invariant across ages. Studies by Huebner and colleagues have found the affects of age to be insignificant (see Ash & Huebner, 2001; Dew & Huebner, 1994; Gilman et al., 2000; Huebner, 1991b; Huebner et al., 1998, 2000). Huebner et al. (2000) examined age and Life Satisfaction in a sample of 5544 students in Grades 9 to 12 of mixed ethnicity and found no grade affects on levels of Life Satisfaction. Socio-economic data was not reported however, and the large sample of 5544 still only represented 3% of enrolments in the state. The findings of some of the studies, however, should be interpreted cautiously: The study reported in Huebner (1991b) consisted of a sample of only 79 students.

There have been some studies that have found age differences in Life Satisfaction levels, but the samples used have generally been unrepresentative. Adelman et al. (1989) found that there was a trend towards higher dissatisfaction in the older students in their study. Out of the 4 samples in their study, one reported higher dissatisfaction scores than the other samples and also reported a higher mean age than the other samples. Seventy percent of the sample, however, were of mixed ethnicity and were classified as low to mid socio-economic status.

Petito and Cummins (2000) analysed the relationship between Life Satisfaction and age in a study of 279 Australian adolescents aged 12 to 17. Although information on the socio-economic status or ethnicity of the data was not given, they reported that 54% of the sample were female, and that the sample was drawn from three secondary schools in the eastern suburbs of Melbourne. Petito and Cummins (2000) reported that overall subjective quality of life was correlated negatively and significantly with age for this sample.

Analyses of the relationship between gender and Life Satisfaction have also produced mixed results. Studies by Huebner and colleagues (see Ash and Huebner, 2001; Dew & Huebner, 1994; Huebner, 1991b; Huebner et al., 1998, 2000) reported nonsignificant gender affects from samples ranging in size from 79 to 5544. Samples were mixed in ethnicity and socio-economic status, and ranged from Grades 5 to 12. Wilson and Peterson (1988) found that gender was not a significant predictor of Life Satisfaction in a sample of 322 young adults from rural communities in Appalachia. Young et al. (1995) in a study of 640 students from the United States aged 12 to 16, found that scores for males and females on Life Satisfaction were not significantly different. Gilman et al. (2000b) did find a significant affect for gender in their study, but the sample was unrepresentative. Adelman et al.'s (1989) study of children and adolescents dissatisfaction with their lives used four samples, one of which was a group of 47 students referred to a mental health treatment centre by their school. Students were referred due to emotionally based behaviour problems, underachievement, or school avoidance. Adelman et al.

(1989) found that in the mental health population of their study females reported higher dissatisfaction with their lives. The sample however, was small ($n = 47$) and only 13 were female.

Research into the Life Satisfaction of Portuguese adolescents conducted by Neto (1993) did find a significant affect of gender in a representative sample, with male adolescents reporting higher mean scores for Life Satisfaction than female adolescents. Entered into a stepwise multiple regression at step 1, gender was a significant predictor of Life Satisfaction. When other variables were entered into the analysis gender remained a significant predictor. Similarly, Verkuyten (1986) found a significant gender affect when studying the impact of ethnic and sex differences on happiness. In the sample of 261 adolescents aged 13 to 16, females reported lower levels of Life Satisfaction.

Studies into the relationship between Life Satisfaction and socio-economic status have produced mixed results. Adelman et al. (1989) reported that socio-economic status did not affect Life Satisfaction, as did Wilson and Peterson (1988), who assessed the Life Satisfaction of adolescents in rural areas and found that family socio-economic status was not a significant predictor of Life Satisfaction. Dew and Huebner (1994) however, did report a significant correlation between Life Satisfaction and socio-economic status of .34. Ash and Huebner (2001) also found a significant relationship with 152 high school students with a mean age of 15.89 ($SD = 1.39$), with socio-economic status significantly relating to Life Satisfaction at the $p = .01$ level. Students who belonged to a lower socio-economic group reported lower levels of Life Satisfaction. The results should be interpreted cautiously as the sample was not split evenly across gender; only 37% of the sample were male. Neto (1993) also found that sociocultural level had a significant relationship with Life Satisfaction. He found that adolescents from mid and high sociocultural levels reported higher mean scores than adolescents from a low sociocultural level. Entered into a stepwise multiple regression, sociocultural level was found to be a significant predictor of Life Satisfaction. This result did not remain, however, when other variables were entered into the analysis.

Examination of the relationship between ethnicity and Life Satisfaction has yielded mixed results. Adelman et al. (1989), Huebner (1991b), Huebner et al. (1998), Huebner et al. (2000), and Ash and Huebner (2001) all reported that ethnicity had no effect on Life Satisfaction in their studies. Gilman et al. (2000b) did find African Americans reporting higher Life Satisfaction than Caucasian subjects, but the sample was unrepresentative. Research findings have indicated that Caucasians may experience higher levels of Life Satisfaction, with Dew and Huebner (1994) reporting that African American respondents reported lower means on Life Satisfaction than white respondents. Verkuyten (1986) supported Dew and Huebner's (1994) finding, with a sample of 261 adolescents living in Rotterdam. Within the sample, 157 respondents belonged to an ethnic minority, which reported lower levels of Life Satisfaction than the Dutch students that made up the remainder of the sample.

2.3.2 Personality

In a study of Australian adolescents in their last two years of high school, Heaven (1989) found that neuroticism correlated negatively and significantly with Life Satisfaction for males and the "total group" (both males and females). He also found that social desirability correlated negatively and significantly for female students. Extraversion was found to be unimportant in explaining Life Satisfaction, with this finding holding for both males and females.

Huebner (1991b) found that all scales (psychoticism, neuroticism, extraversion, and lie) from Eysenck and Eysenck's Eysenck Personality Questionnaire (EPQ) (Eysenck & Eysenck, 1975) correlated significantly with Life Satisfaction. The reported correlation for extraversion and Life Satisfaction, although significant, was only low. Findings from this study should be interpreted with caution as the sample size was 79.

2.3.3 Psychosocial

In 1988 Wilson and Peterson studied the Life Satisfaction of young adults in Appalachia in the United States, and found self-esteem to be the strongest predictor of Life Satisfaction. Huebner (1991b) also found that self-esteem had a strong positive relationship with Life Satisfaction, and entered into a stepwise multiple regression, was a significant predictor of Life Satisfaction. As the sample size was only 79 for this study, results should be interpreted with caution. Gilman et al. (2000a) found that self-esteem was significantly correlated with Life Satisfaction in two studies. Results from these studies should also be interpreted cautiously as 55 to 56% of the samples used were African American students, and consisted of people predominantly belonging to a low socio-economic group.

Studies have consistently found significant relationships between Life Satisfaction and both global assessments and domain-specific assessments of self-concept. Huebner (1991a) explored this relationship with 254 rural school students from the Midwest United States, ranging from 7 to 14 years of age. Significant correlations between self-concept and Life Satisfaction were found. This finding needed replication as Huebner's sample was predominantly white, which lead Dew and Huebner (1994) to study the relationship between Life Satisfaction and self-concept in 222 students from Grade 8 through to 12, from a range of ethnicities and socio-economic statuses. Facets of self-concept measured were labelled general self, Mathematics, general school, physical abilities, physical appearance, same-sex peer relations, opposite-sex peer relations, parent relations, honesty-trustworthiness, and emotional stability. Dew and Huebner (1994) found correlations between Life Satisfaction and both global self-concept and domain-specific self-concept. The highest correlation was between parent relations and Life Satisfaction, with Mathematics, general school, physical abilities and physical appearance having low correlations with Life Satisfaction. Same-sex peer relations, opposite-sex peer relations, honesty-trustworthiness, and emotional stability all correlated with Life Satisfaction moderately. Dew and Huebner (1994) also found that there were no

significant interaction affects between self-concept and Life Satisfaction indicating that self-concept has a direct affect on Life Satisfaction.

In his study with Portuguese students Neto (1993) found significant correlations between Life Satisfaction and self-concept and its sub-domains of social acceptance, impulsivity-activity, psychological maturity, and self-efficacy. Stepwise multiple regression analysis found that self-concept was the largest predictor of Life Satisfaction with social acceptance and impulsivity-activity also significant predictors. McCullough et al. (2000) provided confirmation of the relationship between Life Satisfaction and self-concept. Entering self-concept first into a stepwise multiple regression, self-concept was a significant predictor of Life Satisfaction with the model explaining 21.9% of the variance.

Neto (1993) found that in Portuguese adolescents loneliness, social anxiety, self-assessed loneliness and shyness correlated with Life Satisfaction in male and female adolescents from mid and high sociocultural levels. Of these variables, only loneliness and self-assessed loneliness correlated with Life Satisfaction in adolescents from low sociocultural levels. Neto also found that self-rated attractiveness correlated with Life Satisfaction. Stepwise regression indicated that loneliness and physical attractiveness were significant predictors of Life Satisfaction.

In their study comparing French adolescents who lived with their families with those living in children's homes, Munõz Sastre and Ferrière (2000) found that adolescents with strong self-affirmation had lower levels of Life Satisfaction. They concluded that this was explained by the greater demand for autonomy in the children who reported experiencing low levels of Life Satisfaction.

Huebner (1991b) found that satisfaction with self was a strong correlate with Life Satisfaction. Gilman et al. (2000a), in a cross-sectional and longitudinal study of psychosocial correlates of adolescent Life Satisfaction, found that social stress was consistently correlated negatively with Life Satisfaction.

2.3.4 Institutional Experiences and Competencies

Studies exploring the relationship between family and adolescent Life Satisfaction are few but have generally found the two to be related. In 1989 Adelman et al. found that life dissatisfaction was not related to the severity of problems at home. Yet in 1991(b) Huebner found that satisfaction with family life was the strongest correlate with Life Satisfaction, and when entered into a stepwise multiple regression, home environment was a significant predictor of Life Satisfaction. Young et al. (1995) also found that family was important to Life Satisfaction with parental support dimensions and support measures correlating with Life Satisfaction significantly at the .001 level. The stronger relationships in the study were found between perceived maternal support measures and Life Satisfaction. After conducting structural equation modelling, Young et al. (1995) found that intrinsic support was the strongest predictor of Life Satisfaction and that perceived maternal and paternal support were important in predicting the Life Satisfaction of both adolescent sons and daughters. Gilman et al. (2000a) confirmed the relationship further finding that relationships with parents correlated significantly with Life Satisfaction.

The relationship between family and Life Satisfaction has been replicated in studies of adolescents in other cultures. In a study of 1099 ethnic Chinese adolescents living in Hong Kong, Leung and Zhang (2000) found that relationship with parents correlated most strongly with Life Satisfaction. They also found that parents often had a greater influence on their adolescent son/s or daughter/s than their school: Parent-child relations influenced Life Satisfaction more than school-child relations did.

Munõz Sastre and Ferrière (2000) compared French adolescents aged 12–19 living with their families with adolescents of the same age and demographic characteristics living in a children's home. Adolescents living with their families reported higher levels of Life Satisfaction. They also found that family/children's home was the main predictor of Life Satisfaction and had

more influence than gender, age, and parents' school level. Furthermore they found that family/children's home had a direct affect on Life Satisfaction. They concluded that adolescents living in the children's home were less satisfied because they were unsatisfied with their family life conditions, felt limited in their growth, and had a greater demand for autonomy.

Petito and Cummins' (2000) study with an Australian sample found that adolescents who identified their parents' parenting style as authoritative (joint process but parents decide) reported higher subjective quality of life than adolescents who identified their parents' parenting style as engaged (adolescent decides).

Research into the relationship between school and Life Satisfaction is limited and results are mixed. Smith et al. (1987) found that public school special education students were significantly more negative in their ratings of their Life Satisfaction than mainstream students. Adelman et al. (1989) found that high levels of life dissatisfaction were related to low expectations of improvement in problems at school.

Huebner (1991b) found that satisfaction with school life only had a weak correlation with Life Satisfaction and entered into a stepwise multiple regression, school did not contribute to Life Satisfaction. Wilson and Peterson (1988) found that educational attainment was not significantly correlated with Life Satisfaction. In their study of French adolescents however, Munõz Sastre and Ferrière (2000) found that increases in satisfaction with school were correlated with high levels of Life Satisfaction.

The relationship between Life Satisfaction and other institutions have been studied, but to a limiting degree. Huebner (1991b) explored the relationship between friends, satisfaction with city, neighbourhood satisfaction and Life Satisfaction. He found that neighbourhood correlated strongly with Life Satisfaction, whereas the correlations between satisfaction with city and Life Satisfaction were weak. Satisfaction with friends and Life Satisfaction was

the weakest correlation of the study and did not reach significance. This finding contrasted with a study by Gilman et al. (2000a), who found that interpersonal relations in American students, with a mean age of 16.14 ($SD = 1.13$), was significantly related to Life Satisfaction.

2.3.5 Mental Health

Research into depression and Life Satisfaction in adolescents has found significant correlations, but samples have generally not been representative. Adelman et al. (1989) found a strong correlation between depression and Life Satisfaction in a sample of 47 adolescents who were referred to a mental health centre by their school. Students were aged between 7 and 16 and 24% classed themselves as ethnic. Adelman et al., (1989) found that people who were scoring low on life dissatisfaction belonged in the low and moderate categories of depression scores. Those who scored highly on the depression scale were split between low and high life dissatisfaction, with the majority falling into the high life dissatisfaction category. Gilman et al. (2000a) found a significant correlation between Life Satisfaction and depression but results should be viewed cautiously – of the 321 students involved in the studies 55 to 56% were African American and most belonged to a low socio-economic status.

The few studies conducted into the relationship between anxiety and Life Satisfaction have consistently reported a significant correlation. Huebner (1991b) reported that anxiety was negatively related to Life Satisfaction in a study of 254 rural school students from the Midwest United States, ranging from 7 to 14 years of age. Gullone and Cummins (1999) assessed subjective quality of life and anxiety in an Australian sample and found that there was a negative correlation but it only ranged from $-.14$ to $-.32$. Gilman et al. (2000a) also found that anxiety was correlated with Life Satisfaction.

A range of strengths regarding the relationship between control and Life Satisfaction have been reported. Smith et al. (1987) found that self-ratings on

the Perceived Control at School Scale (PCSS) (Adelman, Smith, Nelson, Taylor, & Phares, 1986) were related negatively to Life Satisfaction in their “regular education” sample. They found that students reporting high and moderate levels of control were reporting significantly higher levels of Life Satisfaction. Adelman et al. (1989) also looked at control and Life Satisfaction using the PCSS and found a significant negative relationship. Supporting Smith et al.’s (1987) findings, Adelman et al. (1989) found that students reporting higher levels of perceived control reported higher levels of satisfaction, whereas those reporting lower levels of satisfaction reported lower levels of perceived control.

Grob, Stetsenko, Sabatier, Botcheva, and Macek (1999) studied the relationship between control and Life Satisfaction, but looked at general control expectancies as opposed to perceived level of control at school. They found a moderate correlation between Subjective Well-Being and control expectancies ranging from .18 to .42. Control expectancy was entered with emotion-oriented and problem-oriented coping into a stepwise multiple regression and added 9% to the model. All three regression coefficients (control expectancy, emotion-oriented coping and problem-oriented coping) were significant.

Gilman et al. (2000a) looked at locus of control when investigating correlates of adolescent Life Satisfaction in a longitudinal study. Utilising a sample of 321 students with a mean age of 16.14 ($SD = 1.13$), Gilman et al. (2000a) found that locus of control was correlated with Life Satisfaction at both Time 1 and Time 2. The sample was not representative however: Over 50% of the students belonged to a lower socio-economic group, and African American students made up 56% of the sample.

Ash and Huebner (2001) also studied the relationship between locus of control and Life Satisfaction and found that there was a relatively strong correlation between the two concepts. Specifically, having an internal locus of control was associated with higher levels of Life Satisfaction. When entered into a hierarchical regression, locus of control orientation mediated the relationship

between negative life events and Life Satisfaction, explaining most of the relationship. The sample of 152 students was generally representative with a mix of ethnicities and socio-economic groups. Only 37% of the sample, however, was male.

Petito and Cummins (2000) in a study of 279 Australian adolescents aged from 12 to 17, found that primary control and secondary control predicted an adolescent's subjective quality of life. The sample was drawn from three secondary schools in the eastern suburbs of Melbourne, and 54% of the sample were female.

Grob et al. (1999) explored the relationship between coping and Subjective Well-Being, and although they do not report if it relates to the cognitive or affective components of Subjective Well-Being, they do report that Subjective Well-Being was correlated with emotion-oriented coping negatively. They also found a significant positive relationship between problem-oriented coping and Subjective Well-Being ranging from .18 to .38. After entering the variables into a stepwise multiple regression with the control expectancies variable, they found that the three variables added 9% to the model and all three were significant contributors to Subjective Well-Being.

When measuring strain Grob et al. (1999) asked respondents to think about strains and obstacles they had faced over the last 6 months in 11 domains of life (such as family, friends, and school), and assess the difficulty of these strains/obstacles. There was a significant negative relationship between Subjective Well-Being and strain ranging from $-.30$ to $-.51$. When included in a stepwise multiple regression, strain increased R^2 by 17% and was the strongest predictor of Subjective Well-Being.

2.3.6 Health and Risk Behaviours

In a study of 5032 students in Grades 9 to 12, Valois et al. (2001) reported a significant relationship between Life Satisfaction and violent and aggressive behaviours. Further, this relationship was mediated by gender and ethnicity. For all gender and ethnic groups (African American and Caucasian were represented in the study) physical fighting, carrying a weapon and carrying a weapon at school, and feeling unsafe at or going to and/or from school were associated with life dissatisfaction. For African American students and Caucasian males, fighting that required medical treatment and driving in a car while drinking were associated with life dissatisfaction. For Caucasian adolescents and African American male adolescents, carrying a gun, being threatened or injured by a person with a weapon on school property, and riding in a vehicle with someone who had been drinking, were all associated with life dissatisfaction. For Caucasian students and African American female students, having property stolen or damaged at school were associated with life dissatisfaction.

In a study utilising the same data from the 1997 South Carolina Youth Risk Behaviour Survey as Valois et al. (2001) above, Zullig, Valois, Huebner, Oeltmann, and Drane (2001) studied the relationship between Life Satisfaction and substance abuse in adolescents. They found that Life Satisfaction was significantly related to substance use in adolescence and the gender and ethnicity affects discussed above were also operating in this analysis. For all gender and ethnicities first cigarette smoked less than or equal to 13 years-of-age, chewing tobacco use in past 30 days, first alcohol drink less than or equal to 13 years-of-age, lifetime alcohol use, alcohol use in past 30 days, first marijuana use less than or equal to 13 years-of-age, lifetime marijuana use, lifetime cocaine use, lifetime crack or freebase cocaine use, lifetime inhalant use, and lifetime steroid use without prescription were all associated with dissatisfaction with life. For Caucasian males and females, and African American males smoked cigarette in past 30 days, first marijuana use later than age 13, first cocaine use less than or equal to 13 years-of-age age 13, first cocaine use later than age 13, cocaine use in past 30 days, and

illegal drug injection for lifetime, were associated with life dissatisfaction. For both Caucasian and African American females and Caucasian males, binge drinking in past 30 days, and marijuana use in past 30 days were associated with lower levels of Life Satisfaction. For Caucasian females and African American males, first cigarette later than age 13 was associated with dissatisfaction with life. For Caucasian and African American females, first alcohol drink later than age 13 was associated with life dissatisfaction.

2.3.7 Life Events

Analysis of the relationship between Life Satisfaction and life events by McCullough et al. (2000) found that major life events added 8.6% to the model, whereas entering daily events added an extra 12.9%. When looking at the categories of life events (positive and negative, daily and major) they found that only positive daily events related to Life Satisfaction.

Ash and Huebner (2001) investigated the relationship between environmental events and Life Satisfaction reports in 152 adolescents of mixed ethnicity and socio-economic statuses. They found a modest to moderate relationship between Life Satisfaction and life events. When entered into a hierarchical regression analysis, negative life events was a significant predictor of Life Satisfaction, explaining 19% of the variance. When the stressor subscale of the life events measure was added to the regression equation it added significant predictive power explaining an additional 19% of the variance. Positive life events significantly predicted Life Satisfaction accounting for 4% of the variance. The resources subscale of the life events measures added significant predictive power explaining an additional 8.4% of the variance. Ash and Huebner (2001) concluded that stressors with friends, health, home and school environments were uniquely associated with Life Satisfaction in adolescents.

2.3.8 Summary of Life Satisfaction and Adolescents

In summary, the past research into Life Satisfaction in adolescents has generally found that Life Satisfaction is significantly correlated with, or predicted by, self-esteem, self-concept, loneliness, social anxiety, shyness, attractiveness, self-affirmation, satisfaction with self, neighbourhood, friends, depression, anxiety, control, coping, strain, health and risk behaviours, and life events. Some of the research, however, has produced mixed results, which could be a consequence of adolescent Subjective Well-Being being a relatively young research field. There has not been enough time to complete confirmatory studies and establish concrete findings about adolescent Subjective Well-Being. Conflicting findings have also been reported for demographic variables (i.e., age, gender, socio-economic status, and ethnicity), personality, family, and school – all of which could be considered to be key areas of the adolescent's life.

The major criticisms to be made of existing research into the predictors and correlates of Life Satisfaction in adolescents are the small samples that are used; the unrepresentativeness of the samples that can limit the researcher in understanding Life Satisfaction at the population level and in other countries; and the tendency not to report the socio-economic and ethnic make up of the samples used in the research. Although Dew and Huebner (1994) attribute the lack of research into Life Satisfaction in adolescents to the lack of valid measures, the use of existing well-established measures on such small samples also hinders this research; For example, the seminal work in the field of adolescent Subjective Well-Being by Huebner (1991b) is based on a sample of only 79 students. Often samples in this field of research are not representative of a variety of socio-economic circumstances, if socio-economic statistics are presented at all. For example, results from Gilman et al. (2000a) on self-esteem, social stress, family, interpersonal relations, depression, anxiety, and locus of control, was conducted with a sample that was approximately 55 African-American students, who are traditionally of low socio-economic status. Findings of this nature can then only be applied

safely to similar samples and cannot be extrapolated to fit the whole United States population or groups in other countries.

2.4 Positive and Negative Affect and Adolescents

Limited studies have examined the Positive Affect of adolescents. Those that have been conducted generally report low levels of Positive Affect. In a study of 266 adolescents with a mean age of 16.22 ($SD = 1.28$), Huebner and Dew (1995) used the Positive and Negative Affect Schedule (PANAS) to measure adolescents' levels of Negative and Positive Affect. On a scale from 20 to 100, respondents reported a mean of 34.65 ($SD = 7.33$). Similarly, McCullough et al. (2000) used the PANAS to measure levels of Positive and Negative Affect in 92 adolescents from Grades 9 through to 12. Students reported a mean similar to that reported in Huebner and Dew's 1995 study of 35.69 ($SD = 6.13$).

Contrary to popular ideas on the experience of adolescence, Huebner and Dew (1995) and McCullough et al. (2000) reported lower Negative Affect means than those of Positive Affect indicating adolescents are feeling less Negative Affect than Positive Affect. In Huebner and Dew's (1995) study, respondents reported a mean of 22.62 ($SD = 7.63$), whereas McCullough et al.'s (2000) sample reported a mean of 22.98 ($SD = 7.04$).

2.4.1 Demographics

As noted previously, research into the area of Positive Affect in adolescents is limited, hence studies into the relationship between Positive Affect and demographics are also limited. The studies that have been conducted have found age to be unrelated to Positive Affect. Huebner and Dew (1995) studied the relationship between demographic variables and Positive and Negative Affect with 266 students of mixed ethnicity with an average age of

16.22 (SD = 1.28). They found nonsignificant age affects for demographics and both Positive and Negative Affect.

The results of studies that have examined the relationship between gender and Positive and Negative Affect have come up with mixed findings. Huebner and Dew (1995) did not find a significant gender or gender x age interaction affect. Verkuyten (1986) however, studied affect scores in a sample of 261 Rotterdam students and found that females reported lower affect scores. This finding was supported by two studies conducted with American students: Ashby Wills, Vaccaro, and McNamara (1992) studied 1289 students from Grades 8 through to 8 and found the females reported lower affect scores. This result should be interpreted cautiously however, as the sample was unrepresentative: 51% of respondents were Hispanic, 25% were African American, and the majority belonged to a lower socio-economic group. Cole, Peeke, Dolezal, Murray, and Canzoniero (1999) studied 436 Grade 7 and 8 students of mixed ethnicity and found a gender difference in mean levels of Negative Affect, with girls reporting higher levels.

In 1994 Ewart and Kolodner studied the relationship between gender and Negative Affect in a study of 228 9th Grade students. They found that girls experienced higher levels of Negative Affect than boys, however the results should be interpreted with caution: African American participants constituted 67% of the sample and most students were from low to middle income families.

Few studies have explored the relationship between socio-economic status and Positive and Negative Affect, but those that have, have found that the relationship is not significant. In their study of 266 16-year-olds, Huebner and Dew (1995) reported a nonsignificant relationship between Positive Affect and socio-economic status with a sample that covered a range of groups. Cole et al. (1999) in their study of 436 students from Grades 7 and 8 also found a nonsignificant relationship between socio-economic status and Negative Affect.

Studies into Positive and Negative Affect in adolescent populations have consistently found an ethnicity affect. Huebner and Dew (1995) reported an ethnicity affect on Positive Affect in their study, with African American participants experiencing higher levels of Positive Affect than Caucasian participants. Verkuyten (1986) supported this in his study of 261 students from Rotterdam. Some of the students belonged to an ethnic minority, and these students reported lower affect scores than Dutch students.

Ashby Wills et al. (1992) examined the relationship between Positive and Negative Affect and ethnicity, and found that a significant relationship existed. Caucasian and African American students reported higher levels of Positive Affect than Hispanic students. Hispanic and African American students reported higher levels of Negative Affect than Caucasian students.

Even though there seems to be evidence for an affect of ethnicity on adolescents' levels of Positive and Negative Affect, there is conflicting results regarding which ethnicity experiences more or less Positive and Negative Affect. Cole et al. (1999) found in their study of 436 Grade 7 and 8 students of mixed ethnicity, that Caucasian students reported higher levels of Negative Affect than African American students. This finding contradicted the finding of Ashby Wills et al. (1992) discussed above, and would suggest that there is possibly another factor in play that influences the relationship between ethnicity and Positive and Negative Affect.

2.4.2 Psychosocial

Huebner and Dew (1995) found that both Negative and Positive Affect correlated moderately with self-esteem. Higher levels of Positive Affect were associated with higher levels of self-esteem, whereas higher levels of Negative Affect were associated with lower levels of self-esteem.

McCullough et al. (2000), in a study of 92 high school students (Grades 9 to

12), found that self-concept was a significant predictor of Positive Affect, but did not significantly predict Negative Affect.

2.4.3 Institutional Experiences and Competencies

Very little research has been conducted into the relationship between Positive and Negative Affect and institutions in which adolescents take part frequently. Gavin and Furman (1996), however, studied the relationship between Positive Affect and family in a study of 60 middle class students aged 15 to 18, and found that female adolescents with more harmonious relationships with their mothers displayed higher levels of Positive Affect.

2.4.4 Mental Health

Huebner and Dew (1995) found that high Positive Affect was associated with lower locus of control scores; meaning that Positive Affect was related with a more internal locus of control. Conversely Negative Affect was associated with an externally based locus of control. The table displaying the results in their article, however, indicated that the relationship between Negative Affect and control did not reach significance.

2.4.5 Risk Behaviours

Little research has looked at the relationship between risk behaviours and Positive Affect but a considerable amount of research has been conducted on the relationship between Negative Affect and risk behaviours. Ashby Wills et al. (1992) studied substance abuse in 1289 adolescents (predominantly Hispanic – 51% – and African American – 25%) and found that substance use related to more Negative Affect and less Positive Affect, and was disproportionately elevated for students with a high Negative Affect and low Positive Affect combination. In 1994, Hann, Osofsky, Barnard, and Leonard studied dyadic affect regulation in three different care giving environments

and through the course of their investigation found that adolescent mothers reported higher levels of Negative Affect.

Ewart and Kolodner (1994) studied the blood pressure of 228 adolescents and found that Negative Affect correlated significantly with all ambulatory blood pressure means. Pinto and Whisman (1996) studied the Negative Affect levels of suicidal and nonsuicidal hospitalised adolescents and found that suicide ideation correlated significantly with Negative Affect. The sample consisted of 228 adolescents aged 13 to 18 in a children and adolescent psychiatric inpatient unit. In a study of bulimia nervosa with 218 females aged 16 to 18, Stice, Shaw, and Nemeroff (1998) found that Negative Affect predicted bulimic symptoms.

2.4.6 Life Events

In a study examining the relationship between life events, self-concept and Subjective Well-Being, McCullough et al. (2000) found that major life events did not add any predictive power over and above that of self-concept when explaining Positive Affect. Daily events however, added an additional 8% of explained variance, and upon examination of the betas McCullough et al. (2000) concluded that only negative daily events uniquely predicted Positive Affect. Their study also examined the relationship between Negative Affect and life events, and found that major life events did not significantly predict Negative Affect but, as with Positive Affect, daily events added significantly to the model above self-concept and major events. Ashby Wills et al. (1992) in a study of the role of life events in adolescent substance use with 1289 students (predominantly Hispanic – 51%), found that life events correlated significantly with both Positive and Negative Affect.

2.4.7 Summary of Positive and Negative Affect and Adolescents

In summary, previous research into Positive Affect and adolescents has generally found that this affective component of Subjective Well-Being is significantly related to ethnicity, self-esteem, self-concept, family, internal locus of control, substance use, and negative daily events. Some results from past studies, however, have produced mixed results, which could be expected due to the small number of studies that have examined Positive Affect in adolescents. Although ethnicity has been found to be related to Positive Affect, conflicting findings have been reported in the literature for gender.

Existing research into Negative Affect and adolescents has found that Negative Affect is significantly related to ethnicity, self-esteem, external locus of control, substance use, ambulatory blood pressure, suicide ideation, bulimia, and daily events. A reading of the literature suggests that there are mixed results for the relationship between some of the possible correlates and predictors and Negative Affect. As with Positive Affect, this finding could be expected to a degree due to the small number of studies that have thus far examined Negative Affect in adolescents. Again, conflicting findings have been reported in the literature for the relationship between gender and Negative Affect.

The major criticism to be applied to the research on the predictors and correlates of Positive Affect and Negative Affect in adolescents is the lack of research that has taken place. The focus of much research into the nature of Subjective Well-Being in adolescents has been on Life Satisfaction and researchers are yet to establish strong correlates and predictors of Positive Affect. Other criticisms of the current research into Positive and Negative Affect in adolescents are the small samples that are used; the unrepresentativeness of the samples; and the tendency not to report the socio-economic and ethnic make up of the samples used in the research.

2.5 Limitations of Research into Adolescent Subjective Well-Being

A significant limitation of research into adolescent Subjective Well-Being to date is that many studies have not examined both the cognitive and affective aspects of Subjective Well-Being: The core of adolescent Subjective Well-Being research has been conducted on Life Satisfaction only, leading to little related understanding of Positive and Negative Affect in adolescents. Most studies into adolescent Subjective Well-Being have also been only correlational, focusing on variables that may correlate with Life Satisfaction, Positive Affect, or Negative Affect: Few causal or regression studies into the Subjective Well-Being of adolescence have been conducted, which has resulted in a lack of strong findings and identification of predictors of Subjective Well-Being. Further, most studies have summed their scales in order to get a single value for respondents on the scale. This ignores the fact that some items may be weighted as more important to the measurement of the concept than others. Lucas et al. (1996) noted that little attention has been given to the finding that the cognitive and affective components of Subjective Well-Being possess discriminant validity. There is a need to see if the predictors and correlates of adolescent Subjective Well-Being that have been established relate to the three components of Subjective Well-Being – Life Satisfaction, Positive Affect, and Negative Affect – in different ways and to varying degrees.

Another issue worth noting is that, with a few exceptions, studies have been conducted with samples that are small and/or unrepresentative. For example see Adelman et al., 1989; Ash and Huebner, 2001; Ashby Wills et al., 1992; Ewart and Kolodner, 1994; Gilman et al., 2000a, 2000b; Huebner, 1991b; and McCullough et al., 2000. Although the findings from these studies may be sound for the population from which they are drawn, they may not be applicable to the Subjective Well-Being of the Australian population.

As yet, the relationship between Subjective Well-Being and demographic variables has yet to be clearly established with regard to adolescents. There are mixed results for Life Satisfaction and age, socio-economic status, and gender.

Many areas important to adolescent development are not covered in the adolescent Subjective Well-Being literature. Students spend the bulk of their days with friends and in the school community and it is important that their competencies and experiences in these institutions are examined to see how they affect students' Subjective Well-Being. It has been the trend of adolescent Subjective Well-Being researchers to take areas that have been found to correlate with Subjective Well-Being in adults and apply them to adolescents when they may not be the most appropriate theories or indicators. Research needs to be conducted with indicators appropriate to this age group.

Research into the Subjective Well-Being of adults has found personality to be one of the strongest predictors of Subjective Well-Being, yet it is an area that has not been explored in depth with adolescents. This is perhaps due to the lack of research into the Positive and Negative Affect of adolescents, and these components of Subjective Well-Being have been found to be linked with personality. In the light of these limitations, and from a reading of adolescent Subjective Well-Being literature, the research questions in Figure 2.1 were developed for this study.

1. What is the level of Subjective Well-Being of Tasmanian adolescents?
2. Are previous correlational findings supported in a larger and more representative sample?
3. What are other possible correlates and predictors of adolescent Subjective Well-Being? Is there a relationship between Life Satisfaction, Positive and Negative Affect, and domains important to adolescents (family, friends, school, for example)?

Figure 2.1. Research Questions for Current Study.

Research on both Subjective Well-Being and adolescents may help identify the possible causes and correlates of adolescent Subjective Well-Being. Four theories are summarised in the following section. Some are taken from research into the Subjective Well-Being of adults, whereas others are taken from adolescent development theories.

2.6 The Personality Model

Research over the last 25 years into the causes and correlates of Subjective Well-Being in adults has found a significant relationship between personality and Subjective Well-Being, and researchers have concluded that a person's experience of Positive Affect, Negative Affect, and Life Satisfaction depend more on temperament than on his or her life circumstances. Specifically, extraversion has been found to be associated with Positive Affect, whereas neuroticism has been found to be associated with Negative Affect (e.g., Costa & McCrae, 1980; Emmons & Diener, 1985, 1986; Fujita, 1991; Suh, Diener, & Fujita, 1996).

The argument that extraversion and neuroticism are strongly related to Subjective Well-Being was first hypothesised by Wilson in 1967. His research concluded that a happy person “emerges as a young, healthy, well-educated, well-paid, *extroverted*, optimistic, worry-free, religious, married person with high self-esteem, high job morale, modest aspirations, of either sex and a wide range of intelligence” (Wilson, 1967, p. 294) [*italics added*].

Costa and McCrae (1980) examined the possible relationship between affect and personality further. They hypothesised that each aspect of affect would be influenced by individual and independent dispositions as Bradburn (1969) had found, and specifically that extraversion predisposed people toward experiencing higher levels of Positive Affect, and neuroticism predisposed people toward experiencing higher levels of Negative Affect. From their study Costa and McCrae concluded that in all of their cases extraversion was more strongly correlated with Positive Affect than Negative Affect, and

neuroticism was more strongly correlated with Negative Affect than Positive Affect. They concluded that Positive and Negative Affect are the direct outcomes of extraversion and neuroticism. According to Costa and McCrae Positive and Negative Affect are “subjectively ‘balanced’ by the individual to arrive at a net sense of Subjective Well–Being, which may be measured as morale, life satisfaction, hopefulness, or simply happiness” (Costa & McCrae, 1980, p. 675). This view has been supported by Schimmack, Radhakrishnan, Oishi, Dzokoto, and Ahadi (2001), who found that when making Life Satisfaction judgements people rely heavily on the balance between Positive Affect and Negative Affect, also termed hedonic balance. They reported that people retrieve memories from the past of both pleasant and unpleasant events and assess which outweighs the other. If people’s pleasant memories outweigh their negative memories they will have a high level of Life Satisfaction. A graphic representation of Costa and McCrae’s (1980) model is shown in Figure 2.2.

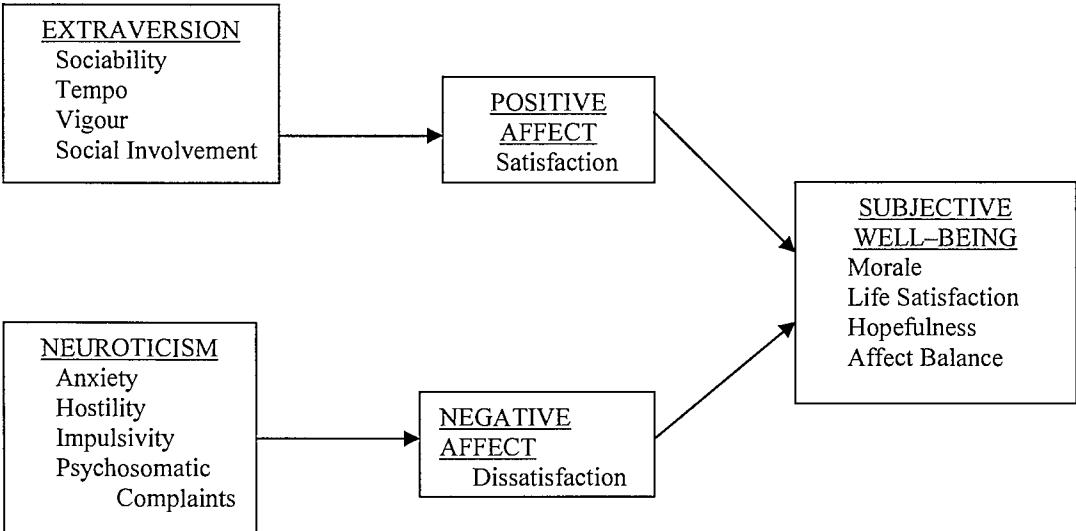


Figure 2.2. Model of the Relationship of Personality to Subjective Well–Being, adapted from Costa and McCrae (1980).

Warr et al. (1983) tested the findings of Costa and McCrae (1980) by recruiting 520 undergraduates from Sheffield University with a median age of 20 years. The sample was split evenly across genders (49% female, 51% male). Their findings regarding the relationship between extraversion and

neuroticism, and Positive and Negative Affect supported the findings of Costa and McCrae (1980). Extraversion was correlated positively with Positive Affect, and neuroticism was correlated positively with Negative Affect. Warr et al. (1983) noted that the measure used in their study to assess personality – the EPQ – only measures the sociability component of extraversion. Therefore they concluded that sociability predicted Positive Affect as measured in their research.

In 1985(a) Emmons and Diener attempted to build on the personality–affect theory by investigating the correlates between extraversion and neuroticism and the two components of affect using daily mood reports as well as personality inventories. Their study utilised two samples of 74 and 62 University of Illinois undergraduates, who held a variety of majors. Confirming Costa and McCrae's (1980) findings, they found that sociability and extraversion correlated significantly with Positive Affect, but not Negative Affect, whereas emotionality and neuroticism correlated significantly with Negative Affect, but not Positive Affect. Emmons and Diener concluded that interpersonal competencies were related mainly to Positive Affect, whereas internal states such as anxiety and emotionality were most related to Negative Affect. A person who experienced high levels of Positive Affect would be extraverted, active, enthusiastic, managerial–autocratic and would have cooperative interpersonal styles. They also concluded however, that people who do experience high levels of Positive Affect do not necessarily experience less anxiety, or have higher self–esteem than people with low levels of Positive Affect. In relation to Negative Affect, Emmons and Diener concluded that people with higher levels of Negative Affect would be emotionally reactive, sensitive interpersonally, tense, worriers, impulsive, aggressive and untrusting. These individuals would also have low self–esteem and hold the belief that outcomes in their lives were not under their control.

In 1986 Emmons and Diener critiqued aspects of Costa and McCrae's (1980) study by pointing out that they failed to distinguish between the two separate components of extraversion (impulsivity and sociability) as measured by the

Eysenck Personality Inventory (EPI). It was the aim of Emmons and Diener to both build on the theory linking personality traits to Positive and Negative Affect and to correct this error by examining the separate contribution of impulsivity and sociability to affect. Their study confirmed previous findings that extraversion correlated significantly with Positive Affect, but not Negative Affect, and neuroticism correlated significantly with Negative Affect, but not Positive Affect. In relation to the influence of sociability and impulsivity, they found that sociability correlated significantly with Positive Affect, whereas impulsivity was associated more with Negative Affect than Positive Affect.

Since the work of Costa and McCrae and Emmons and Diener, other researchers have supported their findings and developed the personality-affect theory further. In 1990 Larsen and Kasimatis found that extraverts experienced more positive well-being than introverts every day. Also in 1990, Pavot, Diener, and Fujita reported that extraverts experienced higher levels of Positive Affect when tested at random moments in time. Fujita (1991) conducted two studies on 90 and 182 undergraduate students taking Introduction to Psychology. Using both observer and daily data, he confirmed the finding that extraversion correlated strongly with Positive Affect, whereas neuroticism correlated strongly with Negative Affect. He also concluded that Negative Affect and neuroticism might not be empirically separable. In 1992 Diener, Sandvik, Pavot, and Fujita found that extraversion predicted a person's level of Subjective Well-Being regardless of his or her living circumstances and that extraverts reported higher levels of happiness in a variety of social settings. Fujita (1993) used a latent trait approach to Subjective Well-Being in order to correct for random errors of measurement. He found that extraversion and Positive Affect correlated in the vicinity of .80. Suh et al. (1996) studied the relationship between personality and affect in 222 psychology majors aged 20 to 21. Most respondents were Caucasian. Using multiple regression they found that personality was a significant predictor of current levels of Subjective Well-Being, and that extraversion predicted both Positive Affect and Life Satisfaction.

How is personality relevant to adolescent Subjective Well-Being? As Watson and Walker (1996) note, the popular belief that personality is developed in people by their 20s may not be true. Several studies have concluded that personality continues to develop throughout the 20s (e.g., Costa & McCrae, 1994; Finn, 1986; Haan, Millsap, & Huebner, 1986; Helson & Moane, 1987; McCrae & Costa, 1990; Siegler, Zonderman, Barefoot, Williams, Costa, & McCrae, 1990). Haan et al. (1986) stated that the most marked changes in personality happen when people make large role shifts, for example getting married and starting full time work. McCrae and Costa (1990) suggested that adulthood does not begin until the age of 30. These findings would all suggest that personality and Subjective Well-Being may not be stable in adolescence and during this time the strength of the relationship between the concepts may not be as strong.

2.6.1 Limitations to the Personality Model

The major limitation to the personality-affect model is a sampling issue rather than a conceptual one. The major works on the relationship between Positive Affect and Negative Affect and personality use limited data samples. Costa and McCrae's (1980) seminal study of the influence of extraversion and neuroticism on happiness utilised a sample of 902 men. The men were largely white veterans aged from 35 to 85. Costa and McCrae (1980) noted themselves that the lowest socio-economic groups were not represented in their study. As with many of Diener's studies, his work with Emmons on the personality correlates of Subjective Well-Being was conducted with undergraduate students at the University of Illinois, as was their work on the influence of impulsivity and sociability on Subjective Well-Being. Although at times the students studied a diverse range of majors, the majority of the samples were taken from psychology students including those participating in teaching courses on Subjective Well-Being. Diener noted this fact in his review of Subjective Well-Being, stating that

A number of studies have appeared in recent years that examine the influence of personality on SWB [Subjective Well-Being]. Because these studies are usually conducted with fewer broadly representative samples than those that examine demographic

factors, the conclusions should only be given credence if the results are replicated across a number of studies with varying types of samples (1984, p. 558).

2.7 The Life Events Model

Most research into Subjective Well-Being has looked only at *internal* causes of happiness such as personality and self-esteem. Kamman and Campbell (1982) posited that happiness is caused mostly by internal states and is not due to external life circumstances. Aristotle posited that in assessing a person's level of happiness his or her whole life had to be taken into account. He believed that it was only when a man was dead could he be called happy. Emmons and Diener (1985) in a study of factors that predicted satisfaction judgments found that objective factors were often significant predictors of Subjective Well-Being. They concluded that instead of debating if external factors impact Subjective Well-Being, researchers should explore when they do and when they do not. The studies referred to in sections 2.3 and 2.4 on the correlates of Life Satisfaction, Positive Affect, and Negative Affect have highlighted the impact of life events on adolescence, especially that of McCullough et al. (2000).

Headey and Wearing (1992) also queried findings by Subjective Well-Being researchers regarding the strength of life event affects on Subjective Well-Being. They cited and questioned Costa and McCrae's (1980) finding that events had no influence on Subjective Well-Being once extraversion and neuroticism affects were taken into account. They conducted a hierarchical regression analysis with the personality variable entered first and the life events variable entered second, to ascertain the amount of influence events had once personality influences are controlled. They concluded that events did have a significant affect on Subjective Well-Being, and found that both favourable and adverse life events substantially affected Life Satisfaction. Positive Affect was only influenced by favourable events, whereas Negative Affect was only influenced by adverse events.

Warr et al. (1983) studied the affects of life events on Positive and Negative Affect in a sample of 520 undergraduates from the University of Sheffield. Life events were measured by counting the number of desirable and undesirable events. They found that the number of desirable events correlated positively with Positive Affect, and the number of undesirable events correlated positively with Negative Affect. As expected, Warr et al. (1983) found that the number of desirable events was not correlated with the number of undesirable events respondents experienced.

Emmons (1991) endeavoured to advance the field further by adding an additional variable to the model – personal strivings. Personal strivings were defined as “what a person is typically or characteristically trying to do” (Emmons, 1986, p. 1059). He theorised that the impact of events on Subjective Well-Being depended on the extent to which the event impinged on a person’s commitments, therefore events should be appraised with respect to their significance to personal strivings. His research found that between-subjects power strivings (such as concern with establishing, maintaining, or restoring power, and impact on others) related positively with daily Negative Affect, whereas affiliative strivings (such as concern with establishing, maintaining, and repairing interpersonal relationships, and seeking the approval and attention of others) was positively and significantly related to Positive Affect. Emmons also reported positive relationships between bad interpersonal events and Negative Affect, and surprisingly, between good interpersonal events and Negative Affect. This relationship became negative, however, when total events and total affect were controlled for. Within-subjects, Emmons (1991) found that Positive Affect was related positively to good interpersonal events, and Negative Affect was positively related to bad interpersonal events. He concluded that his hypothesis was supported: People experienced affect in relation to events that impinged upon their strivings. He did note however that strivings may not always mediate the relationship between life events and Subjective Well-Being.

Brief, Houston Butcher, George, and Link (1993) argued that the traditional division between top-down and bottom-up theories of Subjective Well-Being

needed to be closed and the possibility of applying an integrated model to Subjective Well-Being needed to be explored. Their research supported the application of an integrative framework to Subjective Well-Being and they concluded that personality and objective life circumstances both influence how a person interprets his or her life circumstances, which, in turn, directly influences Subjective Well-Being.

Suh et al. (1996) examined the relationship between events and Subjective Well-Being in regard to the proximity of events in time. They endeavoured to find out whether recent events had more impact on Subjective Well-Being than less recent events. They noted the lack of research into the relationship between life events and Subjective Well-Being and posited that it may be due to the findings that objective indicators do not have a large influence on Subjective Well-Being over long periods of time (e.g., Costa, McCrae, & Zonderman, 1987; Diener et al., 1992). Suh et al. (1996) found that only recent events influenced Subjective Well-Being, and events longer than six months ago had no correlation with Subjective Well-Being. Events affected Positive Affect for less than six months. The authors reported that events predicted Life Satisfaction for less than six months, but the correlations reported in the article were not significant. Events affected Life Satisfaction and Negative Affect for three months or less. They also found a significant correlation between Negative Affect and bad events that occurred three to four years in the past.

In relation to the affects of life events on Subjective Well-Being in adolescents, little work has been done. There is a need to examine how the many environmental changes that occur in adolescence (e.g., changing schools, friendship problems, poor grades) affect adolescents in a time when they are seeking independence and forming identity. With this in mind, questions were added to the questionnaire assessing various life events.

2.7.1 Limitations of Life Events Model

Limitations of work into the affects of life events on Subjective Well-Being in adults are again methodological. Most studies have been conducted on non-representative samples of university psychology students. One aim of the Life Events model was to overcome the dominance of internal causes of happiness in the research. One criticism that could be made of this model is that in trying to right this wrong the theorists have gone to the other extreme: There is a need to find a balance between the internal and external causes of happiness. Another limitation of the Life Events model is that it is a new area of Subjective Well-Being that has not been tested often, even with adults. All findings will need further exploration and testing.

2.8 The Institutional Experiences and Competencies Model

2.8.1 Family

The happiest moments of my life have been the few which I have passed at home in the bosom of my family.

– Thomas Jefferson (1762 – 1826)

McInerney and McInerney (1998) posited that parent-adolescent relations are probably the most critical factor in an adolescent's identity development. Heaven (2001) stated that the family is an important support system to adolescents. Noller and Patton (1990) remarked that the quality of an adolescent's relationship with his or her family is of vital importance. The relationship between adolescents and their families were once believed to be full of conflict but are actually more positive than once believed (Noller & Patton, 1990; Santrock, 1998; Steinberg, 1990). Heaven (2001) cited research that has found that most adolescents have positive and favourable attitudes towards their families.

In a study of 139 14-year-old males and females and their parents, Baumrind (1991) found that parents' level of responsiveness (e.g., consideration and

support) was associated with adolescent social competence, above any other variable. Studies have also shown that parenting styles can affect adolescent development: Keener and Boykin (as cited in Santrock, 1998) found that adolescents experienced lower levels of adjustment when parents were psychologically manipulative and imposed feelings of guilt on the adolescent. Conversely, parents being aware of the activities of their adolescent children, trying to control deviance, and not dealing with the adolescent harshly, were associated with better adjustment in adolescents. Noller and Patton (1990) cite research that has found that the quality of the family relationship is the major contributor to differences in adolescent development.

Santrock (1998) noted that attachment to parents might facilitate adolescent social competence and well-being when conceptualised as self-esteem, emotional adjustment, and physical health (e.g., Allen and Kuperminc, as cited in Santrock, 1998; Juang and Nyugen, as cited in Santrock, 1998). Santrock (1998) cites research findings that adolescents who are satisfied with the amount of help they receive from their parents report higher levels of emotional well-being (Burke and Weir, 1979), and that higher levels of self-esteem and emotional well-being are associated with having secure relationships with parents (Armsden and Greenberg, 1987). Allen and Bell (as cited in Santrock, 1998) posit that adolescent attachment to parents may give adolescents a secure foundation that allows them to explore and master new environments in ways that are psychologically healthy. Santrock (1998) adds that attachment to parents may also protect adolescents from feelings of anxiety and depression that may come from the transition from childhood to adulthood.

Questions were entered into the present study's questionnaire to address issues of parental support and attachment to ascertain the relationship between these variables and Subjective Well-Being. Questions regarding the structure of the family unit were also added (for example, "Are your parents separated or divorced?"). These questions were added as Santrock (1998) noted that in some cases siblings may have stronger socialising influences on adolescents than parents, and that birth order may be a strong predictor of adolescent

behaviour. Santrock (1998) also cited the work of Hetherington (1995) into the affects of separation and divorce on adolescents. He stated that the separation or divorce of an adolescent's parents is an emotional event that leaves the adolescent in an environment immersed with conflict. Heaven (2001) stated that disturbance in the family because of separation or divorce has negative implications for adolescent functioning, adjustment, and identity achievement. Hetherington (1995) found that living with a non-remarried mother had long-term negative effects on boys, whereas at the onset of adolescence early maturing girls who parents were divorced experienced negative effects on their lives (cited in Santrock, 1998).

2.8.2 Friends

Friendship improves happiness and abates misery, by the doubling of our
joy and the dividing of our grief.

– Cicero (106 – 43BC)

Researchers have shown that peers play a vital role in the psychological, emotional, and social development of adolescents (Heaven, 2001; McInerney & McInerney, 1998). This idea is not new: Aristotle and Epicurus believed that friendship was crucial to happiness. The relationship between friends and adolescent development is to be expected considering the amount of time that adolescents spend with peers (Heaven, 1990, 2001; Savin-Williams & Berndt, 1990). Condry, Simon, and Bronfenbrenner (as cited in Santrock, 1998) found that over the course of one weekend adolescents spent more than twice as much time with friends than with their parents. As Cotterell (1996) stated, “much of early and middle adolescence is occupied with the task of making friends, and understanding how friendship relations work” (p. 64). Lack of time with peers, or social isolation, has been linked to a range of disorders such as delinquency and depression (Hops, Davis, Alpert, & Longoria, as cited in Santrock, 1998; Kupersmidt & Coie, 1990; Roff, Sells, & Golden, 1972) and social isolation or being rejected by peers can make adolescents feel lonely or hostile as well as influencing an individuals subsequent mental health (Heaven, 2001; Santrock, 1998). Buhrmester and colleagues

(Buhrmester, as cited in Santrock, 1998; Buhrmester & Carbery, as cited in Santrock, 1998; Yin, Buhrmester, & Hibbard, as cited in Santrock, 1998) reported that adolescents without close friendships reported feeling lonelier and more depressed and also experienced lower levels of self-esteem than adolescents with intimate friendships. As with attachment to families, closeness and importance of friendships allow and cause adolescents to develop more sophisticated social competencies (Santrock, 1998). As noted earlier in this chapter, this is not an area that has been studied in depth by Subjective Well-Being researchers.

Traditionally, adolescent development theorists have believed that the adolescent's move away from the family as the primary reference group towards the peer group meant breaking away from the family completely; the two institutions were seen to be incongruent (Coleman, 1980; Noller & Patton, 1990). As Santrock (1998) noted however, adolescents live in a connected world and they stay connected to both groups, therefore a more moderate position may be closer to the truth (Noller & Patton, 1990). In fact, Armsden and Greenberg (1984) found that secure attachment to an adolescent's parents related to the adolescent's positive peer relationships. Dekovic and Meeus (1997) stated that the quality of parent-adolescent relationships, and the quality of peer relationships are strongly linked. Further, the more positive the relationships adolescents have with their parents, the better their peer relations will be.

Sullivan (1953) stated that there is an increased dependency on friends to fulfil needs essential to a person's emotional well-being such as tenderness, playful companionship, and social acceptance. Friends help adolescents move toward psychological growth and social maturity (Savin-Williams & Berndt, 1990). Santrock (1998) adds that the quality of a person's friendship is strongly linked to feelings of well-being, more so in adolescence than childhood (Buhrmester & Carbery, as cited in Santrock, 1998). Friends can become agents in building each other's sense of identity (Santrock, 1998). As this is such an important domain of an adolescent's life, questions were added to the present study's questionnaire addressing the number of friends

respondents had, the benefits of friendships, and assessments of their competencies at making and keeping friends.

2.8.3 School

Advanced education may or may not make men and women more efficient; but it enriches personality, increases the wealth of the mind, and hence brings happiness.

– William Lyon Phelps (1822 – 1900)

The influence of the school on the adolescent is more powerful today because more individuals are in the school system, and for a longer time (Cotterell, 1996; Santrock, 1998). As Cotterell (1996) stated, the school is the only institution apart from the family that deals with the adolescent on a personal basis. There is an unresolved debate on the affects of school size on adolescents, but it is generally believed that smaller schools are optimal and possibly promote more prosocial and less antisocial behaviour. The affects of school size however, on adolescent behaviour can be mediated by the response of the school (Santrock, 1998). Eccles and colleagues (Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, & Mac Iver, 1993) believed that the difficulties that adolescents can have in the school setting are due to the mismatch between the person and the environment; the school environment does not match the needs of the adolescent, and this can be harmful to adolescent development. Giaconia and Hedges (1982) however, found that positive affects on adolescents' self-concept were associated with individualised instruction and the role of adolescents in learning (i.e., the degree the adolescent is an active agent in learning). Questions were added to the questionnaire used in this study that addressed students engagement in activities at school and self-assessed success in core school subjects.

2.8.4 Limitations to the Institutional Experiences and Competencies Model

The institutions examined in this study are yet to be tested in relation to adolescence and Subjective Well-Being. Research into the institutions

adolescents are associated with and the relation of these institutions to Subjective Well-Being is exploratory, and even if results are positive they will need further testing. Another limitation of this model is that there are other institutional areas that may be important to adolescent Subjective Well-Being that are not tested in the current study. For example, future research should consider examining the effects of peer groups, dating, sexuality, adolescent parenthood, and blended families on the Subjective Well-Being of adolescents.

2.9 The Goal Model

Twentieth century philosopher Roger Montague acknowledged the importance of having and achieving goals. He believed that achieving *all* goals most important to a person is crucial to happiness: “Even if you have a large aggregate of pleasure over pain, you cannot, logically cannot, be happy if certain of your crucial goals remain unachieved” (Barrow, 1980, p. 47). The “aggregate of pleasure over pain” could be associated with the balance between Positive Affect and Negative Affect, and current Subjective Well-Being researchers have found a relationship between goals and Subjective Well-Being. Diener et al. (1999) stated that individual behaviour is best understood by examining people’s goals, as well as the types of, rate of progress towards, structure of, and success at reaching goals, and their affect on emotions and Life Satisfaction.

Emmons (1986) conducted research on the relationship between personal strivings, personality, and Subjective Well-Being with 40 University of Illinois undergraduates. He found that the simple presence of goals was associated with higher levels of Subjective Well-Being. In Emmons’ research personal striving characteristics accounted for greater percentages of variance in Subjective Well-Being than personality traits. He concluded “subjective well-being might be better understood in terms of individuals’ perceptions of their idiosyncratic goal strivings rather than in terms of nomothetic personality traits” (1986, p. 1064). Emmons’ research found that specific

characteristics of goals predicted Subjective Well-Being, and that different characteristics influenced Positive Affect, Negative Affect, and Life Satisfaction in different ways. He found that simply having goals that are valued was associated with higher levels of Life Satisfaction regardless of past success at achieving goals. He also found that people with high levels of Life Satisfaction see their goals as important, valued, and unlikely to produce conflict. Emmons' research found that Positive Affect was associated with successful goal achievement in the past, whereas Negative Affect was associated with a low perceived probability of success in achieving future goals. Negative Affect was also associated with conflict among goals and ambivalence towards goals.

In 1998, Brunstein, Schultheiss, and Grassman found that motive and needs are vital to the relationship between goals and Subjective Well-Being. They found that progress toward goals that were congruent with needs and motives were related to Subjective Well-Being. They posited that the individual has conscious or unconscious needs, and it is the meeting of these needs that leads to higher levels of Subjective Well-Being. They concluded that even if people achieve goals, but they are incongruent with the individuals' needs, success at achieving them will not lead to an increase in Subjective Well-Being.

Diener and Fujita (1995) hypothesised that situational contexts may influence a person's ability to reach goals. With this in mind they studied the affects of resources on Subjective Well-Being and goals, and theorised that demographic variables such as income may affect Subjective Well-Being only when they impede or help progress towards goals. They thought this theory might account for the low levels of influence of demographic variables on Subjective Well-Being that have been reported. Diener and Fujita (1995) found that resources predicted Subjective Well-Being more strongly when they were relevant to an individual's goals. They also concluded, interestingly, that the causal direction of the relationship could go either way: They found that happy people selected goals for which they had the

appropriate resources. Subjective Well-Being, therefore, may lead to goal attainment as well as be caused by it.

The relationship between goals and Subjective Well-Being is hence more complex than simply achieving the goals a person sets. The goals must be appropriate to the needs and motives of the individual, and appropriate to the context of a person's life (Diener et al., 1999). Having goals and the resources to meet them has not been found to guarantee happiness. Diener et al. (1999) noted that Subjective Well-Being has been conceptualised as a yardstick that measures an individual's proximity to achieving his or her goals. Hsee and Abelson (1991) found that the rate of progress towards a person's goals explained differences in affect levels, and Carver and Scheier (1998) found that the difference between a person's goals and life circumstances were associated with both Positive and Negative Affect.

This view may be too simplistic however. As noted above, Emmons (1986) found that different characteristics of goals related to the components of Subjective Well-Being in different ways. Diener and Fujita (1995) found that the relationship between goal attainment and Subjective Well-Being might be reciprocal. Pomerantz, Saxon, and Oishi (1998) found that people who have more goals that they consider important have higher levels of Life Satisfaction and Positive Affect, but more symptoms of anxiety. Research on the relationship between goals and Subjective Well-Being has resulted in many interesting findings but, as Diener et al. (1999) stated, more details are needed. This is a complex relationship that needs further exploration and with that in mind questions were added to the present study's questionnaire on progress towards goals, future orientation, and influences on goal setting.

2.9.1 Limitations of the Goal Model

Research into telic models of Subjective Well-Being is still in the beginning stages. As such, research into the relationship between goals and Subjective Well-Being in adults is yet to establish the nature of this relationship. It is an

area that needs further exploration. Another limitation of this model is that there may be areas of goal setting and achievement that are applicable to adolescents that are not part of the adult theories and as such have not yet been explored.

2.10 Conclusion

This chapter has outlined the aim of the thesis research to move toward a focus on positive aspects of adolescent experiences, to which the concept of Subjective Well-Being is apt. The thesis follows Diener's conceptualisation of Subjective Well-Being as a tripartite concept including Life Satisfaction, Positive Affect, and Negative Affect. Correlates of adolescent Life Satisfaction have gained the most attention from adolescent Subjective Well-Being researchers, with limited research into the causes and correlates of Positive Affect and Negative Affect. The literature presented in the chapter from adult Subjective Well-Being research and adolescent development theories assists in identifying possible correlates and predictors of adolescent Subjective Well-Being. The thesis now moves on to discuss both the methodology and methods used in the research.

Chapter 3: Methodology

3.1 Introduction

The previous chapter outlined the literature on adolescent Subjective Well-Being, listed the research questions central to the dissertation, and summarised theories of adolescent development and adult Subjective Well-Being that may assist the identification of possible correlates and predictors of Subjective Well-Being in adolescents. The aim of this chapter of the thesis is to discuss both the methodology and methods used in the research project. A brief history of social and survey research are given, and theory and questionnaire construction are discussed. The research design is outlined, including the introduction of the Adolescent Health, Education, and Well-Being Project (AHEWP), the wider project within which this dissertation is located. Sample and procedural details are given and data analysis techniques are discussed.

3.2 Theoretical Framework

Within the quantitative component of the AHEWP – and therefore this dissertation – respondents are not seen to be active in constructing their happiness. As discussed in Chapter 1, assessments of happiness are gathered through the measurement of observable concepts from which underlying constructs are inferred. Respondents are not directly asked what makes them happy. This approach locates the project, and therefore the dissertation, inside a positivistic framework. The positivist theoretical framework often partners survey research. De Vaus (2002) stated that survey research is inherently positivistic. Survey research suits the current study as it allows for the use of large samples, which are important for the descriptive and exploratory nature

of the thesis. Survey research also allows for the collection of samples that are used to describe a population that is too large to observe directly (Babbie, 1992).

3.3 Theory Construction

Theory is the end that can become the means in social research. There is a constant interplay between theory construction and research – theory construction guides research by providing guidelines and assumptions, and research in turn helps establish and revise theories. According to Sarantakos (1993), theory is “a set of systematically tested and logically interrelated propositions that have been developed through research and that explain social phenomena” (p. 9). Theory construction is based partly on the neopositivist belief that similarities exist that are observable between nature and social science and are applicable to society, and that research should be as objective as possible and should avoid speculation (Sarantakos, 1993). In practice, theory construction gives systematic, clear, and formal procedures to follow in all stages of research. The aim of these guidelines is to end with a process that is clear and objective. Further, the differences between social philosophy and “abstract speculation” must be made clear. Sarantakos (1993) posits that theory construction helps to create possible explanations of social phenomena that can be assessed, revised, reassessed and formulated into a theory. During the process of theory construction observations are assessed to see if they are one-off anomalies or indicative of a general underlying factor. If there is an underlying factor at work, there is greater understanding and meanings in these observations. It can be a difficult process to find out what this underlying commonality or factor is, and as de Vaus (2002) stated, it is partly art and partly science.

There are two processes through which theory can be constructed – inductive reasoning and deductive reasoning. As deductive reasoning is used in this study only its methods will be discussed. Opinions on the processes involved in developing a theory using deductive reasoning vary among social science

researchers. The method outlined here is based on the works of Sarantakos (1993), Babbie (1992) and de Vaus (2002). There are four stages in the process, and there is debate on which of the first two stages, labelled Phase 1 and Phase 2, occurs first. In this discussion Babbie's (1992) order of procedures is used. More often than not creating a theory begins with a researcher's interest in an aspect of the real world, and as deductive reasoning begins with a theoretical explanation, the researcher is propelled by his or her interest into Phase 1. This phase involves taking an inventory of what is known about the topic of interest, sourcing from scholarly works, opinions, previous research, and considering the researcher's own intuitions and ideas. In the case of this study, an interest in Subjective Well-Being lead the research into an examination of theoretical explanations of the causes of Subjective Well-Being in adults, as well as theoretical explanations regarding adolescence.

Phase 2, the development of concepts, "enable[s] us to construct our experience and structure our perception of reality" (Sarantakos, 1993, p. 10). Concepts can be either observable or constructed. Observable concepts can be perceived by the senses (e.g., violence), whereas constructs are not observable to the senses but can be inferred from the observable concepts (e.g., hatred). It is difficult to determine whether a concept is observable or constructed, and many concepts are a combination of both (e.g., love). The concepts used in the current study of Life Satisfaction, Positive Affect, and Negative Affect, are constructs inferred from observable concepts. Phase 3, the development of classification systems, allows the researcher to understand the concepts better and condense them into categories or systems. This process helps the understanding of the structure and composition of the reality the researcher is observing (Sarantakos, 1993). By moving from the specific to the general the researcher has an objective context in which to view the observations. The method by which concepts are compressed into categories depends on the criteria the researcher adopt. This is informed by the purpose of classifying the concepts. Phase 4, consists of the development of propositions through the gathering together of previous knowledge about the relationships between concepts. A proposition is a "statement which specifies

the nature of a relationship between two factors” (de Vaus, 2002, p. 14). The constructs remain at an abstract or conceptual level within propositions and are not directly observable (e.g., hatred). Whereas concepts and classification systems address the question of what, propositions address the question of why (Sarantakos, 1993). They have limited explanatory powers but can still answer certain questions (Babbie, 1992; Sarantakos, 1993).

Keeping Sarantakos’ definition of theory in mind, researchers differ on the systematic method of presenting propositions. There are two schools of thought – those who believe that propositions should be arranged in axiomatic formats, causal process formats, and typological or classification formats, and those who endorse hypothetico–deductive and pattern models. In hypothetico–deductive models theory is treated as hierarchical or deductive – propositions must move from the more general to the more specific and lower propositions must be derived from higher propositions. Pattern models have two components – theoretical and empirical. The theoretical aspect consists of relationships that exist in the empirical world, whereas the empirical facet treats a phenomenon as a specific instance of the relationship in the theoretical model. A further development of propositions is to translate the constructed concepts into something directly observable, something that can be quantified. The new “testable propositions” (de Vaus, 2002) consist of indicators of the constructed concepts.

The explanations that evolve through the process of theory construction need rigorous testing. After testable propositions are formed data are collected and analysed. The data provide a critical test of the theory and the goal is to see if there is support in the data for the testable propositions, then in turn the conceptual propositions, and then the initial theory (de Vaus, 2002). A theory is judged to be productive if its interpretation is meaningful or if it adds new knowledge to existing information (Sarantakos, 1993). If there is support for the propositions, the theory is deemed to be correct. If there is not support, the process of theory construction starts again keeping in mind not only that the original theory might have been wrong but also that the prediction and/or method of data collection may be at fault.

3.4 Research Design

The data that are analysed and discussed in this thesis are embedded within the AHEWP, a collaborative project funded by the Australian Research Council at the University of Tasmania, with the Tasmanian Department of Education and the Tasmanian Department of Health and Human Services as Industry Partners.

3.4.1 Background of the AHEWP

The AHEWP originated from The Healthy Communities Survey, an examination of the health and well-being of Tasmanian adults. One interesting result to come from this study was a negative and statistically significant relationship between educational attainment, as measured by years of schooling, and various indicators of well-being and quality of life. It was this finding that prompted the creation of the AHEWP. The initial design and form of the project was also influenced by the introduction of the Essential Learnings (ELs) curriculum in Tasmania. With a focus on Personal Futures and Social Responsibility, the ELs signalled an effort to enhance the existential, social and civic value of schooling. Through ELs the schools are committed to “authentic” school outcomes including the maintenance of well-being. The process of developing and implementing the ELs has so far occurred without empirical knowledge of the structure or sources of adolescent well-being. At the time of the project’s conception there was a lack of data with which to examine the effectiveness of the ELs – a problem that the AHEWP aimed to rectify.

Commitments to the Tasmanian Department of Education and the Tasmanian Department of Health and Human Services from the research team also influenced the initial design of the survey. The research team committed to the evaluation of the impact of policy initiatives on adolescents by the mapping, measuring, identifying, and modelling of the following:

- The life experiences, well-being, and life plans of adolescents;
- Adolescents' institutional experiences and capacities (e.g., doing well at school, making and keeping friends).

The identification of risk and protective factors and development of evidence-based Whole of Government policy frameworks were other commitments made to the Departments. The theoretical interests of the Chief Investigator of the AHEWP also influenced the project design, specifically questionnaire construction, include contemporary cognitive and psychosocial theories of the self, post-modern theories of the reflexive self, and life planning.

3.4.2 Aims of the AHEWP

The AHEWP worked from three aims:

1. To map patterns of health morbidities, risk beliefs and behaviours, Subjective Well-Being, life planning, resilience and protective factors, and institutional participation, dispositions, and competencies.
2. To develop causal models of adolescent health and well-being, Subjective Well-Being, life planning, and institutional participation, dispositions, and competencies.
3. To support the development of Whole of Government, evidence-based, outcomes-focused policies and programs for adolescents.

3.4.3 The Significance of the AHEWP

The research project was particularly valuable to Tasmania for a number of reasons. First, recent research into the health and well-being of Australian adolescents highlighted many problems including increased risk taking behaviour and increased levels of mental health problems (Eckersley, 1999; Mather, 1996; Moon et al., 1999; Patton, 1999; all as cited in Hogan et al., 2000). These issues can continue into adulthood, having profound life-long, intergenerational effects on health and well-being. They are particularly acute in rural and remote areas of Australia, such as Tasmania, and with disadvantaged youth. Second, the government agencies required additional

intellectual infrastructure in the area of health and well-being to guide policy development. Most of the data obtained on the health and well-being of adolescents had previously come from hospital admissions rather than population surveys. Using data that are collected *after* illness has caused damage, or injury has occurred, fails to address the need to explore the processes and mechanisms *behind* problems such as engagement in risk behaviours. Third, little was known about the causal relationship between risk and protective factors and health and well-being. There was little research exploring why some adolescents overcome adversity and factors that are a risk to their health and others do not (Catalano & Hawkins, 1996). Fourth, the biomedical model has been the dominant theoretical position in health and well-being research, and a social view of health and illness may provide alternative answers to promoting health and well-being, as research in the last 20 years has started to explore in depth. The AHEWP also aimed to expand the research on the causal links between social background and health and well-being. Last, responses by government to these issues were hindered by the compartmentalisation of agencies. Agency-specific and output focused policies ignored the multi-factorial nature of adolescent health and well-being.

3.4.4 The Outcomes of the AHEWP

The AHEWP was focused on achieving the following outcomes in order to address the gaps outlined above:

1. A community-based, Whole of Government, inter-sectorial policy development process.
2. A comprehensive, state-wide, policy relevant, data base of adolescent health and well-being.
3. The development and validation of an adolescent health and well-being instrument.
4. A state-wide, evidence-based, and outcomes focused five-year policy framework promoting adolescent health and well-being.

5. The extension, consolidation and institutionalisation of a genuinely collaborative partnership between the University of Tasmania and the state government.

3.4.5 The Structure of the AHEWP

There were three components to the AHEWP: qualitative, quantitative and policy-based. The quantitative component involved the administration of questionnaires (Appendix A) to Grade 8 and Grade 10 students in 73 Tasmanian schools (government, independent and Catholic) beginning in 2003 and planned to run annually. A pilot study was included in the research design in order to evaluate the questionnaire and its individual components. Details are given in Section 3.8. The qualitative element interviewed approximately 80 adolescents in out of school contexts; for example, drop-in centres and community programs. The goal of the policy component was to conduct an audit and review of current policies of adolescent health and well-being, and the processes engaged in creating these policies.

The project team consisted of academics from the University of Tasmania's School of Sociology and Social Work, Faculty of Education, Faculty of Health Science, School of Government, and Department of Rural Health, as well as staff from the Tasmanian Department of Education, the Office of Youth Affairs, and the Tasmanian Department of Health and Human Services.

3.5 Questionnaire Construction

The method of constructing the questionnaire followed the system outlined by de Vaus (2002), Babbie (1992), and Sarantakos (1993). Construction of the questionnaire followed their principles on question design, content, wording, and response format. In constructing these questions the researchers were interested in the measurement of the extent to which respondents held particular attitudes or perspectives, and the questionnaire was constructed with this aim in mind (Babbie, 1992).

3.5.1 Advantages and Disadvantages of Questionnaires

There are many advantages to questionnaires. They allow the researcher to collect more data than other methods (in terms of both the number of respondents and the amount of information gathered). They are less expensive than other methods, quick to yield results, convenient to respondents (they can fill out mailed out questionnaires in their own time), and give the respondent a greater assurance of anonymity. Questionnaires are also easily replicable: Findings from initial research can be tested with varying populations.

Questionnaires also have their disadvantages. The researcher has no way of prompting the respondent or clarifying the meaning of his or her response as the researcher could in an interview. Questionnaires do not offer the researcher the opportunity to motivate the respondent; respondents are less likely to decline participation when speaking to a person face to face or over the phone. The researcher also does not have the opportunity to collect additional information or information he or she might not have thought of including in a questionnaire as the interviewer can by following the flow of the conversation (Sarantakos, 1993).

3.5.2 Principles of Question Design

The concepts of reliability, validity and discrimination often used in data analysis are also applicable in question design. In this context, reliability requires that a respondent answers the question in the same way when asked multiple times assuming that the respondent's answer has not changed, and the question is constructed correctly: Questions should not be so ambiguous that a respondent could read the question in a different way on a different occasion. Validity of the question is established when the question measures what it is intended to measure. Discrimination requires that there is significant variation in the sample on the key variables. Although low

variance is most often attributed to homogeneity it can also come from poor question design.

Response rates can be affected by many things, such as method of survey administration, questionnaire length, employing the wrong type of question, and poor question construction. Questions that are intrusive, sensitive, irrelevant, repetitive, poorly worded, or hard to understand or answer, can annoy respondents, and end in low response rates. It is also important that the meanings of terms used in questions are unambiguous – if not, people may interpret them in different ways (e.g., “old”), which could lead to unreliable data.

3.5.3 Question Content

Following de Vaus (2002) there are five types of question content: behaviour, beliefs, knowledge, attitudes, and attributes. Behaviour questions establish what people *do*; belief questions focus on establishing *what people think is true*; knowledge questions ascertain the *accuracy of the respondents' beliefs*; attitudinal questions are created to measure *what people think is desirable*; and attribution questions are formulated to establish *respondents' characteristics*. Knowing the difference between the five types of question content also affects the preparation of data for analysis – when creating composite measures only similar questions can be put together (de Vaus, 2002). The AHEWP used four of the five types of question content in constructing the questionnaire: Knowledge questions were not used.

3.5.4 Wording Questions

De Vaus (2002) provides 17 questions to guide the wording of questions. Some additional points from the work of Babbie (1992) and Sarantakos (1993) have been added (presented in Figure 3.1).

1. Is the language simple? Avoid jargon and technical terms.
2. Can the question be shortened? Response rates will improve if the questions are less confusing and ambiguous. Respondents should be able to read items quickly, understand their intent, and respond without difficulty.
3. Is the question double-barrelled?
4. Is the question leading? Leading questions can give respondents the impression that there is a "correct" answer.
5. Is the question negative? Negatively worded questions can be confusing.
6. Is the respondent likely to have the necessary knowledge to answer the question?
7. Will the words used have the same meanings for everyone? Meanings of words change depending on factors such as the respondents' age and subculture. Avoid problematic words or make meaning clear. Be aware that people will also vary in the way they define terms. Researchers who know the topic well may not be clear and write in a way that respondents would not understand. This would also be the case with researchers who did not know the topic well enough.
8. Does the question contain prestige bias? Having the name of a prestigious person in the question can influence the respondents' answers.
9. Is the question ambiguous?
10. Is the question precise? Avoid questions that will need more precision than people will be able or want to provide reliably (e.g., exact income, age).
11. Is the frame of reference clear? Make sure that timelines are specified (e.g., How often have you felt sad *in the last two weeks*?).
12. Does the question create an opinion? Questions with strong wording can bias respondents to what they think is the "correct" answer. Offer "Don't know" and "No opinion" responses.
13. Is personal or impersonal wording preferable (e.g., "You," or "People")? This often depends on the purpose of the question. Impersonal wording will give you the respondents' perceptions of other people's attitudes.
14. Is the question wording too detailed or objectionable?
15. Does the question have dangling alternatives (e.g., do you strongly disagree, disagree, agree, or strongly agree with euthanasia)? Give the subject matter before the response alternatives.
16. Does the question contain gratuitous qualifiers? They can present an argument for one particular response.
17. Is the answer to the question a "dead giveaway"? Avoid absolute, all-inclusive, or exclusive words. Few people will agree with statements that include these words, which will end in poor question discrimination.
18. Is the question relevant? If respondents do not care about a topic they may give a response without giving thought to the issue leading to problematic data. The researcher has no way of knowing if the response is genuine or a meaningless answer to an irrelevant question.
19. Are the questions in the same language as the respondents (including age appropriate)?
20. Is the tone of the questions positive and encouraging?

Figure 3. 1. Guidelines for Wording Questions. Adapted from de Vaus (2002), Babbie (1992), and Sarantakos (1993).

3.5.5 Question Responses

The structure of questions and responses creates the level of measurement (i.e., nominal, ordinal, or interval). The AHEWP used some ordinal variables that are commonly treated as interval level variables. As a wide range of statistical methods have been used on the data collected in the project, interval

level variables are the most suitable (de Vaus, 2002). Open-ended questions require that respondents give their answers, usually to an interviewer, without a list of possible answers from which to choose. With closed or forced-choice questions respondents are given a number of response alternatives to select. With the exception of some questions such as “Other (please indicate)” and those requiring written responses (e.g., mother’s occupation), the questions in the questionnaire used in this study use forced-choice response alternatives.

It is usual in self-administered questionnaires that respondents are asked to select one response from a series of responses. The final goals in constructing responses are easy application, reduced time and stress on the part of the respondent, and high precision. There must be a sufficient range of responses to cover all possibilities. Responses must be mutually exclusive and there should be the same number of responses on either side of the “neutral” position (Babbie, 1992; de Vaus, 2002; Sarantakos, 1993). Responses used in the current study consist of Likert scales, dichotomous, and multiple-choice options.

The Likert scales used in this study are in a grid or matrix format and start with the negative or smallest option on the left and move through to the most positive or highest option on the right. Numbers move from 0 or 1 on the left through to higher numbers on the right – the higher the number, the more intense the response (Frankfort-Nachmias, 1996). Figure 3.2 gives an example of a matrix response format. The dichotomous responses give respondents the choice between two options (e.g., male or female). The multiple-choice responses are asking respondents to choose either between multiple nominal responses or multiple ordinal categories. Multiple nominal responses are in no set order and cannot be ranked (Figure 3.3), whereas multiple ordinal categories can, and should, be ordered (Figure 3.4).

C10 To what extent do you agree or disagree with each of the following statements?

	Strongly Disagree	Disagree	Agree	Strongly Agree
I don't understand myself very well	1	2	3	4
I spend a lot of time thinking about myself	1	2	3	4
I talk with friends a lot about myself	1	2	3	4
I don't know who the real me is	1	2	3	4

Figure 3.2. Example of Likert Scale in Matrix Format.

H4	After you leave school/college, what do you plan to do? (Choose one only)
Get a job	1
Get an apprenticeship/traineeship	2
Go to TAFE	3
Go to University	4
Travel	5
Join the services	6
Take a year off and do nothing much	7
Other	8
Don't know	9

Figure 3.3. Example of Multiple Nominal Response Format.

D13	How often do you attend religious services?
Never	0
About once or twice a year	1
Between three and six times a year	2
About every month	3
About every fortnight	4
About every week	5
More than once a week	6

Figure 3.4. Example of Multiple Ordinal Response Format.

Non-committal responses such as “I don’t know” and “No opinion” are important to include in question responses. Without these there is a risk of getting false opinions from respondents. There is no widespread agreement in the literature on the optimal number of response categories to use (de Vaus, 2002). Dichotomous scales are problematic as some people may feel they are in the middle of the two positions – not quite a yes, but not quite a no – which can lead to poor response distribution in the data. Likert scales are a more apt method, but there is still debate over the best length. Five-point scales are the

most widely used because often in analysis a longer scale would be collapsed anyway (de Vaus, 2002; Sarantakos, 1993). The questionnaires developed for the AHEWP use 4-, 5-, and 6-point Likert scales. Response categories for most of the existing questionnaires were not changed, which resulted in a variety of length for the response scales.

3.5.6 General Questionnaire Format

The layout of a questionnaire is as important as the wording or response format chosen (Babbie, 1992), and respondents may miss questions or get frustrated and not complete the questionnaire if it is poorly laid out. In constructing questionnaires the language of the respondent should be employed – both cultural and sub-cultural – (Babbie, 1992). The questionnaire must always be professional in appearance and should contain a cover letter and instructions. This element of questionnaire design can affect response rates significantly (Sarantakos, 1993). See Appendix A to view the cover letter used in this study.

Instructions should be included at the beginning of the questionnaire, including general instructions for completing the questionnaire as well as the purpose of the questionnaire and the respondents' assurance of confidentiality. Instructions should also be included in the body of the questionnaire. Respondents should, for example, be told when they are required to choose one response only, and contingency questions should include some form of a "go to" instruction (see E10 in Questionnaire 2 in Appendix A) (Babbie, 1992; de Vaus, 2002; Sarantakos, 1993). The instructions for the questionnaires used in this study can be found in Appendix A.

The order in which questions are presented in a questionnaire can affect respondents' answers. The appearance or content of earlier questions can affect later ones. If a question asks for respondents' satisfaction with their lives as a whole, respondents will answer subsequent questions about their satisfaction with specific domains in their lives with their first answer in mind

– they will aim to be consistent in their responses. Conversely, if respondents are asked to rate their satisfaction in a number of areas of their lives and are then asked to rate their satisfaction with their lives as a whole at the end of the questionnaire, they will keep their prior assessments in mind (Babbie, 1992). In this study the latter outcome was desired and the questionnaire was constructed with this in mind.

Again, there is no universal consensus on the best length for a questionnaire. The size of the questionnaire generally depends on the research objectives, the age, time restraints, and intellectual ability of the respondents, as well as available resources.

3.5.7 Designing the Questionnaire

De Vaus (2002) defines concepts as “abstract summaries of a whole set of behaviours, attitudes and characteristics which we see as having something in common” (p. 34). The clarification of concepts is fundamental in developing and sourcing questions, as it is imperative that questions match the conceptual definitions. If there is a lack of consistency in the meaning of concepts, comparing findings with other studies becomes meaningless (de Vaus, 2002). As noted in the introduction, many of the concepts used in this study have multiple meanings and need clarification.

As a first step in defining concepts, de Vaus (2002) suggests searching textbooks, dictionaries, encyclopaedias, journal articles, the internet, and online tools to find other ways that researchers have defined the relevant concepts. It is then possible to look for common elements in existing definitions and develop a new definition based on the generally understood meaning of the concept. The alternative is to choose an existing definition, as long as the choice is justified (de Vaus, 2002). This process gives a concept a “nominal” or “working” definition that guides the type of information that the researcher collects. As with theory construction, there is a constant interplay between clarifying the concept and the analysis of the data. The form of the concept may change as a result of further exploration of the concept with the

data. Evidence of this can be found in the psychosocial questions used in the current study (see Chapter 4, Section 4.3.2.3).

More often than not the number of questions is decided by practical rather than theoretical considerations. The length of the questionnaire, the age of respondents, and method of administration all affect the number of questions created. If well-established questions of a concept already exist they should be used, and modified where necessary to be appropriate for the sample (de Vaus, 2002). If the questions do not fit the research design, pose other practical problems, or are unavailable, it is necessary for the researcher to develop his or her own.

3.6 Question Selection in the AHEWP

The questions for the AHEWP were constructed from the areas of interest outlined in the project design – demographic information, institutional experiences and competencies, life events, goals and life planning, mental health, personality, psychosocial well-being, risk behaviours and beliefs, and Subjective Well-Being. In the examination of Subjective Well-Being that is the core of this thesis, the dependant variables were Life Satisfaction, Positive Affect, and Negative Affect. The remaining variables were treated as independent.

The criteria for selecting scales were brevity, age appropriateness, and psychometric validity. It was imperative that questions were kept short because of the number of areas the project aimed to address, therefore lengthy scales were not considered. It was important that all students could understand the questions, hence when possible, scales were chosen that had been tested with adolescents as young as 12 years of age. The Cronbach's alpha, item-total correlation, test-retest reliability, concurrent validity, and construct validity were examined for each scale in order to ascertain the psychometric validity of the scale. In many cases existing scales failed to

meet these criteria and new scales were created around these criteria to meet the needs of the project.

The scales measuring Life Satisfaction, life events, mental health, personality, and Positive and Negative Affect were all validated measures in the public sphere and were included in the pilot study either in full, shortened or slightly modified. All but the Mental Health Inventory were added to the questionnaire for the examination of Subjective Well-Being for this thesis. Details of the creation and psychometric properties of these scales are given below. Eight questions came from The Healthy Communities Survey (HCS) (1998) and were included either in full or modified: agency contact, attachment, family functioning, number of close friends, time with friends, trust, suicide attempts and suicide ideation. Details of the construction of these questions can be found in *First Results from the Healthy Communities Survey, 1998*. The Chief Investigator of the AHEWP was also working on the School Governance and Educational Outcomes Project at the time the AHEWP was running. Seven questions were taken from the questionnaire in that project, and were included in full or modified form: extracurricular activities, family support, hours doing homework, living arrangements, plans after finishing school, truancy/disposition, and when finishing high school/college. Details of these scales are yet to be published. The Chief Investigator created the remaining questions in the questionnaire. The project team were given the questionnaires to review before they were administered in the pilot study to establish the face validity of the questions. The questionnaires were not modified as a result of this process.

3.6.1 Dependent Variables

Students' Life Satisfaction Scale (SLSS) Positive and Negative Affect Schedule (PANAS)

3.6.1.1 Students' Life Satisfaction Scale (SLSS)

The SLSS (Huebner, 1991a) was developed to address the lack of instruments measuring positive well-being among children. It was designed to measure the Life Satisfaction component of Subjective Well-Being, and was based on the well-established adult Life Satisfaction scale created by Diener and colleagues (Diener, Emmons, Larsen, & Griffin, 1985; Pavot & Diener, 1993a). The scale asked respondents to rate statements of Life Satisfaction on a 6-point Likert scale ranging from *strongly disagree* to *strongly agree*. The scale had a good psychometric history with item-total correlations ranging from .46 to .73 and coefficient alphas ranging from .73 to .86. Dew and Huebner (1994) tested the reliability and validity of the SLSS with a sample of 222 students from Grades 8 to 12 in a rural school district within a south-eastern state of the United States. This sample had a mean age of 15.5 years ($SD = 1.5$), was 52% female and included a mix of African American ($n = 115$), white ($n = 106$) and Native American ($n = 1$) students from low through to above average socio-economic status. The scale reported item-total correlations between .49 and .73 and a coefficient alpha of .86. Dew and Huebner (1994) conducted a principal components analysis on the scale where one-factor emerged accounting for 55% of the variance. All factor loadings acquired for the scale had adequate scores (range = .61 to .83). The study also found support for the concurrent validity of the SLSS, testing the scale against the Perceived Life Satisfaction Scale ($r = .58$) and examining the correlation between participants' self-ratings and ratings by their parents ($r = .48$).

3.6.1.2 Positive and Negative Affect Schedule (PANAS)

The PANAS was developed to address the lack of reliable measures for Positive and Negative Affect. It was the aim of Watson et al. (1988) to

develop a brief and easy to administer instrument that was reliable. The scale required respondents to indicate the amount they had experienced certain emotions over a given time span decided by the researcher¹. Respondents gave their responses on a 6-point Likert scale ranging from *none of the time* to *all of the time*.

Watson et al. (1988) tested the instrument with a large sample ($n = 4207$) and achieved good coefficient alphas for both the Positive Affect subscale (range = .87 – .90) and the Negative Affect subscale (range = .84 – .87). The instrument also showed good test–retest reliability after 8 weeks (Positive Affect = .47 – .68; Negative Affect = .39 – .71). The authors also conducted a principal factor analysis on the scale, which resulted in two–factors that explained between 62.8% and 68.7% of the variance (depending on the time frame used). Each item had a factor loading above .50. They compared the PANAS to other affect measures and found convergent correlations between .76 and .92. With discriminant validity correlations under –.20, the PANAS offers a clear structure of Positive and Negative Affect.

Before including this question in the questionnaire it was imperative to see if it was applicable to an adolescent sample. Huebner and Dew (1995) tested the PANAS on 266 adolescents from Grade 9 to 12. The sample consisted of 174 females and 92 males with a mean age of 16.22 (SD = 1.28). A range of ethnicities and socio–economic groups were represented. The coefficient alphas obtained were good: .84 for the Negative Affect scale; .85 for the Positive Affect scale. Factor analysis using principal axis factoring resulted in a two–factor solution, which explained 37% of the variance. The Positive Affect items loaded cleanly on Factor one with loadings ranging from .46 to .66, and the remaining Negative Affect items loaded cleanly on Factor two with loadings ranging from .31 to .81.

¹ The authors of the scale give seven different time spans from which a researcher can choose. The present study used “in the past few weeks.”

3.6.2 Independent Variables

Personality
Psychosocial
Institutional Experiences and Competencies
Mental Health
Risk Behaviours and Beliefs
Life Events
Goals and Life Planning

3.6.2.1 Personality

Research into Subjective Well-Being with adult samples has found a significant relationship between personality and Subjective Well-Being (Diener et al., 1999), and this seminal finding needed to be tested with adolescents. The Junior Eysenck Personality Questionnaire – Abbreviated (JEPQR–A) was designed as a short, reliable measure of personality among children and adolescents. Previous attempts to create reliable personality measures had resulted in the questions increasing in length from Eysenck’s early questionnaire. Authors have tried to raise the psychometric values of scales by adding more items, from the Maudsley Medical Questionnaire (Eysenck, 1952) of 40 items through to the Revised Eysenck Personality Questionnaire (Eysenck, Eysenck, & Barret, 1985) of 100 items (Francis, 1996). This trend extended to the development of short, reliable instruments for children including Furneaux and Gibson’s (1961) Junior Maudsley Personality Inventory of 44 items and Corulla’s (1990) 89–item–long Junior Revised Eysenck Personality Questionnaire.

The JEPQR–A was derived from the short–form of the Revised Junior Eysenck Personality Questionnaire (JEPQR–S) developed by Corulla (1990). Different from the above–mentioned Junior Revised Eysenck Personality Questionnaire, the JEPQR–S contained four subscales measuring extraversion, neuroticism, psychoticism, and lie with 12 items in each subscale. Francis’ (1996) JEPQR–A measures the same four constructs with six items in each subscale. Respondents answered either yes or no to

questions such as “Can you get a party going?” and “Do you sometimes feel life is just not worth living?” The questionnaire was administered to 1597 students aged 13 to 15 in a state school in Wales. Seven hundred and ninety-nine of the students were female. The scale produced alpha coefficients of .66 for the extraversion subscale, .70 for the neuroticism subscale, .61 for the psychoticism subscale, and .58 for the lie subscale. Although the alphas were quite low, Francis argued that this could be expected with scales that are only six items long. The correlations between the JEPQR–A and its parent the JEPQR–S show that the scale has good concurrent validity: extraversion = .91, neuroticism = .92, psychoticism = .88, and lie = .89.

Some changes were made to this instrument before administering it to students involved in the pilot study. With the author’s consent (L. J. Francis, personal communication, April 30, 2002), the instrument was changed from a binary scale to a four-point Likert scale ranging from *strongly disagree* to *strongly agree*. The rationale behind this change was the view that a binary scale implies that respondents are situated at either extreme of the concept (i.e., totally extraverted or neurotic) when most people fall between the extremes of extraversion and neuroticism (Buchanan & Huczynski, 2001). The items were rewritten into statements and the language used in one statement was changed to keep with the students’ age and current language conventions: “Did you ever take anything (even a sweet) that belonged to someone else?” was changed to “I have taken things (even small things) that belong to someone else.”

3.6.2.2 Psychosocial

This section of the questionnaire deals with psychosocial well-being and is based on a number of theorists, including Erikson, Mead, Rosenberg, and Cooley (D. Hogan, personal communication, July, 2004). Questions were written by the Chief Investigator and measure either the importance of, or agreement with, statements on 4-, 5-, or 6-point Likert scales. Areas covered in this section are attachment, trust, collective and relational social identity, personal identity, ideal self, control, problem solving, self-esteem, reflexivity,

address the lack of research on the affects of stressful life events on adolescents and addressed six domains of their lives – parents and family, school, personal health and appearance, interpersonal relations, independence and freedom, and legal behaviour. The scale was tested with 1018 male and female students as part of a longitudinal study on adolescent growth and development. The sample, drawn from Los Angeles County schools, completed the questionnaire twice, at three year intervals, with the life events scale included the second time. One thousand and eighteen responses were received in the second administration, and students ranged from Grades 10 to 12. Of the sample, 349 of the respondents were male and 669 of the respondents were female. Caucasians accounted for 60% of the sample, whereas 18% were African American, 15% were Hispanic, and 7% were Asian. Using montonicity analysis, Newcomb et al. (1981) came up with a seven factor solution accounting for 44% of the variance. The reliabilities for the scales were not high, ranging from .36 to .58.

The scale created by Newcomb et al. (1981) was used as a starting point in constructing the life events scale used in this study. Respondents are asked about major and minor, positive and negative, and daily and life events in the same domains as the institutional experiences and competencies, and life planning sections.

3.6.2.7 Goals and Life Planning

The goals and life planning section dealt with the students' goals in each institution outlined in section 3.6.2.3. Goals have been found to have strong relationships with Subjective Well-Being in adults and it is necessary to see if this relationship holds with adolescents who are starting to make plans at this time in their lives. Students were asked if they had ideas about their future aspirations, as well as school, work, family, friendship, and community goals. Students were also asked what influenced their goal making. A set of questions asking students to give specifics about their school plans were also included that addressed when students would prefer to finish school, when their parents would prefer them to finish school, what they plan to do after

school, their desired job and confidence level of getting this job, and their labour market beliefs.

3.7 Gaining Ethics Committee Approval

The AHEWP followed the National Health and Medical Research Council principles of integrity, respect for persons, beneficence, justice, consent, research merit and safety, and the ethical review and conduct of research. The project upheld that research participants had the right to voluntary participation, informed consent, no harm, confidentiality and anonymity, and privacy.

3.7.1 Tasmanian Department of Education Ethics Approval

Approval from the Department of Education was obtained quickly and without any issues being raised.

3.7.2 University of Tasmania Southern Social Sciences Ethics Committee Approval

Receiving approval from the University of Tasmania Southern Social Sciences Ethics Committee (hereafter “Ethics Committee”) was a complex and difficult process. The Ethics Committee raised a number of issues relevant to the whole project as well as others specific to the pilot study. They identified four areas of concern: the sensitive nature of some of the questions, the use of passive consent, confidentiality in the classroom context, and the length of the questionnaire.

3.7.2.1 The Issue of Sensitive Questions

The sensitive questions that concerned the Ethics Committee addressed sexual activity, drug use and other risk behaviours. Some committee members believed that these questions were not relevant to 13 to 16 year old

adolescents. In contrast to this belief, according to the Royal Adelaide Hospital's STD Services Clinic, by 17 years of age, half of Australia's adolescents have experienced sexual intercourse with most having their first sexual experience at age 15 or 16 (Royal Adelaide Hospital Sexually Transmitted Disease Services, 2002). It was an issue that the researchers strongly believed needed to be addressed while not upsetting students or parents/carers, and the risk behaviour questions were substantially revised. The Ethics Committee accepted the revisions and the issue was resolved.

3.7.2.2 The Issue of Passive Consent

The use of passive consent required that parents withdrew their children if they objected to their participation (see Appendix B for withdrawal of consent form). The Ethics Committee opposed this method due to the sensitivity of the questions and the NH&MRC guidelines that specify consent must be gained from parents/guardians. The project team responded with a memorandum to the chair of the Ethics Committee arguing for passive consent (Appendix C) and the Ethics Committee then decided to have the project externally reviewed. Two academics from within the university were asked to review the application, provide a critique of the project, outline its limitations and offer recommendations. The first reviewer did not consider using passive consent problematic – s/he did not raise the method as a concern. The second reviewer fully supported the use of passive consent. After the external review the Ethics Committee still preferred the use of active consent. In response, a literature review of the key findings on the ways in which active consent can affect research was conducted and other avenues were explored (e.g., ways of getting the required response rate with active consent) (Appendix D). The Ethics Committee approved the pilot study conditionally with a kind of passive consent. It required that:

- The information sheet and withdrawal of consent form be sent to parents from the school in stamped envelopes informing parents in detail of the nature of the risk questions;

- A report on the pilot study be submitted to the Ethics Committee including:
 - How the administration was undertaken,
 - Problems that became evident,
 - Changes that had to be made with research protocol or questions as a result of the pilot study,
 - The number of “withdrawal of consent” forms the school received,
 - Difficulties experienced by the schools in sending out information sheet and withdrawal of consent form,
 - How many, if any, parents went to the school to view the surveys, and
 - How many, if any, parents objected to the manner in which their consent was obtained.

3.7.2.3 Confidentiality in the Classroom Setting and the Length of the Questionnaire

These issues were discussed with the Ethics Committee and resolved quickly without changes being made to the research design.

3.8 Pilot Study

After the project team established the face validity of the questionnaire, it was refined through a pilot testing process. Questions were tested to address three concerns: Whether respondents understood the question, whether the questions were too hard to answer or too personal, and if the response alternatives were appropriate. Following de Vaus (2002) existing scales were tested, as well as the new questions, in order to make sure that they were appropriate for the sample. A second aim of the pilot study was to find the items that best measured the construct the question was aiming to measure. This was analysed using both reliability analysis and factor analysis, the latter of which is discussed as a data analysis method in section 3.11.6. The

questionnaire as a whole was also evaluated: Was it too long for the respondents? Did it fit into the time span allocated to completing it? Did students become bored? The students' responses to the questions were analysed as well as their comments. Once results were gathered, the questionnaire was revised, shortened, and re-ordered where necessary as recommended by de Vaus (2002).

3.8.1 Pilot Study Procedure

The questions were divided into three questionnaires – The Self, Life Planning, and Institutional Experiences and Competencies (Appendices E), which were distributed evenly to the students. Either the vice principal or principal at each school was approached and informed of the wider project and asked for his or her schools' participation in the pilot study. All principals/vice principals were given a copy of the questionnaires, as well as the information and withdrawal of consent form, for their approval. The schools mailed out the information and consent letters to the parents in accordance with the University's Ethics Committee requirements. Withdrawal of consent forms were sent back to the school and the schools made alternative arrangements for students who were not participating.

Once objecting parents had withdrawn their consent, students were asked to complete the questionnaires in a 45-minute period in a core curriculum class (English, Mathematics, Science, or Studies of Society and Environment [SOSE]). Students were informed of the purpose of the study and what was required of them. This was a declared pilot study – students were informed that one of the purposes for completing the questionnaire was to improve it. They were also assured that their participation was entirely voluntary and their answers confidential. They were guaranteed that the author was the only person who would see the questionnaires, and that they would be stored securely at the University of Tasmania. Students were told that there would not be any negative consequences if they declined participation and were given the option of completing other work if this was the case. Either the

students' teacher, or the author administered the surveys according to the schools' wishes and the Ethics Committee's approval. At the end of each questionnaire a form was provided for the students to fill out asking for their feedback on the length, difficulty, and their understanding of the questionnaire. They were asked to circle words that they did not understand, write "TP" next to questions they thought were too personal, and were provided with space to give additional comments. The results of these notations were used to amend the questionnaire length and language, and to ascertain whether students were comfortable with answering some of the more personal questions.

3.8.2 Pilot Study Sample

De Vaus (2002) states that questionnaires should be tested on subjects that resemble the final sample. As the final sample for the AHEWP was Grade 8 and 10 students, the questionnaire was tested on Grade 8 students – it was important to ensure that the youngest students could complete the questionnaire without difficulties. De Vaus (2002) recommends that between 75 and 100 respondents be used to test a questionnaire, and as the items in the AHEWP had been split into three shorter questionnaires for the purposes of the pilot study, 433 students were recruited, giving each short questionnaire 144 respondents. Respondents were drawn from four schools in the south of Tasmania. School one was a public co-educational school located in a housing commission area ($n = 85$). School two was a private, girls Catholic school located in the city, whose students come from a wide range of socio-economic circumstances ($n = 82$). School three was a public co-educational school located in a middle class area ($n = 132$). School four was a private co-educational school located in the city where students come from middle to high socio-economic backgrounds ($n = 134$). Passive parental consent was obtained before the students were able to complete the questionnaires in accordance with the Ethics Committee's requirements. Demographic information on the students was not obtained.

3.8.3 Student Responses

In the following section the summaries of these responses are presented by instrument. Common problems to all questionnaires are then addressed. Some of the additional comments made by students can be found in Appendix E.

3.8.3.1 Instrument 1 – The Self

The majority of respondents – 53% – found Instrument 1 too long, 11% found the questions too hard, and 12% indicated that they did not understand what the questions were asking them. In C10 students were asked how much *influence* items listed in the response matrix had on their self-esteem. Eighteen percent of respondents indicated that they did not know what “influence” meant. This was subsequently changed to “How important are each of the following to your sense of self esteem?” There was a substantial amount of data missing on C12, which asked students to indicate how much they agreed or disagreed with statements to do with optimism. Fifteen percent of students indicated that they did not know what “optimistic” meant. This was changed to “confident.” A small percentage of students had trouble with items from other questions: “Deny myself things I want” (7%), “high-strung” (6%), “I can get a party going” (6%), “persistent” (5%), “My personal values and moral standards” (3%), and “Being a law-abiding citizen” (3%). As such a small proportion of students had difficulty with these phrases they were not changed.

Students found other ways to resist answering personal questions without putting “TP” next to them: 10% did not answer the question and 3% circled the highest option for all of the items in the question. The latter method happened often with the risk behaviour and beliefs questions (M3 and M5 in Appendix A).

3.8.3.2 Instrument 2 – Life Planning

Twenty-four percent of respondents indicated that Instrument 2 was too long, whereas 5% said the questions were too hard. Fourteen percent did not understand what some of the questions were asking. A small number of students indicated that they had trouble with items in this questionnaire: “Job experience is more important than further qualifications” (21%), “hostile” (11%), “attentive” (9%), “To help other people exercise their rights” (7%), “jittery” (7%), “To exercise my rights (6%), “trade union” (4%), and “irritable” (3%). As this was a small number of students, changes were not made.

Some students found questions regarding their career choice and their intimate relationships too personal. Again, it was only a small number of respondents: 11% found “Formed an intimate relationship with someone” and “Broke up with boyfriend/girlfriend” too personal; 4% found “Fell in love,” and 3% found “What kind of job would you really like to get after you finish your education?” too personal. As it was a small percentage of students the items remained the same.

3.8.3.3 Instrument 3 – Institutional Experiences and Competencies

Twenty-four percent of students found Instrument 3 too long, 5% found the questions too hard, and 14% did not understand what some of the questions were asking of them. A small number of students did not understand some items: “confide” (14%), “ATSIC” (10%), “Children are consulted with and participate in decision making” and “My parents/carers encourage me to participate in extra-curricula activities and events” (both 3%). “Confide” and “ATSIC” were not changed for the final questionnaire, but “Children are consulted with and participate in decision making” and “My parents/carers encourage me to participate in extra-curricular activities and events” were dropped as a result of the factor analysis process. Students indicated that none of the questions in this questionnaire were too personal.

3.8.3.4 Common Issues

Students would often circle a non-existent point between two options (e.g., between *agree* and *disagree*), in essence creating a mid-point. A small number of students circled the anchors' labels rather than the corresponding points, and some students indicated that they did not understand the anchor *not applicable*. They would write, for example, "Don't have one" next to a question regarding trust of brother/s.

3.9 Final Administration

3.9.1 Final Administration Instruments

Changes were made to the pilot study instruments based on factor analysis results (Appendix F), reliability analysis results, and the students' responses. The two or three items with the highest factor loadings and/or lowest "alpha if item deleted" were kept. If the question had an insufficient alpha or poor factor structure, it was not included in the final questionnaire. Five questions were added to the beginning of the questionnaire including school sector, years at current school, grade, gender, month born, and age in years. Following Babbie (1992) more detailed and personal demographic questions were placed later in the questionnaire.

The final questionnaire was split into two separate, smaller questionnaires – "Health and Well Being" and "Education and Life Planning." The personal information, personality, psychosocial, and family/demographic sections remained largely identical in both modules. The main difference between the two questionnaires was that the Education and Life Planning module assessed educational experiences and life planning in more depth, whereas the Health and Well-Being module explored other institutional experiences and competencies, mental health, and Subjective Well-Being in more depth (see Appendix A).

3.9.2 Questions Added After the Pilot Study

Questions were added to the final questionnaires that did not need testing. They addressed students' school sector, years at their school, grade, gender, month of birth, and age in years, as well as parents' compulsory and non-compulsory education, parents' occupation and occupational status, home ownership, family finances, language, hours watching television, attendance at religious services, and number of books at home. A breakdown of the contents of the two modules is presented in Appendix G.

The data this thesis uses is from Questionnaire 2 – Health and Well-Being. Only the data from Questionnaire 2, therefore, will be discussed from this point forward (Appendix H).

3.9.3 Final Administration Sample

The sample involved in the final administration of Questionnaire 2 consisted of Grade 8 and Grade 10 students drawn from all Tasmanian schools and sectors (government, non-government, and Catholic). The only criteria for involvement in the project were belonging to the grades mentioned and receiving permission from parents through a passive consent procedure.

In the process of administering the AHEWP, 3726 copies of Questionnaire 2 were sent out to schools. Of those, 2534 were returned yielding a response rate of 68%. Through the process of scanning further questionnaires were eliminated. These questionnaires had either not been attempted or could not be scanned. This process resulted in a sample size of 2515 (response rate = 67.5%). An initial look at the data set revealed that some respondents had only answered A1 to A6 and B1. These were deleted leaving a sample size of 2464 (response rate = 66%).

After the further deletion of invalid data through missing data analysis, the sample consisted of 2094 students, 1073 (51.24%) in Grade 8 and 1021

(48.76%) in Grade 10. The questionnaires were split evenly across genders with female students totaling 1061 (51.3%) of the sample, whereas 1009 respondents (48.7%) were male. Students' average age was 14.34 (SD = 1.28). Fifty-nine percent (n = 1220) of students attended government schools, 21.2% (n = 438) attended Catholic schools, and 19.9% (n = 412) attended other private schools.

3.9.4 Final Administration Procedure

Letters were sent to the Deputy Secretary of the Tasmanian Department of Education and the Director of the Catholic Education Office asking for their support of the project. Attached to the letter was a memorandum to be circulated to the school principals endorsing the project and asking for the schools' full cooperation (Appendix I). The Association of Independent Schools of Tasmania recommended contacting and gaining permission from its school principals individually. Research assistants were hired to talk to the school principals and administer the surveys. Each school was given information about the project and told that a research assistant would be contacting them soon to give them more information. The research assistants made appointments with the principals or vice principals, in which they explained the aims and purposes of the project, the processes involved in administering the questionnaires, and what the schools were required to do. Copies of the questionnaires, the information sheet, and withdrawal of consent form were left with the principals, and research assistants followed them up to ascertain whether they would consent to participation in the project. Once participating schools were identified, the Department of Education sent information sheets and withdrawal of consent forms to the parents/guardians of all Grade 8 and Grade 10 students in the school. Research assistants asked the principals to provide the class lists for two classes from each grade to which they assigned an identification number (made up of sector, school, and student ID numbers) to each student. Some principals asked for all classes in Grade 8 and/or 10 to participate. In order to maintain the confidentiality of participants, the research team who would be working directly on the data did

not see the class lists. They were given to the Department of Education after administration for safekeeping.

After objecting parents had withdrawn their children, the research assistants made a time with the schools to administer the questionnaires. Once in the class they gave students a copy of the information sheet to keep (Appendix J) and explained the aims and intended outcomes of the project. The research assistants then read a preamble that was included in the information sheet regarding the confidentiality of the project, students' rights to withdraw without incurring academic penalty, and their right to not answer questions that were distressing or uncomfortable. They were also told to see their school counsellor if they were feeling distressed. The instructions for completing the survey were read to the students and they were given the opportunity to ask questions. After students completed the questionnaires they were asked to put them in an envelope and seal them, with the research assistants then collecting the envelopes.

After the questionnaires were returned to the project team they were sorted, and for completed questionnaires, ID numbers were recorded. The instruments were sent to the Social Science Research Lab at the University of Tasmania where they were scanned into an Excel file. This file was converted to a SPSS data file and a data entry employee checked the data file against the questionnaires.

3.10 Limitations of the Thesis Research

One of the limitations of the current study is that other researchers have not tested a number of the measures used in the questionnaire. Although they were tested through a pilot study, the psychometric properties of the scales were not conclusive and further testing is needed. Huebner (1994) posited that Life Satisfaction might be a multidimensional construct, but Multidimensional Life Satisfaction was not analysed in this study and consequently, the correlates and predictors of domain-specific Life

Satisfaction could not be examined. The inclusion of this analysis would have provided a richer understanding of Life Satisfaction in adolescents. The study was limited by the amount of missing data (see Chapter 3, Section 3.11.1). Although testing of the remaining data indicated that it was representative of the sample, the normality of the data could still be doubted. As the sample was drawn from schools in Tasmania, there is an out-of-school population that is not included in this study, therefore the findings from this research can only be applied to in-school populations. The correlates and predictors of Subjective Well-Being could change considerably with the inclusion of out-of-school adolescents. A further limitation of this study was the low alphas generated on the personality scales. Although Francis (1996) argued that low alphas could be expected on scales that are only six items long, it throws doubts onto the findings in this study regarding personality and Subjective Well-Being.

3.11 Data Analysis Methods

3.11.1 Dealing with Missing Data

Initial analysis of the data indicated that missing data were a problem, especially towards the end of the questionnaire. This was a concern as the dependent variables were located at the end of the questionnaire. The largest amount of missing data was on the dependent variables, but ignoring them in the analysis was obviously not an option. The next step was to look at deleting cases with more than 5% of missing data (Tabachnick & Fidell, 2001). Analysis showed that all cases in the data set had more than 5% of missing data, but as the data set was so large deleting cases was seen to be a viable option. Removing cases that had more than 25% data missing meant the deletion of 377 cases. This equated to 15% of the sample, which is allowable following Hertel's guidelines for listwise deletion (1976, as cited in de Vaus, 2002).

To ensure that deleting the invalid data would not compromise the data set a comparison of means was performed through an independent samples test.

The deletion set and the retention set were compared. Cases were assigned a value of 0 if they fell within the 25% to be deleted, and a value of 1 was assigned to remaining cases. The comparison of means test showed non-significant differences between the two groups on the dependent variables.

3.11.2 Exploratory Factor Analysis

A specific goal of factor analysis is to explore the dimensionality, or possible multidimensionality, of the data. Items within questions are analysed to see if they are related to each other, and if so, are combined. Questions are also analysed to see if they overlap. This aids the researcher in deleting excess questions and avoiding multicollinearity.

3.11.2.1 Principal Components Analysis or Factor Analysis?

There is a subtle, yet vital, difference between principal components analysis and factor analysis. Based on different models, factor analysis produces factors whereas components analysis produces components. Principal components analysis analyses all available variance amongst the factors in order to obtain an impression of the multidimensional variation, whereas factor analysis analyses variance minus unique and error variances, and seeks a plausible and simple structure underlying the multidimensional variation.

Factor analysis was used in this study because it stresses that factors, as opposed to components, “cause” variables. The underlying unobserved factor becomes the horse before the cart; it produces the score on each variable the factor is composed of. Components, on the other hand, are simple aggregates of correlated variables and here the cart is before the horse; it is the variables that “cause” the component. Underlying processes or inferences cannot be drawn from the components produced. As this study is interested in looking at the underlying unobservable constructs of observed variables, factor analysis is used (Tabachnick & Fidell, 2001).

3.11.2.2 Factor Extraction Techniques

At times researchers intend to use factor analysis to find or confirm underlying constructs, but use a principal components method of extraction, the default of SPSS, resulting in a principal components analysis rather than a factor analysis. The extraction options available for factor analysis are principal axis factoring, image factoring, maximum likelihood, unweighted least squares, generalised least squares and alpha factoring. Principal axis factoring is used in this study as it allows common variance to be analysed without unique and error variance and is the most widely used and understood method of extraction (Tabachnick & Fidell, 2001).

3.11.2.3 Rotation

Rotation is used to improve the interpretability of a solution and comes in two forms – orthogonal and oblique. Each form of rotation yields similar results and solutions using orthogonal rotation are easy to interpret, but this style of rotation runs on the assumption that factors are not correlated. Initially, all factor analyses in this study use oblique rotation in order to ascertain whether the factors are correlated or not. If the interfactor correlations exceed .32 there is enough overlap in variance to consider the factors correlated. If they are correlated, the solution derived from principal axis factoring with oblique rotation is kept, if they are not correlated the analysis is re-run using orthogonal rotation. When factors are correlated, oblique rotation should be used. Solutions produced using oblique rotation, however, are more difficult to interpret and describe. Direct Oblimin is the oblique rotation method used in this study, whereas varimax is the method used in this study when factors are not correlated.

3.11.2.4 Adequacy of Solution

The adequacy of a solution depends on many criteria including adequacy of extraction, number of factors, rotation and structure. The adequacy of the extraction and the number of factors are assessed by looking at the

eigenvalues, scree plot and factor structure. Eigenvalues represent the amount of variance a factor explains. Factors with eigenvalues equal to or greater than one are considered to be important observed variables and can define how many factors are evident. Eigenvalues should not be the sole criteria for defining how many factors exist, however, as they can both over and under estimate the actual number of factors. The scree plot offers a visual representation of the pattern of eigenvalues plotted against the factors. The position where the slope of the points changes gives an indication of the possible number of factors in the data. This is a subjective process and therefore not exact. Tabachnick and Fidell (2001) estimate that it is reliable to within one or two factors. The third criterion of solution adequacy, the factor structure, examines the number of variables that load on a factor. The maximum number of factors that can be accepted is calculated by dividing the number of variables by three: Each factor must have three variables loading on it (Tabachnick & Fidell, 2001). Factors with one variable loading on them should not be considered adequate. Factors with two variables may be considered reliable if the two variables are highly correlated with each other and not other variables. This is also a judgement to be made by the researcher, as factors with a small number of variables can be the most interesting. The factor structure of a solution is also judged by the criterion of simple structure: The best solution is a simple one. The criterion of simple structure is best judged by making sure that variables load on one factor only: Variables should have high correlations with one factor and low correlations with the rest. In a simple solution a variable should not be influenced by more than one factor. When this does occur, the variable is deemed to belong to the factor on which it loads the highest (Tabachnick & Fidell, 2001). By analysing results with these three aids – eigenvalues, scree plots, and factor structure – the researcher can assess the adequacy of the solution.

3.11.2.5 Interpretation of Factors

The general consensus is that only variables with loadings of .32 and above are considered strong enough to “belong” to a factor. In this study .35 is used in most cases to ensure simplicity of structure and accuracy of factor

interpretations. In some cases a loading between .32 and .35 is accepted. Comrey and Lee (1992) suggest guidelines for interpreting the strength of variables by looking at the percentage of overlapping variance:

- .71 = excellent (50% overlapping variance)
- .63 = very good (40% overlapping variance)
- .55 = good (30% overlapping variance)
- .45 = fair (20% overlapping variance)
- .32 = poor (10% overlapping variance)

The next step in the interpretation of factors is to name them – a process that is “art as well as science” (Tabachnick & Fidell, 2001, p. 625). This process involves looking at the variables that load on a factor and attributing a single construct that may explain the variable scores. Sometimes the factor analysis confirms that the question is measuring what it was intended to measure; other times it does not and the researcher has to re-evaluate the question with regard to the factor analysis results.

3.11.3 Univariate Analysis

Univariate statistics are presented in two forms. Histograms and frequency tables are presented and discussed. Frequencies for ordinal and nominal questions that were not converted into factor scales are presented and discussed. The factor scales were divided into three intervals of approximately equal length in order to compare the response distribution of cases across the top, middle and bottom thirds of the range of the variables. The treatment of scales in a similar manner can be found in the Subjective Well-Being literature. Pavot and Diener (1993) wished to interpret responses to the Satisfaction With Life Scale in relative terms so they divided the scale into a midpoint and four groups. The scale ranged from 5 to 35. They assigned a neutral midpoint of 20 – a point at which a person would be experiencing similar amounts of satisfaction and dissatisfaction – and divided the scale into two groups on either side of the midpoint. Values of 5 to 9 on the scale indicated extreme dissatisfaction with life, values between 15 and 19

represented slight dissatisfaction with life, values between 21 and 25 represented slight satisfaction, and values between 26 and 30 represented satisfaction.

3.11.4 Bivariate Analysis

Due to the large sample size in this study, it was expected that nearly all correlations would be significant, and that shared variance would be used to interpret findings. Tighter restrictions were put on the data, and only correlations equal to or greater than .20 were considered.

3.11.5 Partial Correlation

The purpose of examining the data through partial correlations was to see if additional interactions existed which affected the initial correlation between X and Y (or “zero order correlation”). The relationship between two variables can be better understood if it is tested to see whether the relationship is direct or if another variable is affecting the relationship. This is tested through the addition of a third variable to the zero order relationship: Z, or test, variables. These variables were chosen according to the following criteria:

It made sense theoretically that Z could have an effect on the zero order correlation;

The variable correlated at zero order level with both X and Y variables (de Vaus, 2002).

When Z was found to have an effect on the zero order relationship, the initial correlation was said to be spurious or indirect. The relationship between the three variables can be spurious or direct to varying degrees: It can be partly spurious or indirect, or entirely spurious or indirect. The criterion used in assessing the degree of spuriousness or directionality are given below.

A zero order relationship was found to be *partly spurious/indirect* when:
The partial correlation was lower than the zero order correlation;

The partial correlation was significantly different from zero;
The confidence levels of the zero order and partial coefficients did not overlap (de Vaus, 2002).

A zero order relationship was found to be *entirely spurious/indirect* when:
The partial correlation was lower than the zero order correlation;
The partial correlation was not significantly different from zero;
The confidence levels of the zero order and partial coefficients did not overlap (de Vaus, 2002).

A zero order relationship was found to be *direct* when:
The partial and zero order correlations were the same or close to each other;
The partial and zero order correlations were both significantly different from zero;
The confidence levels of the zero order and partial coefficients did overlap (de Vaus, 2002).

Deciding whether a relationship is indirect as opposed to spurious is “based on theory and commonsense” (de Vaus, 2002, p. 304). To be considered as spurious, X must be able to be changed by Z, and Z must precede both X and Y in time. An indirect relationship requires that Z can be changed by X, and must occur in time after X but before Y (Figure 3.5).

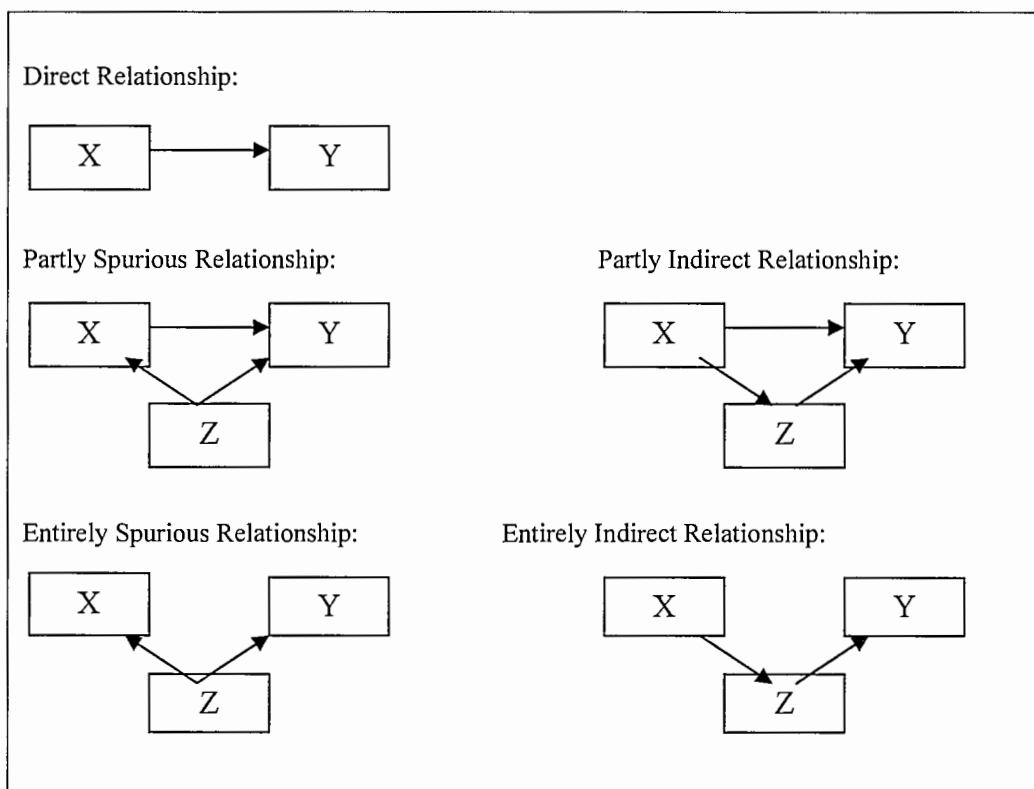


Figure 3.5. Examples of Direct, Spurious, and Indirect Relationships.

3.11.6 Multiple Regression

Multiple regression is an extension of bivariate regression that allows the researcher to examine the affect of a set of independent variables on dependent variables: It is used to assess the unique explanatory power of a variable (de Vaus, 2002; Tabachnick & Fidell, 2001). Regression techniques are particularly useful in experimental and survey research as they allow the independent variables to be correlated. The goal of regression is to detect the smallest number of independent variables that reliably predicts the dependent variable when the affect of the independent variable is substantial and explains a unique part of the dependent variable. The multiple regression equation takes the form of $Y' = A + B_1X_1 + B_2X_2 + B_3X_3 + \dots$ where Y' is the predicted value of the dependent variable, A is the Y intercept, X 's are the independent variables, and B_1 's represent the coefficients given to each of the independent variables through the regression analysis. The aim of regression analysis is to identify the independent variables that best predict scores on the dependent variables, and regression coefficients that bring the predicted

dependent variable score (Y) closest to scores actually obtained on the dependent variables. Regression coefficients aim to minimise the difference between the Y' and actual Y scores, and to optimise the correlation between the two (Tabachnick & Fidell, 2001).

3.11.6.1 Applicability of Multiple Regression to Research Questions

Multiple regression suits the exploratory nature of this research. It allows the assessment of the impact of an independent variable on the dependent variables. Further, it assesses the relationship between the independent and dependent variables controlling for the affects of other significant independent variables, and allows the comparison of the predictive power of competing independent variables (Tabachnick & Fidell, 2001).

3.11.7 Statistical Multiple Regression

Statistical multiple regression orders the entry of the variables based on statistical criteria: the partial F statistics (Montgomery & Peck, 1992; Tabachnick & Fidell, 2001). Forward selection, backward deletion and stepwise are different methods of statistical regression, and in this study stepwise is used. This method is a combination of forward selection and backward deletion; the equation starts without independent variables, which are added one at a time if they meet the statistical criteria. Independent variables in the equation are reassessed when new ones are entered and deleted when they no longer contribute to the model. It is the method that is typically used in model building where the researcher wants to find the subset of variables that are useful in predicting the dependent variables (Tabachnick & Fidell, 2001).

There are a number of criticisms of this method, one of which is that researchers tend to view the final model the procedure produces as the best or most optimal method when this may not be the case. It is possible that there are models that are equally good but could not meet the statistical criteria as

strongly (Montgomery & Peck, 1992). Montgomery and Peck (1992) offer the following questions as a guideline to establishing the adequacy of a model:

1. Is the equation reasonable? That is, do the regressors [independent variables] in the model make sense in light of the problem environment?
2. Is the model usable for its intended purpose? For example, a model intended for prediction that contains a regressor that is unobservable at the time the prediction is required is unusable. If the cost of collecting data on a regressor is prohibitive, this would also render the model unusable.
3. Are the regression coefficients reasonable? That is, are the signs and magnitudes of the coefficients realistic and are the standard errors relatively small?
4. Are the usual diagnostic tests for model adequacy satisfactory? For example, do the residual plots indicate unexplained structure or outliers, or are there one or more high-leverage points that may be controlling the fit? (Montgomery & Peck, 1992, p. 301)

Tabachnick and Fidell (2001) suggest that the stepwise procedure is usable when the sample is large and representative as is the case in this study.

Variables are included in each model that correlate with the appropriate dependent variable higher than .2 (r_s). From this point on all analysis used Pearson's r . Only the final models are presented and discussed in Chapter 5 and causal inferences cannot be made from the multiple regression procedure.

3.11.8 Assumptions of Regression

Multiple regression techniques are reliant on the following assumptions being met:

- Case to independent variable ratio. There must be enough cases on which to test independent variables. Tabachnick and Fidell (2001) outline a number of formulas to calculate the sufficient number of cases when testing multiple correlations, individual predictors, if the data are skewed, if a small effect is anticipated, or if substantial measurement error is expected.
- The absence of outliers among variables. Outliers affect the accuracy of the regression weight estimation.

- The absence of multicollinearity and singularity. Multicollinearity may result in a falsely non-significant result due to the size of the standard errors.
- The normality, linearity, and homoscedasticity of residuals. If these three conditions are not met analysis can be weakened.
- The independence of errors.

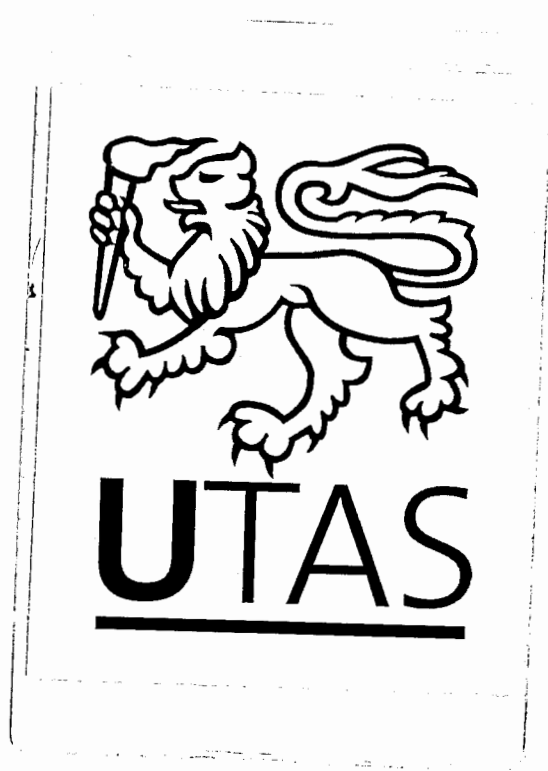
3.11.9 Limitations of Regression

A limitation of multiple regression lies in its inability to establish causal relationships. Although regression can show a relationship between two variables, it cannot say whether the relationship is causal. This can only be said when changing one variable leads to a change in another, when the affect of all other variables are controlled for. Regression solutions may be sensitive to which variables are included in the analysis; certain combinations of variables may result in the significance of the solution being decreased. A further limitation of multiple regression is that it is based on the assumption that the independent variables are measured without error, which is an impossibility in research. To overcome this, the researcher has to choose the most reliable independent variables possible.

3.12 Conclusion

This chapter has outlined both the methodology and methods used in the research central to this thesis. The thesis is located within a positivistic framework and posits that interplay between theory construction and research is a continuous and iterative process. The data analysed and discussed in the thesis were embedded within the AHEWP, a project examining the health and well-being of Tasmanian adolescents. The questionnaire construction followed systems outlined by de Vaus (2002), Babbie (1992), and Sarantakos (1993), and the questionnaire was constructed to address the areas of interest outlined in the project design (see Hogan et al., 2000). The pilot study resulted in a final instrument that was administered to Grade 8 and 10 students

with the assistance of research assistants. An initial look at the data set found that missing data were a problem and appropriate steps were taken to ensure the normality of the data. Multiple regression and partial correlation analysis techniques are the focus of the analysis. The thesis now proceeds to discuss the descriptive results of the data analysis.



Chapter 4: Data Preparation and Univariate Analysis Results

4.1 Introduction

The previous chapter addressed the methodology and methods used in the research central to this thesis. The current chapter presents the first set of findings from the data analysis. Preparation of the data for analysis is presented, specifically the factor analysis results with interesting findings. The normality of the data is analysed and discussed. Univariate results are presented and discussed in two forms: Histograms and frequency tables.

4.2 Data Preparation

In preparing the data for analysis the forms of some question responses were changed. The response categories to some questions were collapsed, for example. Aggregate scales were created for appropriate questions using either summation or the factor analysis techniques outlined in Chapter 3, Section 3.11.2. Due to the large number of variables in the data set, it was necessary to determine the degree of overlap among the question items through the use of factor analysis. Previous analyses of the pilot study data set had only looked at the factor structure of individual questions, and overlap among the items in each question, and were therefore exploratory.

4.2.1 Collapsed Response Categories

Response categories were collapsed for D1 (current living arrangements) and E6 (time spent on different activities). In D1, living with both parents/carers in the same house was combined with living with mother/stepmother/female carer only and living with father/stepfather/male carer only, and was renamed

“Living with either one or both parents/carers.” Alternating between parents in different houses remained its own category, whereas the remainder of the items were combined (see Appendix A), hence creating three categories. In E6, average hours spent on homework per week and participation in a community group or activities were not collapsed with other responses, however different internet activities were combined, as were different sporting activities, as well as chores with paid work. It is often best that responses to questions are interpreted in relative terms (de Vaus, 2002) and to that end responses on the factor scale were trichotomised and re-labelled as low, medium, or high for ease of interpretation on questions for which aggregate scales were created.

4.2.2 Summed Scales

The responses to E7 (extracurricular activities), E11 (voluntary contact with government agencies), and E12 (involuntary contact with government agencies) were summed to create individual scales: Extracur, Helpgovt, and Contgovt respectively. Responses to the risk behaviours question (F3) were multiplied by students’ responses to the risk beliefs question (F4) to create a risk acceptance scale (Riskacce). This allows the interpretation, for example, of relatively high values of risk acceptance as meaning relatively high frequency of risk behaviours that are judged to be of high risk by the respondent.

4.2.3 Factor Scales

All factor analyses were conducted with principal axis factoring using varimax rotation unless otherwise indicated. That is, all analyses were conducted using oblique rotation first (Direct Oblimin) and were kept if the factors were correlated. If factors were not correlated the analysis was re-run using orthogonal rotation (varimax). Unless otherwise indicated, all variables were explained by the solution and factors were void of cross loadings. Where cross loadings did occur, the item was included in the scale on which it loaded the highest (de Vaus, 2002). The Kaiser–Meyer–Olkin (KMO)

measure of sample adequacy, as well as scale alphas, are provided at the bottom of each questions' results table. The univariate statistics of each scale are given from Section 4.5 onwards. Factor scales were calculated for use in subsequent analyses.

4.3 Factor Scale Results

4.3.1 Dependent Variables

4.3.1.1 Life Satisfaction, Positive Affect, and Negative Affect

Questions J1 and J2 were intended to measure Life Satisfaction, Positive Affect, and Negative Affect respectively. J1 and J2 were entered into a factor analysis to ascertain whether the items separated into three factors representing Life Satisfaction, Positive Affect, and Negative Affect. The analysis resulted in a three factor solution, which accounted for 57.89% of the variance. Factor one addressed Positive Affect, Factor two addressed Life Satisfaction, and Factor three addressed Negative Affect. The factor structure however was not as expected. The two reversed items in the SLSS ("I would like to change many things in my life" and "I wish I had a different kind of life") loaded on the factor containing the Negative Affect items of the PANAS, suggesting that these items may be measuring Negative Affect in this sample. Life Satisfaction correlated positively with Positive Affect ($r = .44$), and negatively with Negative Affect ($r = -.31$). Confirming previous research on the factor structure of affect, Positive and Negative Affect were relatively independent of each other ($r = .23$) (Bradburn & Caplovitz, 1965; Diener, 1998; Diener et al., 1985; Diener & Larsen, 1999; Emmons & Diener, 1985b; Huebner, 1991c; Warr et al., 1983). As factors were correlated, oblique rotation was used. Results of the three factor solution are presented in Table 4.1.

Table 4.1
Pattern Matrix for SLSS and PANAS

	Positive Affect	Life Satisfaction	Negative Affect
Felt enthusiastic	.854		
Felt active	.814		
Felt proud	.723		
Felt determined	.721		
Felt strong	.720		
Felt excited	.665		
Felt inspired	.634		
Felt interested	.631		
Felt alert	.583		
Felt attentive	.578		
I have what I want in life		.887	
I have a good life		.876	
My life is just right		.852	
My life is going well		.787	
My life is better than most kids		.572	
Felt scared			.845
Felt ashamed			.799
Felt afraid			.774
Felt guilty			.759
Felt upset			.741
Felt nervous			.705
Felt distressed			.672
Felt jittery			.672
Felt hostile			.659
Felt irritable			.497
I would like to change many things in my life			.346
I wish I had a different kind of life			.329
Eigenvalue	7.28	6.61	1.74
% Variance Explained (cumulative)	26.97	51.45	57.89
Factor Scale Alphas	.91	.90	.90
KMO	.924		

4.3.2 Independent Variables

4.3.2.1 Personality

Factor analysis for the personality variables resulted in a three factor solution accounting for 38.55% of the variance, although the original scale consisted of four subscales. As in the pilot study, the first factor addressed a combination of what was intended to be two separate scales addressing psychoticism and “lie” – the social desirability scale. Factor two contained the neuroticism items, and Factor three contained the extraversion items. The three factors

were not correlated. The alpha for the Psychoticism/Lie factor scale was quite low (.53). Results are presented in Table 4.2.

Table 4.2
Rotated Factor Matrix for Personality Variables

	Psychoticism & Lie	Neuroticism	Extraversion
I get into more trouble at school than most other students	.572		
I have taken things (even small things) that belong to someone else	.538		
I would enjoy practical jokes that could sometimes really hurt people	.526		
I throw waste paper on the floor when there is not a waste paper basket handy	.521		
I seem to get into more fights than other young people	.501		
I enjoy hurting people I like	.486		
I sometimes like teasing animals	.461		
I have been greedy by helping myself to more than my share of anything	.454		
I always do as I'm told at once	-.447		
I always say I am sorry when I have been rude	-.426		
It is important to have good manners	-.416		
I have said bad or nasty things about people	.394		
My feelings are rather easily hurt		.662	
I am easily hurt when people find things wrong with me or the work I do		.656	
I find it hard to get to sleep at night because I'm worrying about things		.616	
I worry for a long time if I feel I have made a fool of myself		.544	
I sometimes feel life is just not worth living		.515	
I often feel "fed-up"		.460	
I can let myself go and enjoy myself a lot at a lively party			.667
I like going out a lot			.641
I find it hard to really enjoy myself at a lively party			-.595
I can get a party going			.549
I am rather lively			.506
I would rather be alone instead of being with other young people			-.375
Eigenvalue	3.804	3.011	2.336
% Variance Explained (cumulative)	16.27	28.81	38.55
Factor Scale Alphas	.53	.75	.73
KMO	.838		

4.3.2.3 Psychosocial Variables

The psychosocial section of the questionnaire consisted of 14 questions containing 62 items that were created to measure different aspects of a person's psychosocial state (e.g., trust, attachment, optimism). They were entered into a factor analysis to eliminate any cross over in the 62 items and to make sure they were measuring what they were designed to measure. Results indicated that the questions were only measuring six factors as opposed to 14, accounting for 41.32% of the variance. Item C9.1 loaded on both Factors one and five, and item C6.3 loaded on both Factors one and three. Seven items did not load on any factors. Following the factor analysis process outlined in Chapter 3 (section 3.11.2.5), the naming of factors involved looking at the variables that load on a factor and attributing a single construct that explained the variable scores. Factor one addressed Idealism, Factor two addressed Image, Factor three Confidence, Factor four Voice, Factor five Family Attachment and Factor six Adventurism. Most of the factors were uncorrelated with one exception: Idealism correlated positively with Voice ($r = .35$). Results are presented in Table 4.3.

Table 4.3
Rotated Factor Matrix for Psychosocial Questions

	Idealism	Image	Confidence	Voice	Family Attachment	Adventurism
Importance of personal values and moral standards	.682					
Importance of goals and plans for future	.666					
Importance of being best person you can	.663					
Importance of emotions & feelings	.661					
Importance of thoughts and ideas	.637					
Importance of being good student	.618					
Importance of skills and abilities	.595					
Importance of ideas about kind of person you are	.595					
Importance of being good son or daughter	.545					
Importance of relationship with parents	.461				.371	
Work effort when encounter difficulties with school work	.400					
Work effort when encounter difficulties with being responsible	.392					
Likelihood of leading the life you want to lead	.366		.353			
Importance of possessions	.362					
Importance of relationships with classmates	.352					
Likelihood of getting the job you want	.343					
Importance of how good looking other people think you are		.808				
Importance of how good looking you are compared to others		.795				
Importance of how attractive you look		.777				
Importance of your looks		.749				
Importance of popularity		.658				
Importance of the kind of clothes you wear		.596				
Importance of how good at sports you are compared to others		.575				
Importance of kind of haircut you have		.571				
Importance of kind of house you live in		.511				
Importance of being great at sport		.341				
Feel you're not particularly good at anything			-.753			
Feel you don't have much to be proud of			-.744			
Feel you can't do anything right			-.702			
I don't know who real me is			-.600			
I don't understand myself very well			-.552			
Very confident that life will turn out well for me			.463			
Feel happy the way you are			.449			
Very confident I can be the kind of person I want to be			.430			
Very confident I will get most of the things I want			.358			
Willing to say what you truly believe to teachers				.760		
Willing to say what you truly believe in class				.749		

Willing to say what you truly believe to people you don't know							.666
Willing to say what you truly believe to parents							.521
How good at solving problems with teachers							.434
How good at solving problems with people in authority							.383
How good at solving problems with strangers							.371
Likelihood of convincing teacher to change things in classroom							.345
How surprised if mother let down your trust						.585	
How close to mother						.572	
How surprised if father let down your trust						.536	
How close to father						.516	
How close to grandparents						.448	
How surprised if grandparents let down your trust						.396	
I do things others think are stupid							.609
I have a strong Sense of Adventure							.532
If I injured myself doing something stupid, would do it again							.504
I do things unusual for me sometimes							.492
I like to try out new things							.434
<hr/>							
Eigenvalues	9.50	5.13	3.9	2.98	2.41	2.09	
% Variance Explained (cumulative)	15.58	23.88	29.07	33.85	37.89	41.32	
Factor Scale Alphas	.89	.88	.83	.80	.69	.66	
<hr/>							
KMO	.875						

4.3.2.4 Institutional Experiences and Competencies

4.3.2.4.1 Family

Questions D15 and D16 were originally intended to measure family functioning and parental support respectively. Factor analysis resulted in a one factor model accounting for 57.10% of the variance, indicating that parental support may be a part of family functioning for this sample. Results are presented in Table 4.4.

Table 4.4
Factor Matrix for Family Questions

	Family Functioning
We listen and respect each other	.789
We show tenderness and affection to one another	.771
People in our family support and help each other	.744
Every member of our household has a say in important family decisions	.744
Rules in our family are clear and fair	.706
My parents help me solve problems I have at school	.683
My parents help me solve problems I have with my friends	.683
My parents help me plan for the future	.579
Eigenvalues	4.568
% Variance Explained	57.10
Factor Scale Alpha	.89
KMO	.901

4.3.2.4.2 Friends

Questions E3 and E4 aimed to measure friendship abilities and benefits from friendship respectively. Both questions were entered into a factor analysis, which resulted in a two factor solution accounting for 66.16% of the variance. Factor one addressed Friendship Benefits, whereas Factor two addressed Friendship Abilities. The factor structure was not completely adequate however. The third item in the friendship competencies question did not load on either factor leaving the second factor with only two items. The resulting alpha for this scale was poor (.48). To obtain a more robust solution, the question would have needed to contain more items. The two factors were negatively correlated ($r = -.39$) so oblique rotation was used. Results are presented in Table 4.5.

Table 4.5
Pattern Matrix for Friendship Questions

	Friendship Benefits	Friendship Abilities
Importance of having support when you need it	.917	
Importance of having someone to confide in	.895	
Importance of being able to be the real you	.759	
I prefer spending a lot of time by myself		.646
I'm not very good at keeping friends		.507
Eigenvalues	2.75	1.23
% Variance Explained (cumulative)	45.75	66.16
Factor Scale Alphas	.89	.48
KMO	.758	

4.3.2.4.3 Sport Prevention

Factor analysis for the sport prevention question, using oblique rotation, resulted in a two factor solution. The solution, however, was not interpretable, and a one factor solution using varimax rotation was found to be the best solution. This solution accounted for 43.21% of the variance. Results are presented in Table 4.6.

Table 4.6
Pattern Matrix for Sport Prevention Question

	Sport Prevention
Not knowing how to exercise properly	.709
Lack of energy	.705
Not having anyone to exercise with	.655
Lack of self discipline	.628
Your health	.626
Not having access to the proper equipment	.605
Lack of time	.596
Not having enough money	.595
Having no interest	.590
Being too scared of getting injured	.536
Being too self conscious about how you look	.470
Eigenvalues	4.75
% Variance Explained	43.21
Factor Scale Alpha	.86
KMO	.899

4.3.2.4.4 Sport Benefits

The sport benefits question was designed to measure improvements that come as a result of participation in sport. Factor analysis for the sport benefits scale resulted in a one factor solution, accounting for 81.88% of the variance. Results are presented in Table 4.7.

Table 4.7
Factor Matrix for Benefits from Sport Question

	Benefits from Sport
Improvement in your ability to be responsible	.922
Improvement in your self-confidence	.820
Improvement in your ability to get along with others	.820
Eigenvalues	2.47
% Variance Explained	81.88
Factor Scale Alpha	.89
KMO	.733

4.3.2.4.5 Social Capital

Factor analysis for the social capital question using oblique rotation resulted in a one factor solution. This solution accounted for 47.90% of the variance. Results are presented in Table 4.8.

Table 4.8
Factor Matrix for Social Capital Question

	Social Capital
Importance of visiting art galleries or museums in your life right now	.804
Importance of reading books in your life right now	.580
Importance of reading newspapers in your life right now	.528
Importance of going to concert or plays in your life right now	.528
Importance of listening to classical music in your life right now	.507
Eigenvalues	2.40
% Variance Explained	47.90
Factor Scale Alpha	.71
KMO	.737

4.3.2.5 Mental Health

F1 and F2 were created to measure mental health and coping respectively. The Mental Health Inventory (MHI) was used to assess mental health. The two questions – mental health and coping – were entered into a factor analysis, resulting in a two factor solution accounting for 60.65% of the variance. Factor one consisted of the MHI items, whereas Factor two consisted of the Coping items. Results are presented in Table 4.9.

Table 4.9
Rotated Factor Matrix for Mental Health Questions

	Mental Health	Coping
Time feeling downhearted and blue	.859	
Time feeling depressed	.844	
Time feeling in very low spirits	.844	
Time feeling so down in the dumps that nothing could cheer you up	.828	
Time feeling tense or high strung	.781	
Time feeling like crying	.780	
Time being a very nervous person	.653	
Ability to cope with problems with your school work		.764
Ability to cope with problems with your feelings		.752
Ability to cope with friendship problems		.751
Ability to cope with problems with life generally		.744
Ability to cope with problems with your teachers		.731
Ability to cope with problems with your looks		.711
Ability to cope with problems with doing well at sport		.678
Ability to cope with problems with your boyfriend/girlfriend		.678
Ability to cope with problems with your parents/carers		.548
Eigenvalues	7.86	3.67
% Variance Explained (cumulative)	41.36	60.65
Factor Scale Alphas	.90	.93
KMO	.933	

4.3.2.6 Goals and Life Planning

H1 and H2 were designed to measure future orientation and influences on goal setting respectively. Both questions were entered into a factor analysis resulting in a three factor solution, which accounted for 57.73% of the variance. Factor one addressed External Influences on Goal Setting, Factor

two addressed Internal Influences on Goal Setting, and Factor three consisted of five out of the seven items measuring Goal Ambivalence. The other two items from this scale loaded on Factor two. Four items loaded on both Factors one and two, whereas item H1.1, “I have a good idea of what I’ll do when I’m older,” did not load on any factors. Results are presented in Table 4.10.

Table 4.10
Rotated Factor Matrix for Goal Questions

	External Influences	Internal Influences	Goal Ambivalence
Influence of having support of your friends	.837		
Influence of family circumstances	.806		
Influence of having support of your family	.784		
Influence of whether you know people who have successfully pursued their goals	.775		
Influence of whether young people like you pursue your kind of goals	.758		
Influence of knowing people who can help	.749		
Influence of pleasing other people	.566		
Influence of other peoples expectations	.535	.415	
Influence of wanting to be successful		.801	
Influence of your interests		.733	
Influence of your skills and abilities		.692	
Influence of whether you are good at activities associated with your goals	.433	.662	
Influence of whether you are making progress towards your goals	.473	.600	
Influence of what you’ve learnt at school	.410	.553	
I spend a long time thinking about my future goals		.375	
I have a really hard time choosing my future goals			.747
I change my mind about my future goals all the time			.698
I don’t really choose goals: I just let things happen			.613
The kinds of things I’ll end up doing are very different from the kinds of things I’d like to do			.456
I don’t care about the future			.411
Eigenvalue	7.72	2.71	1.69
% Variance Explained (cumulative)	36.78	49.68	57.73
Factor Scale Alphas	.93	.88	.73
KMO	.906		

4.4 Normality of the Data

Tabachnick and Fidell (2001) remarked that statistical tests used to detect skewness and kurtosis in data sets are too sensitive to be used with large

samples. They recommended the inspection of histograms to analyse the distribution of the data. Initial analysis of histograms for variables that were expected to be normally distributed (i.e., factor-based scales) highlighted the need to have a close look at the data, where it was evident that there were some outliers, skewness and kurtosis. Outliers were considered as values on the histograms that were not similar to the bulk of responses. Skewness was assessed by the symmetry of the histograms, whereas kurtosis was assessed by the height of the histograms. Tabachnick and Fidell (2001) comment that skewness does not make a substantive difference to the analysis of large data sets, and the risk of underestimation of variance because of kurtosis is reduced with large samples (i.e., more than 200 cases).

A number of subjects had an outlying value on one scaled variable, with fewer having more than one outlier. These cases were examined individually. Patterns in the outliers were not evident. Bivariate analyses were conducted with key variables (e.g., the dependent variables, mother's occupational status) on two data sets, one with the outliers included, and one with the outliers deleted; little difference was found between the size of the correlations or their significance. Bivariate analyses using Pearson's r and Spearman's r_s were compared, and again little difference was found between the size of the correlations or their significance. Multiple regression was performed with two separate files, one with the outliers in, and one with the outliers deleted. The two analyses produced the same regression results. Tolerance levels were good with both data sets, and the same betas reached statistical significance. The betas ranged from .09 to .28 for the analysis run with the outliers in, and from .11 to .29 for the analysis run with the outliers deleted. It is a reasonable conclusion that outlier values, which may be exceptional or spurious, have no influence on the conclusions of this study. Although the data were technically non-normal, the departures from assumption were not serious enough to give concern for the regression analysis in Chapter 5. Spearman's r_s was used for the bivariate and partial correlations presented in Chapter 5.

4.5 Univariate Results

To give a comprehensive description of the data, several approaches to looking at the data are given. Histograms are presented and discussed. Factor scales were trichotomised at points dividing the factor scale range into three intervals of approximately equal length, in order to compare the response distribution of cases across the top, middle, and bottom thirds of the ranges of the variables. This also allows the comparison of the results from this study to findings from other studies. Although other researchers have not used factor scales, it is possible to get a feeling for the distribution of responses in this study and others. Frequencies for ordinal and nominal questions are given as well as basic descriptive statistics.

4.5.1 Dependent Variables

The histogram and distribution table for Positive Affect indicated that responses to the scale were distributed symmetrically, although there were slight “floor” and ceiling effects where students selected either the highest or lowest possible responses to the scale. The histogram for Positive Affect also showed negative kurtosis (platykurtic), with the scores on the scale widely distributed across the factor scale range. The group of cases at the values of 20.5 to 21.5 were indicative of a possible response set in the data. The symmetrical distribution indicated that the majority of students (68.2%) reported moderate levels of Positive Affect. This contrasted with previous findings on the lower levels of Positive Affect that adolescents have reported (Huebner & Dew, 1995; McCullough et al., 2000).

For this sample, Life Satisfaction was skewed to the left, which indicated that most students reported experiencing moderate and high levels of Life Satisfaction (33.8% and 58.3% respectively). The histogram showed negative kurtosis indicating that responses were widely distributed across the factor scale range. The results of this study supported previous research that has found that the majority of adolescents experience a higher degree of Life Satisfaction (Dew & Huebner, 1994; Gilman & Huebner, 1997; Gilman et al.,

2000a, 2000b; Huebner, 1991a, 1991b; Huebner & Dew, 1996; Huebner et al., 1998, 2000; McCullough et al., 2000).

The distribution for Negative Affect was skewed to the right. This indicated that almost all students reported experiencing moderate and low levels of Negative Affect (42.9% and 52.5% respectively). A floor effect was evident, as well as a small ceiling effect. The histogram showed no kurtosis indicating responses were normally distributed. The reports of moderate and low levels of Negative Affect supported results from previous studies with adolescents reporting low levels of Negative Affect. The levels of Negative Affect the adolescents in this sample have reported are slightly lower than that of their American counterparts who scored a mean around 23 (Huebner & Dew, 1995; McCullough et al., 2000). Results for Positive Affect, Life Satisfaction, and Negative Affect are presented in Figures 4.1 to 4.3, and Table 4.11.

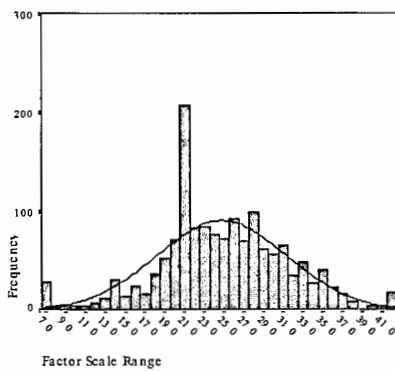


Figure 4.1. Histogram for Positive Affect.

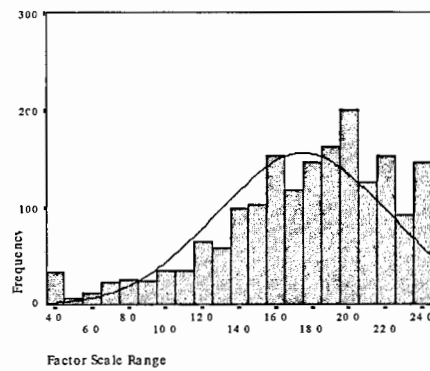


Figure 4.2. Histogram for Life Satisfaction.

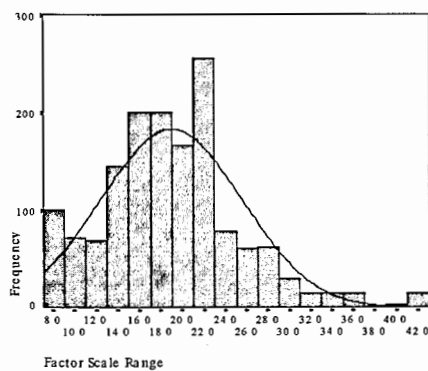


Figure 4.3. Histogram for Negative Affect.

Table 4.11
Univariate Statistics for Dependent Variables

	Positive Affect	Life Satisfaction	Negative Affect
Low (%) (range)	11.7 (7 – 18.7)	7.9 (4 – 10.7)	52.5 (7 – 19)
Moderate (%) (range)	68.2 (18.8 – 30.3)	33.8 (10.8 – 17.3)	42.9 (19.1 – 31)
High (%) (range)	20.2 (30.4 – 42)	58.3 (17.4 – 24)	4.6 (31.1 – 43)
Missing	586	263	580
Mean	24.73	17.48	18.97
SD	6.61	4.67	6.57
N	1508	1831	1514
Factor scale range	7 – 42	4 – 24	7 – 43

4.5.2 Independent Variables

4.5.2.1 Personality

The Psychoticism/Lie scale was skewed to the right, indicating that the majority of respondents reported moderate and low levels of Psychoticism/Lie (51.2% and 47.3% respectively). The histogram showed positive kurtosis (leptokurtic), indicating that responses were concentrated around the mean. The responses for neuroticism were very slightly skewed to the right. This suggested that the majority of respondents were reporting moderate levels of neuroticism (58.1%). The extraversion scale was skewed to the left, which suggested that most students reported experiencing moderate and high degrees of extraversion (31.1% and 66.7% respectively). The histogram showed a small amount of positive kurtosis, indicating that responses were concentrated around the mean. Results are presented in Figures 4.4 to 4.6, and Table 4.12.

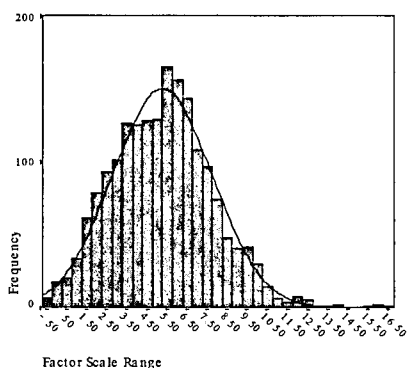


Figure 4.4. Histogram for Psychoticism/Lie

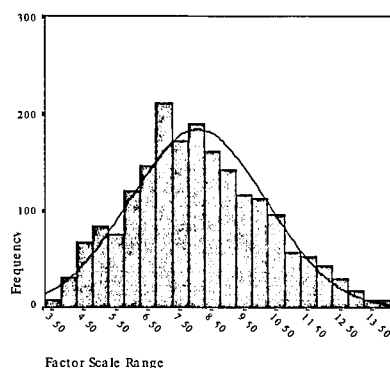


Figure 4.5. Histogram for Neuroticism.

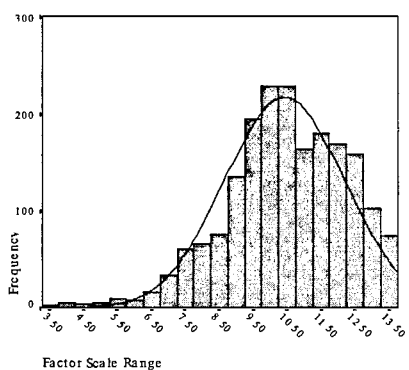


Figure 4.6. Histogram for Extraversion.

Table 4.12
Univariate Statistics for Personality

	Psychoticism/Lie	Neuroticism	Extraversion
Low (%)	47.3	27.6	2.2
(range)	(-1 - 5)	(3 - 6.7)	(3 - 6.3)
Moderate (%)	51.2	58.1	31.1
(range)	(5.1 - 11)	(6.8 - 10.3)	(6.4 - 9.7)
High (%)	1.5	14.2	66.7
(range)	(11.1 - 17)	(10.4 - 14)	(9.8 - 13)
Missing	216	130	157
Mean	5.25	8.05	10.42
SD	2.49	2.13	1.77
N	1878	1964	1937
Factor scale range	-1 - 17	3 - 14	3 - 13

4.5.2.2 Psychosocial

The responses to the Idealism scale were skewed to the left indicating that the majority of respondents reported moderate and high levels of Idealism (35.8% and 62.2% respectively). The histogram showed a very small floor effect, which indicated that a small number of students chose the lowest possible response to the scale. The histogram also showed positive kurtosis, with the responses narrowly distributed across the factor scale range and concentrated around the mean. The responses to the Image scale showed a symmetrical distribution without skewness, which indicated that most students reported moderate levels of Image (63.6%). The histogram and distribution table for Confidence showed that responses were skewed to the left, which suggested that most respondents reported moderate and high levels of Confidence (41.4% and 52.7% respectively). The histogram showed positive kurtosis, which indicated that responses were concentrated around the mean.

The responses to the Voice scale were symmetrically distributed without skewness, which suggested that the majority of respondents reported moderate degrees of Voice (63.6%). The scale for Family Attachment was skewed to the right, which suggested that the majority of respondents reported moderate and low levels of Family Attachment (60.7% and 38.4% respectively). The histogram showed that responses were leptokurtic and concentrated around the mean. The moderate and low levels of Family Attachment that adolescents reported are as expected when looking at traditional views of adolescence (Santrock, 1998). The histogram and response distributions for Sense of Adventure were skewed to the left indicating that most respondents reported moderate and high levels of adventurism (60.9% and 35.3% respectively). The responses were widely distributed, which indicated negative kurtosis. The histogram showed a small ceiling effect, which suggested that some respondents had chosen the highest values possible on the scale. Results are presented in Figures 4.7 to 4.12 and Table 4.13.

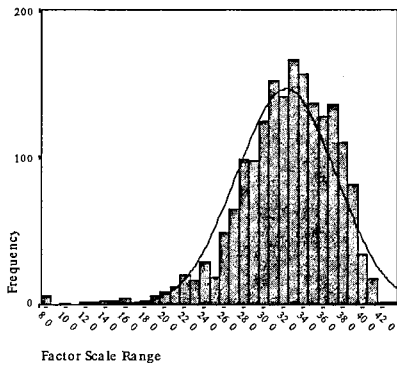


Figure 4.7. Histogram for Idealism.

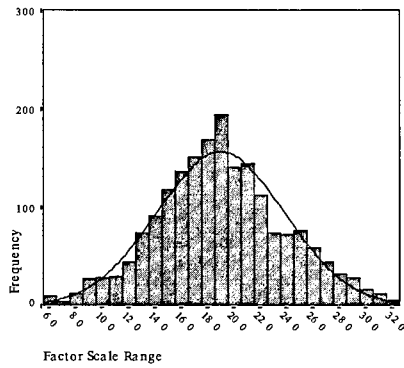


Figure 4.8. Histogram for Image.

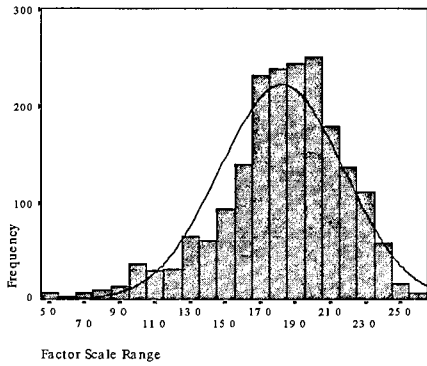


Figure 4.9. Histogram for Confidence.

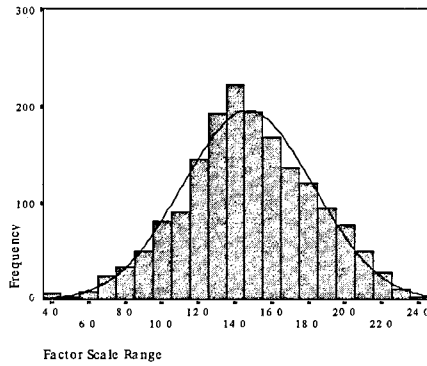


Figure 4.10. Histogram for Voice.

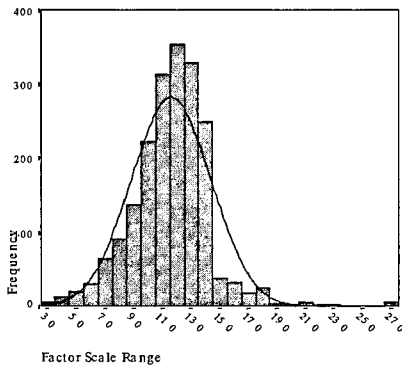


Figure 4.11. Histogram for Family Attachment.

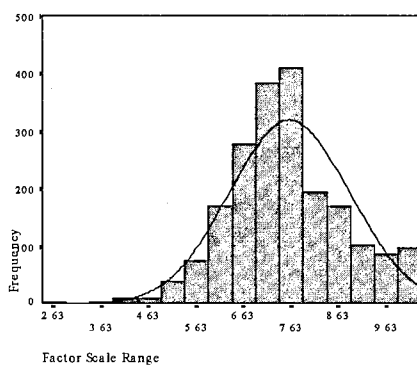


Figure 4.12. Histogram for Adventure.

Table 4.13
Univariate Statistics for Psychosocial Variables

	Idealism	Image	Confidence	Voice	Family Attachment	Adventure
Low (%) (range)	2.0 (8 – 19.7)	17.9 (6 – 14.6)	5.9 (5 – 11.7)	13.1 (4 – 10.7)	38.4 (3 – 11)	3.7 (3 – 5.3)
Moderate (%) (range)	35.8 (19.8 – 31.3)	63.6 (14.7 – 23.3)	41.4 (11.8 – 18.3)	63.6 (10.8 – 17.3)	60.7 (11.1 – 19)	60.9 (5.4 – 7.7)
High (%) (range)	62.2 (31.4 – 43)	18.5 (23.4 – 32)	52.7 (18.4 – 25)	23.3 (17.4 – 24)	0.9 (19.1 – 27)	35.3 (7.8 – 10)
Missing	245	186	116	346	117	59
Mean	32.26	19	18.20	14.68	11.6	7.59
SD	5.01	4.85	3.55	3.55	2.78	1.27
N	1849	1908	1978	1748	1977	2035
Factor Score Range	8 – 43	6 – 32	5 – 25	4 – 24	3 – 27	3 – 10

4.5.2.3 Institutional Experiences and Competencies

4.5.2.3.1 Family

Most students reported having one brother 39.8%, whereas 41.2% of respondents reported having one sister. These results are as expected in an Australian sample. Most students were evenly split between being the youngest in their family and the oldest in their family (35.7% and 35.4% respectively), which is also to be expected when most Australian families have two children. Results are presented in Tables 4.14 and 4.15.

Table 4.14
Univariate Statistics for Number of Brothers
and Sisters

	Number of Brothers (%)	Number of Sisters (%)
0	25.4	29.1
1	39.8	41.2
2	20.8	18.4
3	7.6	6.2
4	3.5	2.5
5	1.0	0.8
6 – 9	2.4	1.9
Missing N	94 2000	107 1987

Table 4.15
Univariate Statistics for
Birth Order

	Birth Order (%)
Oldest (1)	35.4
Middle (2)	28.9
Youngest (3)	35.7
Missing N	38 2056

The majority of respondents reported that their parents were not separated or divorced (69.5%). The rate of parental divorce in this sample was close to one third (30.5%). Surprisingly, over a third of respondents reported that they did not know what level of basic education their parents had achieved. The percentage of “Don’t know” responses was slightly higher when respondents were asked to indicate their fathers’ level of education (mothers = 30.7%; fathers = 34.9%). Even more respondents did not know what level of further education their parents had reached (mothers = 43.6%; fathers = 46.5%). Interestingly, in assessing the level of further education of their mothers, respondents reported that 13.4% had a university or college degree, 3.9% had completed postgraduate study, 3.1% had a trade certificate, and 0.8% had police or armed forces training. When assessing their father’s level of further education, respondents reported that 14.1% had a university or college degree, 5.8% had completed postgraduate study, 10.5% had a trade certificate, 3.1% had police or armed forces training, and 0.9% had a nursing certificate or similar qualifications.

Most respondents stated that their parents were working either full time or part time (mothers = 57.4%, fathers = 74.7%). Parents engaged in domestic

duties equalled 16.2% for mothers compared to 2.6% for fathers. Mothers working casual jobs amounted to 9.3%, whereas 2.5% were unemployed. Close to 7% of respondents did not know what their mother’s labour market status was (6.9%), and 7.8% of respondents chose the “Other” option. Fathers in causal employment equalled 5.4%, whereas 1.7% were reported to be unemployed. Six percent of respondents chose the “Other” option for their fathers, whereas 9.5% did not know what their father’s labour market status was. Results are presented in Tables 4.16 to 4.20.

Table 4.16
Univariate Statistics for
Parent’s Marital Status

Parents Separated or Divorced (%)	
Yes (0)	30.5
No (1)	69.5
Missing N	81 2013

Table 4.17
Univariate Statistics for Parent’s Basic
Education

	Parent’s Basic Education (%)	
	Mothers	Fathers
Primary (1)	0.9	1.2
Some Secondary (2)	4.0	6.3
Year 10 (3)	21.2	20.3
Year 11 (4)	3.1	2.5
Year 12 (5)	40	34.8
Don’t Know (6)	30.7	34.9
Missing N	108 1986	126 1968

Table 4.18
Univariate Statistics for Parent's Further Education

	Parent's Further Education (%)	
	Mother	Father
None (0)	15.4	12.6
Trade Certificate (1)	3.1	10.5
TAFE Certificate or Diploma (2)	10.2	6.5
Nursing or Similar Certificate (3)	9.8	0.9
Police or Armed Forces Training (4)	0.8	3.1
University or College Degree (5)	13.4	14.1
Completed Postgraduate Study (6)	3.9	5.8
Don't Know (7)	43.6	46.5
Missing	129	168
N	1965	1926

Table 4.19
Univariate Statistics for Parent's Labour Market Status

	Parent's Labour Market Status (%)	
	Mother	Father
Full or Part Time (1)	57.4	74.7
Casual (2)	9.3	5.4
Unemployed (3)	2.5	1.7
Domestic Duties (4)	16.2	2.6
Other (5)	7.8	6.0
Don't Know (6)	6.9	9.5
Missing	94	124
N	2000	1970

Table 4.20
Univariate Statistics for Parent's Occupation

Parent's Occupation (%)		
	Mother	Father
Managers & Administrators	1.7	3.9
Farmers & Farm Managers	1.2	4.1
Professionals	28.0	18.8
Associate Professionals	9.6	12.6
Tradespersons & Related Workers	5.0	21.1
Advanced & Intermediate Sales & Clerical Workers	28.5	7.0
Production, Transport, Intermediate Sales & Services, & Factory Workers & Labourers	19.1	22.2
Unemployed	0.8	1.1
Retired, Pensioner	0.2	0.6
Self-Employed	1.5	1.9
Student	1.0	0.2
Employment Unspecified	3.4	6.5
Missing	489	208
N	1605	1886

The majority of respondents reported living with both of their parents/carers in the same house (85.6%), which was owned outright (56.4%). Close to half of respondents (45.5%) reported that their families were living comfortably, whereas 1.5% reported that their families were "Finding it very difficult." For almost all respondents, their primary language was English (94.3%), the majority never attended religious services (54.4%), and most respondents (approximately 90%) watched between 0 and 30 hours of television a week. The histogram for Average Hours Watching Television Per Week was skewed to the right, indicating that most responses fell at the lower end of the scale. The histogram showed that responses were platykurtic, indicating that responses were widely distributed across the summed scale range. The high number of cases at values 5 to 15 shows that a lot of the data was concentrated around the mean. Respondents reported that their households held between

100 and 200 books (22.6%). Results are presented in Tables 4.21 to 4.26 and Figure 4.13.

Table 4.21
Univariate Statistics for Current Living Arrangements

Current Living Arrangements (%)	
Living with One Parent or Both	85.6
Alternating Between Parents	9.3
Other	5.1
<hr/>	
Missing	62
N	2032

Table 4.22
Univariate Statistics for Status of Home Ownership

Status of Home Ownership (%)	
Outright Owner of House (1)	56.4
Outright Owner of Apartment (2)	0.2
Mortgage on House or Apartment (3)	20.7
Renting a House (4)	12.0
Renting an Apartment (5)	0.6
Living with other Family or Friends (6)	0.4
Other (7)	1.9
Don't Know (8)	7.7
<hr/>	
Missing	44
N	2050

Table 4.23
Univariate Statistics for Family's Finances

Family Finances (%)	
Living Comfortably (1)	45.5
Doing Alright(2)	34.3
Just Getting By (3)	10.4
Finding it Quite Difficult (4)	3.1
Finding It Very Difficult (5)	1.5
Don't Know (6)	5.3
<hr/>	
Missing	31
N	2063

Table 4.24
Univariate Statistics for Language

Language at Home (%)	
English (1)	94.3
English + Other (2)	3.7
Other (3)	2.0
<hr/>	
Missing	25
N	2069

Table 4.25 Univariate Statistics for Religious Service Attendance	
Religious Service Attendance (%)	
Never (1)	54.4
Once or Twice a Week (2)	21.4
3 – 6 Times a Year (3)	8.0
Every Month (4)	3.2
Every Fortnight (5)	1.6
Every Week (6)	8.5
More than Once a Week (7)	2.8
Missing	54
N	2040

Table 4.26 Univariate Statistics for Number of Books at Home	
Number of Books at Home (%)	
None or Very Few (1)	3.7
11 – 25 (2)	8.4
25 – 100(3)	21.0
100 – 200 (4)	22.6
200 – 300 (5)	17.4
300 – 400 (6)	9.5
More Than 400 (7)	17.3
Missing	40
N	2054

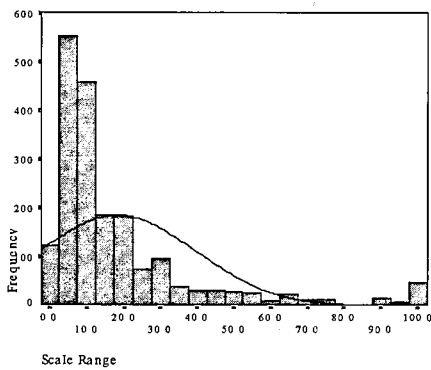


Figure 4.13. Histogram for Average Hours Spent Watching TV per Week.

The histogram and response distributions for the Family Functioning scale were slightly skewed to the left, which indicated that most respondents reported moderate and high levels of Family Functioning (55.8% and 37.5% respectively). The histogram shows a small floor and a substantial ceiling effect, both of which indicated that students had selected either all of the highest, or all of the lowest responses possible on the scale. The histogram reflected negative kurtosis in the data, indicating that responses were widely distributed across the factor scale range. Results are presented in Figure 4.14 and Table 4.27.

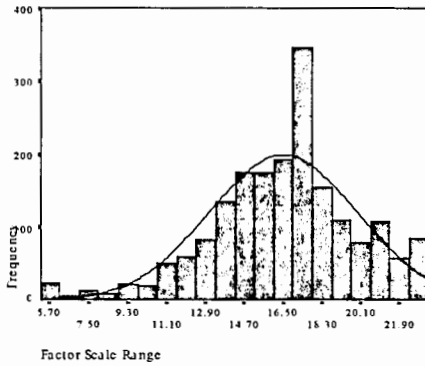


Figure 4.14. Histogram for Family Functioning.

Table 4.27
Univariate Statistics for Family Functioning

Family Functioning	
Low (%)	6.7
(range)	(6 – 11.7)
Moderate (%)	55.8
(range)	(11.8 – 17.3)
High (%)	37.5
(range)	(17.4 – 23)
Missing	211
Mean	16.5
SD	
N	1883
Factor Scale Range	6 – 23

4.5.2.3.2 Friends

Over half of the respondents in this study reported having 10 or more close friends (52.4%), with 2.7% stating they do not have any close friends. Close to 90% of respondents reported having 10 friends or more in general (87.4%), whereas 1.2% report having no friends in general. The majority of respondents reported talking to, or being with, their friends many times a day (65.5%). This is to be expected considering that most adolescents' friends would be at school with them. Results are presented in Tables 4.28 and 4.29.

Table 4.28
Univariate Statistics for Number of Friends

	Number of Friends (%)	
	Close	General
None	2.7	1.2
1 – 3 Friends	10.3	2.1
4 – 6 Friends	20.8	3.5
7 – 9 Friends	13.8	5.8
10+ Friends	52.4	87.4
Missing	110	102
N	1984	1992

Table 4.29
Univariate Statistics for Time With/
Talking to Friends

Time With/Talking To Friends (%)	
Many Times/Day	65.5
Couple of Times/Day	19.3
Once/Day	5.4
Every Couple of Days	5.2
Once/Week	1.7
Once/Two Weeks	0.4
Once/Month	0.6
Once/Every Few Months	1.9
Missing	39
N	2055

The responses for Benefits from Friendship scale were distributed unevenly with a skew to the left indicating that the majority of students reported feeling moderate and high levels of Benefits from Friendship (28.2% and 68.4% respectively). There was a very strong ceiling effect, which suggested that many students selected the highest responses possible. The histogram also showed a disconnected group of cases on the left side with a value below the bottom range on the factor scale. The cases were examined and consisted of missing data for this variable. This was the only time that this occurred in the data set. The histogram indicated that the responses had negative kurtosis: Responses were spread widely across the factor scale range. The Friendship Abilities scale showed a nearly symmetrical distribution with a slight skew to the right. This result indicated that the majority of students reported feeling moderate and low degrees of Friendship Abilities (28.3% and 68.7% respectively). The histogram showed a floor effect, which suggested that a number of students chose the lowest responses possible. Results are presented in Figures 4.15 and 4.16, and Tables 4.30 and 4.31.

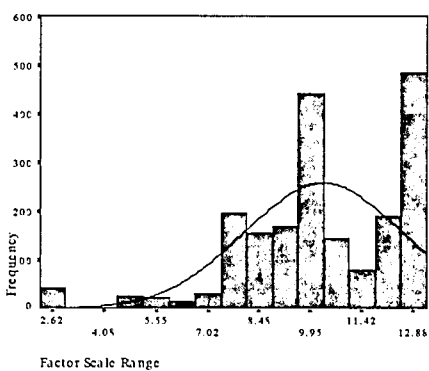


Figure 4.15. Histogram for Benefits from Friendship.

Table 4.30
Univariate Statistics for Benefits from Friendship

	Benefit from Friendship
Low (%)	3.4
(range)	(3 – 6.3)
Moderate (%)	28.2
(range)	(6.4 – 9.7)
High (%)	68.4
(range)	(9.8 – 13)
Missing	132
Mean	10.31
SD	2.26
N	1962
Factor Scale Range	3 – 13

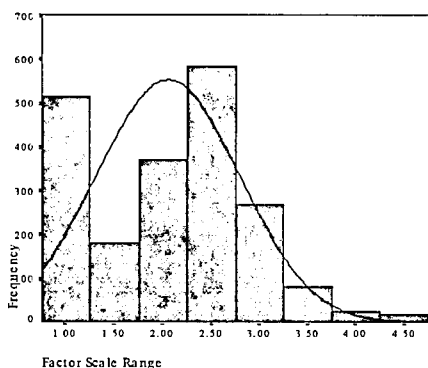


Figure 4.16. Histogram for Friendship Abilities.

Table 4.31
Univariate Statistics for Friendship Competencies

	Friendship Abilities
Low (%)	68.7
(range)	(1 – 2.3)
Moderate (%)	28.3
(range)	(2.4 – 3.7)
High (%)	3.0
(range)	(3.8 – 5)
Missing	541
Mean	2.05
SD	0.74
N	1553
Factor Scale Range	1 – 5

4.5.2.3.3 School

The patterns of results were very similar for students' self assessed success in Mathematics, English, Science, and SOSE, with the majority of students reporting they are doing well (Mathematics = 31.5%; English = 40.3%; Science = 34.2%; SOSE = 39.4%). In regard to Mathematics and English,

this was followed by those who reported doing very well (Mathematics = 29.8%; English = 27.9%). For Science and SOSE, it was followed by those who reported doing OK. Interestingly, the pattern of responses was very different for the Arts. Most respondents reported doing very well (47%), followed by those who assessed themselves as doing well (28.2%). Results are presented in Table 4.32.

Table 4.32
Univariate Statistics for School Variables

	Self-Assessed Success in School (%)				
	Mathematics	English	Science	SOSE	The Arts
Very Poorly (1)	3.9	2.0	3.6	2.6	3.8
Poorly (2)	6.3	3.7	7.1	5.5	3.5
OK (3)	28.5	26.1	32.5	27.1	17.6
Well (4)	31.5	40.3	34.2	39.4	28.2
Very Well (5)	29.8	27.9	22.6	25.4	47.0
Missing	32	37	93	182	460
Mean	3.77	3.88	3.65	3.79	4.11
SD	1.06	0.93	1.02	0.97	1.06
N	2062	2057	2001	1912	1634
Range	1 – 5	1 – 5	1 – 5	1 – 5	1 – 5

4.5.2.3.4 Sport and Extracurricular

The responses to questions that asked students how often they participate in particular activities followed very similar patterns as can be seen in Tables 4.33 to 4.38. Most students reported that they used the internet for homework, email or chat with friends, and other things between 0 and 3 hours per week. Interestingly, 36.1% of respondents reported never using the internet for homework, 33.5% reported never using the internet to chat or email friends, and 25.2% reported never using the internet for other things. Most respondents reported spending between 0 and 6 hours per week on both summer and winter sports (summer = 74%; winter = 75.8%). Again, the patterns were similar for questions regarding hours spent working. Close to three quarters of respondents reported spending 0 to 3 hours on chores per week (72.6%), and three quarters also reported spending the same amount of

time on paid work outside the home (74.5%). Interestingly, 15.5% of respondents reported never having to do chores at home. Over half of the students reported spending 0 hours on paid work outside the home. This result is not surprising considering that the data set included students in Grade 8 who are legally considered to be too young to work.

Tables 4.33

Univariate Statistics for Sport Prevention

Most Important Reason for Playing Sport (%)	
I Want to Get Fit (1)	28.4
I Want to Look Good (2)	3.2
My Parents Make Me (3)	2.7
I Love Sport (4)	34.6
I love Competing Against Others (5)	3.9
I Love Being Part of a Team (6)	8.3
I Love Winning (7)	1.6
I Like Pushing Myself as Hard as I Can (8)	5.4
I Want to be Really Good at Something (9)	3.6
It Gives Me a Sense of Achievement (10)	6.5
It Helps Me Develop Self Discipline (11)	1.9
Missing	144
N	1950

Table 4.34
Univariate Statistics for Average
Homework Hours per Week

Homework Hours per Week (%)	
None	14.4
1 – 3 Hours	51.6
4 – 6 Hours	20.3
7 – 9 Hours	8.1
10 – 12 Hours	3.0
13 – 15 Hours	1.1
16+ Hours	1.6
Missing	33
N	2061

Table 4.35
Univariate Statistics for Average Internet Hours
per Week

Internet Hours per Week (%)			
	Homework	Email/Chat	Other
None	36.1	33.5	25.2
1 – 3 Hours	49.4	32.5	45.3
4 – 6 Hours	9.0	14.9	15.0
7 – 9 Hours	3.0	8.7	5.6
10 – 12 Hours	1.0	4.4	2.9
13 – 15 Hours	0.4	2.0	1.7
16+ Hours	1.0	4.0	4.2
Missing	43	57	69
N	2051	2037	2025

Table 4.36
Univariate Statistics for Sport Hours
per Week

Sport Hours per Week (%)		
	Summer	Winter
None	22.1	21.9
1 – 3 Hours	29.7	31.9
4 – 6 Hours	22.2	22.0
7 – 9 Hours	10.7	10.4
10 – 12 Hours	5.7	5.8
13 – 15 Hours	2.8	2.2
16+ Hours	6.8	5.8
Missing	55	59
N	2039	2035

Table 4.37
Univariate Statistics for Work Hours per
Week

Work Hours per Week (%)		
	Chores	Paid Work
None	15.5	59.3
1 – 3 Hours	57.1	15.2
4 – 6 Hours	16.8	8.4
7 – 9 Hours	5.7	6.6
10 – 12 Hours	2.4	4.3
13 – 15 Hours	0.8	2.7
16+ Hours	1.7	3.5
Missing	64	75
N	2030	2019

Table 4.38
Univariate Statistics for Community Hours per Week
Community Hours per Week (%)

None	64.3
1 – 3 Hours	22.2
4 – 6 Hours	6.4
7 – 9 Hours	3.0
10 – 12 Hours	1.5
13 – 15 Hours	0.8
16+ Hours	1.7
Missing	84
N	2010

The histogram and response distributions in the table for Extracurricular Activities was skewed to the right, which suggested that the majority of students reported that they had low and moderate levels of participation in Extracurricular Activities (70.1% and 25.1% respectively). The histogram showed a floor effect indicating that some students chose the lowest possible options on the scale. The histogram also showed that responses had some negative kurtosis; responses were widely distributed. The group of responses at 5 were indicative of a response set. Responses to the Sport Prevention scale skewed to the right. This suggested that most students reported low and moderate levels of Sport Prevention (87.5% and 11.2% respectively). The histogram showed quite a strong floor effect, which indicated that a number of students chose the lowest option possible on the scale (*never*). The histogram showed slight negative kurtosis. The histogram for Benefits from Sport was slightly skewed to the left, which suggested that most students reported moderate and high levels of Benefits from Sport (37.1% and 45.9% respectively). The histogram showed a small floor effect and larger ceiling effect, which suggested that some students had chosen either all of the lowest or all of the highest responses possible on the scale. Results are presented in Figures 4.17 to 4.19, and Tables 4.39 to 4.41.

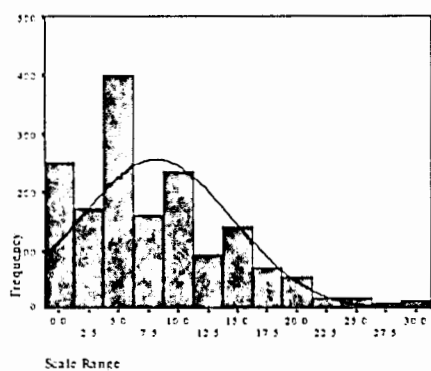


Figure 4.17. Histogram for Extracurricular Activities.

Table 4.39
Univariate Statistics for Extracurricular Activities

Extracurricular Activities	
Low (%)	70.1
(range)	(0 – 10)
Moderate (%)	25.1
(range)	(10.1 – 20)
High (%)	4.9
(range)	(20.1 – 30)
Missing	451
N	1643
Range	0 – 30

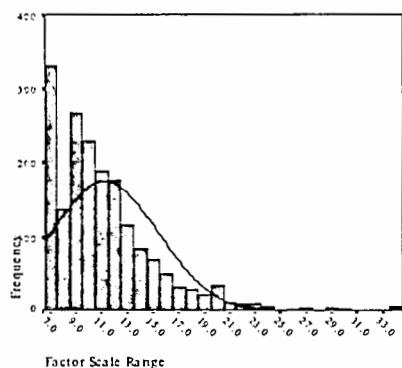


Figure 4.18. Histogram for Sport Prevention.

Table 4.40
Univariate Statistics for Sport Prevention

Sport Prevention	
Low (%)	87.5
(range)	(7 – 16)
Moderate (%)	11.2
(range)	(16.1 – 25)
High (%)	1.4
(range)	(25.1 – 34)
Missing	481
N	1613
Factor Scale Range	7 – 34

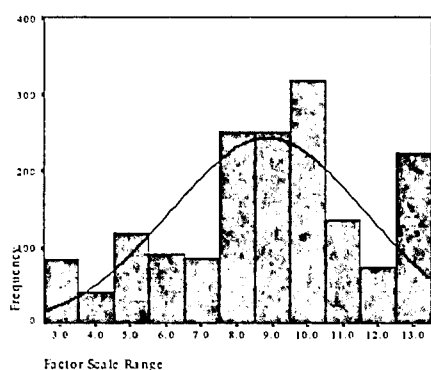


Figure 4.19. Histogram for Benefits from Sport.

Table 4.41
Univariate statistics for Benefits from Sport

	Benefits from Sport
Low (%) (range)	17.1 (3 – 6.3)
Moderate (%) (range)	37.1 (6.4 – 9.7)
High (%) (range)	45.9 (9.8 – 13)
Missing	476
N	1618
Factor Scale Range	3 – 13

4.5.2.3.5 Other

Response frequencies indicated that most students did not seek help from or have contact with the government agencies listed in the question (percentages for *none* range from 77.0% to 95.8%). Results are presented in Tables 4.42 and 4.43.

Table 4.42
Univariate Statistics for Voluntary Contact with Government Agencies

	Sought Help or Advice from... (%)				
	Police	Legal Aid or Community Legal Service	Drop-in Centre	Counselling Service	Emergency or Crisis Relief
None	89.9	93.0	95.0	85.6	95.8
1 – 2 Times	7.5	4.7	2.2	7.3	2.0
3 – 4 Times	1.3	0.8	1.1	2.3	0.7
5 – 6 Times	0.4	0.6	0.8	1.7	0.4
7 – 8 Times	0.3	0.3	0.2	0.7	0.4
9 – 10 Times	0.1	.01	0.0	0.4	0.1
11+ Times	0.4	.05	0.5	2.0	0.4
Missing N	41 2053	37 2057	55 2039	68 2026	61 2033

	Sought Help or Advice from... (%)		
	ATSIC	Housing Assistance	Centrelink
None	96.9	94.8	90.4
1 – 2 Times	0.7	2.6	5.7
3 – 4 Times	0.5	0.6	1.6
5 – 6 Times	0.6	0.6	0.9
7 – 8 Times	0.3	0.4	0.3
9 – 10 Times	0.3	0.2	0.3
11+ Times	0.5	0.7	0.6
Missing N	81 2013	70 2024	84 2010

Table 4.43
Univariate Statistics for Involuntary Contact with Government Agencies

	Involuntary Contact with... (%)			
	Police	Youth Detention Centre	Probation/Parole Officer	Counselling Service
None	77.0	95.7	95.7	93.7
1 – 2 Times	15.0	1.6	1.2	7.4
3 – 4 Times	3.6	0.6	0.9	2.7
5 – 6 Times	1.4	0.3	0.2	1.6
7 – 8 Times	0.5	0.3	0.3	0.8
9 – 10 Times	0.2	0.1	0.2	0.6
11+ Times	2.3	1.3	1.4	3.1
Missing	39	51	51	51
N	2055	2043	2043	2043

4.5.2.4 Mental Health

The responses to the Mental Health scale were skewed to the right, which indicated that students reported feeling low and moderate frequency of feelings of Mental Health (60.2% and 33.4% respectively). The histogram showed a large floor effect, which suggested that a number of students were selecting the lowest response option possible. The histogram also showed that responses had some negative kurtosis; responses were widely distributed across the factor scale range. The group of cases at 12, 13, 18, and 19 were indicative of possible response sets. Coping was symmetrically distributed, which suggested that the majority of students reported moderate levels of Coping (54.8%). There was a floor effect on this variable, indicating that some students chose the lowest possible response for the Coping variable. The Coping histogram suggested responses were platykurtic with widely distributed responses. The high number of cases at 21 and 28 were indicative of a response set. Results are presented in Figures 4.20 and 4.21, and Tables 4.44 and 4.45.

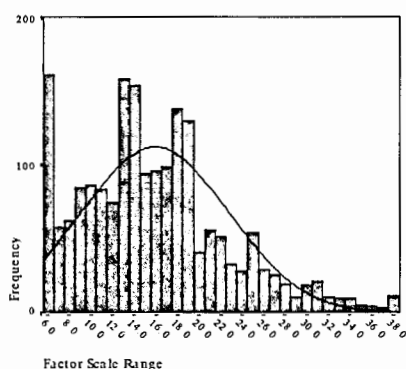


Figure 4.20. Histogram for Mental Health.

Table 4.44

Univariate Statistics for Mental Health

Mental Health	
Low (%)	60.2
(range)	(6 – 16.7)
Moderate (%)	33.4
(range)	(16.8 – 27.3)
High (%)	6.4
(range)	(27.4 – 38)
Missing	158
Mean	15.91
SD	6.85
N	1936
Factor scale range	6 – 38

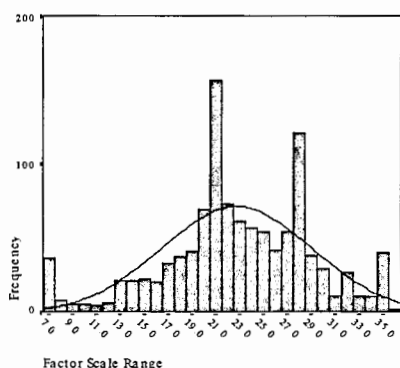


Figure 4.21. Histogram for Coping

Table 4.45

Univariate Statistics for Coping

Coping	
Low (%)	14.2
(range)	(7 – 16.7)
Moderate (%)	54.8
(range)	(16.8 – 26.3)
High (%)	31.0
(range)	(26.4 – 36)
Missing	962
Mean	22.79
SD	6.25
N	1132
Factor scale range	7 – 36

4.5.2.5 Risk Behaviours and Beliefs

Around one fifth of respondents reported that they have thought about committing suicide (20.8%). Six percent of respondents who have had suicidal thoughts have attempted to commit suicide once, whereas 86% of respondents reported never attempting suicide. Results are presented in Tables 4.46 and 4.47.

Tables 4.46
Univariate Statistics for Suicide
Ideation

Suicide Ideation (%)	
Yes (1)	20.8
No (0)	79.2
Missing	64
N	2030

Table 4.47
Univariate Statistics for Suicide
Attempts

Suicide Attempts (%)	
Never (0)	86.0
Once (1)	6.0
2 or 3 Times (2)	3.9
4 or 5 Times (3)	1.2
6+ Times (4)	2.9
Missing	46
N	2048

The histogram and frequency distributions for the Risk Acceptance scale were skewed to the right. This indicated that the majority of respondents reported low levels of risk acceptance (97.4%). The histogram showed that the responses were leptokurtic, with responses centred around the mean. Results are presented in Figure 4.22 and Table 4.48.

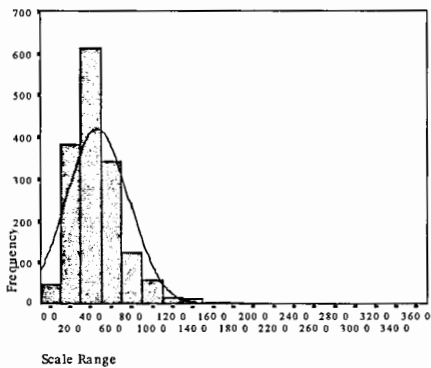


Figure 4.22. Histogram for Risk
Acceptance.

Table 4.48
Univariate Statistics for Risk Acceptance

Risk Acceptance	
Low (%)	97.4
(range)	(0 – 116.7)
Moderate (%)	2.2
(range)	(116.8 – 233.3)
High (%)	0.4
(range)	(233.4 – 350)
Missing	475
Mean	46.46
SD	30.72
N	1619
Range	0 – 350

4.5.2.6 Life Events

The majority of students reported never experiencing the following events: changing schools (39.8%); the separation or divorce of their parents (67.8%); serious health problems (70.1%); friendship problems (34%); being bullied (49.1%); receiving a serious injury (49.5%); family problems (47.4%); forming an intimate relationship (42.7%); having a parent remarry (84.3%); falling in love (39%); starting to make their own money (46.7%); getting into trouble at school (33%); and breaking up with boy/girlfriend (40.9%). Of the respondents who did experience these events, the majority reported that they occurred at least three years ago for: death of a family member or friend; changing schools; separation or divorce of parents; serious health problems; and receiving a serious injury. For students who experienced friendship problems, being bullied, poor grades at school, family problems, falling in love, and getting into trouble at school, the majority reported it happening in the last week. Most students who experienced the following events reported that they occurred in the last six months: formed an intimate relationship; started making own money, and broke up with boy/girlfriend. Results are presented in Table 4.49.

Table 4.49
Univariate Statistics for Life Events

	Life Events (%)				
	Death of Family Member/Friend	Changed Schools	Separation/Divorce of Parents	Serious Health Problems	Friendship Problems
Never	19.1	39.8	67.8	70.1	34.0
Last Week	5.1	2.1	1.6	4.0	24.4
Last Month	5.8	1.4	1.3	3.1	14.4
Last 6 Months	13.2	2.9	1.6	4.3	12.0
Last Year	13.6	3.8	2.1	4.4	7.0
1 – 2 Years Ago	16.5	18.4	2.5	4.3	5.1
3+ Years Ago	26.7	31.7	23.1	10.0	3.2
Missing	43	46	52	71	63
N	2051	2048	2042	2023	2031
Scale Range	0 – 6	0 – 6	0 – 6	0 – 6	0 – 6
	Bullied By Other Kids	Poor Grades at School	Received a Serious Injury	Family Problems	Formed an Intimate Relationship
Never	49.1	40.3	49.5	47.4	42.7
Last Week	17.7	17.9	6.5	20.1	11.9
Last Month	6.5	12.1	6.6	8.7	12.2
Last 6 Months	6.3	9.3	7.9	8.8	15.7
Last Year	5.8	9.5	9.0	5.6	9.4
1 – 2 Years Ago	5.7	5.9	7.5	3.3	5.3
3+ Years Ago	9.0	5.1	13.1	6.1	2.7
Missing	61	69	69	88	108
N	2033	2025	2025	2006	1986
Scale Range	0 – 6	0 – 6	0 – 6	0 – 6	0 – 6

	Parent Remarried	Fell In Love	Started Making Own Money	Got Into Trouble at School	Broke Up with Boyfriend/ Girlfriend
Never	84.3	39.0	46.7	33.0	40.9
Last Week	2.0	14.8	7.5	32.8	5.8
Last Month	1.3	12.8	6.0	11.2	10.0
Last 6 Months	1.9	14.7	12.8	8.5	16.2
Last Year	1.7	9.8	11.4	6.4	13.3
1 – 2 Years Ago	1.4	5.5	8.4	3.4	8.0
3+ Years Ago	7.2	3.3	7.2	4.6	5.8
Missing	82	109	109	81	83
N	2012	1985	1985	2013	2011
Scale Range	0 – 6	0 – 6	0 – 6	0 – 6	0 – 6

4.5.2.7 Goals and Life Planning

Most respondents indicated that they would be continuing high school/college through to the end of year 12 (67.9%). Close to a fifth of the respondents had not decided when they would finish high school/college (19.9%). After school, the majority of students planned to go on to study at university (39.2%), whereas 19.6% were planning to get a job. Over ten percent of students had not decided what they would do after school (10.9%). The majority of students reported that they would like to be in a professional occupation (45.4%), and the majority were moderately confident of getting their desired job (34.6%). Results are presented in Tables 4.50 to 4.53.

Table 4.50
Univariate Statistics for School Plans

Finish High School/College (%)	
End of Year 10 (1)	9.6
End of Year 11 (2)	2.6
End of Year 12 (3)	67.9
Don't Know (4)	19.9
<hr/>	
Missing	102
N	1992

Table 4.51
Univariate Statistics for After School Plans

After School Plans (%)	
Get a Job (1)	19.6
Get an Apprenticeship (2)	8.9
Go to TAFE (3)	7.1
Go to University (4)	39.2
Travel (5)	6.0
Join the Services (6)	2.8
Take a Year Off (7)	2.9
Other (8)	2.8
Don't Know (9)	10.9
<hr/>	
Missing	137
N	1957

Table 4.52
Univariate Statistics for Student's Occupational Preference

Student's Occupational Preference (%)	
Managers & Administrators	1.2
Farmers & Farm Managers	0.8
Professionals	45.4
Associate Professionals	16.3
Tradespersons & Related Workers	14.3
Advanced & Intermediate Sales & Clerical Workers	4.8
Production, Transport, Intermediate Sales & Service, & Factory Workers & Labourers	2.4
Family Business	0.2
Undecided	14.5
<hr/>	
Missing	232
N	1862

Table 4.53
Univariate Statistics for Confidence at Getting Desired Job

Confident at Getting Desired Job (%)	
Not At All Confident	4.0
A Little Confident	9.8
Somewhat Confident	20.9
Moderately Confident	34.6
Very Confident	30.6
<hr/>	
Missing	159
Mean	3.78
SD	1.11
N	1935
Range	1 – 5

The responses for the Goal Ambivalence variable were skewed to the right, which indicated that the majority of respondents reported low and moderate levels of Goal Ambivalence (41.5% and 55.3% respectively). The histogram showed a small floor effect on the variable, which suggested that some students chose the lowest possible response on this variable. External Influences on Goal Setting was slightly skewed to the right, which suggested that the majority of students reported that external influences had moderate impacts on their goal setting (48.5%). Both a floor and ceiling effect are evident on this variable indicating that some students chose either all of the highest or all of the lowest responses possible. The histogram also showed that responses were platykurtic and widely distributed across the factor scale range. The group of cases at 17 were indicative of a possible response set. The response distributions for the Internal Influences on Goal Setting scale were slightly skewed to the left. This indicated that most students reported moderate and high levels of impact of internal influences on goal setting (42.1% and 44.5% respectively). As with external influences, both a floor and ceiling effect are evident, suggesting that some students chose either all of the highest or all of the lowest responses possible. This histogram showed slight negative kurtosis, with widely distributed responses. The high number of cases at 13 and 17.5 were indicative of a possible response set. Results are presented in Figures 4.23 to 4.25, and Tables 4.54 to 4.56.

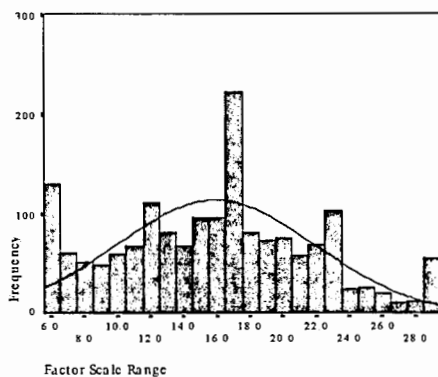


Figure 4.23. Histogram for External Influences on Goal Setting.

Tables 4.54
Univariate Statistics for External
Influences on Goal Setting

	External Influences
Low (%) (range)	33.5 (6 – 13.7)
Moderate (%) (range)	48.5 (13.7 – 21.3)
High (%) (range)	18.1 (21.4 – 29)
Missing	573
Mean	15.89
SD	5.99
N	1521
Factor Scale Range	6 – 29

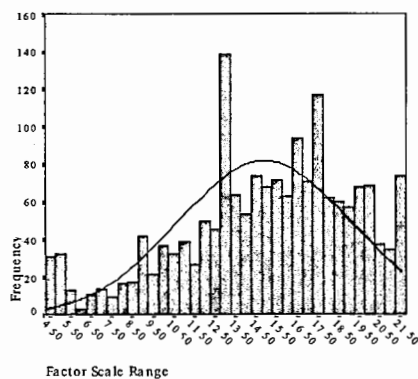


Figure 4.24. Histogram for Internal Influences on Goal Setting.

Table 4.55
Univariate Statistics for Internal
Influences on Goal Setting

	Internal Influences
Low (%) (range)	13.4 (4 – 10)
Moderate (%) (range)	42.1 (10.1 – 16)
High (%) (range)	44.5 (16.1 – 22)
Missing	387
Mean	14.90
SD	4.19
N	1707
Factor Scale Range	4 – 22

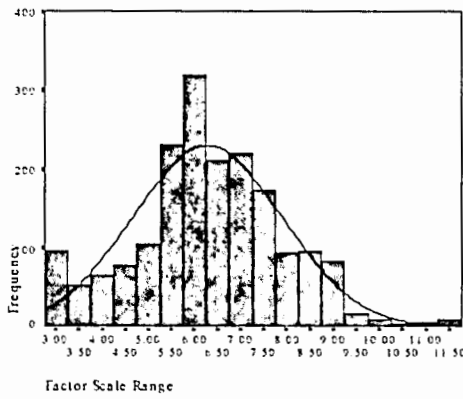


Figure 4.25. Histogram for Goal Ambivalence.

Table 4.56
Univariate Statistics for Goal Ambivalence

Goal Ambivalence	
Low (%)	41.5
(range)	(3 – 6)
Moderate (%)	55.3
(range)	(6.1 – 9)
High (%)	3.1
(range)	(9.1 – 12)
Missing	375
Mean	6.28
SD	1.62
N	1719
Factor Scale Range	3 – 12

4.6 Conclusion

This chapter has presented the first set of results from the data analysis. The data were prepared for analysis by the summing of some scales, whereas other scales resulted from a factor analysis. The results from the factor analysis for the dependent variables were unexpected and differed from findings reported in previous research. The findings, however, supported other research suggesting the three variables are distinct concepts. Before the univariate analysis was conducted the normality of the data was assessed. Histograms indicated the presence of outliers prompting a closer look at the data. It was concluded that the influence of the outliers was not serious enough to give concern. Frequency tables and histograms are both used to present and discuss the univariate statistics. Chapter 5 outlines the second set of results, specifically bivariate correlations, pre-regression partial correlations, multiple regression results, and post-regression partial correlations.

Chapter 5: Bivariate, Partial Correlation, and Multiple Regression Results

5.1 Introduction

The previous chapter discussed the results from the factor and univariate analyses. This chapter presents the second set of results produced from the data analysis, specifically bivariate correlations, pre-regression partial correlations, multiple regression results, and post-regression partial correlations. All results are organised according to dependent variable, therefore giving a full picture of the relationship of the independent variables to each dependent variable. The pre-regression partial correlations were obtained through analysis conducted prior to the regression analysis. The purpose of conducting this analysis was to identify variables that had the potential to be in more than one of the regression equations. The post-regression partial correlations are conducted with variables that were found to be shared by two or more of the dependent variables in the regression analysis. A full discussion of results is presented in Chapter 6.

5.2 Bivariate Results

As the sample size in this study was large, nearly all correlations between variables were statistically significant, including variable combinations with less than 1% shared variance. Tighter restrictions were set, therefore, on the required strength of associations, with only correlations equal or greater to .20 considered for analyses and description. As the normality of the data was sometimes uncertain, Spearman's r_s was used. All correlations presented are significant at the .001 level. Assessing the strength of correlations or shared variance followed Cohen's (1988) guidelines:

Weak = 1% – 8.41% ($r_s = .10 - .29$)
 Moderate = 9% – 24.01% ($r_s = .30 - .49$)
 Strong = 25% – 100% ($r_s = .50 - 1.0$)

5.2.1 Correlations Among the Dependent Variables

Positive Affect and Negative Affect were found to correlate with Life Satisfaction moderately in the current study supporting previous research by Andrews and Withey (1976), Campbell et al. (1976), Emmons and Diener (1985a), and Lucas et al. (1996). Negative Affect correlated with Life Satisfaction negatively, with the two variables sharing 9% variance. This result indicated that higher levels of Negative Affect were associated with lower levels of Life Satisfaction. Positive Affect had a moderate, positive relationship with Life Satisfaction. The two variables shared 19.36% variance, which, interestingly, made this the second strongest association between Life Satisfaction and all of the other variables. The relationship indicated that higher levels of Life Satisfaction were associated with higher levels of Positive Affect. Positive and Negative Affect did not correlate within this data set providing further support for the widely held view that the two dimensions are separate. The correlations between the dependent variables are presented in Table 5.1. Positive Affect and Negative Affect did not correlate with each other, therefore only correlations between Life Satisfaction and Positive Affect, and Life Satisfaction and Negative Affect are presented.

Table 5.1
 Bivariate Correlations Among Dependent Variables

Life Satisfaction and...	r_s	% Shared Variance	Missing	N
Positive Affect	.44	19.36	666	1428
Negative Affect	-.30	9.00	658	1436

5.2.2 Correlations Among Independent Variables

Many of the independent variables correlated with each other. The highest correlation occurred between Suicide Ideation and Suicide Attempts ($r_s = -.69$). Mental Health and Family Functioning also correlated significantly ($r_s = -.58$), as did Mental Health and Neuroticism ($r_s = .59$). Coping correlated with Family Functioning ($r_s = .51$) and Confidence correlated with Neuroticism ($r_s = -.54$). Involuntary Contact with Government Agencies correlated highly with Voluntary Contact with Government Agencies ($r_s = .57$).

5.3 Life Satisfaction Results

5.3.1 Bivariate Correlation Results

Correlations among Life Satisfaction and the independent variables are presented in Table 5.2 and discussed below. All correlations presented are significant at the .0001 level, and are ordered from the highest percentage of shared variance to the lowest.

5.3.1.1 Demographics

Age and Gender did not correlate with Life Satisfaction significantly in this study, providing support for previous studies that found that the two variables were not correlated with Life Satisfaction (Ash & Huebner, 2001; Dew & Huebner, 1994; Gilman, et al., 2000b; Huebner, 1991b; Huebner et al., 1998, 2000; Wilson & Peterson, 1988; Young et al., 1995).

5.3.1.2 Personality

Both the Neuroticism and the Psychoticism/Lie scales had weak, negative relationships with Life Satisfaction (shared variance Neuroticism = 7.29%; shared variance Psychoticism/Lie = 5.76%), indicating that higher levels of Neuroticism and Psychoticism/Lie were associated with lower levels of Life Satisfaction. Extraversion did not correlate with Life Satisfaction. These

findings replicated the results from Heaven's (1989) study of Life Satisfaction with Australian adolescents.

5.3.1.3 Psychosocial

The relationship between Life Satisfaction and Coping was the strongest of all relationships between Life Satisfaction and all other independent variables. There was a strong, positive relationship between the two variables, which shared 29.16% of variance. Of the remaining psychosocial variables, Idealism, Family Attachment, and Voice also correlated with Life Satisfaction. The relationships between Idealism and Life Satisfaction, and Family Attachment and Life Satisfaction were of moderate strength (shared variance Idealism = 16.81%; shared variance Family Attachment = 9%), whereas the relationship between Life Satisfaction and Voice was weak (shared variance = 7.84%). All relationships were positive indicating that high levels of Confidence, Idealism, Family Attachment and Voice were associated with higher levels of Life Satisfaction.

5.3.1.4 Institutional Experiences and Competencies

5.3.1.4.1 *Family*

Respondents' evaluation of their family's financial situation had a weak, negative relationship with Life Satisfaction (shared variance = 7.84%). The Family Finances question was constructed in such a way that a low value indicated a better financial situation, and a high value indicated a worse financial situation. The negative direction of the correlations between the two variables, therefore, suggested that the more advantageous the family's financial situation is the higher the level of Life Satisfaction that is experienced. Whether a respondent's parents were separated or divorced also correlated with Life Satisfaction (Married = 0; Separated or divorced = 1). The relationship was weak and positive, with the two variables sharing 4.41% of variance. The relationship indicated that parents being separated or divorced was associated with higher levels of Life Satisfaction. Exploration of the relationship between Family Functioning and Life Satisfaction resulted

in a moderate positive relationship, with the two variables sharing 20.25% of variance. Higher levels of Family Functioning were found to be associated with higher levels of Life Satisfaction. This result supported research by Gilman et al. (2000a), Huebner (1991b), Leung and Zhang (2000), Petito and Cummins (2000), and Young et al. (1995), on the importance of satisfaction with family life, relations with parents, parental support, and parenting style to adolescent Life Satisfaction.

5.3.1.4.2 Sport

Sport Prevention and Benefits from Sport correlated with Life Satisfaction. Benefits from Sport had a weak to moderate, positive relationship with Life Satisfaction (shared variance = 8.41%), indicating that higher levels of Benefits from Sport were associated with higher levels of Life Satisfaction. Sport Prevention had a weak, negative relationship with Life Satisfaction (shared variance = 7.29%), which indicated that increased usage of the reasons given for Sport Prevention were associated with lower levels of Life Satisfaction.

5.3.1.4.3 School

Self-Assessed Success in English, SOSE, Mathematics, and Science all had weak but significant, positive correlations with Life Satisfaction (shared variance English and SOSE = 6.76%; shared variance Mathematics and Science = 6.25%). Increased self-assessed success in these subjects was associated with higher levels of Life Satisfaction. This finding seems to contradict the findings of Wilson and Peterson (1998), who concluded that educational attainment was not significantly correlated with Life Satisfaction. Perhaps this is due to the differences in measurement: Here educational attainment was self assessed, whereas in Wilson and Peterson's (1998) study educational attainment was measured by asking respondents how far they had reached in school.

5.3.1.4.4 Friends

Levels of friendship abilities and the number of close friends a respondent had correlated with Life Satisfaction. The relationship between Life Satisfaction and Friendship Abilities was weak and negative (shared variance = 5.29%), indicating that high levels of incompetency were associated with lower levels of Life Satisfaction. Number of Close Friends correlated positively to a small degree (shared variance = 4.84%). This result indicated that an increase in the number of close friends was associated with higher levels of Life Satisfaction. When studying satisfaction with friends however, Huebner (1991b) found that satisfaction with friends was not a significant correlate with Life Satisfaction. Gilman et al.'s (2000a) research supported the current findings: They found that interpersonal relations were significantly related to Life Satisfaction in adolescents.

5.3.1.4.5 Other

Involuntary Contact with Government Agencies had a weak, negative correlation with Life Satisfaction, with the two variables sharing 6.25% of variance. This result indicated that increased involuntary contact with government agencies was associated with lower levels of Life Satisfaction for adolescents.

5.3.1.5 Mental Health

The Mental Health question measuring depression, anxiety and control had a moderate, negative relationship with Life Satisfaction, with the two variables sharing 18.49% of variance. This result suggested that higher levels of depression, anxiety and control were associated with lower levels of Life Satisfaction. This result supported the findings of Adelman et al. (1989), Gilman et al. (2000a), Gullone and Cummins (1999), and Huebner (1991b) who also examined the relationship between adolescent Mental Health and adolescent Life Satisfaction. The question measuring Coping had the second strongest relationship with Life Satisfaction of the independent variables, with a strong positive relationship. The two variables shared 28.09% of variance.

The relationship indicated that higher levels of Coping were associated with higher levels of Life Satisfaction.

5.3.1.6 Risk Behaviours and Beliefs

Suicide Ideation and Suicide Attempts had significant relationships with Life Satisfaction, both of moderate strength. Suicide Ideation (No = 0; Yes = 1) had a positive relationship with Life Satisfaction, with the variables sharing 14.44% variance. This result suggested that a tendency towards *considering* committing suicide was associated with higher levels of Life Satisfaction. Suicide attempts had a negative relationship with Life Satisfaction with the two variables sharing 9.61% of variance. The result indicated that increased frequency of Suicide Attempts was associated with lower levels of Life Satisfaction.

5.3.1.7 Life Events

The life event items addressing the separation/divorce of parents and family problems both correlated negatively with Life Satisfaction. The correlations were only weak with both variables sharing 4.41% of variance with Life Satisfaction. This result indicated an association between the distance in time of these events occurring and lower levels of Life Satisfaction (i.e., the further in time the events occurred, the lower the level of Life Satisfaction). These findings related to those of Ash and Huebner (2001) who found that stressors with the family environment were associated with Life Satisfaction for adolescents.

5.3.1.8 Goals and Life Planning

The impact of internal influences on adolescents' goal setting had a weak to moderate, positive relationship with Life Satisfaction. The two variables shared 8.41% of variance. The relationship indicated that higher levels of impact of Internal Influences on Goal Setting were associated with higher levels of Life Satisfaction. Confidence at Getting Desired Job also correlated with Life Satisfaction. The relationship was weak in strength, with the two

variables sharing 7.84% of variance. The result suggested an association between higher levels of Confidence at Getting Desired Job and higher levels of Life Satisfaction.

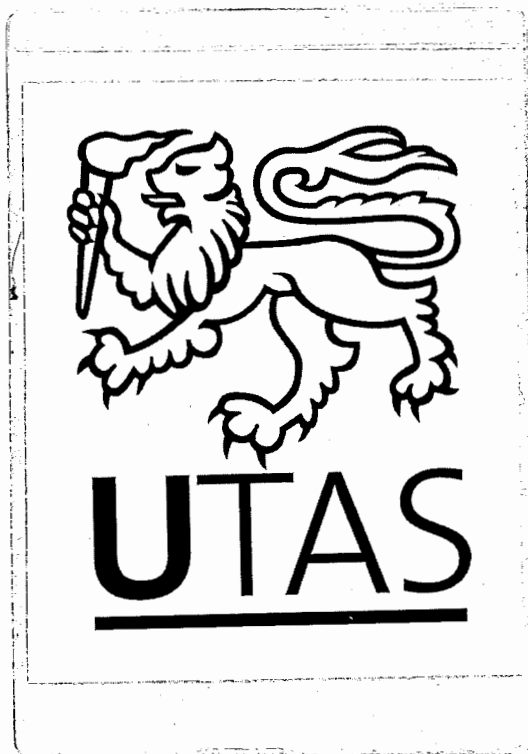


Table 5.2
Bivariate Correlations Among Life Satisfaction and Independent Variables

Life Satisfaction and...	r_s	% Shared Variance	Missing	N
Confidence	.54	29.16	349	1745
Coping	.53	28.09	1094	1000
Family Functioning	.45	20.25	387	1707
Mental Health	-.43	18.49	363	1731
Idealism	.41	16.81	438	1656
Suicide Ideation*	.38	14.44	311	1783
Suicide Attempts	-.31	9.61	300	1794
Family Attachment	.30	9.00	143	1951
Internal Influences on Goal Setting	.29	8.41	495	1599
Family Finances	-.28	7.84	287	1807
Confidence at Getting Desired Job	.28	7.84	342	1752
Voice	.28	7.84	553	1541
Sport Prevention	-.27	7.29	451	1643
Neuroticism	-.27	7.29	370	1724
Benefits from Friendship	.27	7.29	605	1489
Self-Assessed Success in English	.26	6.76	291	1803
Self-Assessed Success in SOSE	.26	6.76	418	1676
Self-Assessed Success in Mathematics	.25	6.25	289	1805
Self-Assessed Success in Science	.25	6.25	343	1751
Involuntary Contact with Government Agencies	-.25	6.25	340	1754
Psychoticism/Lie	-.24	5.76	434	1660
Friendship Abilities	-.23	5.29	298	1796
Number of Close Friends	.22	4.84	355	1739
Parent's Martial Status**	.21	4.41	330	1764
Life Event: Parents Separate or Divorce	-.21	4.41	302	1792
Life Event: Family Problems	-.21	4.41	326	1768

*(No = 0; Yes = 1)

**(Married = 0; Separated/Divorced = 1)

In summary:

Higher levels of Life Satisfaction are associated with higher levels of:

- Confidence
- Coping
- Family Functioning
- Idealism
- Suicide Ideation (No = 0; Yes = 1)
- Family Attachment
- Internal Influences on Goal Setting
- Confidence of Getting Desired Job
- Voice
- Benefits from Sport
- Self-Assessed Success in English, SOSE, Mathematics, and Science
- Number of Close Friends
- Parent's Marital Status (Married = 0; Separated/Divorced = 1)

Lower levels of Life Satisfaction are associated with higher levels of:

- Depression, Anxiety and Lack of Control
- Suicide Attempts
- Involuntary Contact with Government Agencies
- Friendship Abilities
- Life Event: Family Problems
- Family Finances
- Sport Prevention
- Neuroticism
- Psychoticism/Lie
- Life Event: Parents Separate/Divorce

5.3.2 Pre-Regression Partial Correlation Results

The purpose of examining the data through partial correlations at this stage of the analysis was to see if any additional interactions existed that affected the initial correlation between the two variables X and Y (or “zero order correlation”). The relationship between two variables could be better understood if it was tested to see whether the relationship was direct or if another variable was affecting the relationship. This was assessed through the addition of a third variable to the zero order relationship: Z, or test, variables. These variables were chosen according to the criteria outlined in Chapter 3, Section 3.11.5.

In this analysis of the partial correlations, it is the correlations among the dependent variables that are important. The purpose of examining partial correlations here was to see which independent variables might have an effect on multiple dependent variables: To see which variables may appear in more than one regression equation for the dependent variables. The dependent variables cannot be seen as occurring prior to each other so relationships can only be interpreted as spurious to varying degrees. Life Satisfaction correlated with both Positive Affect and Negative Affect, and Positive and Negative Affect did not correlate with each other, therefore all partial correlation results involve Life Satisfaction. All partial correlation results are presented here. The variables were chosen as Z, or test, variables because it made logical sense that they could influence the zero order relationship, and because they correlated with either Life Satisfaction and Negative Affect, or Life Satisfaction and Positive Affect. The results presented are those that may be partly spurious or entirely spurious. All other zero order correlations were direct and not influenced by the Z variables.

The relationship between Positive Affect and Life Satisfaction was explored controlling for Idealism, Confidence, Family Functioning, and Coping. The value of r_s dropped from .44 to .33 for Idealism and Confidence, .34 for Family Functioning, and .31 for Coping. Examination of the confidence intervals confirmed that the relationship between Positive Affect and Life Satisfaction was partly spurious and influenced by Idealism, Confidence, Family Functioning, and Coping. If these variables are found to be significant predictors of both Positive Affect and Life Satisfaction, it is expected that they will account for some of the zero order correlation between the two dependent variables. The results are presented in Tables 5.3 to 5.7 and Figures 5.1 to 5.5.

Table 5.3

Zero Order Correlation for Life Satisfaction and Positive Affect

Zero Order r_s ($X \rightarrow Y$) r_{xy}	Confidence Intervals (95%)
.44	.40 , .48

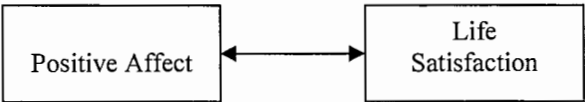


Figure 5.1. Zero Order Correlation for Life Satisfaction and Positive Affect.

Table 5.4

Partial Correlation for Life Satisfaction and Positive Affect – Controlling for Idealism

Partial r_s ($X \leftrightarrow Z \rightarrow Y$) $r_{xy.z}$	Confidence Intervals (95%)
.33	.28 , .38

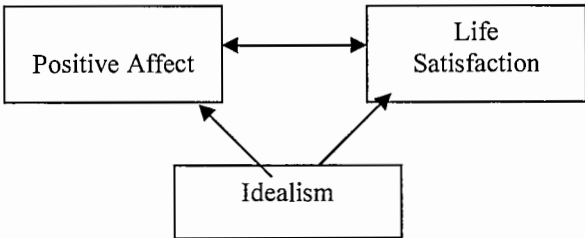


Figure 5.2. Partial Correlation for Life Satisfaction and Positive Affect – Controlling for Idealism.

Table 5.5

Partial Correlation for Life Satisfaction and Positive Affect – Controlling for Confidence

Partial r_s ($X \leftrightarrow Z \rightarrow Y$) $r_{xy.z}$	Confidence Intervals (95%)
.33	.28 , .38

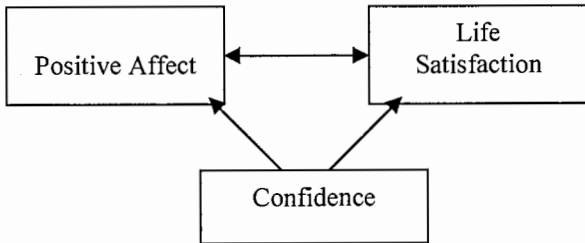


Figure 5.3. Partial Correlation for Life Satisfaction and Positive Affect – Controlling for Confidence.

Table 5.6
Partial Correlation for Life Satisfaction
and Positive Affect – Controlling for
Family Functioning

Partial r_s ($X \leftrightarrow Z \rightarrow Y$) $r_{xy.z}$	Confidence Intervals (95%)
.34	.29 , .39

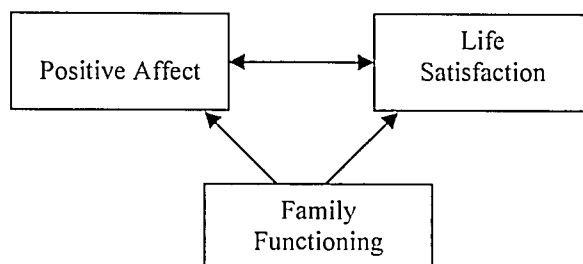


Figure 5.4. Partial Correlation for Life Satisfaction and Positive Affect – Controlling for Coping.

Table 5.7
Partial Correlation for Life Satisfaction
and Positive Affect – Controlling for
Coping

Partial r_s ($X \leftrightarrow Z \rightarrow Y$) $r_{xy.z}$	Confidence Intervals (95%)
.31	.26 , .36

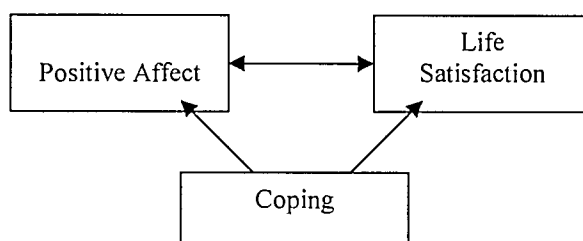


Figure 5.5. Partial Correlation for Life Satisfaction and Positive Affect – Controlling for Coping.

The relationship between Life Satisfaction and Negative Affect was examined controlling for Mental Health and Confidence. The zero order correlation dropped from $-.30$ to $-.05$ when controlling for Mental Health, and $-.08$ when controlling for Confidence. The partial r_s for the variable measuring Confidence was significant and examination of the confidence intervals confirmed that the relationship between Life Satisfaction and Negative Affect was partly spurious. The partial r_s for the controlling variable Mental Health was not significant at the .05 level ($p = .06$) and confidence intervals did not overlap. This result indicated that the relationship between Life Satisfaction and Negative Affect was entirely spurious and almost entirely explained by Mental Health. Results are presented in Tables 5.8 to 5.10 and Figures 5.6 to 5.8.

Table 5.8

Zero Order Correlation for Life Satisfaction and Negative Affect

Zero Order r_s (X→Y) r_{xy}	Confidence Intervals (95%)
-.30	-.35 , -.25



Figure 5.6. Zero Order Correlation for Life Satisfaction and Negative Affect.

Table 5.9

Partial Correlation for Life Satisfaction and Negative Affect – Controlling for Confidence

Partial r_s (X↔Z→Y) $r_{xy.z}$	Confidence Intervals (95%)
-.08	-.13 , -.03

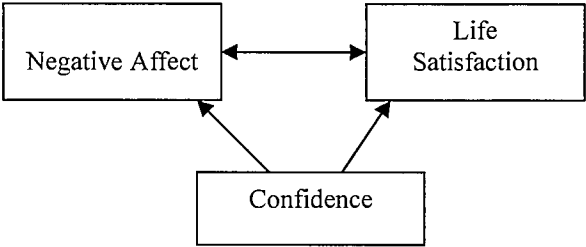


Figure 5.7. Partial Correlation for Life Satisfaction and Negative Affect – Controlling for Confidence.

Table 5.10

Partial Correlation for Life Satisfaction and Negative Affect – Controlling for Mental Health

Partial r_s (X↔Z→Y) $r_{xy.z}$	Confidence Intervals (95%)
-.05 ($p = .06$)	-.13 , -.03

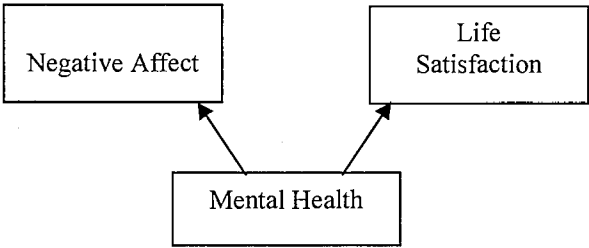


Figure 5.8. Partial Correlation for Life Satisfaction and Negative Affect – Controlling for Mental Health

5.3.3 Regression Results

As detailed in Chapter 3, multiple regression analysis orders the entry of the variables based on statistical criteria: the partial F statistics (Montgomery & Peck, 1992; Tabachnick & Fidell, 2001). Forward inclusion, backward deletion and stepwise selection are different methods of statistical regression, and in this study stepwise selection is used. This method is a combination of forward selection and backward deletion; the equation starts without independent variables, which are added one at a time if they meet the statistical criteria. Independent variables in the equation are reassessed when new ones are entered and deleted when they no longer contribute to the model. This is the method that is typically used in model building where the researcher wants to find the subset of variables that are most useful in predicting the dependent variables (Tabachnick & Fidell, 2001). Variables are included in each model that correlated with the appropriate dependent variable stronger than $r_s = .20$. From this point on all analysis used Pearson's r or change in R^2 . Only the final models are presented and discussed here. As the study is observational, causal inferences cannot be made from the multiple regression procedure.

The following variables correlated with Life Satisfaction from above .20 and were entered into a stepwise multiple regression analysis:

- | | | |
|---------------------------------------|--|---|
| • Idealism | • Parent's Marital Status | • Suicide Ideation |
| • Confidence | • Family Attachment | • Suicide Attempts |
| • Family Functioning | • Friendship Abilities | • Sport Prevention |
| • Mental Health | • Voice | • Psychoticism/Lie |
| • Coping | • Neuroticism | • Benefits from Sport |
| • Number of Close Friends | • Life Event: Family Problems | • Life Event: Parents Separating Or Divorcing |
| • Internal Influences on Goal Setting | • Self-Assessed Success in Mathematics | • Self-Assessed Success in English |
| • Self-Assessed Success in Science | • Self-Assessed Success in SOSE | • Family Finances |
| • Confidence at Getting Desired Job | • Involuntary Contact with Government Agencies | |

The Life Event item “Parents Separating or Divorcing” was removed from the analysis to avoid multicollinearity as it was very similar to the item “Parent’s Marital Status.” Multicollinearity was checked through the examination of correlations among independent variables. Correlations were lower than .7, with the highest correlation between Confidence and Mental Health ($r = -.62$), indicating that multicollinearity was not a problem. As confirmation, Tolerance and Variance Inflation Factor (VIF) values were good for the model, with the lowest Tolerance level reaching .50 and the highest VIF value reaching 1.99.

Before the model was considered, the histograms and casewise diagnostics were examined to determine the nature of the data, specifically, the identification of univariate and multivariate outliers (see Figure 5.9 and Table 5.11).

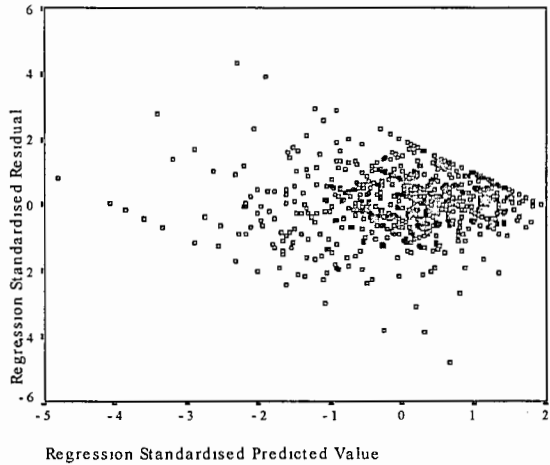


Figure 5.9. Standardised Residual Scatterplot for Life Satisfaction.

Table 5.11
Casewise Diagnostics for Life Satisfaction

Book_2 Number	Std. Residual	Life Satisfaction Score	Predicted Value	Residual
4	-3.015	4	13.86	-9.89
61	-3.112	8	18.13	-10.21
1176	-4.792	4	19.69	-15.72
1288	-3.900	24	11.09	-12.76
2018	-3.851	4	16.61	-12.63
1277	4.294	24	9.76	14.08
1826	3.889	24	11.09	12.76

Figure 5.9 and Table 5.11 show that the Life Satisfaction model had a small number of outliers and contained some heteroscedasticity. The presence of outliers indicated that the regression equation was a poor fit for some of the cases, and possibly reflected the “floor” and ceiling effects in the Life Satisfaction scale. The effect of these cases was to lower the multiple correlation. Before deciding how to treat the outliers they were analysed to see if they were multivariate outliers. Following Tabachnick and Fidell (2001) each case was analysed separately and a dummy variable created giving the case a value of 1 and all other cases 0. The dummy variable was then entered into a multiple regression analysis with the Life Satisfaction predictors. Book_2 numbers (hereafter “case number”) 4 and 1826 were found to be multivariate outliers.

Case number 4 was predicted by Coping, Mental Health, Suicide Ideation, Family Functioning, and Confidence at Getting Desired Job, with the model significant at the .0001 level, and betas significant at the .0001 level (Coping and Mental Health), the .01 level (Suicide Ideation and Family Functioning), and .05 level (Confidence at Getting Desired Job). Using a list procedure the case values for the appropriate scales were obtained and compared to the descriptive statistics on the whole data set. The mean in the sample for Coping was 23, whereas case number 4’s value for Coping was 7; the mean in the sample for Mental Health was 16, whereas case number 4’s value was 6;

the mean in the sample for Suicide Ideation was .21, whereas the value for case number 4 was 1; the sample mean of Family Functioning was 17 and the value for case number 4 was similar (18); and the sample mean for Confidence at Getting Desired Job was 4, whereas the value for case number 4 was 1. From these results it was concluded that the model obtained for Life Satisfaction might not be applicable to respondents with this combination of responses.

To see if the combination of Mental Health, Coping, Suicide Ideation, Family Functioning, and Confidence at Getting Desired Job were working together to affect Life Satisfaction scores, that is, to see if this affect held for the wider data set, the cases with similar values on these variables to case number 4 were selected and their residuals examined. The values of residuals were varied indicating that this combination of variables was relevant for case number 4 only.

Case number 1826 was predicted by Idealism, with the model significant at the .0001 level, and the beta. A list procedure and descriptive statistics showed that while the mean for Idealism in the sample was 32, the value for case number 1826 was 14. This suggested that cases low on Idealism might have a similar response. The data were checked to see if this effect held for the wider data set, with no effect being found.

Case number 1277 was predicted by Confidence, Confidence at Getting Desired Job, and Idealism with the model significant at the .001 level. The betas for the three variables – Confidence, Confidence at Getting Desired Job, and Idealism – were significant at the .05 level. Inspection of the case indicated that it had low values for Confidence, as well as Confidence at Getting Desired Job, and had a high value for Idealism. This indicated that the regression equation might not be applicable to similar cases. The residuals of cases with similar responses to case number 1277 were examined. The values of the residuals indicated that this effect was relevant for this case only.

The remaining outliers were examined in the same manner as the outliers identified by the histograms in Chapter 4. Their values on key variables were obtained and analysed to see if any data entry errors, or other intervening factors, existed. As in Chapter 4, Section 4.4, no discernable pattern among these cases could be found that would suggest why some responses on the cases were acting as outliers. The values on these cases hence, were taken to be true representations of the respondent and the analysis of the model continued.

The final model obtained explained 51% of the variance in Life Satisfaction. Twelve of the twenty six variables entered into the equation significantly predicted Life Satisfaction: Confidence, Coping, Family Functioning, Suicide Ideation, Parent's Marital Status, Idealism, Mental Health, Confidence at Getting Desired Job, Family Finances, Internal Influences on Goal Setting, Number of Close Friends, and Family Attachment. The strongest predictors were Confidence and Coping, both with betas of .19 ($p = .0005$). Confidence explained 31% of the variance, and the addition of Coping explained a further 11%. Family functioning added a further 4% to the equation with a strongly significant beta of .16 ($p = .0005$). The positive direction of these variables indicated that a unit change in Confidence, Coping, and Family Functioning leads to a .19, .19, and .16 increase in standardised levels of Life Satisfaction. Suicide Ideation and Parent's Marital Status were added to the model next, adding 2% and 1% to the variance explained, respectively. The betas for these two variables were $-.11$ for Suicide Ideation and $-.10$ for Parent's Marital Status. As both betas were negative, a unit change in Suicide Ideation and Parent's Marital Status would lead to a decrease in Life Satisfaction levels.

Idealism was entered into the equation next and added significantly to the model ($p = .001$). The variable explained an additional 1% of the variance with a beta of .10, and was positive in nature. This indicated that a unit change in Idealism would lead to a .10 increase in Life Satisfaction. The addition of Mental Health to the model added a further 1% to the solution ($\beta = -.14$). The direction of the beta indicated that a unit change in Mental

Health would lead to a .14 decrease in Life Satisfaction. The other variables of Confidence at Getting Desired Job, Family Finances, Internal Influences on Goal Setting, Number of Close Friends, and Family Attachment also added significantly to the model, adding between 0.1% and 1.0% (p value between .05 and .10). Family Finances and Family Attachment betas were negative, leading to a decrease in Life Satisfaction, whereas the betas for the remaining variables were positive.

Also of interest were the variables that correlated with the dependent variables, but were not found to be significant predictors. Neuroticism and Psychoticism/Lie, the only personality variables to correlate with the dependent variables in this study, did not add explanatory power to the regression equation when entered into the regression equation. Voice also became insignificant as did the institutional experiences and competencies areas of Self-Assessed Success in Mathematics, English, Science, and SOSE, Friendship Abilities, Sport Prevention, Benefits from Sport, and Involuntary Contact with Government Agencies. Life Event: Family problems and Suicide Attempts were also non-significant predictors. Figure 5.10 summarises the Life Satisfaction model, and the final regression equation is presented in Figure 5.11. The regression results can be found in Table 5.12.

A one unit increase in the following variables will lead to a standardised *increase* in Life Satisfaction:

- Increase in Confidence → .19 increase in Life Satisfaction
- Increase in Coping → .19 increase in Life Satisfaction
- Increase in Family Functioning → .16 increase in Life Satisfaction
- Increase in Idealism → .10 increase in Life Satisfaction
- Increase in Confidence at Getting Desired Job → .08 increase in Life Satisfaction
- Increase in Internal Influences in Goal Setting → .06 increase in Life Satisfaction
- Increase in Number of Close Friends → .06 increase in Life Satisfaction

A one unit increase in the following variables will lead to a *decrease* in Life Satisfaction:

- Increase in Suicide Ideation (No = 0; Yes = 1) → .11 decrease in Life Satisfaction
- Increase in Parent's Marital Status → .10 decrease in Life Satisfaction
- Increase in Mental Health → .14 decrease in Life Satisfaction
- Increase in Family Finances → .06 decrease in Life Satisfaction
- Increase in Family Attachment → .04 decrease in Life Satisfaction

Figure 5.10. Summary of the Life Satisfaction Model.

$$\begin{aligned}
 \text{LS}' = & 3.536 + .19(\text{Confidence}) + .19(\text{Coping}) + ^{-}.16(\text{Family Functioning}) \\
 & + ^{-}.11(\text{Suicide Ideation}) + ^{-}.10(\text{Parent's Marital Status}) \\
 & + .10(\text{Idealism}) + ^{-}.14(\text{Mental Health}) \\
 & + .08(\text{Confidence at Getting Desired Job}) + ^{-}.06(\text{Family Finances}) \\
 & + .06(\text{Internal Influences on Goal Setting}) \\
 & + .06(\text{Number of Close Friends}) + ^{-}.04(\text{Family Attachment})
 \end{aligned}$$

Figure 5.11. Final Regression Equation for Life Satisfaction.

Table 5.12
Regression Results for Life Satisfaction

	<i>B</i>	β	sr^2 ^^		
Confidence	.250	.19***	.31	R^2	.51***
Coping	.143	.19***	.11	Adjusted R^2	.51
Family Functioning	.210	.16***	.04	R	.72
Suicide Ideation	-1.234	-.11***	.02	Intercept	3.536
Parent's Marital Status	-.975	-.10***	.01		
Idealism	.093	.10**	.01		
Mental Health	-.093	-.14***	.01		
Confidence at Getting Desired Job	.318	.08*	.01		
Family Finances	-.229	-.06*	.00		
Internal Influences on Goal Setting	.071	.06*	.00		
Number of Close Friends	.227	.06*	.00		
Family Attachment	-.070	-.04 ⁺	.01		

^^ incremental

+ $p < .10$ * $p < .05$ ** $p < .001$ *** $p < .0005$

5.4 Positive Affect Results

5.4.1 Bivariate Correlation Results

Correlations among Positive Affect and the independent variables are presented in Table 5.13 and discussed below. All correlations are significant

at the .0001 level, and are ordered from the highest percentage of shared variance to the lowest.

5.4.1.1 Demographics

As with Life Satisfaction, Age and Gender did not correlate significantly with Positive Affect, supporting the results of Huebner and Dew (1995).

5.4.1.2 Personality

Previous research has found that Positive Affect is related to Extraversion (Cost & McCrae, 1980; Emmons & Diener, 1985, 1986; Fujita, 1991; Suh et al., 1996), however this result was not replicated in this study. The Psychoticism/Lie sub-scale of the JEPQR-A however, did have a negative and weak relationship with Positive Affect, with the two variables sharing 5.29% of variance. This relationship indicated that higher levels of Psychoticism/Lie were associated with lower levels of Positive Affect.

5.4.1.3 Psychosocial

Idealism, Confidence, and Voice showed moderate, positive relationships with Positive Affect. Idealism and Positive Affect shared 16.81% of variance; Confidence and Positive Affect shared 10.89% of variance; and Voice and Positive Affect shared 9% of variance. Higher levels of these variables were associated with higher levels of Positive Affect.

5.4.1.4 Institutional Experiences and Competencies

5.4.1.4.1 *Family*

Family Functioning showed a moderate, positive relationship with Positive Affect, with the two variables sharing 10.24% of variance. It was concluded that higher levels of Family Functioning were associated with higher levels of Positive Affect.

5.4.1.4.2 Friends

The scale measuring Benefits from Friendship had a weak to moderate correlation with Positive Affect. The two variables shared 8.41% of variance indicating that higher degrees of Benefits from Friendship were associated with higher levels of Positive Affect.

5.4.1.4.3 School

Analysis of the relationships between Positive Affect and Self-Assessed Success in Mathematics, English, Science and SOSE resulted in weak, but significant, positive correlations. Self-Assessed Success in Mathematics and Positive Affect shared 5.76% of variance; Self-Assessed Success in Science and Positive Affect shared 6.76% of variance; and Self-Assessed Success in English and SOSE both shared 7.84% of variance. These results indicated that higher levels of Self-Assessed Success in Mathematics, English, Science, and SOSE were associated with higher levels of Positive Affect in adolescents.

The relationship between the average number of hours spent on homework per week and Positive Affect was also examined. A positive, weak relationship was found, with the two variables sharing 6.25% of variance. This result indicated that higher levels of Positive Affect were associated with higher average number of hours spent on homework per week.

5.4.1.4.4 Extracurricular Activities

Exploration of the relationship between Positive Affect and participation in Extracurricular Activities yielded a weak to moderate relationship, with the two variables sharing 8.41% of variance. Higher levels of participation in the Extracurricular Activities listed in the question were associated with higher levels of Positive Affect.

5.4.1.4.5 Sport

There was a weak, but significant, relationship between the average number of hours of sport played per week and Positive Affect. The two variables shared 6.25% of variance, indicating that higher levels of sport participation were associated with higher levels of Positive Affect. There was a moderate relationship between Positive Affect and Benefits from Sport (shared variance = 10.24%), indicating an association between higher levels of Positive Affect and higher levels of Benefits from Sport.

5.4.1.5 Life Events

Previous research by McCullough et al. (2000) and Ash and Huebner (2001) had found life events to be an important correlate of Positive Affect. This result was not supported this study.

5.4.1.6 Mental Health

Coping and Positive Affect showed a moderate, positive relationship. The two variables shared 12.96% of variance. This relationship indicated that higher levels of Coping ability were associated with higher levels of Positive Affect.

5.4.1.7 Goals and Life Planning

Confidence at Getting Desired Job had a weak, positive relationship with Positive Affect. The two variables shared 4.84% of variance, indicating that higher levels of Confidence at Getting Desired Job was associated with higher levels of Positive Affect. The impact of External and Internal Influences on Goal Setting both had positive relationships with Positive Affect. External Influences on Goal Setting and Positive Affect had a weak relationship, with the two variables sharing 6.76% of variance. Internal Influences on Goal Setting had a moderate relationship with Positive Affect, with the two variables sharing 20.25% of variance. The relationship between Internal Influences on Goal Setting and Positive Affect was the strongest of all

relationships between the independent variables and Positive Affect. Findings from this study indicated that higher levels of impact of External and Internal Influences on Goal Setting were related to higher levels of Positive Affect for adolescents.

Table 5.13
Bivariate Correlations Between Positive Affect and Independent Variables

Independent Variables (X)	r_s	% Shared Variance	Missing	N
Internal Influences on Goal Setting	.45	20.25	735	1359
Idealism	.41	16.81	711	1383
Coping	.36	12.96	1270	824
Confidence	.33	10.89	659	1435
Family Functioning	.32	10.24	669	1425
Benefits from Sport	.32	10.24	862	1232
Voice	.30	9.00	817	1277
Extracurricular Activities	.29	8.41	883	1211
Benefits from Friendship	.29	8.41	634	1460
Self-Assessed Success in English	.28	7.84	612	1482
Self-Assessed Success in SOSE	.28	7.84	737	1377
Self-Assessed Success in Science	.26	6.76	654	1440
External Influences on Goal Setting	.26	6.76	751	1343
Average Hours Spent on Homework per Week	.25	6.25	606	1488
Average Hours Spent Playing Sport per Week	.25	6.25	638	1456
Self-Assessed Success in Mathematics	.24	5.76	608	1486
Social Capital	.23	5.29	631	1463
Psychoticism/Lie	-.23	5.29	704	1390
Confidence at Getting Desired Job	.22	4.84	649	1445

In summary:

Higher levels of Positive Affect are associated with higher levels of:

- Internal Influences on Goal Setting
- Idealism
- Coping
- Confidence
- Family Functioning
- Benefits from Sport
- Voice
- Extracurricular Activities
- Benefits from Friendship
- Self-Assessed Success in English, SOSE, Science, and Mathematics
- External Influences on Goal Setting
- Average Hours Per Week Spent on Homework
- Average Hours Per Week Spent Playing Sport
- Social Capital
- Confidence of Getting Desired Job

Lower levels of Positive Affect are associated with higher levels of:

- Psychoticism/Lie

5.4.2 Regression Results

The following variables correlated with Positive Affect above .20 and were entered into a stepwise multiple regression procedure. The variables correlated with Positive Affect above .20:

- | | | |
|--|--|--|
| • Family Functioning | • Confidence | • Idealism |
| • Coping | • Voice | • Benefits from Friendship |
| • Benefits from Sport | • Social Capital | • Psychoticism/Lie |
| • Extracurricular Activities | • External Influences on Goal Setting | • Internal Influences on Goal Setting |
| • Confidence at Getting Desired Job | • Self-Assessed Success in Mathematics | • Self-Assessed Success in English |
| • Self-Assessed Success in Science | • Self-Assessed Success in SOSE | • Average Hours Spent on Homework Per Week |
| • Average Hours Spent Playing Sport Per Week | | |

Correlations between the independent variables were lower than .7, with the highest correlation occurring between Confidence and Coping ($r = .45$).

Tolerance values were high, with the lowest equalling .74 and VIF statistics were low with the highest reaching 1.50. As with Life Satisfaction, the

residual scatterplot and casewise diagnostics were examined to determine the normality of the data (Figure 5.12 and Table 5.14).

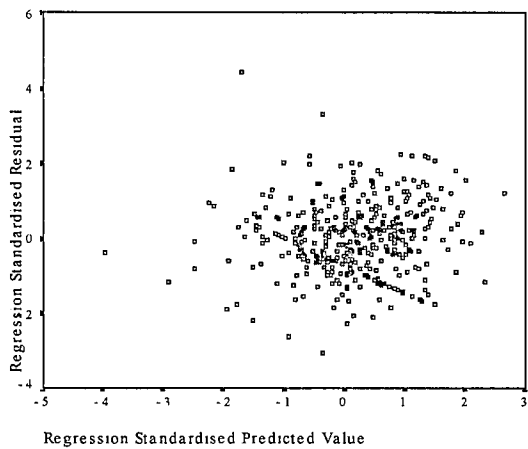


Figure 5.12. Standardised Residual Scatterplot for Positive Affect.

Table 5.14
Casewise Diagnostics for Positive Affect

Case Number	Std. Residual	Positive Affect Score	Predicted Value	Residual
1982	-3.055	7	23.25	-16.33
40	3.303	41	23.31	17.65
1277	4.409	42	17.97	23.56

Figure 5.12 and Table 5.14 show that the residuals for Positive Affect were good, with only a few outliers. The cases were analysed in the same way as the Life Satisfaction outliers to ascertain if they were multivariate outliers, and all cases were found to be multivariate outliers. Self-Assessed Success in SOSE and Confidence, predicted case number 1277 with the model significant at the .001 level. The betas were significant at the .01 level for Self-Assessed Success in SOSE and the .05 level for Confidence. A list procedure was used to compare the cases value with that of the sample. The sample mean was 4 for Self-Assessed Success in SOSE, whereas the value for case number 1277 on Self-Assessed Success in SOSE was 1 and the sample mean for Confidence was 18, whereas the value for case number 1277 was 8. These results indicated that the regression equation might not be suitable for cases

that responded in the same way as case number 1277 on these variables. The residuals of similar cases were examined and an effect in the wider data set was not discernable.

Case number 1982 was predicted by Coping and Confidence, with the model significant at the .001 level, and betas significant at the .001 level (Coping) and .01 level (Confidence). A list procedure showed that the mean for Coping in the sample was 23, whereas the value for Coping on case number 1982 was 7. For Confidence, the sample mean was 18, whereas case number 1982 had a value of 23, higher than the mean. These results indicated that the model obtained for Positive Affect might not be applicable to respondents who scored low on Coping and high on Confidence. Again, cases were examined to see if this effect was occurring in the whole data set, and cases were selected that had low scores lower on Coping and high scores for Confidence. Residuals for these cases were examined and no effect of Coping and Confidence on the data set was found.

The remaining outlier (case number 40) was predicted by Confidence with the model and beta significant at the .01 level. The case's value for Confidence was examined using a list procedure. The mean for the sample was 18, whereas the value on Confidence for case number 40 was 9. This indicated that the regression model might not suit respondents low on Confidence. The residual of similar cases were examined to see if this effect was found in the whole data set. The residuals varied indicating that this effect was relevant for this case only.

The final regression model obtained explained 36% of the variance and was significant at the .0005 level. Ten of the nineteen variables were significant predictors of Positive Affect: Internal Influences on Goal Setting, Coping, Extracurricular Activities, Confidence, Benefits from Friendship, Benefits from Sport, Confidence at Getting Desired Job, Average Hours Spent Playing Sport Per Week, Self-Assessed Success in SOSE, and Voice. The strongest predictor of Positive Affect was Internal Influences on Goal Setting, with a beta of .26 (significant at .0005 level), which explained 20% of the variance in

Positive Affect. Although not as strongly significant, Coping explained an additional 6% of the model. The beta was positive indicating that a one unit increase in Coping would lead to a .08 increase in Positive Affect.

Extracurricular Activities, Confidence and Benefits from Friendship were the next strongest predictors, each explaining an additional 2% of the variance.

The betas were all positive, which indicated that an increase in Extracurricular Activities, Confidence, and Benefits from Friendship would lead to a .10, .13, and .13 increase in levels of Positive Affect respectively.

The remaining variables in the model – Benefits from Sport, Confidence at Getting Desired Job, Average Hours Spent Playing Sport Per Week, Self-Assessed Success in SOSE, and Voice – explained additional variance ranging from 0.3% to 1.0%. The betas were all positive, indicating that an increase in these variables would lead to an increase in levels of Positive Affect.

Nine of the nineteen variables that correlated with Positive Affect were not significant predictors of Positive Affect once entered into a regression equation. Idealism, Family Functioning, External Influences on Goal Setting, Social Capital, Psychoticism/Lie and Average Hours Spent on Homework Per Week were not significant contributors to the model. Interestingly, although self-assessed Mathematics, English, and Science were not significant predictors, Self-Assessed Success in SOSE was, although the beta value was small. Table 5.15 presents the regression results. A summary of the model can be found in Figure 5.13, and Figure 5.14 presents the final regression equation for Positive Affect.

A one unit increase in the following variables will lead to an *increase* in Positive Affect:

- Internal Influences on Goal Setting → .26 increase in Positive Affect
- Coping → .08 increase in Positive Affect
- Extracurricular Activities → .10 increase in Positive Affect
- Confidence → .13 increase in Positive Affect
- Benefits from Friendship → .13 increase in Positive Affect
- Benefits from Sport → .09 increase in Positive Affect
- Confidence at Getting Desired Job → .08 increase in Positive Affect
- Sport Hours Per Week → .09 increase in Positive Affect
- Self-Assessed Success in SOSE → .06 increase in Positive Affect
- Voice → .06 increase in Positive Affect

Figure 5.13. Summary for Positive Affect Model.

$$\begin{aligned} \text{PA}' = & .160 + .26(\text{Internal Influences on Goal Setting}) + .08(\text{Coping}) \\ & + .10(\text{Extracurricular Activities}) + .13(\text{Confidence}) \\ & + .13(\text{Benefits from Friendship}) + .09(\text{Benefits from Sport}) \\ & + .08(\text{Confidence at Getting Desired Job}) \\ & + .09(\text{Average Hours Spent Playing Sport per Week}) \\ & + .06(\text{Self-Assessed Success in SOSE}) + .06(\text{Voice}) \end{aligned}$$

Figure 5.14. Final Regression Equation for Positive Affect.

Table 5.15
Regression Results for Positive Affect

	<i>B</i>	β	sr^2		
Internal Influences on Goal Setting	.409	.26***	.20	<i>R</i> ²	.36***
Coping	.086	.08 ⁺	.06	Adjusted <i>R</i> ²	.35
Extracurricular Activities	.107	.10**	.02	<i>R</i>	.60
Confidence	.243	.13***	.02	Intercept	.160
Benefits from Friendship	.374	.13***	.02		
Benefits from Sport	.211	.09*	.01		
Confidence at Getting Desired Job	.467	.08*	.01		
Sport Hours per Week	.183	.09*	.01		
Self-Assessed Success in SOSE	.400	.06 [^]	.00		
Voice	.105	.06 [^]	.00		

[^] incremental

[^] $p < .10$ $p < .05$ * $p < .01$ ** $p < .001$ *** $p < .0005$

5.5 Negative Affect Results

5.5.1 Bivariate Correlation Results

The bivariate correlations for Negative Affect are presented in Table 5.16.

Correlations decrease in strength and were all significant at the .0001 level.

5.5.1.1 Demographics

As with Life Satisfaction and Positive Affect, Age and Gender were not significantly related to Negative Affect in this research.

5.5.1.2 Personality

Supporting previous research with adults (Costa & McCrae, 1980; Emmons & Diener, 1985a, 1986; Fujita, 1991; Suh et al., 1996), this study found a moderate, positive relationship between Neuroticism and Negative Affect. In this study the two variables shared 19.36% of variance, which indicated that

higher levels of Neuroticism were associated with higher levels of Negative Affect.

5.5.1.3 Psychosocial

Of the six psychosocial variables in this study, only Confidence had a significant relationship with Negative Affect. It was a moderate, negative relationship with the two variables sharing 19.36% of variance, making it the equal second strongest relationship between any independent variable and Negative Affect. This relationship suggested that higher levels of Confidence were associated with lower levels of Negative Affect.

5.5.1.4 Institutional Experiences and Competencies

5.5.1.4.1 Sport

Sport Prevention had a weak, positive relationship with Negative Affect, with the two variables sharing 6.25% of variance. The result indicated that the higher frequency of use of the reasons given to prevent exercise was associated with higher levels of Negative Affect.

5.5.1.4.2 Other

Adolescents' Involuntary Contact with Government Agencies had a weak, positive relationship with Negative Affect. The two variables shared 4.84% of variance. This result suggested that an increase in the frequency of involuntary contact with various government agencies was associated with higher levels of Negative Affect.

5.5.1.5 Mental Health

The Mental Health scale had a strong, positive relationship with Negative Affect, with the two variables sharing 37.21% of variance. This was the largest amount of shared variance between any independent variable and Negative Affect, and indicated that higher levels of depression, anxiety and

control were associated with higher levels of Negative Affect. Coping had a weak, negative relationship with Negative Affect, with the two variables sharing 5.29% of variance. This result suggested that higher levels of Coping were associated with lower levels of Negative Affect.

5.5.1.6 Risk Beliefs and Behaviours

The Risk Acceptance scale correlated to a small degree with Negative Affect (shared variance = 6.76%). The Risk Acceptance scale multiplies the perceived danger of risk items by the frequency of participation in the items, and the relationship found suggested that higher levels of Risk Acceptance were associated with higher levels of Negative Affect.

Suicide Ideation had a weak to moderate, negative relationship with Negative Affect (shared variance = 8.41%). The question asked whether students had considered attempting suicide in the last 12 months with yes coded as 1 and no coded as 0. Surprisingly, the relationship between Suicide Ideation and Negative Affect suggested that thinking about committing suicide was associated with *lower* levels of Negative Affect. Suicide attempts had a weak but significant correlation with Negative Affect (shared variance = 5.29%). This finding indicated that an increase in the frequency of Suicide Attempts was associated with higher levels of Negative Affect. This result supported findings from Pinto and Whisman (1996) who found that Suicide Ideation correlated significantly with Negative Affect, as well as other findings by Ashby Wills et al. (1992), Hann et al. (1994), and Stice et al. (1998) regarding the relationship between adolescent risk behaviours and Negative Affect.

5.5.1.7 Life Events

A weak, positive relationship was found between the Life Event item of Family Problems and Negative Affect (shared variance = 4%). Life events were measured on a seven point scale, which asked students how recently an event may have occurred ranging from never through to 3+ years ago. This

finding suggested that there was an association between an increase in the distance in time of family problems and higher levels of Negative Affect.

5.5.1.8 Goals and Live Planning

The impact of External Influences on Goal Setting showed a weak, positive relationship with Negative Affect (shared variance = 4.41%). It is interesting to note that this variable also had a positive relationship with Positive Affect. A higher impact of External Influences on Goal Setting was found to be associated with higher levels of Negative Affect. Goal Ambivalence also had a weak but significant, positive relationship with Negative Affect (shared variance = 5.76%). This relationship indicated that higher levels of Goal Ambivalence were associated with higher levels of Negative Affect.

Table 5.16
Bivariate Correlations Between Negative Affect and Independent Variables

Independent Variables (X)	r_s	% Shared Variance	Missing	N
Mental Health	.61	37.21	652	1442
Confidence	-.44	19.36	656	1438
Neuroticism	.44	19.36	660	1434
Suicide Ideation*	-.29	8.41	617	1477
Risk Acceptance	.26	6.76	852	1242
Sport Prevention	.25	6.25	726	1368
Goal Ambivalence	.24	5.76	665	1429
Suicide Attempts	.23	5.29	607	1487
Coping	-.23	5.29	1269	825
Involuntary Contact with Government Agencies	.22	4.84	630	1464
External Influences on Goal Setting	.21	4.41	742	1352
Life Event: Family Problems	.20	4.00	623	1471

* (No = 0; Yes = 1)

In summary:

Higher levels of Negative Affect are associated with higher levels of:

- Depression, Anxiety and Lack of Control
- Neuroticism
- Risk Acceptance
- Sport Prevention
- Goal Ambivalence
- Suicide Attempts
- Involuntary Contact With Government Agencies
- External Influences On Goal Setting
- Life Event: Family Problems

Lower levels of Negative Affect are associated with higher levels of:

- Confidence
- Suicide Ideation (No = 0; Yes = 1)
- Coping

5.5.2 Regression Results

The following variables correlated with Negative Affect above .20 and were entered into a stepwise multiple regression analysis:

- | | | |
|-------------------------------|---------------------------------------|--|
| • Confidence | • Mental Health | • Neuroticism |
| • Coping | • Goal Ambivalence | • Suicide Ideation |
| • Suicide Attempts | • Sport Prevention | • Risk Acceptance |
| • Life Event: Family Problems | • External Influences on Goal Setting | • Involuntary Contact with Government Agencies |

Multicollinearity was checked through the examination of correlations between independent variables. Correlations were lower than .7 with the highest correlation occurring between Mental Health and Neuroticism ($r = .61$). Tolerance levels were high, with the lowest equalling .58, and VIF levels were no higher than 1.73.

The residual scatterplot and casewise diagnostics indicated that the Negative Affect model had some outliers (Figure 5.15 and Table 5.17). These were examined to see if they were multivariate outliers before deciding how to treat them.

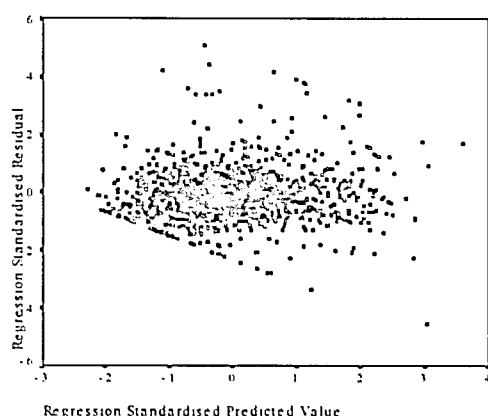


Figure 5.15. Standardised Residual Scatterplot for Negative Affect.

Table 5.17
Casewise Diagnostics for Negative Affect

Book_2 Number	Std. Residual	Negative Affect Score	Predicted Value	Residuals
1110	-4.579	9	31.72	-23.19
1873	-3.349	7	24.08	-16.96
1	3.360	35	17.59	17.02
7	3.783	43	23.58	19.16
395	3.377	34	17.17	17.10
618	4.167	43	21.63	21.11
736	3.442	41	23.83	17.43
824	3.470	36	18.04	17.57
867	3.760	43	23.70	19.04
1075	5.067	43	17.07	25.67
1725	3.058	43	27.25	15.49
2032	3.385	34	16.45	17.15
2138	3.593	34	15.99	18.20
2250	4.418	40	17.35	22.38
2285	4.219	36	14.25	21.37
2365	3.877	43	23.10	19.64
2366	4.162	43	21.65	21.08
2407	3.181	43	26.63	16.11

Eight of the 18 cases listed in Table 5.17 were found to be multivariate outliers. Case number 7 was predicted by Risk Acceptance, Mental Health and Involuntary Contact with Government Agencies, with the model significant at the .0001 level and betas significant at the .0001 level (Risk

Acceptance), the .01 level (Mental Health), and the .05 level (Involuntary Contact with Government Agencies). Descriptive data showed that case number 7 had a high value on Risk Acceptance (315), low value for Mental Health (6) and an average value for Involuntary Contact with Government Agencies (4). From these results it was concluded that the model obtained for Negative Affect might not be applicable to respondents who answered in similar ways as case number 7. To ascertain if these variables were working together to effect Negative Affect scores and to see if this effect held for the wider data set, the cases with high values on Risk Acceptance, low values on Mental Health, and average values on Involuntary Contact with Government Agencies were selected and their residuals examined. The values of residuals were varied indicating the absence of an effect in the whole data set.

Case number 1110 was predicted by Mental Health, Risk Acceptance, and Neuroticism. The model was significant at the .0001 level, and the betas were significant at the .001 level for Mental Health, and the .05 level for Risk Acceptance and Neuroticism. A list procedure indicated that this case had high values for Mental Health and Risk Acceptance (35 and 127 respectively) and an average value for Neuroticism (8). This result indicated that the regression model might not be a good fit for similar cases and as a result the data set was examined to see if there was an effect in the wider data set. The residuals for similar cases were varied, which suggested that this effect was relevant for this case only.

Mental Health and Goal Ambivalence predicted case number 2407, with the model significant at the .001 level. The beta for Mental Health was significant at the .01 level, whereas the beta for Goal Ambivalence was significant at the .05 level. Descriptive statistics indicated that the case had a high value for Mental Health and a low value for Goal Ambivalence. To see if this effect was evident in the whole data set, residuals were examined for similar cases. No effect in the data set was found.

Cases 1725, 2285, and 2366 were all predicted by Goal Ambivalence only, with the model significant at the .001 level for case number 1725, and at

the .05 level for cases 2285 and 2366. Betas were significant at the .001 level for case number 1725, and the .05 level for the other two cases. A list procedure was used to obtain the value for Goal Ambivalence for these cases and found that cases 1725 and 2366 had high values for Goal Ambivalence (12 and 10 respectively), whereas case number 2285 had a low value for Goal Ambivalence (3). These results indicated that the regression solution might not be applicable to cases that were either high and low on Goal Ambivalence. Residuals were examined and this effect was found to be relevant for these cases only.

External Influences on Goal Setting predicted cases 2250 and 867, with the model and beta significant at the .05 level for both cases. Descriptive statistics indicated that case number 2250 had a high value for the variable: The sample mean was 16, whereas the value for the case on External Influences on Goal Setting was 29. Case number 867 also had a high value for the variable (29). The result suggested that the regression model might not be a good fit for cases high on this variable. Examination of the residuals found no effect in the wider data set, however.

Six of the twelve variables were significant predictors of Negative Affect: Mental Health, External Influences on Goal Setting, Goal Ambivalence, Risk Acceptance, Neuroticism, and Involuntary Contact with Government Agencies. The final model accounted for 41% of the variance and was significant at the .0005 level. Mental Health was the strongest predictor explaining 33% of the variance ($\beta = .48$, significant at .0005 level). The beta was positive indicating that a one unit increase in Mental Health would lead to a .48 increase in Negative Affect. External Influences on Goal Setting was the second strongest predictor adding an additional 4% to the model. With a positive beta of .17 (significant at the .0005 level), a one unit change in External Influences on Goal Setting would lead to a .17 increase in a person's level of Negative Affect. Other strongly significant predictors were Goal Ambivalence and Risk Acceptance, which were significant at the .0005 and .001 levels respectively. Goal Ambivalence explained an additional 2%

of Negative Affect, with a positive beta of .15, indicating that an increase in Goal Ambivalence would lead to a .15 increase in Negative Affect. Risk acceptance was also positive and explained an additional 1% of the model. An increase in Risk Acceptance indicated a .09 increase in Negative Affect. Neuroticism and Involuntary Contact with Government Agencies were also significant predictors of Negative Affect explaining an additional 0.3% each. Both betas were positive indicating that an increase in Neuroticism and Involuntary Contact with Government Agencies would lead to an increase in Negative Affect.

The variables that did not significantly predict Negative Affect were surprising: Confidence, Coping, Suicide Ideation, Suicide Attempts, Life Event: Family problems, and Sport Prevention. Confidence was surprising due to its large correlation with Negative Affect ($r_s = -.44$). Table 5.18 outlines the results of the regression analysis, as does Figure 5.16. Figure 5.17 gives the final regression equation for Negative Affect.

- A one unit increase in the following will lead to an increase in Negative Affect:
- Mental Health → .48 increase in Negative Affect
 - External Influences on Goal Setting → .17 increase in Negative Affect
 - Goal Ambivalence → .15 increase in Negative Affect
 - Risk Acceptance → .09 increase in Negative Affect
 - Neuroticism → .08 increase in Negative Affect
 - Involuntary Contact with Government Agencies → .06 increase in Negative Affect

Figure 5.16. Summary of Negative Affect Model.

$$\begin{aligned} \text{NA}' = & 1.647 + .48(\text{Mental Health}) \\ & + .17(\text{External Influences on Goal Setting}) \\ & + .15(\text{Goal Ambivalence}) + .09(\text{Risk Acceptance}) \\ & + .08(\text{Neuroticism}) \\ & + .06(\text{Involuntary Contact with Government Agencies}) \end{aligned}$$

Figure 5.17. Final Regression Equation for Negative Affect.

Table 5.18
Regression Results for Negative Affect

	B	β	$sr^{2\wedge\wedge}$		
Mental Health	.460	.48***	.33	R^2	.41***
External Influences on Goal Setting	.188	.17***	.04	Adjusted R^2	.41
Goal Ambivalence	.587	.15***	.02	R	.64
Risk Acceptance	.018	.09**	.01	Intercept	1.647
Neuroticism	.238	.08*	.003		
Involuntary Contact with Government Agencies	.113	.06*	.003		

$\wedge\wedge$ incremental

* $p < .05$ ** $p < .001$ *** $p < .0005$

5.6 Post–Regression Partial Correlation Results

As can be seen when reviewing the regression equations for each dependent variable, some variables appear in more than one equation. Confidence, Coping, Confidence at Getting Desired Job, and Internal Influences on Goal Setting appear in both the Life Satisfaction and Positive Affect regression equations, and Mental Health appears in both the Life Satisfaction and Negative Affect equations. Partial correlations were run in order to assess the relationship between the dependent variables in regards to these variables and results can be found in Tables 5.19 to 5.25, and Figures 5.18 to 5.24. Results are presented for all variables that were shared by the regression equations, not just those relationships found to be partly or entirely spurious as in the pre–regression partial correlation results. Interestingly, Positive Affect and Negative Affect do not have any common predictors, providing further evidence for the separability of these two constructs.

The zero order correlation between Life Satisfaction and Positive Affect (Table 5.19 and Figure 5.18) was explored while controlling for Confidence, Coping, Confidence at Getting Desired Job, and Internal Influences on Goal Setting. When controlling for Confidence the zero order correlation dropped from .44 to .33. Confidence intervals did not overlap indicating that the

relationship between Life Satisfaction and Positive Affect was partly spurious (Table 5.20 and Figure 5.19). The zero order correlation of .44 dropped .30 when controlling for Coping, and as with Confidence, the confidence levels did not overlap. This result indicated that the zero order relationship was partly spurious (Table 5.21 and Figure 5.20). When controlling for Confidence at Getting Desired Job, the zero order correlation between Life Satisfaction and Positive Affect dropped from .44 to .40. In this case the confidence intervals did overlap, indicating that the initial relationship was direct and the Z variable did not explain the initial relationship (Table 5.22 and Figure 5.21). This was also the case when controlling for Internal Influences on Goal Setting. The value of r dropped from .44 to .36, but confidence intervals overlapped (Table 5.23 and Figure 5.22).

Table 5.19
Zero Order Correlation for Life Satisfaction and Positive Affect

Zero Order r ($X \rightarrow Y$) r_{xy}	Confidence Intervals (95%)
.44	.40 , .48

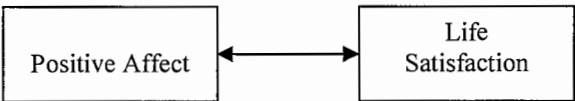


Figure 5.18. Zero Order Correlation for Life Satisfaction and Positive Affect.

Table 5.20
Partial Correlation for Life Satisfaction and Positive Affect – Controlling for Confidence

Partial r ($X \leftrightarrow Z \rightarrow Y$) $r_{xy.z}$	Confidence Intervals (95%)
.33	.28 , .38

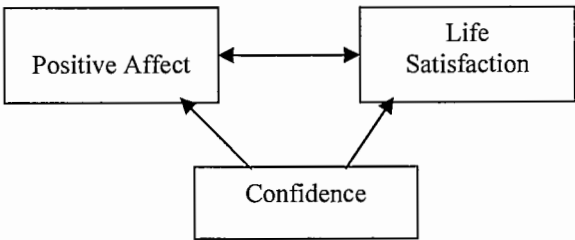


Figure 5.19. Partial Correlation for Life Satisfaction and Positive Affect – Controlling for Confidence.

Table 5.21
Partial Correlation for Life Satisfaction and Positive Affect – Controlling for Coping

Partial r ($X \leftrightarrow Z \rightarrow Y$) $r_{xy.z}$	Confidence Intervals (95%)
.30	.25 , .35

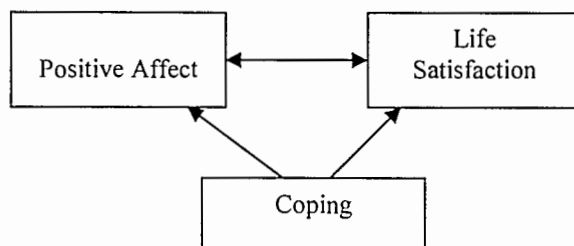


Figure 5.20. Partial Correlation for Life Satisfaction and Positive Affect – Controlling for Coping.

Table 5.22
Partial Correlation for Life Satisfaction and Positive Affect – Controlling for Confidence at Getting Desired Job

Partial r ($X \leftrightarrow Z \rightarrow Y$) $r_{xy.z}$	Confidence Intervals (95%)
.40	.36 , .44

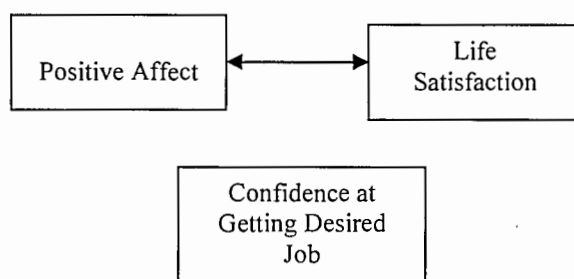


Figure 5.21. Partial Correlation for Life Satisfaction and Positive Affect – Controlling for Confidence at Getting Desired Job.

Table 5.23
Partial Correlation for Life Satisfaction and Positive Affect – Controlling for Internal Influences on Goal Setting

Partial r ($X \leftrightarrow Z \rightarrow Y$) $r_{xy.z}$	Confidence Intervals (95%)
.36	.31 , .40

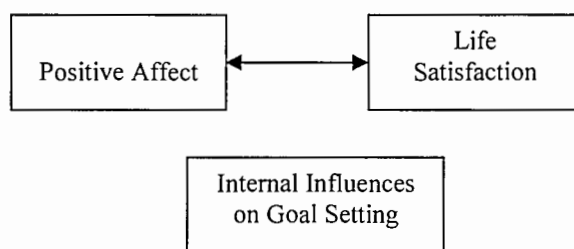


Figure 5.22. Partial Correlation for Life Satisfaction and Positive Affect – Controlling for Internal Influences on Goal Setting.

Mental Health was shared by both the Life Satisfaction and Negative Affect regression equations. The zero order correlation between Negative Affect and Life Satisfaction (Table 5.24 and Figure 5.23) was explored controlling for Mental Health. The zero order correlation dropped from $-.30$ to $.01$, and was

not significant ($p = .649$). The Confidence intervals did not overlap, therefore the initial correlation between Negative Affect and Life Satisfaction was entirely spurious and accounted for by the inclusion of Mental Health in both regression equations (Table 5.25 and Figure 5.24).

Table 5.24
Zero Order Correlation for Life Satisfaction and Negative Affect

Zero Order r ($X \rightarrow Y$) r_{xy}	Confidence Intervals (95%)
-.30	-.35 , -.25

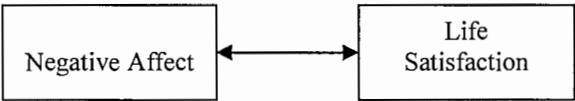


Figure 5.23. Zero Order Correlation for Life Satisfaction and Negative Affect.

Table 5.25
Partial Correlation for Life Satisfaction and Negative Affect – Controlling for Mental Health

Partial r ($X \leftrightarrow Z \rightarrow Y$) $r_{xy.z}$	Confidence Intervals (95%)
.01 ($p = .649$)	-.04 , .06

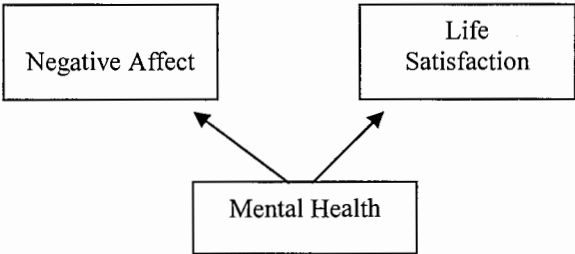


Figure 5.24. Partial Correlation for Life Satisfaction and Negative Affect – Controlling for Mental Health

In summary, Confidence and Coping were found to affect both Life Satisfaction and Positive Affect, explaining part of the association between the two dependent variables. Mental Health was found to explain all of the relationship between Life Satisfaction and Negative Affect. Confidence, Coping, and Mental Health were found to influence the relevant zero order correlations in both the pre-regression and the post-regression partial correlations. As these variables were chosen according to two different sets of criteria, it is reasonable to consider the evidence for these associations to be quite well-founded.

5.7 Conclusion

The results that have been presented here refer to the major statistical analysis of the thesis. Bivariate and initial partial correlations are presented for each dependent variable, as well as the multiple regression results and post-regression partial correlations. The regression results presented in this chapter give a list of independent variables found to affect Life Satisfaction, Positive Affect, and Negative Affect, many of which had not been studied by existing research. The final regression models added significantly to the outcomes reported in the current literature, and explained 51% of the variance for Life Satisfaction, 36% of the variance for Positive Affect, and 41% of the variance for Negative Affect. Partial correlation results have suggested that the relationship between Life Satisfaction and Negative Affect is “conditionally independent” given the affect of Mental Health on these two dependent variables. The regression analysis indicated that Positive Affect and Negative Affect did not have any common predictors, providing further support for the separability of these two variables. These results give a richer understanding of adolescent Subjective Well-Being, and are discussed in more detail in the next chapter.

Chapter 6: Discussion

6.1 Introduction

The previous chapters have presented the results of this study obtained through a variety of analysis techniques including partial correlation and multiple regression. Chapter 4 discussed the preparation of data for analysis, with a focus on the results of factor analysis on the reliability and structure of the scales and the normality of the data. Chapter 4 also discussed the results of univariate analyses for each of the variables. In Chapter 5 the results are presented for the second set of analyses. The correlations between the dependent variables are presented, as well as the bivariate correlations, pre-regression partial correlations, and regression results for each of the dependent variables. The chapter ends with a presentation of the post-regression partial correlations results. The main focus of Chapter 6 is a discussion of the results of the regression analyses presented in Chapter 5 in relation to past research. As the dependent variables in this study are distinct concepts that are predicted by three different sets of indicators, the discussion presented below is organised around these variables. Results regarding Life Satisfaction are presented first, followed by Positive Affect, with Negative Affect last. Implications of the post-regression partial correlations are also discussed and a model of the findings from the current study is presented.

One of the limitations of research is that it takes time. The questionnaires used in the AHEWP were submitted first to the project team, and second to the Ethics Committee, both in late 2001. The literature informing the questionnaire design and study was, therefore, published before late 2001. As a consequence, further research has been conducted on the Subjective Well-Being of adolescents during this time; specifically, the field of Life

Satisfaction has expanded. The latest work is included in this chapter and discussed in the light of the findings from this study.

6.2 Factor Analysis Results

The factor analysis conducted in this study found that the structure of some scales was not as expected. Life Satisfaction was measured using the SLSS (Huebner, 1991b), which was developed to address the lack of instruments measuring positive well-being among children. The SLSS was designed to measure the Life Satisfaction component of Subjective Well-Being, and is based on the well-established adult Life Satisfaction scale created by Diener and colleagues, the Satisfaction With Life Scale (Diener et al., 1985; Pavot & Diener, 1993). The student version used in the current study asked respondents to rate statements of Life Satisfaction on a six-point Likert scale ranging from *strongly disagree* to *strongly agree*. The scale had a good psychometric history with item-total correlations ranging from .46 to .73 and coefficient alphas ranging from .73 to .86. The PANAS was developed to address the lack of reliable measures for Positive and Negative Affect. The aim of Watson et al. (1988) was to develop a brief and easy to administer instrument that was reliable. The scale asked respondents to indicate the amount they have experienced certain emotions over a time span decided by the researcher² on a six-point Likert scale ranging from *none of the time* to *all of the time*. Watson et al. (1988) tested the instrument with a large sample ($N = 4207$) and achieved good coefficient alphas for both the Positive Affect subscale (range = .87 – .90) and the Negative Affect subscale (range = .84 – .87). The instrument also showed good test-retest reliability after 8 weeks (Positive Affect = .47 – .68; Negative Affect = .39 – .71). The two instruments – the SLSS and the PANAS – were entered into a factor analysis and the results of the factor analysis found that Life Satisfaction, Positive Affect, and Negative Affect were three separate but correlated factors as expected. The two negatively worded items in the original SLSS, however,

² The authors give seven different time spans researchers can choose from. The present study used “in the past few weeks.”

loaded on Factor three, which contained all of the Negative Affect items, suggesting that these items may be measuring Negative Affect in this sample.

The JEPQR-A was used in this study to measure personality dimensions, specifically Extraversion, Neuroticism, Psychoticism, and Lie. The scale was designed as a short, reliable measure of personality among children and adolescents. The JEPQR-A was derived from the short-form of the Revised Junior Eysenck Personality Questionnaire (JEPQR-S) developed by Corulla (1990). The JEPQR-S consisted of four twelve-item scales measuring Extraversion, Neuroticism, Psychoticism, and Lie, whereas Francis' (1996) JEPQR-A measured the same four constructs with six-item subscales. Respondents answered either yes or no to questions such as "Can you get a party going?" and "Do you sometimes feel life is just not worth living?" The JEPQR-A was originally administered to 1597 students aged 13 – 15 in a state school in Wales. Seven hundred and ninety-nine of the students were female. The scale produced alpha coefficients of .66 for the Extraversion scale, .70 for the Neuroticism scale, .61 for the Psychoticism scale, and .58 for the Lie scale. The alphas were quite low, but Francis argued that this can be expected with scales that are only six items long. The correlations between the JEPQR-A and its parent the JEPQR-S showed that the scale had good concurrent validity: Extraversion – .91, Neuroticism – .92, Psychoticism – .88, and Lie – .89. The JEPQR-A was originally designed as a dichotomous scale, but was transformed to a Likert-based scale for the questionnaire used in this study. The factor analysis results found that the Psychoticism and Lie subscales formed part of the same factor. It is suggested that this result be explored in further detail by future research.

The psychosocial section of the questionnaire dealt with psychosocial well-being and was based on a number of theorists, including Erikson, Mead, Rosenberg, and Cooley (D. Hogan, personal communication, July, 2004). This section of the questionnaire was made up of 14 questions with 62 items that were created to measure different aspects of a person's psychosocial state (e.g., trust, attachment, optimism). Questions were written by the Chief Investigator of the AHEWP and measured either the importance of, or

agreement with, statements on 4-, 5-, or 6-point Likert scales. Areas covered were attachment, trust, collective and relational social identity, personal identity, ideal self, control, problem solving, self esteem, reflexivity, optimism, focus and determination, persistence, social independence, voice, tolerance of difference, and sense of adventure. The psychosocial measures in the questionnaire were entered into a factor analysis to eliminate any cross over in the 62 items and to make sure they were measuring what they were designed to measure. Results indicated that the questions were only measuring six factors as opposed to 14, suggesting that some of these questions were unnecessary as they were measuring concepts covered by other questions.

6.3 Life Satisfaction Results

Adolescents in this study reported experiencing moderate and high levels of Life Satisfaction. These results supported those of Huebner and colleagues (Dew & Huebner, 1994; Gilman & Huebner, 1997; Gilman et al., 2000a, 2000b; Huebner, 1991a; Huebner, 1991b; Huebner & Dew, 1996; Huebner et al., 1998, 2000; McCullough et al., 2000). The relationships found in this study among the dependent variables also supported previous findings that Life Satisfaction correlated with both Positive and Negative Affect (Andrews & Withey, 1976; Campbell et al., 1976; Emmons & Diener, 1985b; Lucas et al., 1996). The pre-regression partial correlation results expanded the relationship between Life Satisfaction and Negative Affect and Life Satisfaction and Positive Affect further. Mental Health and Confidence were found to partially explain the relationship between Life Satisfaction and Negative Affect, whereas Idealism, Confidence, Family Functioning, and Coping partially explained the zero order correlations between Life Satisfaction and Positive Affect. Bivariate correlations showed that Life Satisfaction was associated with both internal (e.g., Confidence), and external (e.g., Family Functioning) facets of adolescents' lives. This result was replicated in the regression analysis.

In this sample of 2094 Tasmanian adolescents, both personal and environmental factors predicted Life Satisfaction: It was found that a person's family environment and number of friends were important to Life Satisfaction as was his or her psychosocial state (see Chapter 5, Figures 5.10 and 5.11).

6.3.1 Demographics

The findings from this study supported the previous research of Huebner and colleagues that Age was not significantly related to Life Satisfaction (Ash & Huebner, 2001; Dew & Huebner, 1994; Gilman et al., 2000b; Huebner, 1991b; Huebner et al., 1998, 2000).

Previous research into the affects of Gender on Life Satisfaction had produced mixed results. This study supported those that concluded that Gender was not related with Life Satisfaction (Ash & Huebner, 2001; Dew & Huebner, 1994; Huebner, 1991b; Huebner et al., 2000; Wilson & Peterson, 1998; Young et al., 1998).

6.3.2 Personality

The literature regarding personality and Life Satisfaction in adolescents is limited, but the studies that have been conducted have found that personality is related to Life Satisfaction. Heaven (1989) found that Neuroticism was significantly related to Life Satisfaction for both the males in the study and the total group (males and females); the Lie scale was related to Life Satisfaction for females; and Extraversion was important to adolescent Life Satisfaction for the total group. Huebner (1991b) found that all facets of the EPQ (Eysenck & Eysenck, 1975) were related to Life Satisfaction. These findings have not been supported by this study, however. Although the Neuroticism and Psychoticism/Lie scales did correlate negatively with Life Satisfaction, when entered into a regression equation these variables did not add significantly to the equation in the presence of other predictive variables.

Other recent research, however, has found a correlation between Extraversion and Life Satisfaction, and has also supported the correlation found here between Neuroticism and Life Satisfaction. Fogle, Huebner, and Laughlin (2002), in a study of 160 10 to 15 year olds, also found that Neuroticism correlated negatively and moderately with Life Satisfaction, whereas Extraversion had a more modest, but still significant, positive correlation with Life Satisfaction.

6.3.3 Psychosocial

Confidence was found to be one of the strongest predictors of Life Satisfaction in this study. It could be that this variable is closely related to self-esteem and self-concept, two variables that have been found in previous studies to predict Life Satisfaction significantly (Dew & Huebner, 1994; Gilman et al., 2000a; Huebner, 1991a, 1991b; McCullough et al., 2000; Wilson & Peterson, 1988). Idealism was also a strong predictor of Life Satisfaction, indicating that the importance of ideas about the self contributed to Life Satisfaction for adolescents in this study. Although Voice correlated positively and significantly with Life Satisfaction, it did not add further explanatory power to the regression equation in the presence of other variables.

McInerney and McInerney (1998) stated that the parent-adolescent relationship is a critical factor in the identity development that takes place during adolescence. Some of the most interesting results to come out of this study are in regard to Family Attachment and Life Satisfaction. The multiple regression results from this study indicated that an *increase* in Family Attachment (feelings of trust and closeness) would lead to a *decrease* in Life Satisfaction. This could be due to adolescents feeling that they cannot break away from their parents, and hence the closer they feel to their parents the less they have their independence, which in turn leads to a decrease in satisfaction with their lives. It could also be due to a sense of duty to their parents – to be good children they have to be close to their parents – but this may come with

an effect on their satisfaction with life. Perhaps it is due to feelings of suffocation from parents: It could be that mollycoddling is detrimental to adolescents' Life Satisfaction. The association between Family Attachment and Life Satisfaction could also be due to what Santrock (1998) calls "indulgent parenting," where parents are highly involved in their children's lives but have few requirements or rules for them to adhere to. The catalyst behind this style of parenting is the belief that being warm parents who do not place restrictions on their children will lead the children to be adolescents who are creative and confident. The finding from the current study has been contrasted in recent research by Nickerson and Nagle (2004), who found that attachment to parents positively predicted students' levels of Life Satisfaction in a study of 303 students in Grades 4, 6, and 8.

It is a commonly held belief that the adolescent needs both autonomy from, and attachment to, parents to be psychologically healthy (Santrock, 1998). The results from this study, however, indicated that it is possible that too much attachment may be detrimental to the adolescent's psychological health.

6.3.4 Institutional Experiences and Competencies

At the same time as this study found that attachment to parents could be detrimental to adolescent Life Satisfaction, adolescents in this study indicated that Family Functioning was an important predictor of Life Satisfaction: An increase in Family Functioning (e.g., support and help from family, respect, having a say in family decisions) led to an increase in levels of Life Satisfaction. The items that constituted the Family Functioning question in this study are indicative of authoritative parenting as defined by Santrock (1998). In an authoritative parenting situation adolescents are encouraged to be independent, but have clear rules governing them, and parents are warm and nurturing. Recent research has supported the findings of the current study. Suldo and Huebner (2004) conducted a study of Life Satisfaction with 1188 students, aged 11 to 19, and found that authoritative parenting was positively related to Life Satisfaction. In a regression equation, authoritative

parenting accounted for 26% of the variance in Life Satisfaction. Further studies are needed before strong conclusions can be drawn, as Suldo and Huebner's (2004) sample was unrepresentative: 58% of students were African American, and the same percentage came from a low socio-economic background.

The two findings regarding Family Attachment and Family Functioning, taken together, are evidence for the conflict of adolescence that Santrock (1998) highlights: Adolescents struggle with being under the care of the family, yet wanting to be independent. Although the variables regarding family are different in this study to others and not measured in the same way, the results here supported previous research on the importance of family to adolescent Life Satisfaction. Huebner (1991b) found that satisfaction with family life was the strongest correlate with Life Satisfaction, and that home environment was a significant predictor. Young et al. (1995) found that parental support correlated significantly with Life Satisfaction, and Leung and Zhang (2000) found that adolescents' relationships with their parents correlated the most strongly with Life Satisfaction for Chinese adolescents living in Hong Kong.

Of all the institutional experiences and competencies that were assessed in regard to adolescent Subjective Well-Being in this study, it was family that was the most important institution. Family Functioning, Family Attachment, Parent's Marital Status, and the family's financial situation all had an impact on Life Satisfaction. That Family Finances impacted Life Satisfaction negatively, was an interesting finding. The Family Finances question was constructed in such a way that a low value indicated a better financial situation, and a high value indicated a worse financial situation. The negative direction of the correlation between the two variables, therefore, suggested that the more advantageous the family's financial situation was the higher the level of Life Satisfaction that was experienced. This finding is especially interesting in light of the past Subjective Well-Being research that has found objective variables such as income have minimal effect on Subjective Well-Being. Future research should investigate whether it is the subjective assessment of the family's finances – therefore the respondents' perception of

the family's finances and not the actual state of the family's finances – that affects Life Satisfaction.

The findings from this study suggested that the number of friends an adolescent had would increase their levels of Life Satisfaction. This confirmed previous research by Gilman et al. (2000a), which found that interpersonal relations were significantly related to Life Satisfaction. Although Friendship Abilities correlated negatively and significantly with Life Satisfaction, the variable did not add any explanatory power to the regression equation. This result indicated that it is purely the number of friends that an adolescent has that increases Life Satisfaction, not how competent they are at making and keeping friends.

Self-Assessed Success in Mathematics, English, Science, and SOSE correlated with Life Satisfaction in this study: A finding that contrasted that of Wilson and Peterson (1988), who found that educational attainment was not significantly related to Life Satisfaction. This could possibly be because educational attainment in the present study was self-assessed, whereas Wilson and Peterson measured educational attainment by asking how far the respondent had reached at school. Once these variables were entered into a regression analysis containing all variables that correlated significantly with Life Satisfaction however, they were not significant predictors of Life Satisfaction.

Although Sport Prevention correlated negatively and significantly with Life Satisfaction, and Benefits from Sport correlated positively and significantly with Life Satisfaction, the two variables did not add significantly to the regression solution.

Involuntary Contact with Government Agencies had a negative and significant correlation with Life Satisfaction, but was not a significant predictor in the presence of other significant variables.

6.3.5 Mental Health

Although previous findings into the relationship between Mental Health and Life Satisfaction had been conducted on small and/or unrepresentative samples (Adelman et al., 1989; Gilman et al., 2000a, 2000b; Huebner, 1991b; Gullone & Cummins, 1999), the findings of previous research that the two constructs are related have been confirmed in this study. Specifically, when entered into a regression analysis, the variable measuring depression, anxiety, and control was a significant and negative predictor of Life Satisfaction. Recent research has supported this, with Life Satisfaction and “poor Mental Health days” being significantly correlated in a study by Valois, Zullig, Huebner, and Drane (2004).

The research that has looked at the relationship between Coping and Life Satisfaction has looked at different aspects of Coping. Grob et al. (1999) looked at emotion-oriented coping and problem-oriented coping in relation to Life Satisfaction. They found that Subjective Well-Being was correlated negatively with emotion-oriented coping, and positively with problem-oriented coping. They also found that these concepts were significant predictors of Subjective Well-Being when entered into a regression equation. Variables in the current study measured general coping abilities. Coping, measured in this way, was a significant correlate and predictor of Life Satisfaction in this sample. It was, in fact, one of the strongest predictors of Life Satisfaction.

6.3.6 Risk Behaviours and Beliefs

Although both Suicide Ideation and Suicide Attempts correlated with Life Satisfaction (Suicide Ideation correlated positively where No = 0 and Yes = 1, and Suicide Attempts correlated negatively), only Suicide Ideation remained a significant predictor once the two variables were entered into a regression analysis. This result indicated that it may be that *thinking* about committing suicide is more important to Life Satisfaction rather than acting on the

thoughts. Results found in this study regarding the correlation between Suicide Ideation and Life Satisfaction, and Suicide Attempts and Life Satisfaction, have been supported in research by Valois et al. (2004), who found that Suicide Ideation and behaviours both correlated significantly with Life Satisfaction in a sample of 4758 students aged 13 to 18.

6.3.7 Life Events

Although the life event item of “Family problems” correlated significantly with Life Satisfaction, it did not add any explanatory power to the regression equation. The Life Event item of “Parents Separate/Divorce” correlated negatively and significantly with Life Satisfaction but was not entered into the regression equation. This was to avoid problems of multicollinearity as it was very similar to the question regarding parents’ marital status. Previous research by McCullough et al. (2000) assessed the effects of positive daily and major life events, and negative daily and major life events on Life Satisfaction, whereas Ash and Huebner (2001) assessed the relation acute and chronic stressors and environmental resources to Life Satisfaction. Their findings regarding the importance of life events to Life Satisfaction were not confirmed by this study. This could be due in part to the differences between the studies in the measurement of life events.

6.3.8 Goals and Life Planning

Previous research into the relationship between Life Satisfaction and goals with adolescents is negligible. The findings from this study suggested that Internal Influences on Goal Setting (e.g., my interests, my skills and abilities) were important predictors of Life Satisfaction, whereas External Influences on Goal Setting (e.g., resources) were not. The fact that Goal Ambivalence did not correlate with Life Satisfaction implied that being prone to planning and thinking about goals might not be enough. Confidence at getting desired job was another significant predictor of Life Satisfaction, leading to an increase in Life Satisfaction.

6.4 Positive Affect Results

Adolescents in this study reported experiencing moderate levels of Positive Affect. This contrasted with previous findings by Huebner and Dew (1995) and McCullough et al. (2000), who found that adolescents reported lower levels of Positive Affect as measured by the PANAS. Research by Andrews and Withey (1976) found that Positive Affect correlated only moderately with Life Satisfaction, however, in this study $r = .44$, which was one of the higher correlations in this study. Bivariate correlations showed that, as with Life Satisfaction, Positive Affect correlated with both internal and external facets of adolescents' lives. This finding was echoed in the regression results. With this dependent variable however, the external factors influencing Positive Affect were not just family, but all institutions specific to adolescents; family, school, friends, and sport. In this study, both personal and environmental aspects were found to predict Positive Affect: Participation in sport and Extracurricular Activities were found to predict Positive Affect as did psychosocial states (see Chapter 5, Figures 5.13 and 5.14).

6.4.1 Demographics

Research investigating the relationship between Positive Affect and demographics is limited. A study conducted by Huebner and Dew (1995) looked at the relationship between Age and Positive Affect with 266 students with an average Age of 16.22 ($SD = 1.28$). They found no relationship between the two variables, and their results have been supported by this study: Age and Positive Affect were not related.

Research regarding the relationship between Gender and Positive Affect have produced mixed results (Ashby Wills et al., 1992; Cole et al., 1999; Ewart & Kolodner, 1994; Huebner & Dew, 1995; Verkuyten, 1986). The findings from this study supported those of Huebner and Dew (1995), who concluded that Gender was not related to Positive Affect.

6.4.2 Personality

Research has extensively explored the relationship between Positive Affect and personality in adults, particularly the facet of Extraversion (see Chapter 2, Section 2.6). Little research, however, has been conducted on this relationship in adolescents. Results from this study suggested that although Psychoticism/Lie correlated negatively with Positive Affect, it did not add significantly to the regression equation. This finding suggested that previous findings from studies with adults might need to be reviewed in relation to adolescents. It is possible that the observation of Watson and Walker (1996), and others (Costa & McCrae, 1994; Finn, 1986; Haan et al., 1986; Helson & Moane, 1987; McCrae & Costa, 1990; Siegler et al., 1990), that personality may not be developed in people by their twenties as is widely believed, could have merit.

6.4.3 Psychosocial

Although Idealism, Confidence, and Voice all correlated positively with Positive Affect, only Confidence and Voice were predictors of the dependent variable. As mentioned earlier in Section 6.3.3, it could be that Confidence as measured in this study is closely related to self-esteem and/or self-concept. These two variables have been found to be significant predictors of Positive Affect in past studies (Huebner & Dew, 1995; McCullough et al., 2000). The finding from this study suggested that being confident and having the confidence to say what one truly believes helps a person feel positive emotions more often.

6.4.4 Institutional Experiences and Competencies

Very little research has been conducted into the relationship between Positive Affect and family. In contrast to the findings regarding Life Satisfaction, family variables did not add predictive power to the regression equation in

this study. Although Family Functioning was correlated positively with Positive Affect it was not a significant predictor in the presence of other predictive variables.

Previous research into the Positive Affect of adolescents has not looked at the relationship between friends and Positive Affect, though as McInerney and McInerney (1998) stated, friendship is important to adolescents' lives and development. This study found that Benefits from Friendship was a significant predictor of Positive Affect in Tasmanian adolescents. The aspects of friendship measured in this study that have been found to predict Positive Affect are "Having support when you need it;" "Having someone to confide in;" and "Being able to be the real you." These concepts measure the functions of "ego support" and "intimacy/affection" outlined in Gottman and Parker's (1987) six functions of adolescent friendships. As Santrock (1998) notes, being able to disclose insecurities and fears to close friends allows adolescents to discover they are not abnormal. This would in turn lead to adolescents experiencing more positive feelings.

As noted in Chapter 2, Section 2.8.2, researchers have consistently found that a lack of association with friends is linked to a range of disorders such as delinquency, depression and loneliness, and influence an adolescent's mental health (Buhrmester, as cited in Santrock, 1998; Buhrmester & Carbery, as cited in Santrock, 1998; Hops et al., as cited in Santrock, 1998; Kupersmidt & Coie, 1990; Roff et al., 1972; Santrock, 1998; Yin et al., as cited in Santrock, 1998). The current study has shown that the positive outcomes from friendship should be studied as a possible tool to increase students' feelings of Positive Affect.

Previous studies have not looked at the influence of school experiences on the Positive Affect of adolescents. The current study found that participation in extracurricular activities was one of the strongest predictors of Positive Affect in adolescents. This finding is reminiscent of past research that posited that people who experience higher levels of Positive Affect are also extraverts who seek out social situations (Diener & Emmons, 1986). This theory, however,

has been dismissed by subsequent research (Diener et al., 1992). Although Self-Assessed Success in Mathematics, English, Science, and SOSE all correlated positively with Positive Affect, only Self-Assessed Success in SOSE remained a significant predictor when entered into a regression equation. Perhaps this is due to the applicability of the subject to the “real” world. Maybe students value the knowledge and skills gained in this area more than in other subjects.

Interesting results came from the Positive Affect regression analysis in relation to sport. Both the average hours per week adolescents play sport and the benefits they get from sport were significant predictors of their Positive Affect. Perhaps this is due to the emphasis on sport in Australian society. Success at sport is highly valued and is likely to lead to positive emotions.

6.4.5 Mental Health

The present study investigated the ability of adolescents to cope with problems in all domains of their lives (e.g., parents/carers, feelings, friends), and found Coping to be a strong predictor of Positive Affect. Previous research on control by Huebner and Dew (1995) was not replicated in this study, but control was only one part of a tripartite model of Mental Health used in this study that included depression, anxiety, and control.

6.4.6 Risk Behaviours and Beliefs

Little research has been conducted on the relationship between Positive Affect and risk behaviours and beliefs. This study found that Risk Acceptance, Suicide Ideation, and Suicide Attempts were not correlated with Positive Affect.

6.4.7 Life Events

Research by Ashby Wills et al. (1992) examined negative life events that happen to both a respondent and his or her family (e.g., parents argued a lot, disciplined in school), and found that life events correlated significantly with Positive Affect. This result was not replicated in this study however, but this could be due to the fact that life events were not measured in exactly the same way in the current study as in the research of Ashby Wills et al. (1992).

6.4.8 Goals and Life Planning

Little research has been conducted into the relationship between goals and Positive Affect, although research with adults has found it to be important to Subjective Well-Being (for example, Brunstein et al., 1998; Diener & Fujita, 1995; Diener et al., 1999; Emmons, 1986). The current study assessed whether students were orientated toward future thinking and/or planning, as well as the impact of internal and external influences on their goal setting. Although Internal and External Influences on Goal Setting, as well as Confidence at Getting Desired Job, all correlated positively with Positive Affect, only Internal Influences on Goal Setting and Confidence at Getting Desired Job remained significant predictors of Positive Affect once entered into a regression equation. This result provided evidence for the importance of telic theories of Subjective Well-Being in adolescents as well as adults. From this research, it could be concluded that undertaking activities for personal purposes or from a personal motivation may be important to Positive Affect in contrast with doing these activities for others. Perhaps self-motivation and thinking about the future is important to Positive Affect. It may be that the knowledge and abilities that an individual has drives his or her goal setting.

6.5 Negative Affect Results

Findings from this study regarding the reported levels of Negative Affect in adolescents supported that of previous research (Huebner & Dew, 1995;

McCullough et al., 2000), with students reporting low and moderate levels of Negative Affect. Previous research has found that Negative Affect is only moderately correlated with Life Satisfaction (Andrews & Withey, 1976; Campbell et al., 1976; Emmons & Diener, 1985a; Huebner, 1991c; Lucas et al., 1996) and this result was replicated in this study: Negative Affect correlated negatively with Life Satisfaction. Pre-regression partial correlation results showed that the zero order correlation between Negative Affect and Life Satisfaction was almost entirely accounted for by the shared correlation with Mental Health. Bivariate correlations showed that, as with Life Satisfaction and Positive Affect, Negative Affect correlated with both internal and external facets of adolescents' lives but to a lesser degree with external characteristics. Both personal and environmental variables were found to predict Negative Affect, but the influence of external factors was not strong. Involuntary Contact with Government Agencies, and External Influences on Goal Setting were the only environmental variables to be significant predictors of Negative Affect once entered into a regression equation (see Chapter 5, Figures 5.16 and 5.17).

6.5.1 Demographics

Studies exploring the relationship between Negative Affect and demographics are limited. Huebner and Dew (1995) conducted a study with 266 students with an average Age of 16.22 (SD = 1.28) and found no significant affect of Age on Negative Affect. Their results were replicated in this study: Negative Affect and Age were not related.

Results regarding the relationship between Negative Affect and Gender have been mixed (Ashby Wills et al., 1992; Cole et al., 1999; Ewart & Kolodner, 1994; Huebner & Dew, 1995; Verkuyten, 1986). Findings in this study supported those of Huebner and Dew (1995), that is, Gender and Negative Affect were not found to be significantly related.

6.5.2 Personality

Previous research into the relationship between Negative Affect and personality in adults has found Neuroticism to be strongly and positively correlated with Negative Affect (Costa & McCrae, 1980; Emmons & Diener, 1985; Emmons & Diener, 1986; Fujita, 1991; Suh et al., 1996; Warr et al., 1983). Little research, however, has been conducted into the relationship between these two variables in adolescents. Results from the current study reiterated results from studies with adults, and found that not only did Neuroticism correlate positively with Negative Affect, but it was also a significant predictor of Negative Affect once entered into a regression equation.

6.5.3 Psychosocial

Although Confidence correlated significantly and negatively with Negative Affect, it did not add explanatory power to the regression equation in the presence of other predictive variables.

6.5.4 Institutional Experiences and Competencies

Previous research has not looked into the relationship between Negative Affect and sport. As an important part of Australian culture, it was necessary that analyses of sporting beliefs and behaviours were included in this study. Sport prevention, which correlated positively with Negative Affect, did not add significant explanatory power to the regression equation.

Involuntary Contact with Government Agencies correlated significantly and positively with Negative Affect and was found to be a significant predictor of the variable. Involuntary contact with police, youth detention centres, probation/parole officers, and counselling, therefore contribute to adolescents' feelings of Negative Affect. Perhaps a revision of policies and processes of these agencies should be considered in future research.

6.5.5 Mental Health

Previous research has looked at locus of control, a related construct to the control facet of Mental Health as measured in this study. Huebner and Dew (1995) found that Negative Affect was associated with externally based locus of control, but the table displaying the results in the article indicated that the relationship did not reach significance. Results from this study showed that although Coping correlated negatively and significantly with Negative Affect, it did not add to the regression equation. Mental Health, however, was a significant predictor of Negative Affect; in fact, it was the strongest predictor of Negative Affect. This finding suggested that a strong relationship existed among the frequency of feelings of nervousness, depression, and tenseness for example, and common sense would support this relationship.

6.5.6 Risk Behaviours and Beliefs

Risk Acceptance, a scale created by multiplying students' assessments of the frequency of their participation in risk behaviours by their risk beliefs, was both a positive, significant correlate with, and predictor of, Negative Affect. Although not measured in the same way in this study, findings here supported those of Ashby Wills et al. (1992), who found that risk behaviours were related to Negative Affect. Pinto and Whisman (1996) conducted a study of Suicide Ideation and Negative Affect in a sample of 228 adolescents aged from 13 to 18 in a child and adolescent psychiatric inpatient unit. They found that Suicide Ideation was related significantly to Negative Affect. Pinto and Whisman's (1996) results were replicated here with Suicide Ideation correlating negatively and significantly with Negative Affect. Surprisingly, it was not a significant predictor of Negative Affect. Suicide Attempts correlated positively with Negative Affect, but again was not a significant predictor of Negative Affect.

6.5.7 Life Events

Past research has found that daily events and life events in general correlated significantly with Negative Affect (Ashby Wills et al., 1992; McCullough et al., 2000). The correlational result was supported by results from the current study. Although the Life Event item of "Family Problems" did correlate significantly and positively with Negative Affect, it was not a significant predictor of the dependent variable.

6.5.8 Goals and Life Planning

Little research has been conducted into the relationship between goals and Negative Affect, although research with adults has found it to be important to Subjective Well-Being (Brunstein et al., 1998; Diener & Fujita, 1995; Diener et al., 1999; Emmons & Diener, 1986). The current study assessed whether students were orientated toward future thinking and/or planning, and the impact of internal and external influences on their goal setting. Goal Ambivalence and External Influences on Goal Setting were positively and significantly correlated with Negative Affect. Once entered into a regression equation, these variables remained significant predictors of Negative Affect. This finding suggested that feelings of disengagement with future planning contributed to Negative Affect as did setting goals in relation to others (e.g., other people's expectations, pleasing others, other people's success and resources). Perhaps telic theories of Subjective Well-Being are important to adolescent Subjective Well-Being, and thinking about the future and feeling outside pressure on goal setting may be detrimental to adolescents' Subjective Well-Being.

6.6 Post-Regression Partial Correlation Results

Results from the regression analyses conducted on the three dependent variables found that the resultant equations shared independent variables. Partial correlations were conducted in order to examine whether the shared variables impacted the zero order correlations between dependent variables,

and if so, to what degree. The regression equations for Life Satisfaction and Positive Affect shared variables, as did the regression equations for Life Satisfaction and Negative Affect. The equations for Positive Affect and Negative Affect, however, did not share variables providing further evidence for the separability of these two constructs.

Results indicated that Confidence and Coping partially accounted for the zero order correlation between Life Satisfaction and Positive Affect. The shared correlation of Life Satisfaction and Negative Affect with Mental Health entirely accounted for the zero order relationship between the two dependent variables, hence the relationship between Life Satisfaction and Negative Affect may be “conditionally independent.” The Z variables of Confidence, Coping, and Mental Health, were found to influence the relevant zero-order correlations in both the pre-regression and post-regression partial correlations. As these variables were chosen according to two different sets of criteria, it is reasonable to conclude that they influence the zero-order correlations between the dependent variables.

A figurative representation of the findings discussed in this chapter is presented in Figure 6.1

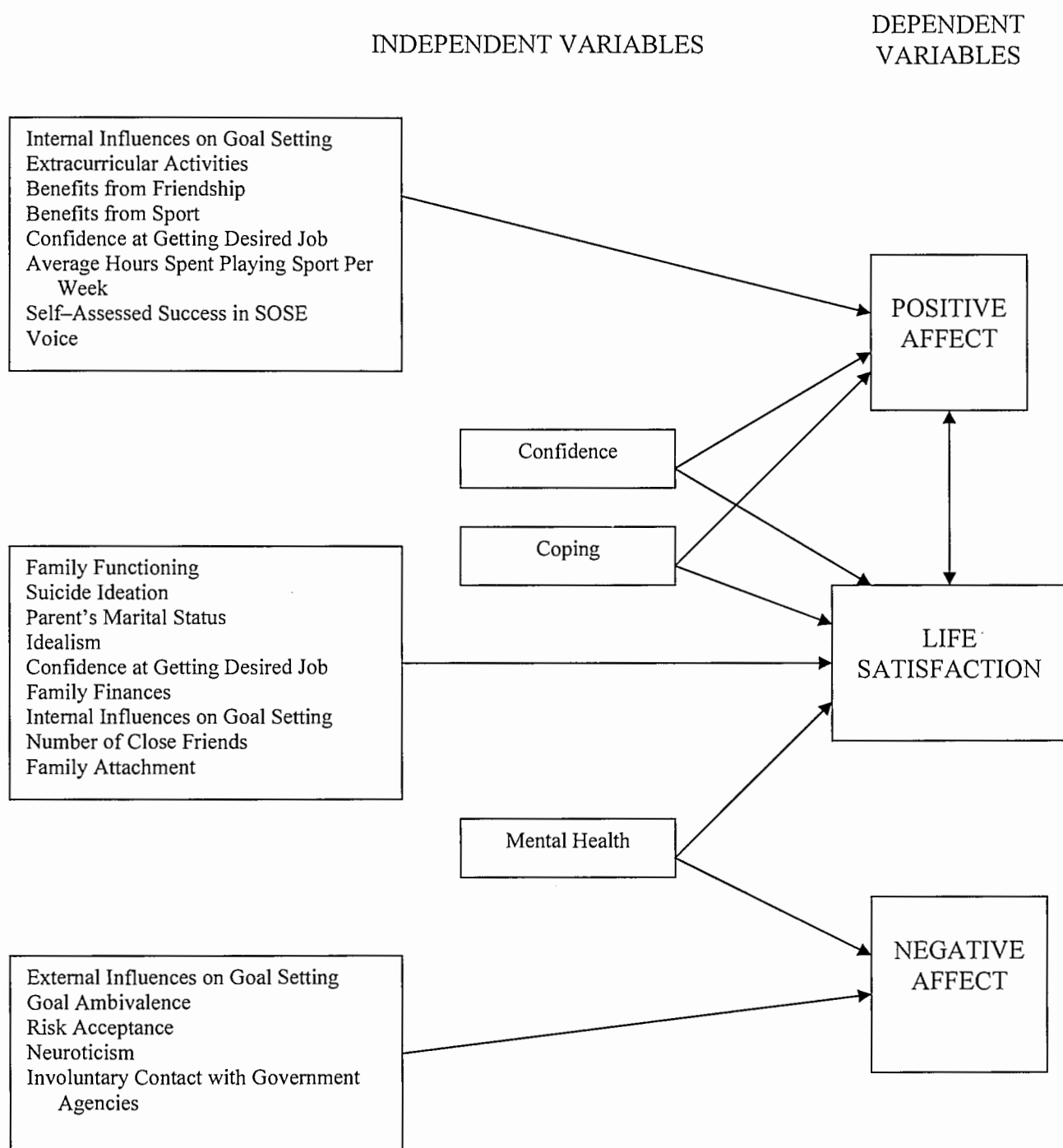


Figure 6.1. Model of Findings from Current Study.

6.7 Conclusion

This chapter has discussed the findings presented in Chapters 4 and 5. The factor analysis results were not as expected for the dependent variables,

however the results supported previous research that has concluded that Life Satisfaction, Positive Affect, and Negative Affect are three separate constructs. The bivariate and regression results were discussed, based on the different regression equations produced for each dependent variable. The post-regression partial correlations focussed on relationships among the dependent variables and found that some of these relationships were mediated by intervening variables. It was concluded that the zero-order correlation between Life Satisfaction and Negative Affect may be “conditionally independent.” In the next chapter the background to the thesis research and key research questions are reviewed, and findings from the current study are summarised for each of the research questions. Finally, the significance and contributions of the thesis research are discussed.

Chapter 7: Conclusion

7.1 Introduction

What makes people happy? How do people create happy lives? These and many other questions regarding well-being have become the focus of many self-help books, as well as pop psychology, traditional psychology, medicine, and research crossing all disciplines. Why are questions such as these so important in research? Because they reflect the questions that all people ponder. Questions that are fundamental to the construction of the meaning of our lives. This thesis has begun to answer questions similar to these in its examination of the Subjective Well-Being of adolescents.

As Heaven (2001) stated, thorough enquiry into adolescence is important, and this was central to the purpose of this thesis. The aim of the thesis was to expand existing knowledge regarding the Subjective Well-Being of adolescents. The study of Subjective Well-Being requires an empirically-based examination of the causes and correlates of happiness and, as stated in Chapter 1, it is imperative that the evaluations of Subjective Well-Being come from the respondents' perspectives. Hence the Marcus Aurelius quote used in the title of this thesis: "No man is happy who does not think himself so."

7.2 Background to the Research and Key Research Questions

Empirical studies examining the Subjective Well-Being of adolescents are few and those that have been conducted have experienced some limitations. The majority of research into Subjective Well-Being with adolescents that

had been previously conducted examined either the cognitive or affective components of Subjective Well-Being and not the two together. As Subjective Well-Being research is in its early stages, findings are often based on only one study, or have been conducted with unrepresentative samples. Variables found to be correlated with, or predictors of, Subjective Well-Being for adults needed to be tested with adolescents, but so did other possible causes and correlates more suited to adolescents. Multivariate analysis techniques needed to be applied to data in order to examine further the relationships between the correlates of Subjective Well-Being. With these ideas in mind, and from a reading of the adolescent Subjective Well-Being literature, the following research questions were developed for this study (Figure 7.1).

1. What is the level of Subjective Well-Being of Tasmanian adolescents?
2. Are previous correlational and findings supported in a larger and more representative sample?
3. What are other possible correlates and predictors of adolescent Subjective Well-Being? Is there a relationship between Life Satisfaction, Positive and Negative Affect, and domains important to adolescents (family, friends, school for example)?

Figure 7.1. Research Questions.

Additional theories were introduced in the literature review (Chapter 2) that could possibly help to identify potential causes and correlates of Life Satisfaction, Positive Affect, and Negative Affect in adolescents. Some of these theories were taken from research into the Subjective Well-Being of adults, others from adolescent development theories. The four theories discussed were the personality model from adult Subjective Well-Being research, the life events model from adult Subjective Well-Being studies, the goal model from adult Subjective Well-Being studies, and lastly the institutional experiences and competencies model based on adolescent development theories (see Chapter 2, Sections 2.6 to 2.9).

The final sample for the thesis research consisted of 2094 students of which 51% were in Grade 8 and 49% were in Grade 10. The questionnaire was split evenly across genders with female students comprising 51% of the sample. The average age of respondents was 14.34 ($SD = 1.28$), with 59% attending government schools, 21% attending Catholic schools, and 20% attending other private schools.

Exploratory factor analysis was used to explore the dimensionality of the data and overlap within the questions. Partial correlations were investigated both before and after the multiple regression analysis in order to see if any additional interactions existed that affected initial correlations between the dependent variables. Three separate multiple regression analyses were conducted to find the strongest predictors for each dependent variable.

7.3 Addressing the Research Questions

The following section addresses the research questions central to the thesis in the light of findings from the current study as well as findings from existing adolescent Subjective Well-Being research.

What is the level of Subjective Well-Being for Tasmanian adolescents?

Results from the current study indicated that the majority of Tasmanian adolescents reported experiencing high levels of Life Satisfaction. The finding from the current study, however, appeared to contrast with the research of Huebner and others, who described the levels of Life Satisfaction experienced by adolescents in their samples as “moderately high” (e.g., Huebner et al., 1998, 2000; McCullough et al., 2000). Findings from the

current study were based on scales created using factor analysis, whereas other researchers have commonly used summed scales to get a single value representing Life Satisfaction levels. Over half of the students' responses in the current study were in the top third of the factor scale range (58.3%) indicating higher levels of Life Satisfaction.

In the current study, Tasmanian adolescents reported experiencing moderate levels of Positive Affect. As mentioned above, findings are commonly based on summed scales, however the current finding, which used factor scales seemed to contrast with previous research, which found that adolescents reported low levels of Positive Affect (Huebner & Dew, 1995; McCullough et al., 2000). Most adolescents' responses to the Positive Affect factor scale of the PANAS fell in the middle third of the factor scale range (68.2%), with only 11.7% of respondents reporting levels of Positive Affect in the bottom third of the factor scale range. Similarly, the level of Negative Affect adolescents in this sample reported seemed to be slightly lower than that of their American counterparts. Most students in this study reported moderate and low levels of Negative Affect. The majority of responses were located in the bottom third of the factor scale range (52.5%), with only 4.6% of respondents located in the top third of the factor scale range.

The findings discussed here have supported the thoughts of researchers as cited in Chapters 1 and 2 that the period of adolescence may not be the negative experience once thought. The findings from the current study indicated that there may be a need for researchers to re-think existing ideas on adolescence, and base research on the *subjective* experiences of adolescents. The results from this study appeared to suggest that Australian adolescents experience a positive life with high levels of Life Satisfaction, moderate levels of Positive Affect, and low levels of Negative Affect. As this sample was larger and more representative than those analysed in past studies, there may be a need to re-examine reported levels of Subjective Well-Being elsewhere, with research comparing Subjective Well-Being levels cross-culturally as well.

Are previous correlational findings supported in a larger and more representative sample?

A number of previous findings regarding Life Satisfaction, Positive Affect, and Negative Affect and various correlates have been supported by the current study, with interesting results regarding the interrelationships between the three dependent variables. The independence of Positive and Negative Affect was established in the bivariate correlations, but received further support after regression analyses were conducted: The regression equations for these two facets of Affect did not share any predictors, providing evidence for the independence of these two constructs.

The pre- and post-regression partial correlations provided further insights into the relationships among Life Satisfaction, Positive Affect, and Negative Affect. The correlation between Life Satisfaction and Positive Affect was found to be partly explained by the shared correlations of the two dependent variables with Confidence and Coping. As noted in Chapter 5, Life Satisfaction and Negative Affect correlated with each other, but they also both correlated with Mental Health. This variable accounted entirely for the zero-order correlation between Life Satisfaction and Negative Affect, indicating that the relationship between these two dependent variables may be ‘conditionally independent.’

Many facets of family life and family functioning have been explored in relation to adolescent Life Satisfaction. Researchers have reported that Life Satisfaction correlated with:

- Satisfaction with family (Huebner, 1991b);
- Family support, which was a significant predictor of Life Satisfaction once entered into a regression analysis (Young et al., 1995);

- Relationships with parents (Gilman et al., 2000a; Leung & Zhang, 2000); and
- Living with family (Munõz Sastre & Ferrière, 2000).

Researchers have reported, however, that Life Satisfaction did not correlate with severity of problems at home (Adelman et al., 1989). The Family Functioning scale in the current study included items that were representative of authoritative parenting and also looked at support and help from the family. The results from this study indicated that family life, specifically Family Functioning, was correlated with Life Satisfaction. Once entered into a regression equation, Family Functioning was also an important predictor of Life Satisfaction, confirming the findings of Young et al. (1995).

The finding regarding the relationship between Family Attachment and Life Satisfaction is an interesting one. The results of the current study indicated that an increase in Family Attachment would lead to a decrease in Life Satisfaction. This finding suggested that being too close to one's family would be detrimental to the adolescent. Results from this study, however, indicated that an increase in Family Functioning would lead to an increase in Life Satisfaction. As mentioned in Chapter 6, these findings provide evidence for the conflict of adolescence: adolescents struggle with being under the care of their family yet wanting to be independent.

Mixed results have been reported by previous researchers when assessing the relationship between school and Life Satisfaction in adolescents, with researchers reporting that Life Satisfaction was associated with:

- The placement of a child in either a "regular" or a special education program (Smith et al., 1987); and
- Low expectations of improvement at school (Adelman et al., 1989);
- Satisfaction with school life positively (Huebner, 1991b; Munõz Sastre & Ferrière, 2000).

Researchers have also reported, however, that:

- Satisfaction with school life did not add significantly to the Life Satisfaction regression equation in the presence of other significant variables (Huebner, 1991b); and
- Educational attainment did not correlate with Life Satisfaction (Wilson & Peterson, 1988).

As with the family variables mentioned above, the school variables in this study are different to those used in previous studies. In this study Self-Assessed Success in Mathematics, English, Science, and SOSE each correlated significantly with Life Satisfaction. Hence, this study supports the general findings regarding the relationship between school and Life Satisfaction found in previous research. The variables were not, however, significant predictors of Life Satisfaction, echoing the findings of Huebner (1991b).

Few studies have examined the relationship between friends and Life Satisfaction with adolescents, and the research that does exist has produced mixed findings. Gilman et al. (2000a) reported that Life Satisfaction correlated with interpersonal relations, however, Huebner (1991b) found that satisfaction with friends did not correlate significantly with Life Satisfaction. In the current study Number of Close Friends and Friendship Abilities were examined in relation to Life Satisfaction and found to be significant correlates. Only Number of Close Friends, however, was a significant predictor of Life Satisfaction. What is interesting, is that it is purely the number of friends, rather than the individual's friendship abilities that is a predictor of Life Satisfaction. Adolescence is an exploratory time during which the adolescent uses peer groups to establish an identity. The findings from this study would suggest that the ever-changing friendships that can be a trait of adolescence is not something that will affect the adolescent's level of Life Satisfaction.

Past studies have reported that aspects of mental health – specifically depression, anxiety, and control – are significantly correlated to Life Satisfaction. Researchers have reported that Life Satisfaction correlated with:

- Depression negatively (Adelman et al., 1989; Gilman et al., 2000a);
- Anxiety negatively (Gilman et al., 2000a; Huebner, 1991b);
- Perceived control at school (Adelman et al., 1989; Smith et al., 1987);
- General control expectancies positively (Grob et al., 1999); and
- Locus of control (Ash & Huebner, 2001; Gilman et al., 2000a).

As well, general control expectancies were a significant predictor of life satisfaction (Grob et al., 1999), and locus of control mediates the relationship between negative life events and life satisfaction (Ash & Huebner, 2001).

The findings from these studies suggest that depression, anxiety, and aspects of control are associated with Life Satisfaction, and are supported by the current study. Mental Health, measured as depression, anxiety and control, correlated significantly with Life Satisfaction. Supporting the findings of Grob et al. (1999) with regard to the predictive power of control, Mental Health was found to be a significant predictor of Life Satisfaction in the current study.

Few studies have looked at the relationship between Life Events and Life Satisfaction in adolescents, with researchers reporting that Life Satisfaction correlated with:

- Positive daily events (McCullough et al., 2000); and
- Negative life events, stressors, positive life events, and resources (Ash & Huebner, 2001).

The current study found that two life event items related to family were significantly correlated with Life Satisfaction – Life Event: Parents Separate/Divorce and Life Event: Family Problems. This finding suggests that there may be a need when creating Life Event scales to construct Life Event items by domain as well as frequency and intensity. It is not surprising that these two Life Event items correlated with Life Satisfaction in this study because of the strong influence of family on Life Satisfaction also found.

Some results, however, have contradicted previous findings. One example of this is the relationship between personality and Life Satisfaction, with researchers reporting that Life Satisfaction correlated with:

- All facets of the EPQ (Extraversion, Neuroticism, Psychoticism, and Lie) (Huebner, 1991b); and
- Neuroticism and Lie negatively, but did not correlate at all with Extraversion (Heaven, 1989).

The findings from the current study supported that of Heaven (1989): Neuroticism and the combined Psychoticism/Lie scale correlated significantly with Life Satisfaction, but Extraversion did not. This result could possibly be explained due to the use of Australian samples in both studies (Heaven, 1989 and the current study). The findings from the current study suggested that the personality–affect relationship, seen to be a major predictor of Subjective Well–Being, may need to be explored in more detail for adolescents, and researchers may also need to examine this relationship cross–culturally.

Many of the research studies into the Subjective Well–Being of adolescents over the last 15 years have looked primarily at the Life Satisfaction of adolescents, and few have looked at the Positive and Negative Affect of adolescents. Subjective Well–Being research with adults has found personality to be important in understanding Positive and Negative Affect (see Chapter 2). Previous findings suggesting a relationship between Neuroticism and Negative Affect were supported by the current study. Research on the relationship between Positive Affect and Extraversion, however, was not supported by this study: Extraversion was not significantly correlated with Positive Affect. The results of this study suggest that the central finding in Subjective Well–Being research, the personality–affect relationship, may need re–examination or re–conceptualisation with regard to adolescents with robust samples and analysis techniques. As they spend so much time in institutions such as the family and school, the influence of personality on Affect may be different for adolescents.

Gavin and Furman (1996) reported that female adolescents with more harmonious relationships with their mothers displayed higher levels of Positive Affect. Generally, findings regarding the family and Positive Affect have been further supported by this study with Family Functioning correlating significantly with Positive Affect. Pinto and Whisman (1996) concluded that suicide ideation was significantly correlated with Negative Affect, and this finding was supported by the current study.

Although many variables that had been found to correlate with Life Satisfaction, Positive Affect, and Negative Affect in past research also correlated in the current research study, not all of them were significant predictors of the dependent variables once entered into a regression equation. Coping, Family Functioning, Parent's Marital Status, Mental Health, Family Finances, Number of Close Friends, and Family Attachment were all significant predictors of Life Satisfaction. Family Functioning was not, however, a significant predictor of Positive Affect in the presence of other significant variables, nor did Suicide Ideation predict Negative Affect. These results highlight the importance of using multivariate techniques to understand better the nature of Subjective Well-Being.

What are other possible correlates and predictors of adolescent Subjective Well-Being?

Are there relationships among Life Satisfaction, Positive Affect and Negative Affect, and domains important to adolescents (family, friends, school, for example)?

A number of variables in this study that had not been explored in previous research were found to be either significantly correlated to Life Satisfaction in Tasmanian adolescents or correlated with, and predictors of, Life Satisfaction. The variables of Confidence, Idealism, and Voice had not been examined by

previous researchers, and all three variables were found to be significantly correlated with Life Satisfaction in this study. Further, Confidence and Idealism were both significant predictors of Life Satisfaction once entered into a regression equation, with Confidence being the strongest predictor of Life Satisfaction. With a beta value of .19 ($p = .0005$), Confidence accounted for 31% of the variance. This strong relationship was also reflected in the post-regression partial correlation results.

Several variables used in this study had not been examined in previous research: Sport Prevention, Benefits from Sport, Involuntary Contact with Government Agencies, Suicide Ideation, Suicide Attempts, Internal Influences on Goal Setting, and Confidence at Getting Desired Job. Three of these variables – Sport prevention, Benefits from Sport, and Involuntary Contact with Government Agencies – correlated significantly with Life Satisfaction, but did not add explanatory power to the regression equation in the presence of other significant variables. Internal Influences on Goal Setting and Confidence at Getting Desired Job were both correlated with Life Satisfaction, and were also significant predictors of the dependent variable. Both Suicide Ideation and Suicide Attempts were significantly correlated with Life Satisfaction, but only Suicide Ideation was a significant predictor of Life Satisfaction, indicating that purely thinking about committing suicide is detrimental to adolescent Life Satisfaction. This important finding has many implications for health prevention practices. As a result of this finding, an argument can be made that early prevention should be the focus of health policies and funding – once the adolescent has contemplated committing suicide the damage is done. The finding in the current study regarding Life Satisfaction and Family Finances is an interesting one. The Family Finances question was constructed in such a way that a low value indicated a better financial situation, and a high value indicated a worse financial situation. The research in this study found that Family Finances was a negative predictor of Life Satisfaction: The more advantageous the family's financial situation was, the higher the level of Life Satisfaction that was experienced. This finding is especially interesting in light of the past Subjective Well-Being research that

has found objective variables such as income to have minimal effect on Subjective Well-Being.

All but one of the variables that correlated with Positive Affect in the current study had not been examined in previous research. As with Life Satisfaction, Confidence, Idealism, and Voice were all significantly correlated with Positive Affect. Confidence and Voice were significant predictors of Positive Affect once entered into the regression analysis. Family Functioning, Benefits from Friendship, Self-Assessed Success in each of Mathematics, English, Science, and SOSE, Average Hours Spent on Homework Per Week, Extracurricular Activities, Average Hours Spent Playing Sport Per Week, Benefits from Sport, and Social Capital were all significant correlates of Positive Affect that had not been examined previously. Of these variables, Benefits from Friendship, Extracurricular Activities, Average Hours Spent Playing Sport Per Week and Benefits from Sport remained significant predictors of Positive Affect once entered into a regression equation. Interestingly, although Self-Assessed Success in Mathematics, English, and Science were not significant predictors of Positive Affect, Self-Assessed Success in SOSE was. This result could possibly be explained by the immediate applicability of the subject content to the “real” world. The skills and knowledge that come from this subject may be valued more by adolescents than other subjects. Coping was the only mental health variable to correlate significantly with Positive Affect, and it was also a significant predictor of Positive Affect. Internal and External Influences on Goal Setting, as well as Confidence at Getting Desired Job, were both significantly correlated with Positive Affect. Confidence at Getting Desired Job was found to be a significant predictor of Positive Affect once entered into a regression equation. As with Life Satisfaction, Internal Influences on Goal Setting was a significant predictor of Positive Affect, whereas External Influences on Goal Setting was not. This finding suggests that it is important to an adolescent’s Subjective Well-Being that the goals he or she chooses should be selected for the adolescent’s own personal reasons. In fact, Internal Influences on Goal Setting was the strongest predictor of Positive Affect. With a beta value of .26 ($p = .0005$), this variable explained 20% of the variance.

Many of the variables used in this study had not been tested previously in terms of their relationship with Negative Affect in this age group. Of the psychosocial variables, only Confidence was significantly correlated with Negative Affect. The variable was not a significant predictor of Negative Affect, however, in the presence of other significant variables. The only variables from the institutional experiences and competencies section of the questionnaire that correlated significantly with Negative Affect were Sport Prevention and Involuntary Contact with Government Agencies. The latter was a significant predictor of Negative Affect once entered into a regression equation; the former was not. The government agencies referred to in this scale were police, youth detention centres, probation/parole officers, and counselling. This finding would indicate that involuntary contact with these organisations would contribute to adolescents' feelings of Negative Affect, and it may be that there needs to be a revision of the policies and processes of these agencies. Mental Health, Coping, Risk Acceptance and Suicide Attempts were all significantly correlated with Negative Affect in this sample. Mental Health and Risk Acceptance, however, were the only significant predictors of Negative Affect from these variables. The Life Event item measuring the occurrence of family problems was the only life event significantly correlated with Negative Affect, but it did not add significantly to the variance explained. Goal Ambivalence and External Influences on Goal Setting were significantly correlated with Negative Affect in this study, and were significant predictors of Negative Affect once entered into a regression equation. That Confidence, Coping, Suicide Ideation, Suicide Attempts, Life Event: Family Problems and Sport Prevention did not predict Negative Affect was a surprising finding. The finding regarding Confidence was particularly surprising given the large correlation the variable had with Negative Affect ($r_s = -.44$).

The concept of Subjective Well-Being is still in the theory building stage. The presence of the variables discussed above that had not been analysed in previous research indicate that researchers need to look at new areas to find possible predictors of Subjective Well-Being. As stated in Chapter 3, Section 3.3, theory construction is an iterative process and this process needs to continue. The results discussed here also emphasise the need to apply multivariate analysis techniques to variables before conclusions can be reached, as the new variables did not always turn out to be predictors of Subjective Well-Being. The resultant regression models in this study, however, added significantly to existing research by explaining more variance in the dependent variables than previous research had done. The percentage of variance reported in previous research for Life Satisfaction ranged up to 41% (see McCullough et al., 2000). In the current study, however, the model explained 51% of the variance in Life Satisfaction. In past research utilising regression to model positive and negative affect, the amount of variance explained for Positive Affect was 27% and for Negative Affect was 19%. Models from the current study explained 36% of the variance for Positive Affect and 41% of the variance for Negative Affect.

7.4 Suggestions for Future Research

Although this study has made a significant contribution to the field of adolescent Subjective Well-Being, there is still a need for a better understanding of the variables that influence this construct. Not only does research into adolescent Subjective Well-Being need to be broader and incorporate more variables relevant to this age group, research on the variables that researchers already think influence adolescent Subjective Well-Being may need to be re-examined. There is a necessity for longitudinal studies into the causes and correlates of adolescent Subjective Well-Being and perhaps this need is more urgent for adolescents than adults. The period of adolescence is one of immense physical and psychological change and the affects of these changes could be monitored closely by longitudinal studies.

This in turn would allow educators, adolescents, and health professionals to deal with and minimise the negative effects of these changes more effectively.

To date the majority of research studies into adolescent Subjective Well-Being have been focussed on possible correlates of Life Satisfaction, Positive Affect, and Negative Affect. Future research would benefit from utilising regression analysis techniques, as well as multilevel modelling, to provide further understanding of the complex relationships of variables to Subjective Well-Being. The findings in this study from partial correlation analysis have highlighted the role of mediating variables in explaining the relationships among Life Satisfaction, Positive Affect, and Negative Affect. Multilevel modelling is an optimal method for exploring these relationships further. It is important that future research look in detail at the ways in which the components of Subjective Well-Being, as well as the correlates and predictors, interact. Specifically, causal relationships need to be identified and examined.

Most research into adolescent Subjective Well-Being has been quantitative in nature. Qualitative research methods should also be utilised as they may assist in understanding the processes used in assessing Subjective Well-Being, and may add to current understandings of the variables that relate to Subjective Well-Being. It is important, however, that future researchers remember the importance of the subjective element of Subjective Well-Being research: It is the opinions, thoughts and processes through the eyes of the adolescent that are of the utmost importance. A further recommendation is that future research uses the new correlates and predictors of Subjective Well-Being found in this study. Studies should be conducted to test these findings in both Australian adolescent populations and samples from other countries. The relationships found in previous research should also be examined cross-culturally. There is a dearth of research on the Subjective Well-Being of adolescents from non-western countries. As researchers such as Diener and Suh (2000) and Kitayama and Markus (2000) point out, cultures hold different sets of values, and these disparities are likely to lead to different criteria for assessing Subjective Well-Being. Past research has supported this

hypothesis, finding that factors central to Subjective Well-Being are not the same across cultures (Grob, 2000; Oishi, 2000; Suh, 2000; Uchida, Norasakkunkit, & Kitayama, 2004), and Subjective Well-Being must be defined in cultural terms (Kitayama & Markus, 2000).

7.5 Significance and Contributions of Research

Findings

The results of this research have important implications for both adolescent Subjective Well-Being researchers and professionals who work with adolescents. Results from this study indicate that areas important to the development of adolescents are also important to their Subjective Well-Being (e.g., family, school, friends), and hence would benefit from further exploration. The results of this research also have important implications for families, educators and adolescent health professionals: Variables that have been identified in this study as potentially important to adolescents were confirmed by adolescents themselves. This could lead to services being provided that are more meaningful for adolescents. It has been the focus of existing Subjective Well-Being research to look at internal influences on Subjective Well-Being generally (e.g., personality and self-esteem). If, as with this study, researchers find that external factors are also predictors of Subjective Well-Being, then interventions can be applied to these predictors in an attempt to raise a person's level of Subjective Well-Being. Health professionals, for example, can focus on the functioning of the family to increase Life Satisfaction, the family can encourage and help increase the confidence of its adolescents in order to increase their levels of Positive Affect, and adolescents themselves can make sure they are positively engaged in future planning in order to lower levels of Negative Affect.

The conclusions drawn from the analysis of the large data set used in this study contribute significantly to existing knowledge in the field. Some of the more interesting findings include the following:

- The cognitive and affective components of Subjective Well-Being are separable;
- Positive Affect and Negative Affect are separate constructs;
- Multiple regression results in a set of cognitive and affective predictors for the three dependent variables that includes common variables;
- Australian adolescents report generally high levels of Life Satisfaction;
- Family is important to the Life Satisfaction of adolescents;
- Family attachment is a negative predictor of Life Satisfaction;
- Australian adolescents report moderate levels of Positive Affect;
- Institutions, as well as psychosocial variables, are important to Positive Affect;
- Australian adolescents report generally low levels of Negative Affect;
- Both external and internal factors predict Negative Affect;
- The correlations between Life Satisfaction and Positive Affect, and Life Satisfaction and Negative Affect can be explained either partly or entirely by shared correlations; and
- The relationship between Life Satisfaction and Negative Affect is “conditionally independent.”

7.6 Final Thoughts

Although the current study has added significantly to existing knowledge about Subjective Well-Being in adolescents, our understanding is still in the early stages. This research highlights the need to examine a wider range of variables and apply multivariate techniques to the data. Solving the puzzle of directionality in relation to the correlates and predictors of the components of Subjective Well-Being will be a complex, but interesting, task for future research. The examination of the processes behind Subjective Well-Being assessments will also be an important task for future researchers. Future research needs to explore further the nature of Subjective Well-Being in adolescence and ways of raising Subjective Well-Being in order to help

adolescents, their families, and those who work with adolescents. Comments made by Keyes and Haidt (2003) in reference to psychology are true for other disciplines: It is important “to catch up with the struggles of the majority of humanity that is searching for ways to make life meaningful” (p. 5).

As discussed earlier in the thesis, it is often the case that theory construction begins with a researcher’s interest in an aspect of the real world, and my interest in Subjective Well-Being research came from my own questions of why I was a successful and happy adolescent when others were not. Was it because my parents were encouraging and supportive? Was it because my mother loved reading? Or was it because I was an only child? The area of Subjective Well-Being is apt for addressing questions that arise when studying this transition from childhood to adulthood. As noted earlier, there is a constant interplay between theory construction and research and within this process old questions are answered and new ones arise. This thesis has sought to add to the early stages of Subjective Well-Being research and has hopefully answered some questions and raised more.

Happiness is the meaning and the purpose of life, the whole aim
and end of human existence.

– Aristotle (384 – 322 BC)

References

- Abercrombie, N., Hill, S., & Turner, B. S. (1994). *The penguin dictionary of sociology*. London: Penguin Books.
- Adelman, H. S., Smith, D. C., Nelson, P., L., T., & Phares, V. (1986). An instrument to assess students' perceived control at school. *Educational and Psychological Measurement*, 46, 1005 – 1017.
- Adelman, H. S., Taylor, L., & Nelson, P. (1989). Minors' dissatisfaction with their life circumstances. *Child Psychiatry and Human Development*, 20(2), 135 – 147.
- Andrews, F. M., & Robinson, J. P. (1991). Measures of subjective well – being. In J. P. Robinson, P. R. Shaver, & L. S. Wrightsman (Eds.). *Measures of personality and social psychology attitudes* (pp. 61 – 114). San Diego: Academic Press Inc.
- Andrews & Withey (1976). *Social Indicators of well-being: America's perception of life quality*. New York: Plenum Press.
- Armsden, G., & Greenberg, M. T. (1987). The inventory of parent and peer attachment: Individual differences and their relationship to psychological well-being in adolescence. *Journal of Youth and Adolescence*, 16, 427 – 454.
- Ash, C., & Huebner, E. S. (2001). Environmental events and life satisfaction reports of adolescents. *School Psychology International*, 22(3), 320 – 336.
- Ashby Wills, T., Vaccaro, D., & McNamara, G. (1992). The role of life events, family support, and competence in adolescent substance use: A test of vulnerability and protective factors. *American Journal of Community Psychology*, 20(3), 349 – 374.
- Babbie, E. (1990). *Survey research methods*. Belmont, CA: Wadsworth Publishing Company.
- Babbie, E. (1992). *The practice of social research*. Belmont, CA: Wadsworth Publishing Company.
- Barrow, R. (1980). *Happiness and Schooling*. New York: St Martin's Press.
- Baumrind, D. (1991). Effective parenting during the early adolescent transition. In P. A. Cowan, & E. M. Hetherington (Eds.), *Advances in family research* (Vol. 2, pp. 111 – 165). New Jersey: Lawrence Erlbaum Associates.

Berry, D. S., Willingham, J. K., & Thayer, C. A. (2000). Affect and personality as predictors of conflict and closeness in young adults' friendships. *Journal of Research in Personality*, 34, 84 – 107.

Bradburn, N. M. (1969). *The structure of psychological well-being*. Chicago: Aldine Publishing Company.

Bradburn, N. M., & Caplovitz, D. (1965). *Reports on happiness: A pilot study*. Chicago: Aldine.

Brickman, P., Coates, D., & Janoff – Bulman, R. (1978). Lottery winners and accident victims: Is happiness relative? *Journal of Personality and Social Psychology*, 36(8), 917 – 927.

Brief, A. P., Houston Butcher, A., George, J. M., & Link, K. E. (1993). Integrating bottom-up and top-down theories of Subjective Well-Being: The case of health. *Journal of Personality and Social Psychology*, 64(4), 646 – 653.

Brunstein, J. C., Schultheiss, O. C., & Grassman, R. (1998). Personal goals and emotional well-being: The moderating role of motive dispositions. *Journal of Personality and Social Psychology*, 75(2), 494 – 508.

Buchanan, D., & Huczynski, A. (2001). *Organizational Behaviour*. Harlow: Financial Times/Prentice Hall.

Burke, R. J., & Weir, T. (1979). Helping response of parents and peer and adolescent well-being. *Journal of Psychology*, 102, 49 – 62.

Campbell, A., Converse, P. E., & Rodgers, W. L. (1976). *The quality of American life*. New York: Russell Sage Foundation.

Carver, C. S., & Scheier, M. F. (1998). *On the self-regulation of behavior*. New York: Cambridge University Press.

Catalano, R. F., & Hawkins, J. D. (1996). The social development model: A theory of antisocial behaviour. In J. D. Hawkins (Ed.), *Delinquency and crime: Current theories* (pp. 149 – 197). New York: Cambridge University Press.

Chamberlain, K. (1988). On the structure of Subjective Well-Being. *Social Indicators Research*, 20, 581 – 604.

Cohen, J. W. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

Cole, D. A., Peeke, L., Dolezal, S., Murray, N., & Canzoniero, A. (1999). A longitudinal study of negative affect and self-perceived competence in young adolescents. *Journal of Personality and Social Psychology*, 77(4), 851 – 862.

- Coleman, J. C. (1980). *The nature of adolescence* (1st ed.). London: Methuen.
- Compton, W. C. (2001). Toward a tripartite factor structure of mental health: Subjective well-being, personal growth, and religiosity. *The Journal of Psychology*, 135(5), 486 – 500.
- Comrey, A. L., & Lee, H. B. (1992). *A first course in factor analysis*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Corulla, W. J. (1990). A revised version of the psychoticism scale for children. *Personality and Individual differences*, 11, 65 – 76.
- Costa, P. T., & McCrae, R. R. (1980). Influence of extraversion and neuroticism on Subjective Well-Being: happy and unhappy people. *Journal of Personality and Social Psychology*, 38(4), 668 – 678.
- Costa, P. T., & McCrae, R. R. (1990). Personality disorders and the five-factor model of personality. *Journal of Personality Disorders*, 4, 362 – 371.
- Costa, P. T., & McCrae, R. R. (1994). Set like plaster? Evidence for the stability of adult personality. In T. Heatherington, & J. Weinberger (Eds.), *Can personality change?* (pp. 21 – 40). Washington, DC: American Psychology Association.
- Costa, P. T., McCrae, R. R., & Zonderman, A. B. (1987). Environmental and dispositional influences on well-being: Longitudinal follow-up of an American national sample. *British Journal of Psychology*, 78, 299 – 306.
- Cowen, E. L. (1991). In pursuit of wellness. *American Psychologist*, 46, 404 – 408.
- Cotterell, J. L. (1996). *Social networks and social influences in adolescence*. London: Routledge.
- Cummins, R. A. (1997). *Comprehensive quality of life scale – school version*. Melbourne: School of Psychology, Deakin University.
- de Vaus, D. (2002). *Surveys in social research* (5th ed.). Crows Nest: Routledge.
- Dekovic, M., & Meeus, W. (1997). Peer relations in adolescence: Effects of parenting and adolescents' self – concept. *Journal of Adolescence*, 20, 163 – 176.
- Dew, T., & Huebner, E. S. (1994). Adolescents' perceived quality of life: An exploratory investigation. *Journal of School Psychology*, 32(2), 185 – 199.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, 95(3), 542 – 575.

- Diener, E. (1992). *The relation between Subjective Well-Being [and] quality of life*. Paper presented at the Fourth Quality of Life/Marketing Conference, Washington, DC.
- Diener, E. (1995). A value based index for measuring national quality of life. *Social Indicators Research*, 36, 107 – 127.
- Diener, E. (1998). Subjective well-being and personality. In D. F. Barone, M. Hersen, & V. B. Van Hasselt (Eds.), *Advanced personality* (pp. 311 – 334). New York: Plenum Press.
- Diener, E., & Diener, M. (1995). Cross-cultural correlates of life satisfaction and self-esteem. *Journal of Personality and Social Psychology*, 68(4), 653 – 663.
- Diener, E., & Emmons, R. A. (1985). The independence of positive and negative affect. *Journal of Personality and Social Psychology*, 47(5), 1105 – 1117.
- Diener, E., & Fujita, F. (1995). Methodological pitfalls and solutions in satisfaction research. In A. C. Samli & M. J. Sirgy (Eds.), *New dimensions in marketing/quality-of-life research* (pp. 27 – 46). Westport, CT: Greenwood Press.
- Diener, E., & Fujita, F. (1995). Resources, personal strivings, and Subjective Well-Being: A nomothetic and idiographic approach. *Journal of Personality and Social Psychology*, 68(5), 926 – 935.
- Diener, E., & Larsen, R. J. (1984). Temporal stability and cross-situational consistency of affective, behavioural, and cognitive responses. *Journal of Personality and Social Psychology*, 47(4), 871 – 883.
- Diener, E., & Lucas, R. E. (1999). Personality and Subjective Well-Being. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well – Being: The foundations of hedonic psychology* (pp. 213 – 229). New York: Russell Sage Foundation.
- Diener, E., & Lucas, R. E. (2000). Explaining differences in societal levels of happiness: Relative standards, need fulfilment, culture, and evaluation theory. *Journal of Happiness Studies*, 1(1), 41 – 78.
- Diener, E., & Suh, E. M. (1999). National differences in Subjective Well-Being. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-Being: The foundations of hedonic psychology* (pp. 434 – 450). New York: Russell Sage Foundation.
- Diener, E., & Suh, E. M. (2000). Measuring Subjective Well-Being to compare the quality of life of cultures. In E. Diener & E. M. Suh. (Eds.), *Culture and Subjective Well-Being* (pp. 3 – 12). Cambridge, MA: The MIT Press.

- Diener, E., Diener, M., & Diener, C. (1995). Factors predicting the Subjective Well-Being of nations. *Journal of Personality and Social Psychology*, 69(5), 851 – 864.
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, 49(1), 71 – 75.
- Diener, E., Larsen, R. J., Levine, Emmons, R. A. (1985). Intensity and frequency: Dimensions underlying positive and negative affect. *Journal of Personality and Social Psychology*, 48, 1253 – 1265.
- Diener, E., Larsen, R. J., & Emmons, R. A. (1984). Person X Situation interactions: Choice of situations and congruence response models. *Journal of Personality and Social Psychology*, 47(3), 580 – 592.
- Diener, E., Napa Scollon, C. K., Oishi, S., Dzokoto, V., & Suh, E. M. (2000). Positivity and the construction of life satisfaction judgments: Global happiness is not the sum of its parts. *Journal of Happiness Studies*, 1(2), 159 – 176.
- Diener, E., Sandvik, E., & Pavot, W. (1991). Happiness is the frequency, not the intensity, of positive versus negative affect. In F. Strack, M. Argyle, & N. Schwarz (Eds.), *Subjective well-being: an interdisciplinary perspective* (pp. 119 – 139). Oxford: Pergamon Press.
- Diener, E., Sandvik, E., Pavot, W., & Fujita, F. (1992). Extraversion and Subjective Well-Being in a US probability sample. *Journal of Research in Personality*, 26, 205 – 215.
- Diener, E., Smith, H., & Fujita, F. (1995). The personality structure of affect. *Journal of Personality and Social Psychology*, 69(1), 130 – 141.
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: three decades of progress. *Psychological Bulletin*, 125(2), 276 – 302.
- Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C. & Mac Iver, D. (1993). Development during adolescence: The impact of stage–environment fit on young adolescents' experiences in schools and families. *American Psychologist*, 48, 90 – 101.
- Emmons, R. A. (1986). Personal strivings: An approach to personality and Subjective Well-Being. *Journal of Personality and Social Psychology*, 51(5), 1058 – 1068.
- Emmons, R. A. (1991). Personal strivings, daily life events, and psychological and physical well-being. *Journal of Personality*, 59(3), 453 – 472.
- Emmons, R. A., & Diener, E. (1985a). Factors predicting satisfaction judgments: A comparative examination. *Social Indicators Research*, 16, 157 – 167.

- Emmons, R. A., & Diener, E. (1985b). Personality correlates of Subjective Well-Being. *Personality and Social Psychology Bulletin*, 11(1), 89 – 97.
- Emmons, R. A., & Diener, E. (1986). Influence of impulsivity and sociability on Subjective Well-Being. *Journal of Personality and Social Psychology*, 50(6), 1211 – 1215.
- Erikson, E. H. (1968). *Identity: Youth and crisis*. New York: W. W. Norton.
- Ewart, C. K., & Kolodner, K. B. (1994). Negative affect, gender and expressive style predict elevated ambulatory blood pressure in adolescents. *Journal of Personality and Social Psychology*, 66(3), 596 – 605.
- Eysenck, H. J. (1952). *The scientific study of personality*. London: Routledge & Kegan Paul.
- Eysenck, H. J., & Eysenck, S. G. B. (1975). *Manual of the Eysenck Personality Questionnaire (adult and junior)*. London: Hodder & Stoughton.
- Eysenck, S. B. G., Eysenck, H. J., & Barrett, P. (1985). A revised version of the psychoticism scale. *Personality and Individual Differences*, 6, 21 – 29.
- Felce, D., & Perry, J. (1995). Quality of life: Its definition and measurement. *Research in Developmental Disorders*, 16, 51 – 74.
- Finn, S. E. (1986). Stability of personality self-ratings over 30 years: Evidence for age/cohort interaction. *Journal of Personality and Social Psychology*, 50, 813 – 818.
- Fogle, L., M., Huebner, E. S., & Laughlin, J. E. (2002). The relationship between temperament and life satisfaction in early adolescence: Cognitive and behavioral mediation models. *Journal of Happiness Studies*, 3, 373 – 392.
- Francis, L. J. (1996). The development of an abbreviated form of the revised junior Eysenck personality questionnaire (JEPQR – A) among 13–15 year olds. *Personality and Individual Differences*, 21(6), 835 – 844.
- Frankfort – Nachmias, C., & Nachmias, D. (1996). *Research methods in the social sciences* (Fifth Edition). London: Arnold.
- Frisch, M. B., Cornell, J., Villanueva, M., & Retslaff, P. J. (1992). Clinical validation of the quality of life inventory: A measure of life satisfaction for use in treatment planning and outcome assessment. *Psychological Assessment*, 4(1), 92 – 101.
- Fujita, F. (1991). *An investigation of the relationship between extraversion, neuroticism, positive affect and negative affect*. Unpublished master's thesis, University of Illinois.

- Fujita, F. (1993). *The effects of naturalistic social comparison on satisfaction with life domains*. Unpublished doctoral dissertation, University of Illinois.
- Furneaux, W. D., & Gibson, H. B. (1961). A children's personality inventory designed to measure neuroticism and extraversion. *British Journal of Educational Psychology*, 31, 204 – 207.
- Gavin, L. A., & Furman, W. (1996). Adolescent girls' relationships with mothers and best friends. *Child Development*, 67, 375 – 386.
- Giaconia, R. M., & Hedges, L. V. (1982). Identifying features of effective open education. *Review of Educational Research*, 52, 579 – 602.
- Gilman, R., & Huebner, E. S. (1997). Children's reports of their life satisfaction: Convergence across raters, time, and response formats. *School Psychology International*, 18, 229 – 243.
- Gilman, R., Huebner, E. S. & Funk, B. A. (2000). Cross-sectional and longitudinal psychosocial correlates of adolescent life satisfaction reports. *Canadian Journal of School Psychology*, 16, 53 – 64.
- Gilman, R., Huebner, E. S., & Laughlin, J. E. (2000). A first study of the multidimensional students' life satisfaction scale with adolescents. *Social Indicators Research*, 52, 135 – 160.
- Gottman, J., & Parker, J. (Eds.) (1987). *Conversations with friends*. New York: Cambridge University Press.
- Green, D. P., Goldman, S. L., & Salovey, P. (1993). Measurement error masks bipolarity in affect ratings. *Journal of Personality and Social Psychology*, 64, 1029 – 1041.
- Greenspoon, P. J., & Saflofske, D. H. (1997). Validity and reliability of the multidimensional students' satisfaction with life scale with Canadian children. *Journal of Psychoeducational Assessment*, 15, 138 – 155.
- Grob, A. (2000). Perceived control and Subjective Well-Being across nations and across the life span. In E. Diener & E. M. Suh. (Eds.), *Culture and Subjective Well-Being* (pp. 319 – 339). Cambridge, MA: The MIT Press.
- Grob, A., Stetsenko, A., Sabatier, C., Botcheva, L., & Macek, P. (1999). A cross-national model of Subjective Well-Being in adolescence. In F. D. Alsaker, & A. Flammer (Eds.), *The adolescent experience: European and American adolescents in the 1990s* (pp. 115 – 130). Mahwah, NJ: Lawrence Erlbaum Associates.
- Gullone, E., & Cummins, R. A. (1999). The Comprehensive Quality of Life Scale: A psychometric evaluation with an adolescent sample. *Behaviour Change*, 16(2), 127 – 139.

- Haan, N., Millsap, R., & Hartka, E. (1986). As time goes by: Change and stability in personality over fifty years. *Psychology and Aging*, 1, 220 – 232.
- Hann, D. M., Osofsky, J. D., Barnard, K. E., & Leonard, G. (1994). Dyadic affect regulation in three caregiving environments. *American Journal of Orthopsychiatry*, 64(2), 263 – 269.
- Headey, B., & Wearing, A. (1992). *Understanding happiness: a theory of Subjective Well-Being*. Melbourne: Longman Cheshire.
- Heaven, P. C. L. (1989). Extraversion, neuroticism and satisfaction with life among adolescents. *Personality and Individual Differences*, 10(5), 489 – 492.
- Heaven, P. C. L. (1990). Understanding adolescents' attitudes and behaviours: the role of personality dimensions. In V. J. Callan, & P. C. L. Heaven (Eds.). *Adolescence: An Australian perspective* (pp. 9 – 25). Sydney: Harcourt Brace Janovich.
- Heaven, P. C. L. (2001). *The social psychology of adolescence*. London: Palgrave.
- Helson, R., & Moane, G. (1987). Personality change in women from college to midlife. *Journal of Personality and Social Psychology*, 53, 176 – 186.
- Hogan, D., & Lamb, S. (2001). *Education and the pursuit of happiness: An empirical study*. [Draft report]. Hobart: University of Tasmania.
- Hogan, D., Carmichael, A., Crowley, K., & Easthope, G. (2000). *Adolescent health, wellbeing, and education policy project*. (Australian Research Council – Strategic Partnerships with Industry – Research and Training grant No. C00107157). Hobart: University of Tasmania.
- Holland Benin, M., Stock, W. A., & Okun, M. A. (1988). Positive and negative affect: A maximum-likelihood approach. *Social Indicators Research*, 20, 165 – 167.
- Hsee, C. K., & Abelson, R. P. (1991). Velocity relations: Satisfaction as a function of the first derivative of outcome over time. *Journal of Personality and Social Psychology*, 60, 341 – 347.
- Huebner, E. S. (1991a). Initial development of the student's life satisfaction scale. *School Psychology International*, 12, 231 – 240.
- Huebner, E. S. (1991b). Correlates of life satisfaction in children. *School Psychology Quarterly*, 6(2), 103 – 111.
- Huebner, E. S. (1991c). Further validation of the students' life satisfaction scale: the independence of satisfaction and affect ratings. *Journal of Psychoeducational Assessment*, 9, 363 – 368.

- Huebner, E. S. (1994). Preliminary development and validation of a multidimensional life satisfaction scale for children. *Psychological Assessment*, 6(2), 149 – 158.
- Huebner, E. S. (1995). Best practices in assessment and intervention with children with low esteem. In A. Thomas, & J. Grimes. (Eds.), *Best practices in school psychology – III*. (pp. 831 – 840). Washington, DC: NASP.
- Huebner, E. S., & Dew, T. (1995). Preliminary validation of the positive and negative affect schedule with adolescents. *Journal of Psychoeducational Assessment*, 13, 286 – 293.
- Huebner, E. S., & Dew, T. (1996). The interrelationships of positive affect, negative affect, and life satisfaction in an adolescent sample. *Social Indicators Research*, 38, 129 – 137.
- Huebner, E. S., & McCullough, G. (2000). Correlates of school satisfaction among adolescents. *The Journal of Educational Research*, 93(5), 331 – 335.
- Huebner, E. S., Drane, W., & Valois, R. F. (2000). Levels and demographic correlates of adolescent life satisfaction reports. *School Psychology International*, 21(3), 281 – 292.
- Huebner, E. S., Laughlin, J. E., Ash, C., & Gilman, R. (1998). Further validation of the multidimensional students' life satisfaction scale. *Journal of Psychoeducational Assessment*, 16, 118 – 134.
- Kamman, R., & Campbell, K. (1982). Illusory correlation in popular beliefs about the causes of happiness. *New Zealand Psychologist*, 11, 52 – 63.
- Keyes, C. L. M., & Haidt, J. (2003). Introduction: Human flourishing – the study of that which makes life worthwhile. In C. L. M. Keyes & Haidt, J. (Eds.), *Flourishing: Positive psychology and the life well-lived* (pp. 3 – 12). Washington, DC: American Psychological Association.
- Kitayama, S., & Rose Markus, H. (2000). The pursuit of happiness and the realization of sympathy: Cultural patterns of self, social relations, and well-being. In E. Diener & E. M. Suh. (Eds.), *Culture and Subjective Well-Being* (pp. 113 – 161). Cambridge, MA: The MIT Press.
- Kupersmidt, J. B., & Coie, J. D. (1990). Preadolescent peer status, aggression, and school adjustment as predictors of externalizing problems in adolescence. *Child Development*, 61, 1350 – 1363.
- Larsen, R. J., & Kasimatis, M. (1990). Individual differences in entrainment of mood to the weekly calendar. *Journal of Personality and Social Psychology*, 58, 164 – 171.

- Leung, J., & Zhang, L. (2000). Modelling life satisfaction of Chinese adolescents in Hong Kong. *International Journal of Behavioral Development*, 24(1), 99 – 104.
- Lucas, Diener, E., & Suh, (1996). Discriminant validity of Subjective Well-Being, self-esteem and optimism. *Journal of Personality and Social Psychology*, 44, 428 – 439.
- McCrae, R. R., & Costa, P. T. (1990). *Personality in adulthood*. New York: The Guildford Press.
- McCullough, G., Huebner, E. S., & Laughlin, J. E. (2000). Life events, self-concept, and adolescents' positive Subjective Well-Being. *Psychology in the Schools*, 37(3), 281 – 290.
- McInerney, D. M., & McInerney, C. (2002). *Educational psychology: Constructing learning* (3rd ed.). Frenchs Forest: Prentice Hall.
- Montgomery, D. C., & Peck, E. A. (1992). *Introduction to linear regression analysis* (Second Edition). New York: John Wiley & Sons, Inc.
- Munõz Sastre, T. M., & Ferrière, G. (2000). Family "decline" and the Subjective Well-Being of adolescents. *Social Indicators Research*, 49, 69 – 82.
- Neto, F. (1993). The satisfaction with life scale: Psychometric properties in an adolescent sample. *Journal of Youth and Adolescence*, 22(2), 125 – 135.
- Newcomb, M. D., Huba, G. J., & Bentler, P. M. (1981). A multidimensional assessment of stressful life events among adolescents: Derivation and correlates. *Journal of Health and Social Behaviour*, 22, 400 – 415.
- Noller, P., & Patton, W. (1990). Maintaining family relationships at adolescence. In V. J. Callan & P. C. L. Heaven (Eds.), *Adolescence: An Australian perspective* (pp. 53 – 65). Sydney: Harcourt Brace Janovich
- Noom, M. J., Dekovic, M., & Meeus, W. H. J. (1999). Autonomy, attachment and psychosocial adjustment during adolescence: a double-edged sword? *Journal of Adolescence*, 22, 771 – 783.
- Oishi, S. (2000). Goals as cornerstones of Subjective Well-Being: Linking individuals and cultures. In E. Diener & E. M. Suh. (Eds.), *Culture and Subjective Well-Being* (pp. 87 – 112). Cambridge, MA: The MIT Press.
- Pavot, W., & Diener, E. (1993). Review of the Satisfaction With Life Scale. *Psychological Assessment*, 5(2), 164 – 172.
- Pavot, W., & Diener, E. (1993). The affective and cognitive context of self-reported measures of Subjective Well-Being. *Social Indicators Research*, 28, 1 – 20.

- Pavot, W., Diener, E., & Fujita, F. (1990). Extraversion and happiness. *Personality and Individual Differences*, 11(12), 1299 – 1306.
- Pavot, W., Diener, E., Colvin, R., & Sandvik, E. (1991). Further validation of the Satisfaction with Life Scale: Evidence for the cross-method convergence of self-report well-being measures. *Journal of Personality Assessment*, 57, 149 – 161.
- Petito, F., & Cummins, R. A. (2000). Quality of life in adolescence: The role of perceived control, parenting style, and social support. *Behaviour Change*, 17, 3, 196 – 207.
- Phillips, B. N. (1993). *Educational and psychological perspectives on stress in students, teachers, and parents*. Brandon, VT: Clinical Psychology Publishing Company.
- Pinto, A., & Whisman, M. A. (1996). Negative affect and cognitive biases in suicidal and nonsuicidal hospitalized adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, 35, 2, 158 – 165.
- Pomerantz, E. M., Saxon, J. L., & Oishi, S. (1998). The psychological tradeoffs of making it personally important: Implications for anxiety and depressive symptoms. *Journal of Personality and Social Psychology*, 79, 617 – 630.
- Reich, J. W., Zautra, A. J., & Potter, P. T. (2001). Cognitive structure and the independence of positive and negative affect. *Journal of Social and Clinical Psychology*, 20, 1, 99 – 115.
- Roff, M., Sells, S. B., & Golden, M. W. (1972). *Social adjustment and personality development in children*. Minneapolis: University of Minnesota Press.
- Royal Adelaide Hospital Sexually Transmitted Disease Services. (2002). *Adolescent sexual behaviour: Information for students*. Retrieved September, 2002, from http://www.stdservices.on.net/std/social_aspects/adolescent.htm
- Santrock, J. W. (1998). *Adolescence* (7th ed.). Boston: McGraw-Hill.
- Sarantakos, S. (1993). *Social research* (2nd ed.). South Melbourne: Macmillan Education Australia Pty Ltd.
- Savin – Williams, R. C., & Berndt, T. J. (1990). Friendship and peer relations. In S. S. Feldman, & G. R. Elliott (Eds.), *At the threshold: The developing adolescent* (pp. 277 – 307). Cambridge, MA: Harvard University Press.
- Schimmack, U., Radhakrishnan, P., Oishi, S., Dzokoto, V., & Ahadi, S. (2001). *Culture, personality, and Subjective Well-Being: Integrating process models of life-satisfaction*. Manuscript submitted for publication.

- Schlosser, B. (1990). The assessment of Subjective Well-Being and its relationship to the stress process. *Journal of Personality Assessment*, 54, 128 – 140.
- Siegler, I. C., Zonderman, A. B., Barefoot, J. C., Williams Jr., R. B., Costa Jr., P. T., & McCrae, R. R. (1990). Predicting personality in adulthood from college MMPI scores: Implications for follow-up studies in psychosomatic medicine. *Psychosomatic Medicine*, 52, 644 – 652.
- Smith, D. C., Adelman, H. S., Nelson, P., Taylor, L., & Phares, V. (1987). Students' perception of control at school and problem behavior and attitudes. *Journal of School Psychology*, 25, 167 – 176.
- Steinberg, L. (1990). Autonomy, conflict, and harmony in the family relationship. In S. S. Feldman, & G. R. Elliott (Eds.), *At the threshold: The developing adolescent* (pp. 255 – 276). Cambridge, MA: Harvard University Press.
- Stice, E., Shaw, H., & Nemeroff, C. (1998). Dual pathway model of bulimia nervosa: Longitudinal support for dietary restraint and affect-regulation mechanisms. *Journal of Social and Clinical Psychology*, 17, 129 – 149.
- Suh, E. M. (2000). Self, the hyphen between culture and Subjective Well-Being. In E. Diener & E. M. Suh. (Eds.), *Culture and Subjective Well-Being* (pp. 63 – 86). Cambridge, MA: The MIT Press.
- Suh, E., Diener, E., & Fujita, F. (1996). Events and Subjective Well-Being: Only recent events matter. *Journal of Personality and Social Psychology*, 70(5), 1091 – 1102.
- Suldo, S. M., & Huebner, E. S. (2004). The role of life satisfaction in the relationship between authoritative parenting dimensions and adolescent problem behavior. *Social Indicators Research*, 66, 165 – 195.
- Sullivan, H.S. (1953). *The interpersonal theory of psychiatry*. New York: W. W. Norton.
- Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics* (4th ed.). Boston: Allyn and Bacon.
- Tasmanian Department of Health and Human Services. (1999). *First results of the Healthy Communities Survey 1998*. Hobart: Author.
- Tellegen, A. (1985). Structures of mood and personality and their relevance to assessing anxiety, with an emphasis on self-report. In A. H. Tuma, & J D. Maser (Eds.), *Anxiety and the anxiety disorders* (pp. 681 – 706). Hillsdale, NJ: Erlbaum.

Uchida, Y., Norasakkunkit, V., & Kitayama, S. (2004). Cultural constructions of happiness: Theory and empirical evidence. *Journal of Happiness Studies*, 15, 223 – 239.

Valois, R. F., Zullig, K. J., Huebner, E. S., & Drane, J. W. (2001). Relationship between life satisfaction and violent behaviors among adolescents. *American Journal of Health Behavior*, 25(4), 353 – 366.

Valois, R. F., Zullig, K. J., Huebner, E. S., & Drane, J. W. (2004). Life satisfaction and suicide among high school adolescents. *Social Indicators Research*, 66, 81 – 105.

Veit, C. T., & Ware, J. E. (1983). The structure of psychological distress and well-being in general populations. *Journal of Consulting and Clinical Psychology*, 51(5), 730 – 742.

Verkuyten, M. (1986). The impact of ethnic and sex differences on happiness among adolescents in the Netherlands. *The Journal of Social Psychology*, 126(2), 259 – 260.

Warr, P., Barter, J., & Brownbridge, G. (1983). On the independence of positive and negative affect. *Journal of Personality and Social Psychology*, 44, 644 – 651.

Watson, D., & McKee Walker, L. (1996). The long-term stability and predictive validity of trait measures of affect. *Journal of Personality and Social Psychology*, 70(3), 567 – 577.

Watson, D., Clark, L., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54(6), 1063 – 1070.

Watson, J. C., & Greenberg, L. S. (1998). Humanistic and experiential theories of personality. In D. F. Barone, M. Hersen, & V. B. Van Hasselt (Eds.), *Advanced personality* (pp. 81 – 102). New York: Plenum Press.

Weber, M. (1904). *The protestant ethic and the spirit of capitalism*. New York: Scribner's.

Wilson, W. (1967). Correlates of avowed happiness. *Psychological Bulletin*, 67(4), 294 – 306.

Wilson, S. M., & Peterson, G. W. (1988). Life satisfaction among young adults from rural families. *Family Relations*, 37, 84 – 91.

World Health Organization. (1964). *Basic documents*. (15th ed.). Geneva, Switzerland: Author.

Young, M. H., Miller, B. C., Norton, M. C., & Hill, E. S. (1995). The effect of parental support behaviors on life satisfaction of adolescent offspring. *Journal of Marriage and the Family*, 57, 813 – 822.

Zullig, K. J., Valois, R. F., Huebner, E. S., Oeltmann, J. E., & Drane, J. W. (2001). Relationship between perceived life satisfaction and adolescents' substance abuse. *Journal of Adolescent Research*, 29, 279 – 288.

