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Socioeconomic differentials in life satisfaction in Australia

Submitted by

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Abstract

This thesis focuses on the relationship between life satisfaction and a range of social, economic and demographic indicators, with a particular emphasis on the common traits of highly satisfied individuals (individuals who reported an overall life satisfaction score of 9 or 10 out of 10). Additional indicators of health and community participation were also investigated in relation to life satisfaction outcomes. The multivariate analysis – taken from the Household, Income and Labour Dynamic in Australia (HILDA) survey, Wave 13 – showed significant correlations between a range of indicators and life satisfaction. Among the most noteworthy findings were: a lack of association between life satisfaction and key socioeconomic indicators including education and income; the positive association between marriage and life satisfaction; and the strong links between reported health status and life satisfaction. Another key finding was that job satisfaction was strongly associated with life satisfaction. I conclude that future research needs to investigate the mechanisms through which the factors examined here determine variations in life satisfaction.

Declaration

This thesis contains no material which has been accepted for the award of any other degree or diploma at any university or equivalent institution and that, to the best of my knowledge and belief, this thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

Andrew Rush

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Chapter 1: Introduction

This thesis explores the relationship between self-reported life satisfaction and indicators of socioeconomic difference in Australia. In this thesis, I discuss the previous life satisfaction literature, propose the research questions, and provide an outline of how each of these indicators will be measured empirically in the Methods chapter (Chapter 3).

This chapter includes: the background of the study, including the reasons for my interest in the topic; a brief history of the study of life satisfaction; and the gaps in the literature my research aims to address. Following on from this, section 1.2 provides a review of traditional measures of life satisfaction. The aims of this research, including the proposed research questions, are given in section 1.3. Finally, I conclude this chapter with a brief description of the structure of the thesis (section 1.4).

1.1 Background

For my Honours thesis, I investigated the relationship between measures of socioeconomic inequality/difference and social capital (measured by volunteering rates) in Victoria. Building on this, and given the increasing attention given to the study of life satisfaction in recent years in sociological literature, I decided to examine the relationship between socioeconomic factors and life satisfaction in Australia.

Life satisfaction is a topic which has been prominent in social research since the 1960s. Life satisfaction researchers have traditionally had a strong motivation to determine which factors contribute most to making a person's life "good", with the broader aim of creating a better society. Early research placed a strong focus on the contribution of mental health to a person's life satisfaction (Saris et al. 1996). Although previous research (Cheung & Chan 2009; Gong et al. 2011; Proto & Rustichini 2014) has indicated that the factors which have the greatest impact on life satisfaction tend to be a combination of socioeconomic indicators, such as education and income, this has been disputed by some authors (Saris et al. 1996). They claim socio-emotional factors, such as family life and personal health, are more important than socioeconomic indicators in determining life satisfaction.

According to Schwarz and Strack (1999, p. 61) individuals take into account currently salient information when making judgements about their life satisfaction levels. Building on this

finding, an investigation by Diener and Diener (1995, p. 17) found that individuals rate certain factors as more relevant than others when rating life satisfaction, depending on their individual traits. As noted by Oishi et al. (1999, p. 980), this judgement is also strongly related to an individual's cultural background. For example, people in more collectivist societies tend to place greater emphasis on the opinions of others such as family members in judging their life satisfaction, while people in individualistic cultures often focus more on factors such as self-esteem in determining their levels of life satisfaction. Therefore, a person's self-assessment of their life satisfaction can be strongly dependent on both their current situation and the factors they determine as more important to their wellbeing, which vary strongly according to that person's cultural/social background (Oishi et al. 1999, p. 989).

Life satisfaction is often confused with "happiness". While happiness, also known as subjective wellbeing (Diener 1984, p. 543), is generally associated with the prevalence of positive moods and emotions over negative ones, also known as "positive affect" (p. 543), life satisfaction is defined by Veenhoven (1991, p. 10) as "the degree to which an individual judges the overall quality of his or her life-as-a-whole favourably". Furthermore, life satisfaction is described as what leads people to evaluate their lives in positive terms, based on their own subjective criteria (Diener 1984, p. 543). It is one of the three indicators of subjective well-being (SWB), the other two being positive affect and negative affect (Diener 1984, p. 543). Historically, determinants of life-satisfaction have been investigated at two levels: external conditions and inner psychological processes (Veenhoven 1996, p. 13). The first is based on the idea that identifying external circumstances in which people tend to be satisfied would allow society to try to create such conditions for everybody. The second proposes, however, that if we were able to understand the mental processes involved in obtaining high levels of life satisfaction, then it would be theoretically possible to assist others in acquiring greater levels of life satisfaction. Both approaches have a long tradition in the research of life satisfaction (Veenhoven 1996, p. 13).

Data on life satisfaction has been used by sociologists to inform policies aimed at improving the quality of life of individuals (Veenhoven 1996, p. 14), such as assessing the benefits of providing better quality housing to socioeconomically disadvantaged people. However, for these policies to be relevant and effective, they must be based on empirical evidence which identifies the conditions necessary for a good life. For example, many studies assume individuals and groups who are disadvantaged in terms of income, education and employment status, are less satisfied with their lives. While there is strong evidence for this,

which is discussed in the literature review chapter (Chapter 2), there is also strong evidence that socio-emotional factors, such as relationship status and family life, are more important. However, due to the reluctance of policy makers to intervene in the private spheres of life, public policies regarding these issues tend to be limited.

Veenhoven (1996) also lists additional benefits of the study of life satisfaction. One of these is measuring differences in the quality of life between different social groups or countries that can help to identify an area of social disadvantage where one group is relatively deprived compared to another. For example, previous studies across many countries (Glenn & Weaver 1988; Worner 2007; and Ball and Robbins 1986) show single people are less satisfied than married people; however they do not indicate the specific source of this dissatisfaction (Veenhoven 1996, p. 13). Therefore, comparing the life satisfaction levels of these demographic groups has helped identify an important area of investigation for research.

The final benefit of the study of life satisfaction listed by Veenhoven is the monitoring of social progress over time. For example, Veenhoven cites a study by Easterlin (1974) which measured life satisfaction against economic growth in the post-war decades in the United States. The findings showed stable life satisfaction in spite of a doubling of economic welfare over the same period, leading to the conclusion that wealth (measured by Gross Domestic Product) is not connected to life satisfaction (Veenhoven 1996, p. 13). Another example of monitoring a social group over time is measuring a selected age cohort across a given time period.

Further research has also shown life satisfaction is linked to a number of positive personal, psychological and social outcomes including self-esteem, gratitude, altruism and positive effect (Proctor, Linley & Maltby 2009, 2010). Furthermore, a longitudinal study of adolescents (Suldo & Huebner 2004, p. 93) found that those with higher levels of life satisfaction were less likely to develop externalising behaviours as a result of stressful life events than those with low life satisfaction. Very high levels of life satisfaction have also shown to be linked to greater levels of academic success in university students (Antaramian 2017). Furthermore, one study (Lacruz et al. 2011, p. 579) concluded that individuals with high levels of life satisfaction had a significantly reduced risk of mortality over a 12 year period compared to respondents who reported either medium or low levels of satisfaction. However, this finding is refuted by Australian researchers (Frijters, Haisken-DeNew & Shields 2005) who argue the increased life expectancy of individuals with higher satisfaction

levels can be accounted for by the fact that less satisfied individuals tend to be less healthy. Despite this, another study (Siahpush, Spittal & Singh 2008, p. 18), using data from an Australian survey, found higher rates of life satisfaction were associated with more positive health outcomes, even after controlling for baseline health indicators.

On the other hand, low levels of life satisfaction have been found to be linked to a number of negative outcomes, such as depression, negative effect, and social stress (Proctor, Linley & Maltby 2010). Additionally, a Finnish longitudinal study by Koivumaa-Honkanen et al. (2001, p. 433) revealed respondents who were dissatisfied with their lives were three times more likely to commit suicide over a 20 year period compared to respondents who reported higher levels of life satisfaction. These studies indicate, in addition to the benefits listed by Veenhoven, that the study of life satisfaction is also an important indicator of individual and population level health and wellbeing.

1.2 Measurement of life satisfaction

Empirical research on subjective wellbeing (SWB) and life satisfaction began in the early 20th century. Early research focused on recording subjects' moods by having them recall emotional events and record their emotional reactions at different moments (Diener, Lucas & Oishi 2009, p. 64). After World War II, researchers began using large-scale social surveys to measure happiness and life satisfaction using global survey questionnaires. These surveys measured large numbers of people and included questions such as: "how happy are you?" with possible responses varying from "very happy" to "not very happy" (Diener, Lucas & Oishi 2009, p. 64). Traditionally, life satisfaction is measured using surveys which contain one question regarding the overall satisfaction of a person's life. These simple global survey questions relating to the overall quality of one's life have been found to have a strong degree of validity in past studies (Andrews & Withey 1976). Another commonly used questionnaire is the five item Satisfaction With Life Scale (Diener et al. 1985), which asks participants to rate their level of satisfaction on a scale of 1-"strongly disagree" to 7-"strongly agree" for five statements related to overall life satisfaction. In the 1980s the first large-scale longitudinal survey on life-satisfaction was performed in Australia by Headey and Veenhoven (1989).

Aside from the Satisfaction with Life Scale (SWLS), there are two main surveys used to measure life satisfaction around the world today. One of these is a question from the Gallup World Poll. This survey was first used to record levels of life satisfaction in 1979, and is

conducted in more than 150 countries today based on a common questionnaire, which is translated into the main languages of each country used in the survey. Samples sizes vary between 1,000 and 4,000 persons, depending on the country. The poll asks participants the following question: "Imagine an eleven-rung ladder where the bottom (0) represents the worst possible life for you and the top (10) represents the best possible life for you. On which step of the ladder do you feel you personally stand at the present time?". This scale is known as the Cantril Self-Anchoring Scale. This is different from the method used by the World Values Survey (WVS). The WVS, which began in 1981 in Europe, now consists of nationally representative surveys conducted in almost 100 countries using a common questionnaire (WVS 2015). Together, the countries used in this survey contain almost 90 per cent of the world's total population. The sample for the last wave of the survey (Wave 6) conducted from 2010-2014 included interviews conducted with almost 400,000 respondents (WVS 2015). The WVS item of life satisfaction asks the following question: "All things considered, how satisfied are you with your life as a whole these days?". Respondents were required to rate their satisfaction on a 1-10 scale (WVS 2015).

Life satisfaction scales tend to have strong reliability (Diener & Diener 1995; Lucas & Donnellan 2011). However, items that are phrased in a manner which reflect a more recent temporal period, such as your "current life" or "these days", may produce lower reliability values (Krueger & Schkade, 2008, p. 1835). This is a result of temporal instability due to changes in people's subjective assessment of their well-being over short periods of time. For example, a person might rate their overall life satisfaction as high on most days, but not on certain days depending on short-term changes in their mood and/or personal circumstances. Previous studies have also shown that single-item scales produce lower reliability scores than multi-item life satisfaction scales (Diener, Inglehart & Tay 2012, p. 5). For example, Michalos and Kahlke (2010) found that a single question asking about satisfaction with overall life produced reliability coefficients of .67 and .65 for one and two years respectively, while the five-item Satisfaction with Life Scale produced correlations of .80 and .75 respectively (Michalos & Kahlke 2010, cited in Diener et al. 2012, p. 5). Furthermore, a meta-analysis by Schimmack and Oishi (2005) which examined reliability scores over short time intervals showed a correlation of .50 for single-item questionnaires and a score of .70 for the multi-item scales (Schimmack & Oishi 2005, cited in Diener et al. 2012, p. 5).

1.3 Research aims and objectives

The primary aim of this thesis is to investigate which sociodemographic and socioeconomic indicators are most strongly associated with levels of life satisfaction amongst Australians, and to determine if these empirical findings are consistent with the previous life satisfaction literature discussed in this chapter. This will be done by measuring and comparing correlations between indicators of socioeconomic and sociodemographic difference and life satisfaction scores at both bivariate and multivariate levels, in addition to a number of selected indicators of health status and community participation. This is to examine whether individual differences in these indicators translate into individual differences in levels of life satisfaction. For example, do people with higher incomes also exhibit higher levels of life satisfaction than those with lower incomes? The data will also be analysed to investigate any gender or age-related variations in the findings which have been overlooked in much of the previous research using the HILDA dataset. A main objective of this research is to answer these questions with the aim of potentially informing public policy with regard to these areas. For example, if respondents with more flexible working hours were found to exhibit higher levels of life satisfaction than those with a full-time work schedule, this could have potential implications for public policy with regard to work arrangements. Likewise, if large correlations between health and life satisfaction were revealed, this would have potential implications for health policy in Australia. Finding these answers will also help to uncover which categories of variables are more strongly correlated with variations in life satisfaction. Although these categories have been a point of interest in past research into life satisfaction, they have generally not been addressed in Australian studies on life satisfaction.

One of the key sociodemographic relationships this project examines is the link between number of children and life satisfaction. This is designed to test the common understanding from both Australian and overseas literature that children have a negative impact on life satisfaction, especially after taking into account marital status. Another key question is whether – and to what degree – these indicators are influenced by one another; for example, is the relationship between education and life satisfaction mediated by other related variables? In investigating these complex relationships, my aim is to fill a gap in previous research on socioeconomic and sociodemographic inequality/difference and subsequent life satisfaction outcomes in Australian individuals. For example, previous studies which have utilised the HILDA dataset (Dockery 2003; Powdhavee, Lekfuangfub & Wooden 2015)

investigated how life satisfaction ratings are influenced by employment status and education level respectively; while Kelley and Evans (2004) and Worner (2007) focused on self-reported life satisfaction in relation to marriage and income respectively. Despite some of these authors using pooled regression analyses (linear regression applied to panel data) to measure a number of these indicators, none of these studies extensively discussed the combined effects of these variables and variable groups (sociodemographic, socioeconomic, health, and community participation). Furthermore, none of these studies, with the exception of Kelley and Evans (2004) investigated the effects of community-related variables, although Dockery's (2003) research, in addition to measuring an extensive range of indicators, does also investigate a number of social variables, although these tend to be different to the community participation indicators which will be measured in this thesis. By doing this, my research will fill a gap in the previous literature, and determine which indicators and indicator groups (sociodemographic, socioeconomic, health, and community participation) are more influential in determining levels of life satisfaction. (It should also be noted that, as this research will only be looking at data from one period in time [Wave 13], the data will be analysed using standard binary logit regression analysis).

Overall this project will provide a robust insight into the factors influencing life satisfaction amongst Australian residents. It is hoped gaining a greater understanding of which indicators are more influential in determining the life satisfaction levels of Australians will have the added benefits described by Veenhoven. In the case of this research these could include: helping inform policy related to improving quality of life in Australia; and identifying potential areas of social disadvantage, as well as areas where progress has been made over time, in order that pecuniary resources might be distributed or redistributed appropriately.

Finally, this thesis uses two selected theoretical frameworks, *post-materialism* and *social stratification theory*, to provide possible theoretical explanations for the research findings, and in doing so increase understanding of life satisfaction. The discussion for both of these frameworks (presented in Chapter 6) will be split into two sections. The first section will be based on the results for the selected sociodemographic and socioeconomic variables, while the second will be based on the results for indicators of health and community participation.

Therefore, informed by the literature review, this research will answer the following questions:

1. What is the extent and nature of socioeconomic and sociodemographic differentials in the levels of self-reported life satisfaction among Australians?

2. What is the extent and nature of the role of indicators of health and community participation in the levels of self-reported life satisfaction among Australians?

3. Do the findings from questions 1 and 2 support the two selected theoretical frameworks?

1.4 Thesis structure

The structure of this thesis is as follows. Chapter 2 will provide a detailed literature review of the role of key social, demographic, economic, health and community factors in determining life satisfaction. This will include both Australian and International literature. The latter part of the chapter explores the theoretical frameworks which will be used to bring context to the research findings in the discussion chapter (Chapter 6).

Chapter 3 is divided into two main sections. The first describes the methodological design of the study including a brief description of the HILDA survey that provides the data used in this thesis; the sample selection process; and the indicators selected for the final analysis. The second section examines the characteristics of the sample by providing a univariate description of the variables included in this study.

Chapters 4 and 5 present the bivariate and multivariate analyses. While Chapter 4 provides analysis for the selected sociodemographic and socioeconomic variables, Chapter 5 does so for indicators of health and community participation. In each of these chapters, the bivariate and multivariate findings for each group of indicators (i.e. sociodemographic) are presented in the same table.

Chapter 6 discusses the research findings for each of the four groups of indicators in relation to the previous life satisfaction literature and with regard to the two selected theoretical frameworks. The final section of this chapter provides an overview of the research findings, a summary of the limitations of the research, and recommendations for future research.

Chapter 2: Literature Review

This chapter provides a review of the previous literature on the links between indicators of social difference and life satisfaction. This is split into four main sections based on the four main groups of indicators which will be investigated in the data analysis chapters: sociodemographic; socioeconomic; health; and community participation. For the first two of these a number of subsections are also included due to the broad and varying range of indicators being investigated in these sections. The final section of the chapter provides a discussion of the two selected theoretical frameworks: the theory of post-materialism and the theory of social stratification, before presenting a brief summary of the findings of the literature review.

2.1 Sociodemographic indicators and life satisfaction

2.1.1 *Gender and life satisfaction*

Previous research has also shown distinctions in levels of life satisfaction according to gender. Some studies have shown that women report higher levels of life satisfaction than men (Frey & Stutzer 2002; Ma & Huebner 2008; and Nickerson, Schwarz & Diener 2007). However, other researchers have found no significant gender differences in levels of self-reported life satisfaction across different cultures (Booth & Van Ours 2008; Stoeber & Stoeber 2009; and Tseng 2007). Despite these findings, a meta-analysis of over 300 studies conducted by Pinquart and Sorensen (2001, p. 195) determined that women report lower levels of life satisfaction than men at all ages and that this disparity increases with age. Although it should be noted that of these 300 studies, only 91 measured life satisfaction, while the remainder examined other measures of SWB such as happiness, self-esteem and loneliness (Pinquart & Sorensen 2001, p. 198). One possible explanation for lower levels of satisfaction amongst females is stratification theory, which emphasises "the social structures and social processes that result in differential allocation of resources and assets to members of that society" (George 2010, p. 333). Therefore, individuals who are allocated the most resources should be more satisfied. In particular, social stratification theory in contemporary society relates to socioeconomic status (SES), race/ethnicity, and gender. Therefore, researchers hypothesise individuals with the highest levels of education and income, who are also white and male, should be more satisfied with their lives than their counterparts.

However, other research suggests gender disparities in life satisfaction may be more complex. Using data from the United States General Social Survey, Plagnol and Easterlin (2008), report that gender differences in life satisfaction and happiness change with age. In early adult life, women are more satisfied than men in most domains of life satisfaction including fulfilment of material goods, family life and marriage attainment. However, these gender differences progressively reverse throughout the life course (Plagnol and Easterlin 2008, p. 601). Ultimately, men become equally satisfied with family life and more satisfied with marriage and financial situation than women, as well as coming closer to fulfilling their material desires (Plagnol and Easterlin 2008, p. 601). In other words, prior to middle age, women are more satisfied on average than men, but from middle age onwards, men progressively become more satisfied than women. A similar observation was made by Inglehart (2002, p. 391), based on a pooled sample of 146,000 respondents from 65 countries. The author theorises the decline in female life satisfaction in older age groups is, at least partially, due to a systematic tendency to devalue the social worth of older women. This is especially true in industrialised countries where mass media and advertising are more prevalent (Inglehart 2002, p. 391).

Despite these findings, Australian research using the HILDA datasets (Worner 2007, p. 14) found that overall the percentage of women who reported a score of 9 or 10 on a scale of 0 to 10 on the question, "All things considered, how satisfied are you with your life?", was higher for females (35.91%) than for males (31.45%). This shows that across the lifespan, overall females are slightly more likely than males to report being "very satisfied" with their lives. Another question to consider is do different factors impact more on self-reported life satisfaction in males and females respectively? A number of studies conclude this is the case. For example, Della Giusta, Jewell and Kambhampati (2011, p. 1), in their study on the relationship between gender and life satisfaction in the UK, found while average levels of life satisfaction are similar for men and women, job satisfaction matters far more to men than to women. This finding is supported by Di Cesare and Amori (2006). Additional research on Chinese Malaysian couples by Ng et al. (2009, p. 33) reports the influence of marital status on life satisfaction, while significant for both genders, is more influential for women. Finally, Liu, Li and Feldman (2013, p. 915), using data from the Chinese General Social Survey (CGSS 2006), reveal marital status is more strongly correlated with male life satisfaction, but marital quality is more important in determining female life satisfaction.

2.1.2 *Age and life satisfaction*

Previous studies on the association between life satisfaction and age have produced mixed findings. Many of these have found no significant age effects on levels of life satisfaction (Baird, Lucas & Donnellan 2010; Diener & Suh 1997; Fugl-Meyer, Melin & Fugl-Meyer 2002; Larson 1978; Wallace, Bisconti & Bergeman 2001). Of those which have reported a significant relationship between life satisfaction and age, most have found a positive correlation (Campbell, Converse & Rodgers 1976; Diener 1984; Prenda & Lachman 2001). Furthermore, a study by Herzog and Rodgers (1981), which used eight national probability surveys of American adults, found a positive correlation between age and life satisfaction in four of the eight samples. Of the remaining four, three showed no significant correlation, and only one exhibited a negative relationship (Herzog & Rodgers 1981, cited in Mroczek & Spiro 2005, p. 190).

A number of authors have also found a U-shaped relationship between age and life satisfaction (Easterlin 2006; Frey & Stutzer 2002; Frijters et al. 2004; and Gwozdz & Sousa-Poza 2009), meaning that life satisfaction is highest for older and younger age groups, and lowest in middle age. One of these studies (Gwozdz & Sousa-Poza 2009) drew data from the German Socio-Economic Panel and the Survey on Health, Ageing and Retirement in Europe to assess the relationship between ageing, health and subsequent life satisfaction outcomes, with a particular focus on the oldest age groups (75 years and over). After controlling for individual fixed effects, their results showed a U-shaped curve for individuals aged 16-65 years, with respondents aged between their mid-thirties and mid-forties the least likely to be satisfied, and respondents aged in the 65-69 and 70-74 age groups reporting the highest levels of satisfaction (Gwozdz & Sousa-Poza 2009). However, beyond this age, life satisfaction levels begin to decline again; this occurred more rapidly past the age of 85 (Gwozdz & Sousa-Poza 2009). On the other hand, a study by Lang and Heckhausen (2001, p. 514) which used data from a sample of 480 German adults aged from 20-90 years, showed life satisfaction was highest among individuals aged 45-65 years and lowest among older individuals. This was despite older individuals being more likely to experience positive affect (Lang & Heckhausen 2001, p. 514).

By contrast, a study of 1749 Australians aged between 17 and 40 years (Hong & Giannakopoulos 1994, p. 99) found respondents in the oldest (30-40 years) age group were more satisfied than those in the younger (17-22 and 23-29) age groups. Life satisfaction was

also measured against gender and university status, with results showing no interactions between age and these additional indicators (Hong & Giannakopoulos 1994, p. 99). Findings were based on participants' responses to Diener et al.'s (1985) Satisfaction With Life Scale. Another potential problem with the U-shaped hypothesis is the observation that once cohort effects are controlled for, life satisfaction remains relatively constant across the lifespan (Gwozdz & Sousa-Poza 2009).

However, two previous studies which have tested this theory provide solid support for the U-shaped hypothesis. The first, a study of 500,000 randomly sampled Americans and West-Europeans by Blanchflower and Oswald (2008, p. 1733), found a robust U-shaped relationship between age and life satisfaction remained after controlling for potential cohort effects. Furthermore, these findings do not differ significantly according to gender, or whether respondents were American or West-European. A partial U-shape is also found in East-European and developing countries. Interestingly, the authors also note a similar U-shaped curve for two other data sets: a General Health Questionnaire (GHQ) sample of 16,000 Europeans, and in a questionnaire measuring reported depression and anxiety in a sample of approximately 1 million U.K. citizens (Blanchflower and Oswald 2008, p. 1733). These findings suggest patterns in life satisfaction across the life course are connected to mental health outcomes (which will be discussed further in the results and discussion chapters). The second (Clark 2007) was a longitudinal study of British Household Panel data. His findings showed a U-shaped pattern between mental well-being (Life satisfaction and General Health Questionnaire [GHQ]) and age, after controlling for cohort effects (Clark 2007). However, this U-shaped pattern was flatter for the life satisfaction data, than for the GHQ measure of mental well-being (Clark 2007).

Research has also found that age moderates the effects of certain variables on satisfaction levels (George, Okun & Landerman 1985, p. 209). These include marital status, income and health. Using data from the Harris Survey of the Myth and Reality of Aging (Harris 1975), which included a sample of 1,500 American adults aged 18 or over, and an oversample of approximately 2,400 participants to ensure an equal representation of various demographic groups in the data, a number of significant findings were noted. It was found being married was less important and being widowed was more important in determining the satisfaction levels of younger respondents (George, Okun & Landerman 1985, p. 228). Income was also less important for this group than it was for middle-aged and older persons, and the importance of health on life satisfaction increased across successively older age groups.

Finally, social support was found to be a stronger predictor of life satisfaction for younger and older respondents than for middle-aged respondents (George, Okun & Landerman 1985, p. 228). These findings were even more interesting given that the authors concluded the total and direct effects of age on life satisfaction were trivial (George, Okun & Landerman 1985, p. 209).

2.1.3 *Citizenship and life satisfaction*

Although this study aims to measure the correlation between language and life satisfaction, this variable has generally not been examined by previous life satisfaction researchers. However, many previous studies have investigated the relationship between life satisfaction and the related concept of citizenship: whether or not a person was born in a given country. Therefore, this section will review previous literature focused on the relationship between citizenship and subsequent life satisfaction outcomes. Firstly, at a national level, previous research has reported significant differences in the life satisfaction levels of different nations. For example, according to the OECD better life index (OECD 2015) life satisfaction is not evenly shared across OECD nations, with some countries – mostly in Southern and Eastern Europe – such as Estonia, Greece, Hungary, Portugal, and Turkey reporting average scores of less than 5.6 out of 10. By contrast, scores as high as 7.5 out of 10 are common in Northern European countries such as Denmark and Iceland. Furthermore, a survey published in the 2016 World Happiness Report (Helliwell, Layard, & Sachs 2016), which included roughly 1,000 individuals from 156 different countries, asked respondents to self-assess their levels of life satisfaction based on their responses to the Cantril Ladder item (0=worst satisfaction; 10=best satisfaction). Results showed clear contrasts between different world regions, with respondents from Western regions, including North America, Northern and Western Europe, Australia and New Zealand, reporting higher than average levels of life satisfaction compared to respondents from most other regions (Helliwell, Layard, & Sachs 2016, p. 15).

Likewise, a study by Bonini (2008) analysed data from a sample of 76,038 adults from 63 countries, taken from the fifth wave of the World Values Survey, conducted between 1999 and 2003. This data showed similar between-country differences in satisfaction levels, with respondents from Western Nations generally more satisfied than those from other regions (pp. 228-229). However, Bonini also found most (81%) of the variation in mean life satisfaction is due to individual characteristics (i.e. gender, marital status, income and so forth), while only 19 per cent is attributable to country characteristics. These included

national wealth (GDP), human development and environmental conditions (Bonini 2008, p. 227). Furthermore, according to research by Angelini et al. (2014), between-nation differences in life satisfaction can also occur due to different scales of measurement being used to measure self-reported life satisfaction in different countries. According to their cross-sectional research of a sample of individuals aged over 50 years of age living in ten different European countries, disparities in response scales between different countries account for a large amount of the variation in average levels of reported life satisfaction (Angelini et al. 2014, p. 643). For example, after controlling for economic, demographic, health and social conditions, respondents from Denmark and Italy were the most and least satisfied respondents in the sample respectively (Angelini et al. 2014, p. 652). However, after controlling for differences in the respective scales used to measure satisfaction in each of the ten countries, the rankings across these countries changed significantly. For instance, the difference between self-reported satisfaction among Danish and Italian respondents disappeared almost entirely (Angelini et al. 2014, p. 654).

Several studies have also focused on cultural differences in life satisfaction by comparing differences between migrants from various ethnic groups with individuals from the local populations of the countries of destination for these migrants. These studies have revealed a number of interesting findings. For example, analysing survey data from two rounds of the European Social Survey (2002/2003, 2004/2005), Baltatescu (2007, p. 67, 75) found Eastern European migrants reported lower average levels of life satisfaction than Europeans born in the countries surveyed and other migrants living in those countries. This is despite Eastern European migrants reporting higher levels of satisfaction with societal conditions than either of the other groups (Baltatescu 2007, p. 67). One likely explanation for this discrepancy is that when evaluating their life satisfaction, migrants rely on experiences within their receiving countries. On the other hand, when evaluating societal conditions, they compare these with conditions in their native countries (Baltatescu 2007, p. 67).

In terms of accounting for European migrants' lower levels of life satisfaction, Safi (2010, p. 159) concluded this result cannot be explained by the migration and assimilation process. Rather, it is the individuals who face higher levels of discrimination in the host society who report lower relative levels of life satisfaction (Safi 2010, p. 159). Furthermore, when measured against ethnicity, respondents from all regions, excluding Western Europe and Other – which was mostly comprised of respondents from North America and Australia – report lower levels of satisfaction than non-migrants, while migrants from Africa report the

lowest levels of satisfaction of any group (Safi 2010, p. 167). These findings suggest the ethnic groups which face the greatest levels of discrimination are the most likely to report lower levels of life satisfaction compared to local respondents. This assumption is supported by findings measuring levels of perceived discrimination among different ethnic groups, which showed respondents from Western Europe and Other regions reporting lower average levels of perceived discrimination than respondents from the remaining ethnic groups. By contrast, respondents from Turkey and Africa reported the highest levels of discrimination (Safi 2010, p. 169).

Despite these findings, previous research has shown cultural assimilation is positively linked with life satisfaction for migrant groups and individuals. For example, results from a study of Latin American migrants in Spain (Herrero, Fuente & Garcia 2011, p. 761) showed a significant positive relationship between social integration and subjective well-being (including life satisfaction), after controlling for other variables. Angelini, Casi and Corazzini (2015, p. 817), using data from the German Socioeconomic panel, similarly found a positive, significant association between cultural assimilation and migrants' levels of life satisfaction, even after controlling for individual demographic and socio-economic characteristics. The researchers also accounted for regional variations, which potentially influence migrants' external social conditions, such as migrants being more likely to live in lower socioeconomic areas (Angelini, Casi and Corazzini 2015, p. 817). They also found the effect only applied to second generation and established migrants, but not recent arrivals (Angelini, Casi and Corazzini 2015, p. 817).

Furthermore, a study of 519 Portuguese youth living in Paris (Neto 1995, p. 93) found positive correlations between life satisfaction and integration, while perceived difficulties of adaptation, marginalisation, social anxiety, and loneliness were all negatively associated with satisfaction levels. Finally, multiple regression analyses determined the strongest predictors of life satisfaction among this sample were loneliness and perceived health (Neto 1995, p. 93). In a later study, Neto (2001) compared levels of life satisfaction among adolescent immigrants living in Portugal with those of a control group of local Portuguese adolescents. His findings revealed demographic factors only accounted for 6 per cent of the statistical variance between the two groups. On the other hand, psychosocial factors – including self-esteem, mastery (sense of control over one's environment), in and out-group social interaction, stressful experiences, ethnic identity and perceived discrimination – when

combined with demographic indicators, accounted for 31 per cent of the total variance (Neto 2001, p. 53).

2.1.4 *Partnership and life satisfaction*

Most previous research found a strong and positive association between being in a partnership – especially marriage – and life satisfaction (Di Tella et al. 2003; Glenn & Weaver 1988; and Tomes 1986). For example, Australian research by Kelley and Evans (2004, p. 303), taken from the HILDA and International Social Science Survey/Australia (IsssA) datasets revealed both men and women in formal marriages experienced higher levels of life satisfaction than did people in other family arrangements. Furthermore, those who had remarried were slightly less satisfied than those who had been married only once, but significantly more satisfied than cohabitating or divorced individuals. For these latter individuals, cohabitation and divorce – without formal marriage or remarriage respectively – were both associated with a 4-12 per cent reduction in life satisfaction across the lifespan for both men and women (Kelley and Evans 2004, p. 303). Furthermore, previous findings have reported cohabitating couples are less satisfied in their relationships than married individuals (Brown & Booth 1996, p. 668). Likewise, an investigation by Easterlin supports Kelley and Evans' (2004) finding that remarriage has similar positive effects on life satisfaction to first marriage (Easterlin 2003, p. 11178).

Another Australian study, which also uses standard panel data techniques from the HILDA survey, reveals that married Australians exhibit higher levels of life satisfaction. Worner also found that life satisfaction displays an inverted U-shaped pattern around the year of marriage; this means life satisfaction tends to increase in the lead up to marriage, and then peaks around the time of marriage, before dropping back to pre-marital levels (2007, p. 1). Furthermore, he found that the increase in life satisfaction for married respondents was equivalent to $100,000+ in extra income over the life course (Worner 2007, p. 1). The concept of placing a monetary value on the benefits of marriage has also been attempted by other authors (Blanchflower & Oswald 2004; Carroll 2007), who found that marriage has a value of at least $100,000 over a person's lifetime. In other words, someone who is not married would need to earn at least $100,000 extra over their lifetime to have the same level of life satisfaction as an equivalent married person. However, Worner notes that the effects of marriage on life satisfaction, while positive for both genders, are greater for men. He found that married men are 135 per cent more likely to report a high life satisfaction score than single men, as

opposed to married women, who were only 52 per cent more likely to be satisfied than their unmarried counterparts (Worner 2007, p. 24). Additional studies have investigated the relationship between partnership status and life satisfaction according to changes in other demographic variables.

One such example was research conducted by Chipperfield and Havens (2001), which compared variations in life satisfaction amongst individuals whose marital status remained stable over a 7-year period and those whose marital status had changed over the same period. This was done using a large-scale, longitudinal dataset, consisting of 2,180 men and women between the ages of 67 and 102 (Chipperfield and Havens 2001, p. 176). The authors discovered for those whose marital status remained stable over this 7-year period, life satisfaction remained stable for men but declined for women, while life satisfaction declined for both men and women in the transition group - especially if this transition involved the loss of a spouse. However, they also note an increase in life satisfaction for men in the transition group who gained a spouse but not the women (Chipperfield and Havens 2001, p. 176). These results suggest some similarities but also a number of differences in how men and women cope with marital status transition.

A study by Ball and Robbins (1986) also notes differences between men and women in their investigation of the relationship between marital status and overall life satisfaction among African Americans. Their sample was all African American and included 373 women and 235 men. Their results reveal, once controls for age, social participation, health, income and education were introduced, that married women were no more satisfied than widowed, divorced, separated or single individuals. For men, those who are married are the least satisfied persons of any category, and are also – along with singles – the least satisfied group overall (male or female) (Ball and Robbins 1986, p. 389). Furthermore, when controls are added, married men are still significantly less satisfied than are the divorced, separated and widowed. However, as noted by the authors, these results are not overly surprising given the economic and social discrimination faced by black families (Ball and Robbins 1986, p. 389). Furthermore, the authors cite research by Spanier and Glick (1980) which notes African American women have a more restricted field of potential marriage partners than white women and, to compensate, they often marry less-educated men (Spanier and Glick 1980, cited in Ball and Robbins 1986, p. 393). This could subsequently lead to a negative impact on the satisfaction of both partners (Ball and Robbins 1986, p. 393). However, it should be noted that most of the studies described above did use controls for income, health and education

and still found a significant effect for marriage, although most did not include a measure of social participation. Therefore, these results could reflect either racial differences due to the disadvantaged socioeconomic status of African Americans or a confounding effect for social participation or a combination of these and perhaps even other community level variables. It should also be noted this research was conducted in the 1980s, well before most of the other research cited in this chapter.

2.1.5 *Parenthood and life satisfaction*

In relation to family effects on life satisfaction, regression analysis, based on a random longitudinal sample of Europeans by Di Tella, MacCulloch and Oswald (2003, p. 819) revealed those with children report slightly lower levels of happiness than those without. Additionally, their research also concluded this effect increases for each extra child born. However, this negative association is considerably lower than that found for divorced or separated individuals, and number of children was only one of a long list of explanatory variables used in the regression analysis (Di Tella, MacCulloch & Oswald, p. 819). Authors including Alesina, Di Tella and MacCulloch (2004) and Clark (2006) use similar techniques to produce similar findings.

In contrast, a study by Luis Angeles (2009, p. 2), using a nationally representative sample of 10,000 households from the British household panel survey (BHPS) found that, contrary to most previous literature, the effect of children on life satisfaction is positive and increases with the number of children. However, this effect was only small and did not appear on some indicators. According to Angeles, this finding was not revealed by previous literature because they did not take into account important variables such as gender, marital status or income (Angeles 2009, p. 2). Further investigation by Deaton and Stone (2014), using data from two surveys – the US based Gallup-Healthways Wellbeing Index (GHWBI) and the Gallup World Poll – revealed a slight negative association between the presence of children and life evaluation. Despite this, when only the 34-46 age demographic (more than 90% of whom are the parents of at least one child at home) is measured, almost all outcomes of life satisfaction were positively correlated with the presence of children. This included the chosen measure of overall life satisfaction, the Cantril Ladder, where those aged 34-46 with children rated their level of satisfaction (on average) 6.84 out of 10, compared to 6.51 for those with no children (Deaton and Stone 2014).

Further analysis by Myrskyla and Margolis (2014, p. 1843), using large British and German longitudinal data sets, found parents who have children at older ages or who have more education have a positive happiness response to a first birth (measured by levels of life satisfaction); and although having the first two children increases satisfaction, this effect is no longer present by the birth of the third child. The results were similar in both countries (Myrskyla and Margolis 2014, p. 1843). Similar to Angeles (2010), along with Evenson and Simon (2005), and Shields and Wooden (2003), they also argue the statistically negative effect of children on parental wellbeing could be largely the result of single parents (Myrskyla & Margolis 2014, p. 1843). This assumption was recently tested by Stavrova and Fetchenhauer (2015) who demonstrated that whether or not single parents are less satisfied than their partnered counterparts is largely dependent on a country's cultural norms regarding childbearing and family formation. Using data from the European Values Study (EVS) and the European Social Survey (ESS) covering 43 countries, the authors discovered that only in collectivist countries and countries with strong two-parent family norms did parenthood have an adverse impact on life satisfaction for single but not partnered (married or cohabiting) individuals. Furthermore, this result applied even amongst single parents who did not share the two-parent norm themselves (Stavrova and Fetchenhauer 2015, p. 1).

This conclusion is supported by previous research by Kohler, Behrman & Skytthe (2005, p. 407) using a Danish sample, which found that a first-born child increased single and partnered female parents' happiness to the same extent. On the other hand, a Norwegian study by Hansen et al. (2009, p. 343) revealed parenthood was related to lower levels of life satisfaction amongst single women in Norway, while parenthood was unrelated to satisfaction levels in men.

These studies provide mixed support for the findings of Stavrova and Fetchenhauer (2015, p. 1) who argue that in more individualistic countries, including Norway and Denmark, single parents are not adversely affected on measures of life satisfaction. This is in contrast to countries which score higher on collectivism, which implies a stronger emphasis on group membership and the integration of individuals into family networks, than individualism (Hofstede 2001; Minkov, Blagoev, & Hofstede 2013; and Triandis 1995, cited in Stavrova and Fetchenhauer 2015).

Pollmann-Schult (2014) explores these connections on a deeper level in his study of the relationship between fertility and life satisfaction, which used longitudinal data from the

German Socio-Economic Panel to determine why having children does not enhance parents' life satisfaction. A key finding was that, after holding constant the financial and time costs of parenthood, fathers and mothers of children of all age groups showed significantly higher levels of life satisfaction than childless men and women (Pollmann-Schult 2014, p. 319). Despite this, even when financial and time costs were taken into consideration, parents of kindergarten children (age 2-5 years) were significantly less satisfied than were parents of infants and toddlers under 2 years (Pollmann-Schult 2014, p. 329). Also, mothers of preteen school children (age 6-12 years) and teenagers (age 13-17 years) were significantly less satisfied with their lives than parents of children below 2 years of age (Pollmann-Schult 2014, p. 329). The author hypothesises the decline in life satisfaction 2 years after the birth of a first child might be due to a decrease in the emotional benefits of parenthood (Pollmann-Schult 2014, p. 333).

Although the reasons for the positive relationship between the presence of children and positive emotions are not fully understood, previous research (Frijters, Johnston & Shields 2011; Myrskylä & Margolis 2012, cited in Pollmann-Schult 2014, p. 322) demonstrates that life satisfaction increases during pregnancy and in the baby's birth year before returning close to pre-birth levels once children reaches the age of 2. Furthermore, findings by Nomaguchi (2012, p. 489) reveal parents whose eldest child is under 5 years of age report higher levels of self-esteem, self-efficacy, and parental satisfaction, as well as lower levels of depression than parents of older children. The fact that Pollmann-Schult's study revealed levels of parental life satisfaction do not fully return to pre-birth levels contradicts the set-point theory, which postulates that as individuals adapt to the positive (emotional) and negative (i.e. financial) costs of having children, their levels of life satisfaction return to a set point in the long term, which suggests there are no lasting emotional benefits associated with parenthood (Pollmann-Schult 2014, p. 322). Also of note, one model (Model 3) showed that widowed and divorced parents are significantly less satisfied with their lives than married parents even when marital status differences in child care costs were taken into account. This suggests psychosocial factors are more important in determining levels of life satisfaction for these parents than child care costs (Pollmann-Schult 2014, p. 330). The fertility/life satisfaction debate is also closely related to the topic of partnership status and life satisfaction. However, unlike the former, there is a strong general consensus on the direction of the relationship between the latter two variables.

2.2 Socioeconomic indicators and life satisfaction

2.2.1 *Education, income and life satisfaction*

A number of papers have found links between both socioeconomic and socio-emotional factors and measures of life satisfaction. Firstly, Cheung and Chan (2009) examined the relationships between education and life satisfaction across thirty-five countries. Their findings revealed that life satisfaction is higher in countries where people have higher levels of education (Cheung & Chan 2009, p. 124). However, Australian research by Gong et al. (2011, p. 4) found the relationship between education and life satisfaction depends on age. According to their findings, higher levels of education are associated with increased life satisfaction in younger age groups, but the reverse is true for older age groups. However, as noted by Vinson and Ericson (2012, p. 26), younger people tend to have higher levels of education, while older people tend to report greater levels of life satisfaction and happiness, which potentially confounds these findings. The argument for education having a potentially negative effect on life satisfaction is supported by Ferrante (2009, p. 3) who, using Italian data, found preliminary support for the idea that education and access to stimulating environments may have an adverse impact on life satisfaction. He also found evidence that this effect is mediated by factors such as gender and age. He argues this negative correlation could be the result of people with higher levels of education overrating their socioeconomic prospects relative to their real life chances of labour market success (Ferrante 2009, p. 3).

Despite these findings, once other variables are controlled for, most researchers have noted a positive relationship between education and life satisfaction. For example, Powdthavee, Lekfuangfu and Wooden (2015, p. 10) using the Household, Income and Labour Dynamics in Australia (HILDA) dataset, found a negative direct effect between education and levels of life satisfaction. However, the total indirect effect is positive, sizeable and statistically significant for both men and women. The researchers conclude this implies that misleading conclusions regarding the influence of education on life satisfaction might be obtained if only single-equation models are used in the data analysis (Powdthavee, Lekfuangfu and Wooden 2015, p. 10). Further, more education is linked to higher life satisfaction through income and health (Powdthavee, Lekfuangfu and Wooden 2015, p. 21). A similar conclusion is reached by Meeks and Murrell (2001, p. 92) who conclude the positive relationship between education, better health and life satisfaction found in their research is mediated by trait negative affect, or the experience of negative emotions/feelings. In other words, higher educational

attainment is related to lower levels of trait negative affect, which in turn results in better health and life satisfaction (Meeks and Murrell 2001, p. 92). However, it should be noted the relationship between education and life satisfaction is not as clear-cut in Australia as in most other developed countries. According to the OECD's Better Life Index (OECD 2015), the average life satisfaction score across OECD countries for people who have only completed primary level education is 5.9, while this score reaches 7.0 for those with a tertiary education. By contrast, in Australia, the average level of life satisfaction for a person with a primary level education is 7.2 and 7.4 for people with a tertiary level qualification: this is the smallest gap of any OECD country (OECD 2015).

Additional research adds further complexity to the relationship between education and life satisfaction. Jimenez, Joaquin and Jimenez (2011, p. 409), researching the relationship between education and life satisfaction for people in different income groups, discovered the contribution of education to subjective wellbeing is stronger as fewer people attain a certain level of education. This finding suggests a relative effect for education on life satisfaction. It also helps explain why higher education was strongly related to life satisfaction in the middle income group only. Given that around 80 per cent of people within the high-income group have either a secondary or higher education qualification, one's education does not give them an advantage over their peers either in the labour market or in terms of social status (Jimenez, Joaquin and Jimenez 2011, p. 422). By contrast, in the lower income group, where half of participants had not completed secondary school, a secondary qualification is adequate for distinguishing oneself. This is in contrast to the middle income group, where 54 per cent of people held a secondary qualification but only 26 per cent held a higher qualification. Therefore, post-secondary education holds a stronger consumption component for individuals within this income group. The authors also found that the net contribution of education to satisfaction with life is positive for the whole sample of individuals (Jimenez, Joaquin and Jimenez 2011, p. 422).

The relative effect hypothesis for education and life satisfaction is supported by Botha (2014, p. 555). Using data from the South African 2008 National Income Dynamics Survey, he found that people who have attained more than the mean level of education in their income cluster are significantly more satisfied with life compared to those with less than the mean level of education. Furthermore, he noted a strong positive association between educational attainment and individual satisfaction with life overall for both men and women (Botha 2014, p. 555). These findings for gender are partially supported by Groot and Van Den Brink (2002,

p. 161) whose findings revealed both men and women are more satisfied with their lives the greater their individual levels of education, although this effect was only statistically significant for men. The more satisfied women were, the greater the educational disparity (positive or negative) between themselves and their husbands. Educational disparity also had a small positive impact on male life satisfaction, but not to the same extent as was the case for females (Groot and Van Den Brink 2002, p. 161).

The findings above reveal a multidimensional and sometimes indirect association between education and life satisfaction. Despite these contradictions, it is apparent in most cases that higher levels of education are positively associated with individual levels of life satisfaction, for both males and females.

Regarding the effects of income, an investigation by Spreitzer et al. (1979-1980, p. 283) using data from three national samples in the U.S.A., found that financial situation was a slightly stronger predictor of life satisfaction for persons under age sixty-five than health. However, this finding is somewhat contradicted by Proto and Rustichini (2014) who conclude the relationship between Gross Domestic Product (GDP) and national life satisfaction tends to be hump-shaped. According to their findings, life satisfaction steadily increases with GDP before peaking at around $30,000 USD and then slightly but significantly declines amongst the richest countries. They also note that income continues to increase with GDP within poorer countries, but in developed countries there is a point where this relation becomes relatively flat. They hypothesise this is the result of aspiration levels increasing with income, which eventually causes a negative relationship once people's aspirations reach a level which can no longer be fulfilled by their level of income (Proto & Rustichini 2014).

This finding is confirmed by Diener et al. (1993) who found a curvilinear effect between income and SWB within the U.S.A., with ever-higher income categories being related to smaller increments of SWB. Furthermore, they concluded that wealthier nations tend to have smaller correlations between income and life satisfaction (measured by SWB) within them than poorer nations (Diener et al. 1993, cited in Diener & Biswas-Diener 2002, p. 119). This further promotes the idea that income enhances SWB only insofar as it helps people meet their basic needs (Diener et al. 1993, cited in Diener & Biswas-Diener 2002, p 119). In another paper Myers and Diener (1995, p. 13) observe the percentage of Americans who reported they were "very happy" decreased slightly between 1957 and 1993 despite the average American income doubling within this period. Despite this, the authors produce data

supporting the relationship between national wealth and life satisfaction, finding a positive correlation of .67 between these two variables with life satisfaction (measured on a scale of 0 to 10). However, this finding was confounded by other factors. The most significant of these was the number of years of continuous democracy, which had a positive correlation of .85 with average life satisfaction (Myers and Diener 1995, p. 13).

Diener and Biswas-Diener (2001, p. 330) note that, despite reliable positive correlations between the wealth of nations (GDP) and mean reports of SWB, previous research tends to show more modest associations between personal income and SWB within nations, in respect to the relationship between income inequality and life satisfaction of individuals. However, these correlations tend to be larger for poorer nations (Diener and Biswas-Diener 2001, pp. 330-331). These findings can be explained by Maslow's need-gratification model which hypothesises that the ''degree of basic need gratification is positively correlated with degree of psychological health'' (Maslow, Frager & Fadiman 1970, p. 67). Once these basic needs are met, however, additional increases in income have less of an impact on life satisfaction (Levin et al. 2011, p. 180). Furthermore, a recent paper by Taormina and Gao (2013, p. 155) reveals significant positive correlations between life satisfaction and satisfaction with the five needs listed in Maslow's original motivational hierarchy of needs (physiological, safety-security, belongingness, esteem, and self-actualisation). Their research results demonstrate these needs are still relevant in creating greater levels of life satisfaction in modern society (Taormina and Gao, p. 155). It should also be noted these five needs are all closely or partially related to personal income, which in part explains the greater link between life satisfaction and income in poorer countries, where it is harder for lower income individuals to meet these requirements. This also helps to explain why poorer people in developed countries report greater levels of satisfaction than poorer people in developing countries (Schyns 2002, p. 5). Furthermore, the hierarchy also accounts for the decreased association between income and life satisfaction upon reaching a certain income threshold: once basic needs are met, individuals are more likely to seek the needs located towards the top of Maslow's hierarchy (esteem and self-actualisation) and additional income alone will not be enough to fulfil these higher order needs.

2.2.2 *Employment and life satisfaction*

The following section will review previous literature on life satisfaction and the indicators of employment (employment status, employment contract, and job satisfaction). The first

employment variable examined will be employment status: whether an individual works full-time or part-time hours. Concerning this variable, previous studies have produced mixed findings. For example, one study (Booth & Van Ours 2008, p. 1) using data on partnered men and women from the British Household Panel Survey, found no link between hours worked and life satisfaction ratings in men. In the case of women, those with children who were employed full-time are more likely to report high levels of life satisfaction. Although for the female sample as a whole, their "life satisfaction is virtually unaffected by hours of work" (Booth & Van Ours 2008, p. 3). The results for the women remained almost identical after controlling for a number of potentially confounding indicators including education level, family income, age, health status and age of partner (Booth & Van Ours 2008, p. 3). This was done in an attempt to explain a phenomenon known as the 'part-time work puzzle' (Booth & Van Ours 2008, p. 1), which shows that childless women working part-time are no more satisfied than those who work full-time. This is despite women with children, who also work full time, actually reporting higher satisfaction levels than mothers who work part-time hours (Booth & Van Ours 2008, p. 17). Furthermore, working part-time allows women to combine paid work and care in a more satisfactory way than full-time work does (Booth & Van Ours 2008, p. 17). There is also a job satisfaction component to the part-time work puzzle, a variable which will be discussed later in this chapter.

Despite these findings, another paper (Gash, Mertens & Gordo 2010), which also used data from the British Household Panel Survey in addition to the German Socio-Economic Panel, found decreases in working hours were associated with significant improvements in wellbeing (happiness and life satisfaction) for women. However, this study differs from the Booth and Van Ours (2008) study, not only in the addition of the German Socio-Economic Panel data, but also in the fact that it was measuring the effects of transitioning from full-time work to part-time work. Furthermore, although the variables controlled for in this study were similar to those used by Booth and Van Ours, there were some differences between the two studies.

Although previous studies examining the links between employment contract (whether an individual is a permanent or temporary worker) and life satisfaction have been limited, De Cuyper and De Witte (2007) have measured this variable against life satisfaction using a sample of 477 temporary and permanent workers from a diverse range of occupational sectors in Belgium. This was done with the aim of measuring job insecurity in temporary versus permanent workers, and its associations with attitudes, well-being (life satisfaction),

and behaviour (Cuyper and De Witte 2007, p. 65). Hierarchical regression analyses showed job insecurity was associated with lower levels of job satisfaction in permanent versus temporary workers (Cuyper and De Witte 2007, p. 75). However, in the case of life satisfaction, no significant differences in life satisfaction between temporary and permanent workers were noted (Cuyper and De Witte 2007, p. 75).

Job satisfaction has also been measured in relation to life satisfaction outcomes in a number of previous studies. One of the earliest of these was conducted by London, Crandall and Seals (1977, p. 329), examining the associations between job and leisure satisfaction and their contributions to perceived quality of life (measured by life satisfaction) in a sample of 1297 American adults. Job satisfaction and leisure satisfaction were both measured by a number of different items, while overall life satisfaction was measured by one item. These variables combined produced an adjusted R^2 value of .23 (meaning 23% of the variance in life satisfaction could be explained by these two indicators), suggesting a moderate relationship with life satisfaction (London et al. 1977, p. 329). However, job satisfaction on its own only accounted for 4 per cent of the overall variance in life satisfaction (London et al. 1977, pp. 330-331). Similar results were reported in a survey by Andrews and Withey (1974), which used a five-item job satisfaction scale to predict overall life satisfaction. Findings showed job satisfaction ranked 28th out of 30 indicators in terms of its contribution to the variance in overall life satisfaction. Furthermore, it accounted for just 2 per cent of the total variance in life satisfaction explained by a regression equation which included job satisfaction and 11 other indicators (Andrews and Withey 1974). However, a second survey by the same researchers, which used a single-item job satisfaction measure, ranked job satisfaction 8th out of 28 indicators in predicting overall life satisfaction according to beta value (beta = .09) (Andrews & Withey 1976, cited in Rice, Near & Hunt 1980, p. 43).

Despite these somewhat contradictory findings, a large body of previous research suggests a positive association between job and life satisfaction. For example, an investigation by Judge and Watanabe (1993, p. 942), based on the results of a representative national probability sample of American workers, revealed a relatively strong and positive association between job and life satisfaction. Furthermore, a meta-analysis of more than 350 studies on the job satisfaction/life satisfaction relationship, revealed that in over 90 per cent of these studies, there was a positive correlation between these two variables (Rice, Near & Hunt 1980, p. 37). In respect of the studies where the direction of the relationship was negative, none of these relationships were statistically reliable. The average zero-order correlation (Pearson's r value)

between job and life satisfaction was in the mid .30s for males and the mid .20s for females, suggesting a moderate to strong-moderate association (Rice, Near & Hunt 1980, p. 37). However, a study conducted using a nationally representative (U.S.) data set (Rode 2004, p. 1205) concluded that, once additional indicators were controlled for, the relationship between job and life satisfaction was not significant. These indicators were comprised of self-evaluations (i.e. self-esteem) and non-work related satisfaction, which included marital status, age and whether participants suffered from any health conditions (Rode 2004, p. 1205, 1213). Moreover, in the study by Judge and Watanabe (p. 939), the relationship between job and life satisfaction was found to be reciprocal, indicating that levels of job and life satisfaction were influenced by one another. Despite this finding, Australian research by Iverson and Maguire (2000, p. 2), based on a sample of 286 male employees from an open-cut coal mine in Central Queensland, concluded job satisfaction has a stronger effect on life satisfaction ratings than vice versa. Furthermore, job satisfaction was the second most important factor in determining levels of life satisfaction (after community variables) out of four variable categories (Iverson and Maguire, p. 15).

2.3 Health and life satisfaction

Previous literature overwhelmingly reveals a positive association between reports of good physical health and higher levels of life satisfaction (Clemente & Sauer 1976; Diener 1984; Fugl-Meyer & Fugl-Meyer 2003; and Mroczek & Spiro 2005). Furthermore, Palmore and Luikart (1972, p. 68) in an analysis of health, activity, social-psychological, and socio-economic variables thought to influence life satisfaction, found that self-rated health was the most significant variable. Additionally, their findings revealed that several variables thought to be related to life satisfaction such as age, marital status and career prospects, had a limited effect on life satisfaction levels (Palmore & Luikart 1972, p. 68). Similar results were reported by Clemente and Sauer (1976, p. 621) who found in their survey of 1347 adult residents in the United States, the quality of perceived health, along with race, were the most significant predictor of life satisfaction. Other variables such as socioeconomic status (SES), and social participation, while displaying some relationship with satisfaction levels, were considerably weaker determinants than the aforementioned indicators (Clemente and Sauer 1976, p. 621). These findings have also been supported by large scale, nation-wide surveys.

One of these surveys was the 2006 Behavioural Risk Factor Surveillance System, which is an ongoing, state-based, random-digit telephone survey of the noninstitutionalized U.S.

population aged 18 years and over (Strine et al. 2008, p. 40). Findings from this survey revealed that adults with a number of illnesses were significantly more likely than those without to report life dissatisfaction, and that this association remained significant after controlling for sociodemographic characteristics (Strine et al. 2008, p. 40). Similar findings were reported in a sample of 87,545 adults from the 2005 Canadian Community Health Survey (Herman, Hopman & Rosenberg 2013, p. 2693), which measured the effects of perceived and actual self-reported body mass index (BMI) on self-reported health status and life satisfaction. Using cross-sectional data, the authors found both perceived and actual weight status influence reports of self-reported health and life satisfaction, but respondent's perceptions of their weight were more strongly associated (Herman, Hopman & Rosenberg 2013, p. 2693). Although this study did not directly measure the relationship between health status and life satisfaction, these findings demonstrate levels of perceived health and life satisfaction do not necessarily reflect an individual's health status. However, it should be noted the highest levels of self-reported health and life satisfaction were by those who reported both a healthy weight BMI and "about right" weight perception (Herman, Hopman & Rosenberg 2013, p. 2693). Despite these findings, one study (Barnes et al. 2012, p. 4) which examined a sample of people with serious mental illnesses revealed that physical Health Related Quality of Life (HRQoL) was not associated with overall life satisfaction.

A number of studies have found the presence of mental health problems to be linked with reduced levels of life satisfaction (Bray & Gunnell 2006; Desousa et al. 2008; Fergusson et al. 2015; Koivumaa-Honkanen et al. 2011; Layard et al. 2013; Murphy et al. 2005). For instance, Fergusson et al. (2015, p. 2427) found in their New Zealand study, using a longitudinal sample of respondents aged from 18 to 35 years, significant associations ($p<0.01$) between measures of life satisfaction and major mental health disorders including major depression, anxiety disorder, suicidality, and substance dependence. These significant relationships remained after adjusting for confounding by fixed effects ($p<0.05$) (Fergusson et al. 2015, p. 2427). Similar results were observed by Fleche and Layard (2017) in an investigation of the relationship between mental health and life satisfaction in Australia, the U.K. and Germany. Furthermore, in a related study, Layard et al. (2013, p. 2) reported that mental health is the largest single predictor of life-satisfaction. The authors also conclude that mental health explains more of the variance of life-satisfaction in the population of a country than physical health, and much more than unemployment or income. Furthermore, in the study of individuals with serious mental illnesses (Barnes et al. 2012, p. 1) mentioned earlier,

overall life satisfaction was associated with fewer psychiatric symptoms and less medical comorbidity.

Despite these findings, other research suggests the association between life satisfaction and mental health may be mediated by other factors. For example, a study of 397 Chinese adults by Bao et al. (2013) explored the relationships between life satisfaction, mental health and perceived financial status (PFS). Their findings (Bao et al. 2013, p. 1597, 1600) indicated that while the relationship between life satisfaction and mental health is significant, PFS has a direct impact on life satisfaction. This implies that the relationship between mental health and life satisfaction could be mediated by an individual's PFS. They also noted that the association between PFS and life satisfaction is possibly mediated by mental health (Bao et al. 2013, p. 1597). However, as noted above, previous studies (Fleche and Layard, 2013) report a strong correlation with income. It should be noted this study was measuring perceived financial status, as opposed to income.

2.4 Community participation and life satisfaction

Although past research on the links between community participation variables and life satisfaction has been fairly limited, most who have studied this relationship have found a positive correlation between the two (Muilenburg-Trevino, Pittman & Holmes 2012; Prezza, Amici, Roberti & Tedeschi 2001; and Prezza & Constantini 1998). For example, Prezza et al. (2001, p. 29), using a sample which included 630 men and women from Central Italy, concluded that a sense of community is positively related to life satisfaction in both urban and regional areas. However, the first study on the relationship between community participation and the broader area of subjective wellbeing, by Davidson and Cotter (1991, p. 246) reported a significant positive relationship between self-reports of sense of community and subjective wellbeing before and after controlling for sociodemographic indicators. This research was conducted by telephone interviews with three random samples across South Carolina and Alabama in the United States, and included a total of 992 participants across the three samples. Results were computed using partial correlations between sense of community – measured by the 17-item Sense of Community Scale (Davidson & Cotter 1986, cited in Davidson & Cotter 1991, p. 246) – and three measures of Subjective Wellbeing (SWB). Their analysis also controlled for selected demographic variables (Davidson and Cotter 1991, p. 246). Furthermore, a Spanish study by Hombrados-mendieta et al. (2013, p. 601) revealed that self-reported sense of community is positively associated with life satisfaction in both

local and immigrant populations, when sense of community is high. This was despite life satisfaction being higher among the local individuals when sense of community was either low or medium (Hombrados-mendieta et al. 2013, p. 601).

Previous research has also noted a strong association between volunteering and levels of life satisfaction. One of these studies was a nationally representative, longitudinal study of 3,617 American adults aged 25 years or older by Van Willigen (2000, p. 308). Her research found both older (aged 60 or over) and younger (aged under 60) volunteers experienced higher levels of life satisfaction than respondents who did not volunteer after controlling for selected socioeconomic and sociodemographic variables including education, gender and race. It was also observed the increase was higher for older volunteers than for those aged under 60 (Van Willigen 2000, p. 308). In another study which utilised the same data set (Thoits & Hewitt 2001, p. 115), results showed a positive association between volunteer work and six aspects of personal well-being, including life satisfaction. However, it was also noted that this relationship was indirect. In other words, not only were people who volunteered more likely to be satisfied with their lives, but people with greater levels of wellbeing (including life satisfaction) were also more likely to volunteer (Thoits & Hewitt 2001, p. 115).

The concept of the volunteering/life satisfaction relationship not being unilateral was examined in research by Neal Cutler (1982). This study used a secondary analysis of a national sample of American adults to examine the correlation between membership in voluntary associations and life satisfaction (Cutler 1982, p. 127). His findings show in some cases the observed positive correlation between life satisfaction and voluntary organisational membership is indirect. Members of voluntary organisations are more likely to display high levels of organisational satisfaction, and in turn, volunteers with high levels of organisational satisfaction are more likely to report high levels of life satisfaction (Cutler 1982, p. 127). However, this relationship was not observed for some of the age groups measured (Cutler 1982, p. 127).

Research has also focused on the relationship between volunteering frequency and subsequent life satisfaction outcomes. Using data from the German Socio-Economic Panel (GSOEP), collected from around 22,000 individuals between 1985 and 1999, Meier and Stutzer (2004, p. 9) reported individuals who volunteered weekly reported an average life satisfaction of 7.35 points out of 10, compared to respondents who never volunteered, who reported an average score of 6.93 points out of 10. When the data was divided into two

groups, respondents who reported volunteering on either a weekly or monthly basis gave an average satisfaction score of 7.30 out of 10. By contrast, people who volunteered less frequently or never, reported an average score of only 6.95 points (Meier and Stutzer 2004, p. 9). When these two sets of data are combined, two conclusions can be drawn: those who volunteer are more likely to report higher levels of life satisfaction than those who do not volunteer, and those who volunteer more frequently are more likely to report higher levels of life satisfaction.

2.5 Theoretical frameworks

This thesis will examine two theoretical frameworks to understand life satisfaction: the theory of post-materialism and the theory of social stratification. The growth of the scientific study of SWB is closely connected to the rise of post-materialism. This is especially true in the Western world, whereby individuals have become concerned with issues beyond financial security and material wealth, such as individual wellbeing and quality of life (Diener et al. 1999, p. 989). This school of thought is also at the heart of – and in part based on – Maslow's Hierarchy of Needs (Maslow 1970a). While materialism is focused on factors such as economic stability leading to material prosperity and a stable political system that sustains law and order, post-materialism is more concerned with elements of individual autonomy and social solidarity (Frijns 2010, p. 4) such as freedom of expression, equality and environmental preservation. Further, the theory of post-materialism is based on two hypotheses: the scarcity hypothesis and the socialisation hypothesis. The scarcity hypothesis proposes that in times of greater need, individuals place a higher priority on lower order, material needs such as food, shelter and physical security. On the other hand, the socialisation hypothesis contends that individuals have a relatively fixed set of values (developed during childhood and adolescence) once they reach adulthood (Frijns 2010, p. 4). These values inform individual's preferences regarding material and post-material needs. When these two hypotheses are combined, the theory of post-materialism suggests someone who grew up in a period of economic scarcity will place greater value on meeting material needs such as economic and physical security. By contrast, someone who has grown up in a more prosperous society will place more emphasis on post-materialistic values such as freedom of expression and self-esteem. Given that the world is currently in a time of relative material prosperity, the study of personal wellbeing, including life satisfaction, has become relevant to

modern society and people's levels of life satisfaction are often dependent on their ability to meet these higher order post-materialistic needs.

Despite this, research by Rode (2004, p. 1221) argues that satisfaction with major life domains such as income, work conditions, race, and health account for a significant portion of the overall variation in levels of life satisfaction. This makes sense given that before people can focus on higher order needs, lower order material needs must be met first. It is also likely many of those even in today's post-modern world who have grown up with less material prosperity, are satisfied as long as their basic material needs are being met, consistent with the socialisation hypothesis. These findings are also consistent with the theory of social stratification, which is defined as: "the social structures and social processes that result in differential allocation of resources and assets to members of that society" (George 2010, p. 333). Therefore social stratification theory could be viewed as a counter theory to post-materialism because, contrary to post-materialism, it suggests individuals in contemporary society still place more of an emphasis on material needs, whereas post-materialism claims most modern individuals place a greater emphasis on higher order needs. According to George (2010, p. 333), there are three primary factors which are considered the basis for social stratification in societies around the world: socioeconomic status (SES), race/ethnicity, and gender. Therefore, an individual with higher levels of education and income and who is white or from a non-migrant background should be more satisfied with their life, which would support Rode's (2004) findings. Although Rode's study did not measure the effects of education, many other studies have demonstrated strong links between measures of social inequality and subsequent life satisfaction ratings.

2.6 Summary

The literature discussed in this chapter provides convincing evidence that a range of indicators are significantly associated with life satisfaction outcomes. These include job satisfaction, marital status, and cultural background, in addition to multiple indicators of health and community participation. In the case of job satisfaction, indicators of health, and indicators of community participation, the association between these variables and life satisfaction was positive. While married respondents were more likely to be satisfied than respondents who were unmarried, and respondents from international – or migrant - backgrounds were less likely to be satisfied than respondents who were born in their respective countries of residence. By contrast, the links between life satisfaction and key

indicators including education, income and children were less certain, with previous studies producing mixed findings for these indicators. Although in the case of education, there is a general consensus among most authors that, once other indicators are controlled for, the relationship with life satisfaction is positive.

Chapter 3: Research methods and sample characteristics

This chapter outlines the research methods used to analyse, interpret, and categorise the data. The data used to conduct this research is secondary quantitative data from the Household, Income and Labour Dynamics in Australia (HILDA) survey, Wave 13 (2013). As mentioned in the literature review section, a number of authors (Dockery; Kelley & Evans; Worner) have already utilised data from the HILDA dataset to examine life satisfaction in relation to socioeconomic and sociodemographic indicators. An objective of this research is to use this data to examine and analyse patterns between a broader range of indicators of sociodemographic and socioeconomic difference – in addition to a number of health and community participation variables – and self-reported life satisfaction ratings. This will be done using a large, representative sample of Australian residents. The methods used to achieve this are described in more detail throughout the rest of this chapter.

3.1 Data set

A total of 24 independent variables were selected from the HILDA dataset to examine life satisfaction, in addition to one dependent variable (life satisfaction). These 24 variables were split into four categories: sociodemographic indicators (9); socioeconomic indicators (6); health indicators (6), and finally, community participation indicators (3). The selection of these variables was based on previous Australian and international research into life satisfaction, as highlighted in the literature review section. Data was analysed using SPSS, a statistical analysis software program.

The dependent variable in this analysis is overall life satisfaction. Life satisfaction was measured from the following question: 'All things considered, how satisfied are you with your life?' Participants were required to give a score between 0 (totally dissatisfied with life) and 10 (totally satisfied with life); therefore, the higher the score given the more satisfied the respondent was with their life. This question is similar in wording to the one used by the German Socio-Economic Panel since its inception in 1984. It is also similar to the life satisfaction items included in the World Values Survey (Inglehart et al. 2000, cited in Shields & Wooden 2003, pp. 9-10) and the Euro-Barometer Surveys (Di Tella et al. 2003, cited in Shields & Wooden 2003, p. 10). The life satisfaction question from the HILDA survey was asked through a combination of face-to-face interviews and two self-completion questionnaires: the Continuing Person Questionnaire and the New Person Questionnaire. The

HILDA questionnaire also contained questions on satisfaction with various life domains, including 'how safe you feel', 'feeling part of your local community', and other similar items. Two of these – 'satisfaction with feeling part of your local community', and 'satisfaction with the neighbourhood in which you live' – are utilised in this research. However, these items do not pertain to overall life satisfaction, and have not been used in previous life satisfaction research that has utilised the HILDA dataset. Rather they are used as separate indicators of general satisfaction. All respondents who answered these questionnaires were over 15 years of age.

Multiple socioeconomic and sociodemographic indicators were initially selected and coded using SPSS Syntax. From this initial list of indicators, a shortlist of variables was chosen, based on which variables were considered most relevant to the research. A decision about which indicators were more relevant was made after reviewing previous quantitative life satisfaction literature, in particular studies which had used the HILDA dataset. All data analyses were carried out in SPSS using a combination of univariate, bivariate and multivariate data analysis techniques. Univariate data is presented later in this chapter and presents background data on both life satisfaction, and each of the independent variables. This provides a more general overview of the sample characteristics, that is, the portion of respondents who have achieved a given level of education, or the percentage who report high levels of life satisfaction.

Because most of the predictor (independent) variables are categorical, the bivariate analysis will be presented in the form of Cross Tabulations, with the associated Chi-Square value and p-value.

Multivariate analysis was carried out by running binary logistic regression models. Responses for the life satisfaction item were divided into two groups: those who reported a high (9 or 10 out of 10) level of life satisfaction, and those who reported an 8 out of 10 or lower. The rationale behind the decision to only include respondents with a score of 9 or above in the 'high satisfaction' group was based partly on previous Australian life satisfaction research (mentioned in Chapter 2). This research noted a relatively high percentage of respondents (35.91% of females and 31.45% of males) who reported a satisfaction score of 9 or above (Worner 2007, p. 14).

The statistics obtained from the binary logistic regression models that are presented include the estimated odds ratios (to determine how much more or less likely a respondent from a

given subset, i.e. low physical health, is to display high levels of life satisfaction) and the associated p-values and standard errors. Binary logistic regression was used because this research is interested in comparing respondents based on two levels of satisfaction (high and low). All 24 selected indicators will be included in the multivariate model, but the model estimates for each of the four categories (sociodemographic, socioeconomic, health and community participation) will be presented separately in the bivariate and multivariate results chapters (Chapters 4 and 5).

3.2 Sample

The sample for Wave 13 consisted of 17, 501 individuals, including 13, 609 persons from the main sample, and 3892 persons from the top-up sample, which was included in Wave 11 in order to retain cross-sectional representativeness in the sample. The top-up sample is also used to replace members from Wave 1 responding households, who have since dropped out of the sample for various reasons including death, illness and relocation overseas. Almost all of the interviews for Wave 13 were conducted during the period between 30 July 2013 and 9 February 2014. Households included in the sample were selected through a multi-stage process. First, a random sample of 488 Census Collection Districts (CDs), based on 1996 Census boundaries, was selected from across Australia; within each of these CDs, there are approximately 200-250 households. From each of these CDs a random sample of 22 to 34 dwellings was selected. It should be noted that dwellings can contain more than one household. Finally, interviews were completed with eligible members of all responding households, although in some households, not all eligible members agreed to an interview. The final sample size after recoding was 6536 participants. These are the number of participants who gave valid responses for all 24 selected variables, with the exception of the employment contract indicator, where the total number of valid responses was slightly fewer than this number (6522).

Access to HILDA data is governed by strict ethical and privacy principles and is only released to researchers with approval from the host and receiving institutions. Access to the HILDA (Wave 13) dataset was provided by the Melbourne Institute, which owns and administers the HILDA survey. Wave 13 was the most recent available Wave of the HILDA survey at the time that data was first collected for this research, in early 2015.

3.2.1 *Sociodemographic variables*

The key sociodemographic variables measured included number of children, marital status, and language. Additional sociodemographic indicators measured, included 'sex' (male or female), and 'age last birthday' (years). These variables were included for two reasons: firstly, to determine whether levels of self-reported life satisfaction are influenced by age or gender, and secondly, to measure the confounding effects (if any) of these two variables on the associations between life satisfaction and other indicators'. In the bivariate and multivariate results chapters (chapters 4 and 5) the sex indicator will be referred to as 'gender'. This is to distinguish between the sociological concept of gender, and biological sex. Doing this was necessary given that the bivariate and multivariate analyses explored the effects of sex (gender) on life satisfaction, while the univariate results specifically recorded the number of respondents who identified as male and female.

The number of children was measured by the item 'Total number of children', and recoded into the categories of 'no children', 'one', 'two' and 'three or more.' This variable was used to answer two questions: does having children make parents more or less satisfied with their lives?; and is there a link between satisfaction and the number of children present in the home? These questions are investigated further through four additional sub-indicators: 'resident children, aged 0-4 years'; 'resident children, aged 5-14 years; 'resident children, aged 15-24 years; and 'resident children, aged 25 years and over'. These variables are measuring the total number of biological children – in addition to any resident step/foster or grandchildren not living with their natural parents – who are present in the household. In other words, if an individual is a parent of a biological or step/foster child who does not currently reside in the same household, that child would not be counted. This study is using these variables to determine whether parents of younger children are more satisfied than parents of older children, consistent with Pollmann-Schult's (2014) findings, mentioned in Chapter 2. The first three of these variables are classified into the groups: 'no children', 'one' and 'two or more.' For the final variable (25 years and over), there are only two groups: 'no children' and 'one or more.' This is due to the very small number of parents reporting two or more resident children in this age group.

Marriage was measured by the item: 'current marital status', which was recoded into the groups: 'married (in a registered marriage)'; 'separated, divorced, or widowed'; 'cohabitating'; and 'single.' This item was used to test the hypothesis that married and

cohabitating people are more satisfied with their lives than those who are single, separated, divorced or widowed. Widowed people were added to the separated and divorced category due to a small number of reported cases. Previous studies (Brown & Booth 1996) have also reported that, similar to divorced and separated people, widowed individuals tend to be less satisfied with their lives than those who are married or cohabitating.

The final key sociodemographic variable asked respondents whether they 'speak a language other than English?' This question required a simple yes or no response. This indicator was included to determine if there is a link between language background and levels of self-reported life satisfaction. More specifically, are Australians who come from non-English speaking backgrounds more or less satisfied with their lives than Australians from English speaking backgrounds?

Additional sociodemographic indicators measured, included 'sex' (male or female), and 'age last birthday' (years). These variables were included for two reasons: firstly, to determine whether levels of self-reported life satisfaction are influenced by age or gender, and secondly, to measure the confounding effects (if any) of these two variables on the associations between life satisfaction and other indicators.

3.2.2 *Socioeconomic variables*

The key socioeconomic variables included income, education level, and employment.

Income was measured by the item: 'financial year disposable total income' (positive values), as measured by HILDA at the responding person level (Wilkins 2014, p. 4). Note that there are a small number of respondents who reported a negative annual income. For this variable, all of these negative values are assigned a value of 0 (Wilkins 2014, p. 4). For the purposes of this research, financial year disposable total income is split into five main income quintiles, ranked from highest to lowest, based on the HILDA data. Those earning below $27,092 per year; those earning from $27,092 to $42,422; those earning from $42,423 to $54,862; those earning from $54,863 to $74,321, and finally those earning over $74,321, with the aim of determining whether higher income earners are more satisfied with their lives than low and medium income earners. Income quintiles were based on those used by the Australian Bureau of Statistics (ABS 2015). (In the final data analysis, respondents aged over 65 years were excluded from the sample, meaning there were very small differences in the total number of individuals categorised within each income quintile.)

Education was measured by the 'highest level of education completed' item, taken from the history variables section of the HILDA dataset. This variable is used to determine whether Australian individuals with higher levels of education are more satisfied than those with a lower level of education. Although the responses are split into separate postgraduate and undergraduate qualification categories, for this research, all qualifications listed as Bachelor's degree or higher were combined into one category. The other categories, in descending order, were: Advanced diploma, diploma or certificate; Year 12; and Year 11 or below. There were also two values listed as 'undetermined' which were omitted from the data.

Employment was measured by four different indicators. The first of these was the item 'number of jobs'. Respondents were required to respond to this question with either of the following responses: 'employed in more than one job' or 'employed in one job only'. This was used to determine whether individuals are more satisfied if they are working one job, or if they are working multiple jobs. The next employment indicator measured was 'employment status', with the aim of determining whether individuals who work more hours are more or less satisfied than those working fewer hours. Categories included '35 hours or more' (full-time) and '34 hours or less' (part-time). The third indicator of employment was 'overall job satisfaction'. Like life satisfaction, this was measured on a scale of 0 to 10, with a 10 indicating the respondent is completely satisfied with their job, and a zero indicating the respondent is completely dissatisfied with their current working circumstances. Responses are divided into three categories, low (0-6), medium (7-8) and high (9-10) This variable was used to indicate the strength of the relationship between life satisfaction and job satisfaction, and how closely the two mirror one another. It was also was in part because, in the original research design, life satisfaction was classified as either low (0-6), medium (7-8), or high (9-10), before it was decided to focus more specifically on respondents with the highest satisfaction levels. The final indicator of the relationship between employment and life satisfaction is 'employment contract – current job'. This variable was split into the following responses 'employed on a permanent or ongoing basis' and 'employed on a fixed term contract or casual basis'. This was used to determine whether individuals who are employed on a permanent or ongoing basis are more satisfied than those who are employed in less stable work arrangements. Unemployed respondents were excluded from the final sample for all selected employment indicators.

3.2.3 *Health variables*

The key health variables included self-reported satisfaction with personal health, current mental health status and current physical health status, as measured by the Kessler and SF-36 questionnaires (mental component and physical component). Although some of these items are based on pre-existing questionnaires, in the case of this research, all of them were taken directly from the HILDA dataset.

Self-reported health was measured by three indicators. The first of these was: 'in general, how would you rate your health?' This item was taken from the SF-36 questionnaire as a measure of overall health, and contained the responses of 'excellent', 'very good', 'good', and 'fair or poor'. The second question was 'do you suffer from a long term health condition?' This question required a simple yes or no response. Finally, the third indicator of self-reported health was 'satisfaction with current weight', which was divided into the following responses: 'very satisfied', 'satisfied', 'neither satisfied nor dissatisfied' and 'dissatisfied or very dissatisfied'. Including these three items serves two purposes: to determine if there is a correlation between self-reported health and levels of life satisfaction; and to establish whether these relationships vary significantly depending on what item is being used to measure self-reported health.

Mental health was measured by two items: the 'Kessler Psychological Distress Scale' (Kessler, Andrew & Colpe et al. 2002), and 'SF-36 Mental Component Summary' (Ware & Sherbourne 1992). While physical health was measured by the 'SF-36 Physical Component Summary' (Ware & Sherbourne 1992). The Kessler Psychological Distress Scale is a 10-item questionnaire, designed to measure psychological distress, with all ten items scored on a scale of 0 'none of the time' to 5 'all of the time' (Kessler, Barker, Colpe et al. 2003). The SF-36 is a 36 item scale constructed to survey health status and quality of life (Ware & Sherbourne 1992). The SF-36 assesses eight health concepts (four physical and four mental), and each component contains a number of individual items. The average scores across these concepts are then split into two summary scores: Mental Component Summary, and Physical Component Summary (Ware & Sherbourne 1992).

These three items are used to gain an understanding of the relationship between self-reported life satisfaction and health, using clinical screening tools, as opposed to the respondent rating their own physical or mental health based on subjective criteria. They are also used to determine whether physical or mental health measures are more strongly correlated with life

satisfaction in this sample. Previous research from a number of scholars has shown that both the SF-36 (Brazier et al. 1992, & Sullivan, Karlsson & Ware Jr 1995) and the Kessler 10 (Zhou et al. 2008, & Hides et al. 2007) have high degrees of internal reliability and predictive validity.

3.2.4 *Community participation variables*

Respondent's levels of community participation were measured by three items: satisfaction with level of involvement in local community, satisfaction with neighbourhood, and whether the respondent is an active member of a sporting/hobby/community based club or association.

Respondent's levels of satisfaction with local their local neighbourhood and level of involvement in their local community, were measured by the following two indicators: 'satisfaction with feeling part of your local community' and 'satisfaction with the neighbourhood in which you live'. Like the overall life satisfaction item, respondents were required to rate their level of satisfaction on a scale of 0 to 10. For the purposes of this analysis, participant's scores were coded into three different groups: low (0-6), medium (7-8), and high (9-10). This – as was the case for the 'job satisfaction' indicator – was in part because, in the original research design, life satisfaction was classified as either low (0-6), medium (7-8), or high (9-10), before it was decided to focus more specifically on respondents with the highest satisfaction levels. The third community participation item was measured by a simple 'yes' or 'no' response.

These variables were included to indicate if there is an association between an individual's level of life satisfaction and their respective levels of satisfaction with life – and involvement – within their local communities.

3.3 Sample Characteristics

The following section provides a univariate description of the social, economic and cultural variables included in this study. This content is divided into four sections, each covering a set of demographic, economic, health and community participation variables. Measuring these indicators provides background to the sample being investigated. For example, when measuring the effects of education and employment variables on life satisfaction, knowing the education level and employment profile of a typical respondent provides important context to the data being analysed in the bivariate and multivariate sections (Chapters 4 and

5). Each of these sections includes an analysis of the findings proceeded by a data table containing each of the selected variables.

3.3.1 *Sociodemographic characteristics*

The first univariate table (Table 3.1) presents the univariate figures for life satisfaction. As shown, the majority of respondents (70.6%) rate their life satisfaction an 8 out of 10 or lower. About 3 in 10 (29.8%) participants rated their satisfaction as high (9 or 10 out of 10).

Table 3.1: Life satisfaction, HILDA 2013.

Characteristics	Number	Percentage
Life satisfaction		
Remainder (0-8)	4614	70.6
High (9-10)	1922	29.4
Total	6647	100

The next univariate table (Table 3.2) displays the univariate findings for the selected sociodemographic variables. The sample consists of slightly more females (51.7%) than males (48.3%).

Table 3.2: Sociodemographic characteristics, HILDA 2013.

Characteristics	Number	Percentage
Sex		
Male	3160	48.3
Female	3376	51.7
Total	6536	100
Age last birthday (Years)		
15-24	1267	19.4
25-39	2203	33.7
40-65	3066	46.9
Total	6536	100
Speak language other than English		
Yes	646	9.9
No	5890	90.1

Characteristics	Number	Percentage
Total	6536	100
Family indicators		
Current marital status		
Married (in a registered marriage)	3138	48
Separated, divorced or widowed	2688	41.1
Cohabitating	186	2.8
Single	524	8
Total	6536	100
Total number of children		
None	2833	43.3
1-2	2526	38.6
3 or more	1177	18
Total	6536	100
Number of resident children aged 0-4 years		
None	5551	84.9
1	691	10.6
2 or more	294	4.4
Total	6536	100
Number of resident children aged 5-14 years		
None	5218	79.8
1	696	10.6
2 or more	622	9.5
Total	6536	100
Number of resident children aged 15-24 years		
None	5466	83.6

Characteristics	Number	Percentage
1	605	9.3
2 or more	465	7.1
Total	6536	100
Number of resident children aged over 25 years		
None	6340	97
1 or more	196	3
Total	6536	100

The majority of participants are either in the 25-39 (33.7%) or 40-65 (46.9%) age groups. However, a sizeable minority (19.4%) are in the younger (15-24) age group.

The next sociodemographic indicator measured in Table 3.2 was the language item (Speak language other than English). The results indicate an overwhelming majority of participants (90.1%) only speak English. This is likely partly due to HILDA being a longitudinal survey, and when the survey was first conducted in 2001 there were not as many people from a non-English speaking background residing in Australia.

The data for marital status show a large percentage of respondents (48%) are in a registered marriage, while divorced, separated and widowed individuals are the next most common group, comprising over 40 per cent of total respondents. Single (8%) and cohabitating (2.8%) were the least common responses. The proportion of married individuals in the survey was similar to that reported in the 2011 Australian census (ABS 2011), which showed 49 per cent of Australians aged over 15 years were in a registered marriage. However, this data also revealed approximately 16 per cent were separated, divorced or widowed, much lower than the percentage recorded here. This is likely in part due to the large percentage of people from the sample in the 40-65 age group, (46.9%) as opposed to slightly over 30 per cent in the ABS data (ABS 2011). This also helps explain why the percentage of cohabiters is low, given that the majority of cohabitating couples are young (AIFS 2016).

Data on the number of children show that the majority of respondents either have one or two children (38.6%), or no children (43.3%). A large number of childless respondents would be expected to come from younger age groups. Despite this, a significant portion of individuals

(18%) report having three or more children. When this data is broken down into resident children by age group, the majority of participants in each respective age group do not have any resident children. This finding is to be expected given that most respondents do not have more than two children in total. However, those that do have children in at least one of the listed age groups appear slightly more likely to have them in the 5-14 year old age group, where over 10 per cent have one resident child, and over 9 per cent have two or more resident children. The next most likely group is 15-24 years (9.3% and 7.1% respectively). This is expected given that almost all children are still being cared for by a parent or guardian in the former age group, and a large majority in the latter group are also still living with a parent or guardian. In the case of the 0-4 age group, there may be a slightly smaller percentage of resident children simply because this age group covers a smaller age range then the 5-14 and 15-24 age groups. Finally, only three per cent of respondents have any resident children 25 years and over, which suggests most children have left home by this age. In other words, many parents may have children aged 25 years and over, who would have been included in the 'total number of children' item, but are not counted in the 'number of own resident children aged 25 years or over' item because they are no longer living at home. The following section will explore these relationships for indicators of socioeconomic difference.

3.3.2 *Socioeconomic characteristics*

This section investigates the univariate relationships between life satisfaction and indictors of socioeconomic difference. This data (displayed in Table 3.3) indicates differing patterns amongst the chosen indicators of socioeconomic difference. The findings for education show approximately two thirds of Australians aged over 15 years have obtained a post-school level qualification. Of these, those with a diploma, advanced diploma, or certificate make up roughly the same percentage of respondents (32.5%) as those with a bachelor's degree or higher qualification (32.8%). The percentage of respondents who have not completed year 12 is fairly low (16.3%). Since the majority of diplomas and certificate level qualifications come from TAFEs as well as other technical institutions and independent Colleges, the percentage of Victorians with university level qualifications is still relatively low.

Table 3.3: Socioeconomic characteristics, HILDA 2013.

Characteristics	Number	Percentage
Highest level of education completed		
Bachelor's degree or higher	2141	32.8
Diploma or certificate	2124	32.5
Year 12	1205	18.4
Year 11 or below	1066	16.3
Total	6536	100
Number of Jobs		
One	6033	92.3%
Two or more	503	7.7%
Total	6536	100
Employment status		
Full-time*	4412	67.5
Part-time*	2124	32.5
Total	6536	100
Employment contract – current job		
Employed on a permanent or ongoing basis	4573	70
Employed on a fixed term contract or casual basis	1949	30
Total	6522	100
Total annual disposable income ($)		
≤$27,092	1316	20.1
$27,092 - $42,422	1304	20
$42,422 - $54,862	1305	20

Characteristics	Number	Percentage
$54,862 - $74,321	1315	20.1
> $74,321	1296	19.8
Total	6536	100
Job satisfaction		
Low (0-6)	1174	18
Medium (7-8)	3501	53.6
High (9-10)	1861	28.5
Total	6536	100

*Note: Full-time work is defined in HILDA (Wave 13, 2013) as 35 hours or more per week; part-time work is defined as 34 hours or less per week.

The first employment variable displayed in the table is 'number of jobs.' The data displayed shows the vast majority of individuals (92.3%) are employed in only one job, compared to a much smaller number (7.7%) who are employed in two or more jobs.

The next employment variable listed is 'employment status.' As shown, the majority of respondents (67.5%) work full-time (over 35 hours per week). This is to be expected given a 40 hour or longer work week is standard for many Australians (ABS 2014). The remaining participants (32.5%) work part-time (34 hours or less per week).

The final measure of employment (employment contract – current job) shows substantially more respondents are employed on a permanent or ongoing basis (70%), than in a fixed term or casual role (30%).

The data for personal total annual disposable (net) income (shown in Table 3.3) is split into five quintiles, each with the same number of respondents. The 20 per cent of respondents earn more than $74,321 per year, and the bottom 20 per cent earn less than or equal to $27,062 per year. The remaining 60 per cent all earn somewhere between these two values. These results indicate a fairly gradual spread of incomes among this sample. However, as noted in the methods section, due to the exclusion of respondents aged 65 years and over, there is a small discrepancy in the number of respondents in each group. However, this difference is very minor, with the largest group (≤$27,092) containing 1,316 participants, and the smallest (> $74,321) comprising of 1,296 participants.

In terms of job satisfaction, a majority (53.6%) of participants reported a medium (7 or 8 out of 10) level of job satisfaction. Despite this, considerably more respondents (28.5%) report a high (9 or 10) level of satisfaction than a low (0-6 out of 10) amount. The figure for high satisfaction closely mirrors that for overall life satisfaction, with 29.4 per cent reporting a high level of life satisfaction. The strong link between job satisfaction and overall life satisfaction will be measured and elaborated on further in the bivariate and multivariate data analysis, as well as the discussion chapter.

The following section explores these relationships in relation to personal health variables.

3.3.3 *Health status variables*

This section deals with the univariate analysis of indicators of personal health. This is divided into three sub-categories: general/overall health, physical health, and mental health. The univariate table (Table 3.4) displays the univariate findings for these selected indicators.

Table 3.4: Health characteristics, HILDA 2013.

Characteristics	Number	Percentage
Overall/General Health		
SF-36 Health rating		
Excellent	1103	16.9
Very good	2681	41
Good	2023	31
Fair or poor	729	11.2
Total	6536	100
Suffer from a long-term health condition?		
Yes	1140	17.4
No	5396	82.6
Total	6536	100
Physical Health		
SF-36 physical component		
Low	1691	25.9
Medium	3703	56.7

Characteristics	Number	Percentage
High	1142	17.5
Total	6536	100
Satisfaction with current weight		
Very satisfied	580	8.9
Satisfied	1636	25
Neither satisfied nor Dissatisfied	1481	22.7
Dissatisfied or very Dissatisfied	2839	43.4
Total	6536	100
Mental Health		
SF-36 mental component		
Low	2674	40.9
Medium	3068	46.9
High	794	12.1
Total	6536	100
Kessler distress scale risk categories		
Low	4324	66.2
Moderate	1377	21.1
High	598	9.1
Very High	237	3.6
Total	6536	100

The majority (72%) of participants either rated their personal health (SF-36 health rating) as very good (41%) or good (31%). A relatively small percentage (16.9%) rated their health as excellent, while only just over 11 per cent rated their health as fair or poor. These generally positive results are reflected in participants' responses to the next item ('suffer from a long

term health condition') where over 82 per cent reported not suffering from a long term health condition.

Interestingly, although most respondents report strong personal health, and not suffering from a long-term health condition, only 33.9 per cent of participants stated they were either very satisfied or satisfied with their current weight, while over 43 per cent said they were either dissatisfied or very dissatisfied.

With regard to the SF-36 questionnaire – a 36 item self-report survey used to assess a patient's overall level of functional health (ability to perform day to day activities) – (Ware & Sherbourne 1992), a large portion of participants (56.7%) scored in the medium range on the physical component. Also of note, considerably more respondents (25.9%) scored in the low range than in the high range (17.5%). Similar findings are observed for the mental components, with 46.9 per cent and 40.9 per cent of participants scoring in the medium and low categories respectively, while only 12.1 per cent scored in the high range.

The results of the Kessler scale questionnaire are scored differently from the SF-36 surveys. This means a low score indicates a better outcome than a high score. The Kessler Psychological Distress Scale (K10) is a scale consisting of 10 items on psychological distress and measures the level of anxiety and depressive symptoms an individual has experienced over a four week period (Kessler & Mroczek 1994). As shown in Table 3.4, only 12.7% of respondents scored in the high or very high range for psychological distress, while a relative majority (66.2%) scored in the low range. These results indicate most participants suffer from a low or relatively low amount of psychological distress.

The following section investigates these associations in relation to measures of community participation.

3.3.4 *Community participation characteristics*

The univariate table (Table 3.5) below displays the univariate findings for each of the indicators of community participation.

Table 3.5: Community participation characteristics, HILDA 2013.

Characteristics	Number	Percentage
Currently an active member of a community based club or association?		
Yes	2335	35.7
No	4201	64.3
Total	6536	100
Satisfaction with feeling part of local community		
Low (0-6)	2878	44
Medium (7-8)	2716	41.6
High (9-10)	942	14.4
Total	6536	100
Satisfaction with neighbourhood in which you live		
Low (0-6)	1037	15.9
Medium (7-8)	3238	49.5
High (9-10)	2261	34.6
Total	6536	100

The data on club/community membership show a majority (64.3%) of participants are not involved in a sporting/hobby/community-based club or association, while the remaining 35.7 per cent of respondents are active members of at least one of these clubs or associations.

The results for the two satisfaction indicators (satisfaction with feeling part of local community and satisfaction with neighbourhood in which you live) produced contrasting results. Whereas the majority of participants were either moderately or highly satisfied (49.5% and 34.6% respectively) with the neighbourhood in which they lived, a sizeable 44 per cent reported a low level of satisfaction with feeling part in their local community, despite a similar percentage (41.6%) reporting a medium level of satisfaction. This may partly reflect

the statistics for club/community membership. If a high percentage of individuals are not participating in a social group, and many of these groups are conducted at the local level, it is reasonable to expect that many of these individuals would not feel a strong connection with their local communities.

3.4 Summary

In summary, the data presented in this chapter has provided a number of key features of the selected sample, in addition to outlining the quantitative data analysis methods which were used to collect, analyse and interpret this data, as well as the data presented in the proceeding results chapters. As mentioned, this data was all collected from Wave 13 (2013) of the HILDA survey. A total of 24 independent variables will each be measured separately against life satisfaction in the bivariate analysis section; and all will be measured against life satisfaction together in the one binary logit regression model in the multivariate analysis section.

Concerning the univariate findings presented in this chapter, the data showed that there were roughly equal numbers of males and females, and around 80 per cent of respondents fell within the two middle age groups (25-39 and 40-65). The vast majority (90.1%) of respondents did not speak a language other than English. Many are married, but a comparable number are separated, divorced or widowed, and about 80 per cent have 2 or fewer children. When the number of children is broken down by age group, there is more of a spread of ages of resident children, meaning the percentage of respondents with resident children in each age group is lower.

The findings revealed around 65 per cent of participants have a post school qualification, and of this group, roughly half hold a bachelor's degree or higher qualification, while the other half have completed a diploma or certificate qualification. The vast majority of participants (92.3%) only had one job, and around two-thirds were employed full-time. A slightly greater percentage (70%) were employed on a permanent or ongoing basis. The top 20 per cent of respondents earned a disposable income greater than $74,321 per annum; the bottom 20 per cent earns an annual income below $27,092; while the remaining 60 per cent earned an annual income in between these two values. Finally, the percentage of respondents reporting a high (9 or 10 out of 10) level of job satisfaction (28.5%) largely mirrored the proportion observed for overall life satisfaction (29.4%), with a majority (53.6%) of respondents

reporting a medium (7 or 8 out of 10) level of job satisfaction. A relatively small percentage (17.8%) of participants rated their job satisfaction as low (lower than 7 out of 10).

The findings for indicators of health reveal almost 9 out of 10 respondents rated their overall health as good or better. Consistent with this finding, the majority of respondents (82.6%) reported not suffering from a long-term health condition. Concerning physical health, the majority (56.7%) of participants scored in the medium range on the SF-36 physical component questionnaire. These findings are consistent with the health rating variable, where most individuals rated their health as good or very good, but not excellent. However, the findings for the second measure of physical health (satisfaction with current weight) revealed a large amount of dissatisfaction from respondents concerning their current weight status. The findings for mental health revealed the largest portion of participants score in the medium range on the SF-36 physical component questionnaire. However, a comparable portion scored in the low range, indicating a comparatively low level of mental health. Despite this, the Kessler distress scale risk categories revealed the majority of participants (66.2%) are in the low risk category (implying a high level of mental functioning), highlighting the discrepancy in results which can occur depending on which mental health assessment is used.

Finally, the community participation variables showed a little over one-third of participants are members of a community based club or association. And the vast majority of participants report either a low (less than 7 out of 10) or medium (7 or 8 out of 10) amount of satisfaction with feeling part of their local community. Despite this, a similarly large majority (approximately 84%) of participants reported either a medium or high (9 or 10 out of 10) level of satisfaction with the neighbourhood in which they reside.

The following chapter, Chapter 4, explores the relationships between life satisfaction and these indicators, using bivariate and multivariate data analysis techniques.

Chapter 4: Sociodemographic and economic characteristics, and life satisfaction

This chapter builds on Chapter 3 by analysing in more detail the relationships between reported levels of life satisfaction and selected sociodemographic and socioeconomic variables. This is done by conducting bivariate and multivariate data analyses. The discussion is divided into two sections: the first focuses on sociodemographic variables, and the second on socioeconomic differences. This will provide an understanding of which individual indicators of sociodemographic and socioeconomic difference are most important in determining levels of life satisfaction, and which of these two groups of indicators tends to be more strongly correlated with satisfaction levels. Furthermore, in cases where there is a discrepancy between the bivariate and multivariate results – or between different models in the multivariate analyses – the data will show which group(s) of indicators is responsible for this change.

4.1 Sociodemographic factors and life satisfaction

This section presents both the bivariate (cross tabulations) and multivariate (binary logit regressions) results for the selected indicators of sociodemographic difference, displayed in Table 4.1 below. This is followed by an analysis of the bivariate findings for each indicator, which in turn is followed by a review of the multivariate findings for each variable.

Table 4.1: Bivariate relationships (cross tabulations), and binary logit regression models between levels of life satisfaction and selected sociodemographic variables, HILDA 2013.

Characteristics	Cross tabulations (% reporting high life satisfaction)	Model 1 Odds-ratio (standard error)	Model 2 Odds-ratio (standard error)	Model 3 Odds-ratio (standard error)	Model 4 Odds-ratio (standard error)
Sociodemographic Indicators					
Gender					
Male	28.7	.92 (.06)	.98 (.07)	.88* (.07)	.91 (.08)
Female*	30.1	-	-	-	-
Age group	***				
-15-24	34.4	1.51*** (.11)	1.37*** (.12)	1.28* (.13)	1.31* (.14)
-25-39	27.9	1.01 (.08)	1.02 (.09)	1.03 (.10)	1.08 (.11)
-40-65*	28.4	-	-	-	-
Speak language other than English	***				
Yes	25.2	.79*** (.10)	.84* (.10)	.87 (.11)	.96 (.12)
No*	29.9	-	-	-	-

Characteristics	Cross tabulations (% reporting high life satisfaction)	Model 1 Odds-ratio (standard error)	Model 2 Odds-ratio (standard error)	Model 3 Odds-ratio (standard error)	Model 4 Odds-ratio (standard error)
Family indicators					
Current marital status	***				
Married	31.4	1.50*** (.08)	1.47*** (.09)	1.34*** (.10)	1.27** (.10)
Cohabitating	17.2	.64** (.21)	.59** (.22)	.59** (.24)	.57** (.25)
Single	23.5	.94 (.13)	.90 (.14)	.82 (.15)	.83 (.16)
Divorced, separated or widowed*	29.3	-	-	-	-
Total number of children	***				
None	30.7	.86 (.13)	1.06 (.14)	1.04 (.15)	1.15 (.16)
1-2	27.1	.80*** (.08)	.85* (.09)	.85* (.10)	.90 (.10)
3 or more*	31.2	-	-	-	-
Number of resident children aged 0-4 years					
None	29.5	1.06 (.16)	.94 (.17)	.89 (.18)	.79 (.19)
One	28.2	1.00 (.16)	.97 (.17)	.92 (.18)	.88 (.18)
Two or more*	30.6	-	-	-	-
Number of resident children aged 5-14 years	***				
None	30.2	1.27** (.11)	1.16 (.12)	1.11 (.13)	1.25* (.13)
One	25.3	.99 (.13)	.92 (.14)	.93 (.15)	.98 (.16)
Two or more*	27.3	-	-	-	-
Number of resident children aged 15-24 years					
None	29.7	1.14 (.12)	1.05 (.13)	97 (.14)	.97 (.15)
One	27.3	1.02 (.14)	1.02 (.15)	1.05 (.16)	1.04 (.17)
Two or more	29.2	-	-	-	-
Number of resident children aged 25 years or over					
None	29.4	1.10 (.17)	1.21 (.18)	1.26 (.19)	1.21 (.20)
One or more*	29.1	-	-	-	-
Socioeconomic indicators		**Not included**	**Included**	**Included**	**Included**
Health indicators		**Not included**	**Not included**	**Included**	**Included**
Community participation indicators		**Not included**	**Not included**	**Not included**	**Included**
-2 log likelihood		7830.03	6973.46	6313.63	5792.33
Chi-Square		88.34	926.40	1586.23	2107.53
Number of cases		6536	6536	6536	6536

Note: Socioeconomic variables included the following: highest level of education completed; number of jobs; employment status; employment contract; total disposable annual income, and job satisfaction. Health variables included: SF-36 health rating; suffer from a long term health condition; SF-36 physical component; satisfaction with current weight; SF-36 mental component, and Kessler distress scale risk categories. Community participation variables included: currently an active member of a community based club or association; satisfaction with feeling part of local community; and satisfaction with neighbourhood in which you live. * Next to variable names indicates this is a

reference category (value against which the other subsets of that variable are measured). For cross tabulations and regressions: * p < .10; ** p<.05; *** p<.01.

Of the nine indicators displayed in Table 4.1, five display significant p-values, with all of these significant at the p≤.01 level. For the first of these (gender), the data show there was no significant difference in levels of life satisfaction between male and female respondents. This is consistent with previous research (Della Giusta, Jewell & Kambhampati 2011) which shows average levels of life satisfaction tend to be similar for both males and females. In contrast, the relationship between age and life satisfaction indicates a strong trend, with younger respondents (15-24 years) more likely to be satisfied than those in the two older (25-39 years and 40-65 years) age groups. Likewise, the next cross tabulation (Table 4.1) shows those who spoke only English were somewhat more likely to report a high level of life satisfaction (29.9%) than those who spoke a language other than English (25.2%).

Regarding the selected family variables, the first of these was marital status. These cross tabulations reveal a strong association (p≤.01) between this variable and subsequent life satisfaction outcomes, with the results showing married individuals are about as likely to report high levels of life satisfaction (31.4%), as respondents who were divorced, separated or widowed (29.4%). By contrast, those who were single were considerably less likely to report high levels of life satisfaction (23.5%). Interestingly, cohabitating respondents were the least likely to report high levels of satisfaction (17.2%), a finding not reported in previous research. However, this could be in part the result of the small number of cohabitating respondents (n=186) included in the sample. This finding will be discussed in more detail in the discussion chapter.

By contrast, the results for the life satisfaction/number of children cross tabulations revealed mixed findings. The first of these was total number of children. While respondents with 3 or more children were most likely to report high levels of satisfaction (31.2%), those with 1 or 2 children were the least likely to report high satisfaction levels (27.1%). When respondents with resident children are divided according to the age groups of their children, differences are more apparent in the data. It should be noted that respondents who reported having no resident children refers both to respondents with no children, as well as those with children who are not currently residing in the same household.

Findings for the first of these variables (number of resident children aged 0-4 years) revealed individuals with 2 or more children were slightly more likely to report high levels of

satisfaction (30.6%) than those with only one child (28.2%), while those with no children were in between these two values (29.5%). These results are consistent with the findings for the 'total number of children/life satisfaction' cross tabulation (Table 4.1), although it should be noted this finding falls short of statistical significance. This pattern is also observed across the remaining age groups (excluding 25 years and over which only has two categories), with those in the middle group (one child) slightly less likely to report a high level of life satisfaction as those in the other two groups. However, the p-value is only significant in the case of the 5-14 age group ($p \leq .01$), where the cross tabulations reveal those with no children were more likely than the other groups to report high levels of life satisfaction (30.2%). By contrast, those with one child were the least likely (25.3%). This indicates that the beneficial effects of having young children (aged 0-4), as noted in Pollmann-Schult (2014), may decline as children begin to get older. However, the main finding to note from these indicators is that the total number of children a parent has does not substantially increase or decrease an individual's likelihood of being highly satisfied with their life. This is especially true when the number of children someone has is categorised according to the number of resident children in each age group, although there may be a smaller benefit for parents of younger children.

The binary logistic regressions (Table 4.1) display the multivariate findings for the selected sociodemographic variables. These findings indicate a number of the selected sociodemographic indicators are significantly correlated with levels of overall life satisfaction. However, the odds ratios for the first selected indicator, gender, indicate little difference in levels of life satisfaction between genders. This is confirmed by the fact that there are no significant ($p \leq .10$) findings in any of the three models. Therefore, these results indicate males and females do not differ in their reported levels of life satisfaction. By contrast, the estimated odds ratios and p values for age indicate significant differences. In general, younger respondents had higher satisfaction levels then older respondents, particularly those aged 15-24 years. The relationship holds after controlling for socio-economic (Model 2), health (Model 3) and community variables (Model 4). Overall, young adults (15-24 year olds) were over 30 per cent more likely to report a high level of satisfaction compared to those aged over 25 years.

There was no significant difference in the association with life satisfaction between those who spoke a language other than English and those who only spoke English. Despite this, these respondents were significantly less likely to report high levels of satisfaction than those

who only spoke English in the first 2 models (odds ratios 0.79, and .84 for models 1 and 2 respectively). However, this relationship is no longer significant in models 3 or 4, and the odds-ratio approached to the null. This suggests that, as more variables are controlled for, the association between language and satisfaction levels gradually disappears. The multivariate data also produce mixed findings for the selected family indicators.

The multivariate analysis for the first of these, 'marital status' exhibits significant p values for both the married and cohabitating sub-groups. However, the odds ratios indicate these significant correlations are in different directions. Married respondents were more likely to report high levels of satisfaction than individuals who were divorced, separated or widowed. By contrast, cohabitating respondents were significantly less likely to report high levels of life satisfaction as indicated by the low odds-ratio values (Table 4.1). There was no relationship between being single and subsequent satisfaction levels, even in the earlier models.

Regressions for total number of children reveal no significant association with life satisfaction. This finding indicates respondents with either no children, or 1 or 2 children, were no more or less likely to report high levels of life satisfaction compared to those who have 3 or more children. Although in the case of respondents with 1 or 2 children, significant associations – odds-ratio .80 ($p \leq .01$), .85 ($p \leq .10$) and .85 ($p \leq .10$) – were found in models 1, 2 and 3 respectively. The change in odds ratios (and reduction in p values) between models 1 and 2, and models 3 and 4 – but not between models 2 and 3 – indicates socioeconomic variables (included in Model 2) and community participation indicators (included in Model 4) both had a mediating effect on the relationship between children and life satisfaction. On the other hand, health variables, which were included in Model 3, did not significantly influence these results. Possible reasons for this will be investigated in the discussion chapter.

When looking at the number of resident children in each age group, the findings were similar. For example, when measuring life satisfaction against reported number of resident children aged between 0-4 years (Table 4.1), no significant associations with satisfaction levels are reported. By contrast, respondents with no resident children aged 5-14 years were found to be slightly more likely to report high levels of life satisfaction (1.25, $p \leq .10$) than respondents with two or more children in this age group. No significant relationship between resident children and high levels of satisfaction was observed for respondents with one resident child in this age group. Furthermore, no significant correlation between numbers of resident

children and high levels of satisfaction was observed in either of the two final indicators (number of resident children aged 15-24 years, and number of resident children aged 25 years or over).

The next section of this chapter investigates these relationships for selected indicators of socioeconomic difference.

4.2 Socioeconomic variables and life satisfaction

This section presents both the bivariate (cross tabulations) and multivariate (binary logit regressions) results for the selected indicators of socioeconomic difference, displayed in Table 4.2. This is followed by an analysis of the bivariate findings for each indicator, which in turn is followed by a review of the multivariate data for each variable.

Table 4.2: Bivariate relationships (cross tabulations), and binary logit regression models between levels of life satisfaction and selected socioeconomic variables, HILDA 2013.

Characteristics	Cross tabulations (% reporting high life satisfaction)	Model 1 Odds-ratio (standard error)	Model 2 Odds-ratio (standard error)	Model 3 Odds-ratio (standard error)	Model 4 Odds-ratio (standard error)
Socioeconomic indicators					
Highest level of education completed					
Bachelor's Degree or higher	28.4	1.18* (.09)	1.06 (.10)	1.00 (.11)	.93 (.11)
Advanced Diploma, Diploma or Certificate III or IV	29.5	1.13 (.09)	1.15 (.10)	1.09 (.10)	1.03 (.10)
Year 12	30.4	1.14 (.10)	1.13 (.09)	.98 (.11)	.93 (.10)
Year 11 or below*	30.3	-	-	-	-
Number of jobs	*				
Two or more	26	.81* (.11)	.80* (.12)	.80* (.12)	.76** (.13)
One*	29.7	-	-	-	-
Employment status	***				
Full-time	28.1	.96 (.08)	.93 (.08)	.93 (.09)	.94 (.09)
Part-time*	32.2	-	-	-	-
Employment contract					
Employed on a permanent or ongoing basis	28.9	1.01 (.07)	1.04 (.07)	1.05 (.08)	1.13 (.08)
Employed on a fixed term contract or casual basis*	30.6	-	-	-	-
Job satisfaction	***				
Low (0-6)	12.7	.12*** (.10)	.12*** (.10)	.17*** (.11)	.22*** (.11)
Medium (7-8)	21.4	.22*** (.06)	.22*** (.06)	.24*** (.07)	.29*** (.07)

Characteristics	Cross tabulations (% reporting high life satisfaction)	Model 1 Odds-ratio (standard error)	Model 2 Odds-ratio (standard error)	Model 3 Odds-ratio (standard error)	Model 4 Odds-ratio (standard error)
High (9-10)*	55.1	-	-	-	-
Total disposable annual income	***				
(≤$27, 092)	35	1.22* (.12)	1.04 (.13)	1.28* (.14)	1.26 (.14)
($27,092 - $42,422)	27.9	.88 (.10)	.84 (.11)	1.01 (.11)	1.02 (.12)
($42,422 - $54,862)	28.1	.89 (.10)	.88 (.10)	1.00 (.11)	1.00 (.11)
($54,862 - $74,321)	25.6	.82** (.09)	.83** (.10)	.93 (.10)	.90 (.11)
(> $74,321)*	30.4	-	-	-	-
Sociodemographic indicators		**Not included**	**Included**	**Included**	**Included**
Health indicators		**Not included**	**Not included**	**Included**	**Included**
Community participation indicators		**Not included**	**Not included**	**Not included**	**Included**
-2 log likelihood		7043.45	6973.46	6313.63	5792.33
Chi-Square		856.41	926.40	1586.23	2107.53
Number of cases	6536	6536	6536	6536	6536

Note: Sociodemographic variables included the following: sex; age group; speak language other than English; and family variables including the following: current marital status; total number of children; total number of resident children aged 0-4 years; total number of resident children aged 5-14 years; total number of resident children aged 15-24 years; and total number of resident children aged 25 years or over. Health variables included: SF-36 health rating; suffer from a long term health condition; SF-36 physical component; satisfaction with current weight; SF-36 mental component, and Kessler distress scale risk categories. Community participation variables included: currently an active member of a community based club or association; satisfaction with feeling part of local community, and satisfaction with neighbourhood in which you live. * Next to variable names indicates this is a reference category (value against which the other subsets of that variable are measured). For cross tabulations and regressions: * p < .10; ** p<.05; *** p<.01.

The cross tabulations (Table 4.2) display the bivariate findings for the selected socioeconomic variables, which reveal four of the six selected indicators exhibit significant p-values. Of these, three are significant at the p≤.01 level. For the first of these, the education/life satisfaction cross tabulations reveal those individuals with the highest levels of education (Bachelor's degree or higher) were the least likely to report high levels of satisfaction (28.4%). However, these figures were only slightly below those observed in the other groups and are not statistically significant. Many of the individuals with lower levels of education (Year 12 or below) are likely to be people from the youngest age group (15-24) who tend to have lower levels of education than respondents in the older age groups, as many of these individuals are still completing their studies. In the case of employment variables, the bivariate data reveal mixed findings. The first of these (number of jobs) indicates a small but significant (at the p≤.10 level) relationship between number of jobs and life satisfaction, confirming this relationship, although significant, is not a large one. According to the table,

those employed in only one job were more likely to be highly satisfied (29.7% vs 26%) than individuals employed in more than one job.

Similarly, the correlations between life satisfaction and employment status (part-time or full-time) show a slight trend towards individuals who work part time hours being more satisfied than those who work longer hours. For example, 32.2 per cent of individuals who worked part-time hours reported a high level of life satisfaction, compared to only 28.1 per cent of respondents who worked a full-time schedule. While the findings for life satisfaction/employment contract reveal only a small discrepancy in satisfaction levels between those who were employed on a non-permanent (fixed term or casual) basis (30.6%) and those who were employed on a permanent or ongoing basis (28.9%). However, this was only a small discrepancy, and a significant p value was not observed between these variables.

Results for the final employment variable (job satisfaction) indicate an extremely strong positive correlation, suggesting that individuals who are more satisfied with their careers are much more likely to be highly satisfied with their lives overall. For example, more than half (55.1%) of respondents who reported a high (9 or 10) level of job satisfaction also reported a high level of overall life satisfaction. This is compared to only 21.4 per cent of individuals who reported a medium level of job satisfaction, and just 12.7 per cent of individuals who reported low job satisfaction. These strong correlations are confirmed by the significant p value ($p \leq .01$).

Results for the final socioeconomic indicator, 'income', were divided into five income quintiles (as mentioned in the Methods chapter). The findings show individuals in the lowest income quintile ($\leq$ \$27, 092 per annum) were most likely to report a high level of life satisfaction (35%), followed by those in the highest quintile (30.4%). Respondents in the second highest (\$54,862 - \$74,321) quintile were the least likely to report high levels of satisfaction (25.6%). This finding for low income earners could share some overlap with the findings for 'employment status' which showed those who work part-time hours are more likely to be satisfied. One possible explanation is that many low income earners are younger people, who are either studying or are yet to enter the workforce; or older people who are receiving retirement pensions. Some may also be married individuals who are working part-time, while their spouse works full-time hours. However, without specifically testing for relationships between these indictors, these assumptions are purely speculative.

The binary logit regressions (Table 4.2) display the multivariate findings for the selected socioeconomic variables. The multivariate findings indicated mixed results with regard to the selected indicators. The first of these was for the 'highest level of education' indicator, where the results revealed no significant correlation between education and reporting a high level of life satisfaction, although a significant finding in model one for the 'Bachelor's degree or higher' sub-indicator was noted. This result indicates when controlling for socioeconomic indicators alone, individuals with a higher level of education are slightly more likely to report high levels of life satisfaction than respondents with Year 11 or below. However, once sociodemographic indicators are controlled for, it is no longer significant. Furthermore – as indicated by the odds-ratio values in models 3 and 4 – any positive relationship with life satisfaction is weakened further by the addition of health and community participation indicators. No significant findings were reported for respondents with a Year 12 level of education, or for those with a Diploma or Certificate III or IV, even in the earlier models (Models 1, 2 and 3).

Findings for the first of the employment variables, 'number of jobs', indicate having more than one job is associated with a decreased likelihood of reporting high levels of satisfaction, compared to those who only work in one job, as indicated by the odds-ratio value in Model 4 (.76). This value is significant at the $p \leq .05$ level which, interestingly, is stronger than the bivariate finding ($p \leq .10$). By contrast, no significant findings were observed for either of the proceeding employment indicators, 'employment status' (full-time or part-time), or 'employment contract'. However, the results displayed for the final employment indicator, 'job satisfaction', reveal an extremely strong association between this indicator and subsequent satisfaction levels. Individuals who reported either a low or medium level of satisfaction with their current occupations were substantially less likely to report a high level of life satisfaction than respondents who reported a high level of job satisfaction. This confirms the findings of the cross tabulations. Conversely, findings for income reveal no significant findings in the final model. Despite this, the earlier models did produce some noteworthy findings. For example, individuals in the second highest income quintile ($54,862 - $74,321 per annum) were significantly less likely (.82, $p \leq .05$ in Model 1, and .83, $p \leq .05$ in Model 2) to report high levels of life satisfaction than those in the highest (> $74,321) quintile. Surprisingly, having a low income was associated with a slightly greater likelihood of reporting a high level of satisfaction, in models 1 (1.22, $p \leq .10$) and 3 (1.28, $p \leq .10$). Furthermore, based on the odds-ratio value (1.26) for the lowest income quintile (< $27, 092)

in the complete model (Model 4), those individuals with a low income may in fact have a slightly greater likelihood of reporting high levels of satisfaction, which would be consistent with the bivariate finding. However, this result could have been influenced by certain sample characteristics. This will be reviewed in more detail in the discussion chapter.

4.3 Summary

Most of the indicators measured in the bivariate sections of this chapter produced statistically significant results, when measured against levels of overall life satisfaction. Of the 15 indicators analysed in total, only four – sex, resident children aged 15-24 years (sociodemographic), highest level of education completed, and employment contract (socioeconomic) – did not produce statistically significant findings. Of the eleven which produced statistical significance, nine of these were significant at the $p \leq .01$ level. These findings suggest the vast majority of the selected variables were appropriate indicators of individual levels of life satisfaction.

This assumption is supported by the multivariate findings, which showed five of these indicators remained statistically significant when measured against one another. This included three of the nine selected sociodemographic indicators, and two of the six selected socioeconomic variables, suggesting these two groups of indicators are relatively equal in importance with regard to predicting life satisfaction outcomes. Of these, the only indicator to produce findings significant at the $p \leq .01$ level in the final model (Model 4) was job satisfaction (a socioeconomic indicator). This – and the corresponding odds-ratio values – indicated respondents who reported a high level of job satisfaction were overwhelmingly more likely to report a high level of life satisfaction compared to individuals who reported medium and low levels of satisfaction with their current occupation. Aside from this, the most noteworthy findings were for current marital status (sociodemographic) and number of jobs (socioeconomic), both of which produced results that were significant at the $p \leq .05$ level.

In summary, measuring more complex quantitative relationships between these indictors has shown that a number of sociodemographic and socioeconomic variables are strongly linked to levels of life satisfaction amongst a broad sample of the Australian community. The results also show while many of these relationships were significant at the bivariate level, this is often due to other, related indicators mediating the respective associations between these variables and subsequent life satisfaction outcomes. For example, although the initial bivariate analysis found part-time workers were more satisfied than those working full-time,

this association disappeared once other socioeconomic indicators were taken into account. Likewise, the significant relationship between language and life satisfaction also disappeared after indicators of socioeconomic difference – along with health and community participation – were taken into account. Another interesting finding was the strength of the correlation between job and life satisfaction despite none of the other selected employment variables – with the exception of 'number of jobs' – being associated with satisfaction levels. These findings, among others, will be examined further in the discussion and conclusion chapter which will also discuss the potential implications of these results for future life satisfaction research.

Chapter 5: Health and community participation characteristics, and life satisfaction

This chapter begins by describing the bivariate relationships between reported levels of life satisfaction and selected health and community participation variables, followed by a description of the multivariate findings for these two groups of indicators. The discussion is divided into two sections: the first focuses on selected indicators of health, which is divided into three pairs of indicators (general health, physical health, and mental health); and the second on variations in life satisfaction according to differences in levels of community participation. A key aim of the first section is to determine which areas of health (i.e. mental, physical, or both?) are most strongly associated with satisfaction levels. Another important component of this chapter will be to determine if respondents' levels of involvement in – and satisfaction with – community life are significantly related to life satisfaction outcomes.

5.1 Health and life satisfaction

This section presents both the bivariate (cross tabulations) and multivariate (binary logit regressions) results for the selected indicators of health, outlined in Table 5.1. This is followed by an analysis of the bivariate findings for each indicator, which in turn is followed by a review of the multivariate data for each variable.

Table 5.1: Bivariate relationships (cross tabulations), and binary logit regression models between levels of life satisfaction and selected health variables, HILDA 2013.

Characteristics	Cross tabulations (% reporting high life satisfaction)	Model 1 Odds-ratio (standard error)	Model 2 Odds-ratio (standard error)	Model 3 Odds-ratio (standard error)	Model 4 Odds-ratio (standard error)
Health indicators					
Overall/General health					
SF-36 Health rating	***				
Excellent	50.5	4.10*** (.15)	3.81*** (.15)	3.86*** (.16)	2.92*** (.17)
Very good	33.1	2.45*** (.14)	2.29*** (.14)	2.36*** (.15)	1.95*** (.15)
Good	19.5	1.46*** (.14)	1.40** (.14)	1.44*** (.15)	1.28* (.15)
Fair or poor*	11.2	-	-	-	-
Suffer from a long term health condition	***				
Yes	22.3	1.14 (.09)	1.13 (.09)	1.17 (.10)	1.17 (.10)
No*	30.9	-	-	-	-

Characteristics	Cross tabulations (% reporting high life satisfaction)	Model 1 Odds-ratio (standard error)	Model 2 Odds-ratio (standard error)	Model 3 Odds-ratio (standard error)	Model 4 Odds-ratio (standard error)
Physical health					
SF-36 physical component	***				
Low	23.8	.92 (.11)	.91 (.11)	.90 (.12)	.86 (.12)
Medium	33.2	1.04 (.09)	1.06 (.09)	1.05 (.09)	1.01 (.10)
High*	25.5	-	-	-	-
Satisfaction with current weight	***				
Very satisfied	44	1.57*** (.10)	1.63*** (.11)	1.55*** (.11)	1.40*** (.12)
Satisfied	35	1.25*** (.08)	1.29*** (.08)	1.26*** (.08)	1.18** (.09)
Neither satisfied nor dissatisfied	30.8	1.21** (.08)	1.22*** (.08)	1.20** (.08)	1.14 (.09)
Dissatisfied or very dissatisfied*	22.5	-	-	-	-
Mental health					
SF-36 mental component	***				
Low	14.8	.23*** (.11)	.23*** (.11)	.29*** (.12)	.31*** (.13)
Medium	35.1	.45*** (.09)	.44*** (.09)	.51*** (.09)	.53*** (.10)
High*	56.7	-	-	-	-
Kessler distress scale risk categories	***				
Low	36.7	1.98*** (.25)	2.07*** (.25)	2.32*** (.26)	2.26*** (.28)
Moderate	17.7	1.39 (.25)	1.43 (.25)	1.60* (.26)	1.57 (.28)
High	11.4	1.12 (.27)	1.13 (.27)	1.23 (.29)	1.20 (.30)
Very high*	8.9	-	-	-	-
Sociodemograph-ic indicators		**Not included**	**Included**	**Included**	**Included**
Socioeconomic indicators		**Not included**	**Not included**	**Included**	**Included**
Community participation indicators		**Not included**	**Not included**	**Not included**	**Included**
-2 Log likelihood		6991.67	6914.75	6313.63	5792.33
Chi-Square		926.70	1003.62	1586.23	2107.53
Number of cases	6536	6536	6536	6536	6536

Note: Sociodemographic variables included: sex; age group; speak language other than English. Family variables included: current marital status; total number of children; total number of resident children aged 0-4 years; total number of resident children aged 5-14 years; total number of resident children aged 15-24 years; and total number of resident children aged 25 years or over. Health variables included: SF-36 health rating; suffer from a long-term health condition; SF-36 physical component; satisfaction with current weight; SF-36 mental component, and Kessler distress scale risk categories. Community participation variables included: currently an active member of a community based club or association; satisfaction with feeling part of local community; and satisfaction with neighbourhood in which you live. * Next to variable names in the 'Characteristics' column indicates this is a reference category (value against which the other subsets of that variable are measured). For cross tabulations and regressions: * p < .10; ** p<.05; *** p<.01.

As Table 5.1 shows, the findings for the life satisfaction/health rating cross tabulations reveal very strong associations between better health and subsequent life satisfaction outcomes for a

number of indicators of personal health. For example, for the first indicator of general health, 'SF-36 health rating', more than half (50.5%) of those with excellent health reported high levels of life satisfaction. By contrast only 19.5 percent of those who reported good health also reported a high level of life satisfaction, and just 11.2 percent of those who rated their health as fair or poor. This finding suggests a very strong link between good overall health (self-rated) and life satisfaction. Similarly, the results displayed for the second indicator of general health, suffer from a long-term health condition', showed strong correlations between life satisfaction and whether respondents suffer from a long-term health condition. Those who suffered from a long-term health condition were considerably less likely to report high satisfaction (22.3%) as those who did not suffer from a long term condition (30.9%).

Conversely, the cross tabulations for the first indicator of physical health, 'SF-36 physical component', reveals some interesting findings. Firstly, those who scored in the medium category on the SF-36 physical component summary were the most likely to report high levels of satisfaction (33.2%). Furthermore, the results for respondents who scored low (poorer health) and high (better health) on the physical summary are similar (23.8% and 25.5% respectively). This may be partly due to issues with how the SF-36 is scored. On the other hand, findings for the next physical health cross tabulation, 'satisfaction with current weight', indicate satisfaction with one's weight is strongly linked to levels of life satisfaction. Those who were very satisfied with their weight were noticeably more likely to report high levels of life satisfaction (44%) than those who were less satisfied with their current weight status. As shown in Table 5.1, this is a gradual pattern: the less satisfied respondents were with their weight, the less likely they were to report high levels of life satisfaction. Respondents who were either dissatisfied or very dissatisfied with their current weight were the least likely to report high levels of life satisfaction (22.5%). Strong bivariate correlations were also observed for the final pair of health indicators, 'SF-36 mental component', and 'Kessler distress scale risk categories', which related to respondents' levels of mental health.

The findings for the life satisfaction/SF-36 mental component (discussed in Chapter 3) cross tabulation show strong correlations between individuals' levels of mental wellbeing and subsequent life satisfaction ratings. As was the case for the previous variable, the lower respondents scored on the SF-36 questionnaire, the lower their likelihood of reporting a high level of life satisfaction. For example, 56.7 per cent of respondents who scored high on the mental health component – indicating a high level of mental wellbeing – also reported having a high level of life satisfaction. In comparison, this figure was only 35.1 percent for

respondents who scored in the medium range on the mental component and just 14.8 percent for those who scored in the low range. Finally, the results displayed for the second mental health indicator exhibit a very strong relationship between psychological distress (measured by the Kessler distress scale risk categories) and life satisfaction, with those reporting lower psychological distress much more likely to report high levels of satisfaction (36.7%) than those in other groups. Further, individuals displaying very high levels of distress were the least likely to report high levels of satisfaction (8.9%).

The multivariate regressions for indicators of health shown in Table 5.1 show a number of significant findings. Results for the SF-36 overall health rating (Model 4) reveal respondents with excellent health were almost 3 times more likely to report high levels of life satisfaction than those whose self-reported health was either fair or poor. Furthermore, those who reported either a good or very good level of overall health were also significantly more likely to report high levels of satisfaction than individuals with either fair or poor levels of health. Similar results were found in the earlier models, although the odds-ratio values were somewhat lower in the final model. While in the case of those who reported a 'good' level of overall health, the relationship with life satisfaction was only significant at the $p \leq .10$ level in the final model, after being significant at the $p \leq .01$ and $p \leq .05$ level in the earlier models. Given that community participation indicators were added into the final model, these findings would suggest the relationship between self-rated health and self-rated life satisfaction is mediated by measures of community involvement. In the case of the second indicator of overall health 'Suffer from a long term health condition', the relationship with life satisfaction was found to be statistically insignificant.

This was also the case for the first indicator of physical health, the SF-36 physical component summary, with neither low nor medium scores associated with a greater or lesser likelihood of reporting a high level of life satisfaction, compared to respondents who scored in the high range on this questionnaire. On the contrary, in the case of the second physical health indicator, 'satisfaction with current weight', most of the findings report a positive, and significant, relationship with high life satisfaction. This means respondents who were more satisfied with their current weight were more likely to be highly satisfied with their lives than respondents who were either dissatisfied or very dissatisfied with their current weight. These findings were significant in the case of respondents who reported being either very satisfied, or satisfied with their current weight, but not those who were neither satisfied nor dissatisfied. However, once again the odds-ratio values decreased in the final model (Model 4) and the

correlation with high life satisfaction for those who were neither satisfied nor dissatisfied with their weight was initially significant in the first 3 models. This indicates that, when all indicators are controlled for, the relationship between weight and life satisfaction weakens slightly. The fact that most of these changes occur after Model 3 suggests, once again, indicators of community participation in some way mediate the association between self-reported health and self-reported life satisfaction. This point will be discussed further in the discussion chapter.

The odds ratios for the first indicator of mental health, 'SF-36 mental component', show that respondents who reported low and medium levels of mental functioning were substantially less likely to report high levels of life satisfaction than individuals who scored in the high range on this questionnaire. This was particularly true of individuals who scored in the low range. These results were significant at the $p \leq .01$ level in the case of both low and medium scores. Furthermore, the odds-ratio values do not change significantly in Model 4, after all variables were controlled for, indicating this relationship remained just as robust. In the case of the second indicator of mental health, the 'Kessler distress scale risk categories', respondents who scored in the low risk category (meaning these individuals had a lower level of psychological distress) were much more likely to report high levels of life satisfaction than respondents who reported a very high level of distress. As was the case for the SF-36 mental health indicator, the odds ratios indicate this relationship remains just as strong, even after taking all selected variables into account. In the case of individuals who reported moderate levels of psychological distress, the odds ratios indicate these respondents are somewhat more likely to report high levels of life satisfaction; however this was not statistically significant. In the case of respondents who reported a high level of distress, no significant findings were noted.

The next section of this chapter investigates these relationships for selected indicators of community participation.

5.2 Community participation and life satisfaction

The following section displays both the bivariate (cross tabulations) and multivariate (binary logit regressions) results for the selected community participation variables, outlined in Table 5.2.

Table 5.2: Bivariate relationships (cross tabulations), and binary logit regression models between levels of life satisfaction and selected community participation variables, HILDA Wave 13 (2013).

Characteristics	Cross tabulations (% reporting high life satisfaction)	Model 1 Odds-ratio (standard error)	Model 2 Odds-ratio (standard error)	Model 3 Odds-ratio (standard error)	Model 4 Odds-ratio (standard error)
Community participation indicators					
Currently an active member of a community based club or association	***				
Yes	33.7	1.16** (.06)	1.12* (.06)	1.16** (.07)	1.04 (.07)
No*	27	-	-	-	-
Satisfaction with feeling part of local community	***				
Low (0-6)	17.9	.29*** (.09)	.27*** (.09)	.33*** (.10)	.35*** (.11)
Medium (7-8)	30.3	.42*** (.08)	.41*** (.09)	.47*** (.09)	.46*** (.10)
High (9-10)*	62	-	-	-	-
Satisfaction with neighbourhood in which you live	***				
Low (0-6)	12.2	.20*** (.11)	.21*** (.11)	.23*** (.12)	.30*** (.12)
Medium (7-8)	19.1	.29*** (.07)	.30*** (.07)	.33*** (.07)	.36*** (.07)
High (9-10)*	52.1	-	-	-	-
Sociodemograph -ic indicators		**Not included**	**Included**	**Included**	**Included**
Socioeconomic indicators		**Not included**	**Not Included**	**Included**	**Included**
Health indicators		**Not included**	**Not included**	**Not included**	**Included**
-2 Log likelihood		6849.54	6777.83	6244.94	5792.33
Chi-Square		1068.83	1140.53	1654.92	2107.53
Number of cases	6536	6536	6536	6536	6536

Note: Sociodemographic variables included: sex; age group; speak language other than English. Family variables included: current marital status; total number of children; total number of resident children aged 0-4 years; total number of resident children aged 5-14 years; total number of resident children aged 15-24 years; and total number of resident children aged 25 years or over. Health variables included: SF-36 health rating; suffer from a long term health condition; SF-36 physical component; satisfaction with current weight; SF-36 mental component, and Kessler distress scale risk categories. Community participation variables included: currently an active member of a community based club or association; satisfaction with feeling part of local community; and satisfaction with neighbourhood in which you live. * Next to variable names in the 'Characteristics' column indicates this is a reference category (value against which the other subsets of that variable are measured). For cross tabulations and regressions: * p < .10; ** p<.05; *** p<.01.

As shown in Table 5.2, the first cross tabulation indicates there are significant differences in levels of self-reported life satisfaction based on whether an individual belonged to a sporting/hobby/community-based club or association. Those who were members of one or

more of these groups were considerably more likely to report high life satisfaction (33.7%) than those who were not (27%). However, these findings are not nearly as robust as those revealed in the next cross tabulation (Table 5.2), which indicates a very strong correlation between respondents' levels of satisfaction with feeling part of their local community and subsequent life satisfaction outcomes. In the case of these respondents, well over half (62%) who reported being highly satisfied with feeling part of their local community also recorded high levels of life satisfaction, compared to 30.3 per cent of those who reported medium levels and just 17.9 percent of those who reported low levels of community satisfaction.

Likewise, the results for the final community participation variable indicate a very strong association between respondents' levels of life satisfaction and their levels of satisfaction with the neighbourhoods in which they live. This finding is not surprising given the similarity of this variable to the 'feeling part of local community' item. According to these findings, those who reported high levels of satisfaction with their neighbourhood were far more likely to report high levels of overall life satisfaction (52.1%) than those who reported a medium (19.1%) or low (12.2%) level of satisfaction with the neighbourhood in which they lived.

The multivariate findings displayed in Table 5.2 indicate no significant association between voluntary group membership and subsequent life satisfaction outcomes, which contrasts with the bivariate findings. Interestingly, this finding was also significant in the first three models of the linear regression analysis, but not in the final model, which controlled for indicators of health of health. This suggests indicators of personal health in some way mediate the positive association between group membership and high levels of self-reported life satisfaction. This observation will be explored in more detail in the discussion section.

Conversely, the findings in Table 5.2 strongly supported the initial bivariate findings, indicating a strong association between respondents' levels of satisfaction with feeling part of their local community and subsequent life satisfaction ratings. According to these findings, individuals who reported either a low or medium level of satisfaction with feeling part of their local communities were substantially less likely to report high levels of life satisfaction compared to individuals who reported a high level of satisfaction with their respective levels of community involvement. These results showed little variation from the earlier models. Similar findings were observed for the remaining indicator, 'satisfaction with neighbourhood in which you live'. The odds ratios indicate, as was the case for the local community variable,

that individuals who reported low and medium levels of satisfaction with their neighbourhood were far less likely to report high levels of life satisfaction than individuals who reported a high level of satisfaction with their neighbourhood of residence.

5.3 Summary

All of the indicators (6 health and 3 community participation) measured in the bivariate sections of this chapter produced statistically significant results, when measured against levels of overall life satisfaction. Furthermore, all 9 of these were statistically significant at the $p \leq 0.01$ level. These findings suggest all of the selected variables were appropriate indicators of individual levels of life satisfaction.

This assumption was supported by the multivariate findings, which showed 6 of the 9 indicators remained statistically significant when measured against one another. Additionally, all 6 of these produced findings which were significant at the $p \leq .01$ level in the final model (Model 4), suggesting these groups of indictors tended to produce stronger relationships with life satisfaction than those observed in Chapter 4. This is confirmed by the odds-ratio values, which also tended to produce more significant deviations than those observed among significant indicators of socioeconomic and sociodemographic difference. Of these, the most significant were for the two indicators of community participation: 'satisfaction with feeling part of local community', and 'satisfaction with neighbourhood in which you live'. Respondents who reported lower levels of satisfaction in these areas were overwhelmingly less likely to report high levels of life satisfaction compared to individuals who reported high levels of satisfaction with these indicators of community life. Aside from these, two noteworthy findings were observed. For the SF-36 health rating, respondents who reported excellent overall health were nearly 3 times as likely to report a high level of life satisfaction compared to respondents who stated their health was either fair or poor. Secondly, respondents who reported a low score on the SF-36 mental component were on average only 31 per cent as likely to report a high level of life satisfaction as individuals who reported a high level of mental functioning.

In summary, measuring more complex quantitative relationships between these indictors has shown that a number of personal and social variables (measures of health and community participation) are strongly linked to levels of life satisfaction amongst a broad sample of the Australian community. Furthermore, despite much previous literature placing a strong focus

on socioeconomic and sociodemographic indicators of life satisfaction, these findings have shown measures of health and social participation are often even more pertinent in determining the main predictors of individual life satisfaction. In doing so, this research has further affirmed that studying life satisfaction is of sociological relevance, both due to its prominence as an area of study in social research, and because of the clear links between levels of self-reported satisfaction and indicators of social difference reported throughout this chapter.

The following chapter (Chapter 6) will include an in-depth discussion these findings – along with those from Chapter 4 –in relation to previous literature. This will also include a discussion of their sociological significance within the context of the two selected theoretical frameworks (outlined in Chapter 2). The chapter will then conclude by considering the limitations of the research, as well as the potential implications for future life satisfaction research.

Chapter 6: Discussion and Conclusion

The findings from chapters 4 and 5 revealed a diverse range of relationships between life satisfaction and the selected indicators of social difference. These results are discussed below in relation to previous life satisfaction literature. The discussion is divided into the four main variable categories: sociodemographic; socioeconomic; health; and community participation. Following these sections, the results are assessed against the two selected theoretical frameworks: post-materialism and social stratification. Finally, the conclusion section of this chapter provides an overview of the research findings, with particular emphasis placed on the more significant results. The limitations of the study are also provided, followed by recommendations for future research, particularly within an Australian context.

6.1 Sociodemographic findings

The results shown for the selected sociodemographic indicators (Table 4.1, Chapter 4, pp. 53-54) were generally supportive of the previous literature on these variables. For example, findings for gender found no significant differences in levels of life satisfaction between males and females. This is a result which is generally supported by previous literature (Booth & Van Ours 2008; Plagnol & Easterlin 2008; Stoeber & Stoeber 2009; Tseng 2007). These findings varied little between the earlier models and the final model, suggesting controlling for socioeconomic and additional health and community participation indicators has little influence on the multivariate relationship between gender and life satisfaction.

Likewise, the multivariate findings for age supported most previous literature (Easterlin, 2006; Frey & Stutzer 2002; Frijters et al. 2004; Gwozdz & Sousa-Poza 2009), which showed life satisfaction is higher in younger respondents compared to those who are middle aged (40-65 years in this study). However it should be noted this finding was only significant at the $p \leq .10$ level, after controlling for all selected indicators, with the pattern of p-values and odds-ratios suggesting the relationship between age and life satisfaction is moderated by indicators of socioeconomic difference and health, but not community participation. Further, while these findings do appear to contradict those of a number of authors who report a positive correlation between age and life satisfaction (Campbell, Converse & Rodgers 1976; Diener 1984; Prenda & Lachman 2001), this sample did not include respondents aged over 65 years. The positive correlation between life satisfaction and age reported in these studies tended to be driven by respondents aged between 65 and 75 years reporting the highest levels of satisfaction of any age group (Gwozdz & Sousa-Poza 2009).

The results also showed no significant differences between respondents aged between 25-39 and those aged 40-65. However, these findings do make some sense with regard to the U-shaped hypothesis: life satisfaction seems to decline steadily throughout a person's 30s and early 40s before beginning to rise again in their 50s, and continuing to rise as individuals enter their 60s. In this respect, it would not be surprising for the average level of satisfaction for individuals aged 25-39 to be similar to that observed for respondents aged 40-65, with respondents aged between their mid-30s and mid-40s likely to report the lowest levels of satisfaction.

The results for language indicated no significant relationship with high life satisfaction. This contradicts those of previous scholars (Baltatescu 2007; Safi 2010). Despite this finding, the results from Model 1 – which only controlled for other sociodemographic variables – found the correlation between language and high life satisfaction was significant at the $p \leq .01$ level. It is then only significant at the $p \leq .10$ level once socioeconomic indicators are controlled for, and no longer significant at all once health and community participation variables are added to the model. However, according to the changes in the odds-ratio values between models 2 (.84), 3 (.87) and 4 (.96), it would appear – of these final two sets of variables (health and community participation) – only community participation had any significant mediating effect.

The decrease in the odds-ratios after controlling for socioeconomic indicators is likely due, at least in part, to the gap in educational achievement and income for those who speak a language other than English, shown in Appendix B. This cross tabulation showed those who reported speaking a language other than English were more likely to be in the lowest income quintile and less likely to be in the highest quintile. This was despite individuals with a bachelor's degree or higher being significantly more likely (16.1%) to come from a non-English speaking background than those with only Year 12 (8.7%) or Year 11 or lower (4.8%). These results are consistent with the findings of Ferrante (2009), who argued that many individuals with higher levels of education are less satisfied with their lives because they may be overrating their socioeconomic prospects relative to their real life chances of labour market success (Ferrante 2009, p. 3). However, this finding also raises potential concerns about the earning potential of Australians from English speaking versus those from non-English speaking backgrounds. A related explanation for the reduced strength of the language/life satisfaction relationship after controlling for socioeconomic indicators is job satisfaction. According to the cross tabulation in Appendix B, those who reported a high level

of job satisfaction were slightly less likely to be from a non-English speaking background (8.3%) than those with a low level of job satisfaction (12.7%). Once again, consistent with the findings of Ferrante (2009), many people from non-English speaking backgrounds may be less satisfied with their occupation because they feel their level of income and/or area of work is not consistent with their qualifications.

The mediating effects of indicators of community participation can be explained by a number of factors. Firstly, Angelini, Casi and Corazzini (2015, p. 831) found a positive association between German language proficiency and life satisfaction in a sample of migrants living in Germany. Furthermore, studies by Hombrados-Mendieta et al. (2013) and Herrero, Fuente and Garcia (2011) both report a positive association between cultural assimilation and life satisfaction in migrant populations, although neither investigated these relationships in relation to language proficiency.

Another factor is differences in social participation. For example, previous research by Conley and Uslaner (2003) distinguishes between two types of people: generalised trusters and particularised trusters (Conley and Uslaner 2003, p. 335). Generalised trusters are those more likely to trust people unlike themselves and to participate in volunteering and other community activities (Rush, Healy & Arunachalam 2015, p. 63). On the other hand, particularised trusters are more likely to form social relationships with people who share similar identifying characteristics, including family, ethnicity and socioeconomic status (Rush, Healy & Arunachalam 2015, p. 63). Conley and Uslaner (2003, p. 355) claim that individuals from minority ethnic groups are more likely to rely on these forms of social networks because they are likely to feel they are not integrated into the larger community. This in turn leads them to shun more mainstream civic organisations in favour of ethnically based associations (Conley & Uslaner 2003, p. 355). Therefore, individuals from non-English speaking backgrounds will be less likely to participate in volunteering and other community related activities. Given that the results showed a strong link between community participation and life satisfaction overall, this could partly explain the small decrease in the language/life satisfaction relationship after controlling for these indicators. Another likely explanation would be that many of these respondents would have some difficulties with language, making them less able to participate in wider community activities.

Finally, the decline in the statistical significance of the language/life satisfaction relationship after accounting for community participation variables could also be – at least to some extent

– the result of migrants as well as second and third generation Australians from non-English speaking backgrounds facing discrimination. This discrimination subsequently makes these respondents more reluctant to participate in the broader community. This would support the results of Safi (2010, p. 159) who concluded that, on average, individuals from most migrant groups report lower levels of life satisfaction than non-migrants, due to the discrimination perceived by some members of these groups in the host society (Safi 2010, p. 169).

Regarding the marital status/life satisfaction relationship, the results showed a strong association between being married and reporting a high level of life satisfaction. Compared to respondents in all of the other categories (single; cohabitating; and divorced, separated or widowed), married respondents were significantly more likely to report being highly satisfied with their lives. This finding affirms much of the previous research (Di Tella et al. 2003; Glenn & Weaver 1988; Kelley & Evans 2004; Tomes 1986) on the relationship between marriage and life satisfaction. The findings also showed that cohabitating respondents were significantly less likely to report a high level of life satisfaction than those who were divorced, separated or widowed. While previous research (Kelley & Evans 2004; Brown & Booth 1996) does support the contention that cohabitating individuals are less satisfied than those who are married, it does not support the finding that they are less satisfied than divorced, separated or widowed respondents.

The results showed no significant association between the number of children a respondent has and their level of life satisfaction. A finding which partially supports some of the previous literature (Alesina et al. 2004; Clark 2006; Di Tella et al. 2003), which argues there is little or no effect of children on life satisfaction. This was despite the earlier models (Models 1-3, Table 4.1, Chapter 4, pp. 53-54) displaying significant results, with respondents who reported having one or two children in total, less likely to report a high level of life satisfaction than their counterparts with three or more children, while respondents with no children were no more or less likely to be satisfied. A close look at this table reveals the reduction in significance occurs in models 2 (socioeconomic) and 4 (community participation). In the case of socioeconomic indicators, this decline in significance can largely be attributed to differences in levels of job satisfaction between respondents with three or more children and those with one or two children. As shown in the Appendices (Appendix C), people with three or more children are proportionally speaking more likely to exhibit a high level of job satisfaction than those with one or two children. Furthermore, participants with no children were the least likely to report high levels of job satisfaction, suggesting job

satisfaction increases with number of children. Given that job satisfaction was found to be a very strong indicator of life satisfaction in the final multivariate regression model (Model 4), this finding would help to explain why respondents with one or two children were considerably less likely to report a high level of life satisfaction before its inclusion in the model.

In the case of the reduction in significance observed after accounting for indicators of community participation, cross tabulations (see Appendix C) also showed those with three or more children were more likely to be to be satisfied with their neighbourhoods of residence and experience a greater sense of belonging within their local communities. This finding would be expected given the potentially large degree of overlap between these two indicators. Furthermore, given that both of these indicators were strongly associated with levels of life satisfaction, these cross tabulations help to explain why the association between number of children and life satisfaction is weaker after their inclusion into the final multivariate model.

Likewise, when number of children is divided according to age group and resident status, the findings were generally insignificant (as reported in Chapter 4), with the exception of respondents with a child aged between 5 and 14 years. In the case of these individuals, having no resident children aged 5-14 was associated with higher levels of satisfaction than for respondents who had at least one resident child in this age group. This partially supports Nomaguchi's (2012) findings, which showed parents of children aged less than 5 years were more satisfied than parents of older children, but only with regard to the fact those with children aged 0-4 years were more satisfied than those with children aged between 5 and 14. In the case of Pollmann-Schult's (2014) contention that parents of infants and toddlers aged under 2 years receive a boost in satisfaction levels, this cannot be accurately measured by the data provided in the HILDA dataset. However, similar to Nomaguchi (2012), the fact that parents of children aged 5-14 years are less satisfied than those with children aged 0-4 years could provide partial support of Pollmann-Schult's findings.

Despite this finding, the results of this study still do not find a positive correlation between having young children (aged 0-4 years) and subsequent life satisfaction outcomes, nor any of the remaining selected age groups. A possible explanation for the contrast in findings is the difference in variable sets between this study, and Pollmann-Schult's research. For example, our study – even in the initial sociodemographic model – controlled for a range of indicators including age and language background. In contrast, the Pollmann-Schult (2014) study used

fewer variables as control dummies, and one of these was time costs of having children: an indicator not taken into account in this study.

6.2 Socioeconomic findings

The first socioeconomic indicator measured was 'highest level of education completed'. As mentioned in Chapter 5, having a higher level of education (bachelor's degree or higher) was not associated with either a greater or lesser likelihood of reporting a high level of life satisfaction compared to respondents with lower levels of education. As previously noted, this finding partially supports research by Ferrante (2009), which argued education is not positively associated with life satisfaction because people with higher levels of education overestimate their socioeconomic prospects relative to their real life chances of success in the labour market (p. 3). If this were true, we might expect to see some significant finding in the regression analyses after controlling for income. Indeed, in Model 1 (Table 4.2, pp. 58-59, Chapter 4), which controls for other socioeconomic indicators – including income – there is a slight positive correlation between education and life satisfaction. This could well lend support to Ferrante's findings, as well as those of Jimenez, Joaquin and Jimenez (2011), who found differing effects for higher education on life satisfaction according to income group. However, given that this association was only significant at the $p \leq .10$ level, and a number of other indicators were being controlled for, more substantial research on the links between education, income and life satisfaction would need to be conducted to confirm the findings of Ferrante and Jimenez et al. in the Australian context.

The finding that there is no significant relationship between education level and life satisfaction also supports the findings from the OECD better life index (OECD 2016) which showed Australia was one of the few countries where education level displayed little or no association with life satisfaction. As mentioned in the literature review section, one reason for this could be that Australia, similar to a number of Northern and Western European countries, has a generous social safety net, making higher education less essential for achieving a secure standard of living. For example, according to another OECD report, Australia has one of the highest social security-disposable income ratios, for the lowest income group, of any OECD nation (Causa et al. 2014, p. 33). It also has the highest ratio of income transfer from the richest 20% of citizens to the poorest 20% of any country in the OECD (Causa et al. 2014, p. 31, 33). This view is also supported by the finding that people who earn lower incomes are not significantly less satisfied than those in the upper income brackets (see Chapter 4).

However, these results are in contrast to previous Australian research (Powdhavee, Lekfuangfub & Wooden 2015). This can be explained by the different variable sets of the two studies. While the findings of Powdhavee et al. did include similar categories of variables including health, age, income, gender, marital status, number of children, and employment status, overall their research used fewer indicators than this research. Furthermore, their study was longitudinal, while this research used cross-sectional data.

Results for the first employment indicator, 'number of jobs' showed respondents with two or more jobs are significantly less likely to report a high level of life satisfaction, compared to individuals with only one job. This significant finding is very relevant not only in the context of this study, but also with regard to the relationship between employment variables and life satisfaction within the broader life satisfaction literature. Given that previous research on the effects of working multiple jobs on levels of life satisfaction is very limited this relationship could be investigated further in future studies on life satisfaction.

The next employment indicator, 'employment status', found respondents who worked part-time hours were no more satisfied than participants who worked full-time hours (as displayed in the cross tabulations in Table 4.2, pp. 58-59, Chapter 4). This is consistent with previous cross-sectional analysis of this relationship (Booth & Van Ours 2008). And while this result does contradict the findings of Gash, Mertens and Gordo (2010, p. 18), it should be noted their study was based on longitudinal data. Furthermore, their research focused only on females who had swapped from full-time to part-time work.

Likewise, findings for the next employment indicator, 'employment contract' show no significant relationship between a person's employment agreement and their level of life satisfaction. This result supports the research of De Cuyper and De Witte (2007), who found no significant association between the life satisfaction levels of permanent and temporary workers in Belgium, demonstrating these findings also apply in the Australian context.

This was in contrast to the findings for the final employment variable, 'job satisfaction' which, as mentioned in Chapter 4, was overwhelmingly associated with higher levels of life satisfaction, even after controlling for all indicators in the final multivariate model (Model 4, Table 4.2, pp. 58-59). This confirms a number of previous findings (Iverson & Maguire 2000; Judge & Watanabe 1993; Rice, Near & Hunt 1980) on the life satisfaction/job satisfaction relationship. They also refute the findings of Rode (2004) who observed the relationship between job and life satisfaction was no longer significant after accounting for non-work

indicators including marital status, age and health. However, his analysis also controlled for variations in self-evaluations, which were not taken into account in this study. Other reasons for the large contrast between the findings of these two studies include differences between the U.S. and Australian samples – these could include socioeconomic, sociodemographic and other cultural differences between the two countries – as well as possible differences in the age cohorts of the respective samples.

The multivariate regressions for income strongly supported the previous literature, much of which (Diener et al. 1993; Diener & Biswas-Diener 2001; Proto & Rustichini 2014) argues personal income is not strongly related to life satisfaction. These findings also support the claims of these authors that developed nations with higher levels of national wealth (GDP), such as Australia, not only tend to have high average levels of life satisfaction (as displayed in the sample characteristics section in Chapter 3), but also tend to exhibit smaller correlations between income and life satisfaction than in developing countries (Diener et al. 1993, cited in Diener & Biswas-Diener 2002, p. 119; Diener & Biswas-Diener 2001). Therefore, these findings also support Maslow's (1970) need gratification model, which postulates that once these basic needs are met, additional increases in income have less of an impact on life satisfaction (Easterlin 1974; Levin et al. 2011). This is also consistent with the theory of post-materialism, which will be discussed in more detail in relation to these findings in section 6.5.

Another partially related explanation for why higher income earners are no more satisfied than those with lower incomes could be found by looking at variations in job satisfaction – which was strongly related to life satisfaction – according to income bracket (see Appendix D). This shows that respondents in the top two income quintiles (> $74,321, & $54,862 - $74,321) are slightly less likely (25.1% and 27.7% respectively) than respondents in the lower three income quintiles to report a high level of job satisfaction. Although, it should be noted, respondents in the top income quintile were also the least likely (14.1%) to report a low level of job satisfaction. Surprisingly, respondents in the lowest income quintile were the most likely (33.1%) to report a high level of satisfaction with their current occupation. These results suggest the payoff for earning a higher salary does not completely offset the pressures that come with many higher paying, professional jobs. This could be related to individuals prioritising self-actualisation, esteem, and love and belonging – which are the needs positioned higher up Maslow's pyramid (Maslow, Frager & Fadiman 1970) – above financial needs. Because many of these higher income earning respondents are more likely to work

long hours, this could leave fewer opportunities for fulfilment outside of their working life. On the other hand, many individuals in the lowest income bracket are likely to work in part-time and/or lower skilled occupations. This potentially presents more time and opportunity for fulfilment outside of the workplace, perhaps offsetting the adverse effects of earning a lower income.

According to the income/health cross tabulations (see Appendix E), there are a number of patterns which distinguish respondents in the lowest income quintile from those in the top income bracket. Firstly, individuals in the top income quintile were substantially less likely to report a low level of mental functioning and considerably more likely to report a high level compared to respondents in the bottom quintile. Likewise, for the second indicator of mental health, 'Kessler distress scale risk categories', those in the highest income group were much more likely to be in the low risk group. They were also significantly less likely to be located in the very high risk category.

In the case of the two indicators of physical health, 'SF-36 physical component', and 'satisfaction with current weight', those with a low income are at a moderate advantage, as would be expected given the younger age profile of this group (Appendix E). However, as mentioned in Chapter 5, the SF-36 physical component, unlike the two indicators of mental health, was not significantly correlated with life satisfaction; while people in the high income bracket were at a slight advantage with regard to indicators of overall health. Therefore, those in this income group appear to be at a considerable advantage overall when it comes to indicators of health (mental and overall) which were found to significantly impact on life satisfaction. In other words, once the health disadvantages of those in the lowest income group were accounted for, respondents in this group appear to be marginally more satisfied with their lives than respondents in the top income quintile. And despite this finding falling narrowly short of statistical significance in the final model (Model 4), it is one which should warrant further investigation in future Australian research on life satisfaction.

6.3 Health findings

As mentioned in Chapter 5, findings for the first indicator of health, 'SF-36 health rating' revealed respondents who reported excellent levels of overall health were nearly three times as likely to be highly satisfied with their lives than participants with fair or poor levels of self-rated health. Furthermore, those with very good levels of health were roughly twice as likely. The multivariate results are consistent with previous research (Clemente & Sauer

1976; Dockery 2003) into the links between perceived health and life satisfaction. This result also reaffirms the findings of previous Australian research (Siahpush, Spittal & Singh 2008, p. 18), which reported a positive association between health and life satisfaction outcomes, even after controlling for additional health indicators. All of these findings reinforce the importance of good general health in order to achieve a high level of satisfaction with life.

However, there was no clear distinction in levels of satisfaction between respondents who reported suffering from a long-term condition and those who did not after controlling for additional personal health indicators (Table 5.1, Chapter 5, p. 64). The findings did not change after controlling for additional social indicators. These results contradict those of Strine et al. (2008), although Strine's research only looked at physical illnesses, whereas this indicator included all long-term health conditions (physical and mental). Furthermore, his research did not control for additional health indicators. The main conclusion of this finding is that – notwithstanding poorer levels of health and its subsequent effects on levels of life satisfaction, as displayed in the initial bivariate findings – respondents with long-term health conditions are at no disadvantage when it comes to life satisfaction outcomes compared to individuals who do not suffer from any long-term conditions.

A similar result was observed for the first indicator of physical health, 'SF-36 physical component', with results showing no significant differences in life satisfaction levels according to levels of physical wellbeing. This finding for physical health was inconsistent with the majority of previous literature (Clemente & Sauer, 1976; Diener, 1984; Melin, Fugl-Meyer & Fugl-Meyer, 2003; Mroczek & Spiro, 2005; Palmore & Luikart 1972). This is likely because a number of these studies only used a single measure of health. However, this finding did support research by Barnes et al. (2012, p. 4), which found no significant effect for physical health on life satisfaction when controlling for mental health and overall health related quality of life. These results thereby demonstrate that the findings of Barnes et al. are also applicable in an Australian context.

On the other hand, satisfaction with current weight was significantly and positively correlated with life satisfaction. This result may seem surprising given that life satisfaction and physical health – measured by the SF-36 – were not significantly related. A possible explanation can be found in the findings of Herman, Hopman and Rosenberg (2013) who noted that respondents' perceptions of their weight status were more influential in determining levels of self-reported health and life satisfaction than their actual Body Mass Index (BMI) values.

Likewise, applying their findings to this research, it would appear perceived health is even more influential in determining individual's life satisfaction ratings than their actual physical health. Especially given that the physical health items on the SF-36 questionnaire asked respondents to rate their level of functioning on a diverse array of items such as pain, energy levels and fatigue. This leaves less room for subjective evaluations of their levels of overall physical health. However, it should be noted this study did not measure participants' actual BMIs, meaning there is no way to determine with certainty how accurately participants' ratings reflected their actual weight.

An important note to take from the findings for these two physical health indicators is that perception, perhaps driven by cultural forces, can be more instrumental in determining a person's perception of their health and subsequent sense of satisfaction with life than their true level of physical wellbeing.

Likewise, the results for both indicators of mental health produced statistically significant findings. These supported the bulk of previous research (Bray & Gunnell, 2006; Desousa et al. 2008; Fergusson et al. 2015; Koivumaa-Honkanen et al. 2011; Layard et al. 2013; Murphy, McDevitt-Murphy & Barnett 2005) into the mental health/life satisfaction relationship. The fact that both of these indicators, 'SF-36 mental component' and 'Kessler distress scale risk categories' produced findings which were significant indicates that mental health was more influential in determining life satisfaction outcomes than physical health. This result supports the findings of Barnes et al. (2012).

Using both the SF-36 questionnaire and the Kessler Psychological Distress Scale (K10) to measure participants' levels of mental wellbeing was useful both in determining which scale(s) were most influential in predicting satisfaction levels, as well as in establishing the general strength of the mental health/life satisfaction relationship in a demographically representative Australian population. The results clearly show both of these measures were strongly correlated with levels of life satisfaction, although in the case of the K10, only the first indicator, 'low' was correlated with satisfaction levels. The finding that the K10 is significantly and negatively correlated with life satisfaction is consistent with the only other known Australian research by Dear, Scott and Korten (2002) to investigate this indicator in relation to life satisfaction levels. Their study collected data from a national household sample of 10,641 individuals, drawn from the 1997 National Survey of Mental Health and Well-being in Australia (Dear, Scott and Korten 2002, p. 503). Their findings remained

significant after controlling for sociodemographic indicators, employment variables, as well as indicators of both physical and mental health.

6.4 Community participation findings

Results for the indicators of community participation (Table 5.2, Chapter 5, p. 69) revealed mixed findings with relation to life satisfaction outcomes. In the case of the first indicator, 'currently an active member of a community based club or association' the results were not significant in the final model, but were significant in the first three models. This shows that the relationship between group membership and life satisfaction is mediated by indicators of health. These results are consistent with previous research by Thoits and Hewitt (2001, p. 115), which shows a positive correlation between volunteer work and six aspects of personal well-being, including both physical and mental health. However, this is the first known Australian research to establish a link between these indicators in relation to life satisfaction. As the authors of this study note, this may be due to healthier and happier people actively seeking out volunteering opportunities. But on the other hand, it may be these individuals are more likely to be targeted by individuals and organisations (Thoits and Hewitt 2001, p. 115). More research is required to understand how health mediates the relationship between volunteering and life satisfaction in an Australian context.

It would also be reasonable to conclude, given there is some degree of similarity between this indicator and the two remaining indicators of community participation, that group membership is no longer significant in the multivariate findings because they are controlling for these indicators. However, the results of Model 1, which show the correlation between group membership and high life satisfaction is significant at the $p \leq .05$ level, would suggest this is not the case. While in the case of models 2 and 3, these groups of indicators have little effect on the association between group membership and life satisfaction. Therefore, it can be concluded that health variables are the main underlying factor behind the insignificant relationship between group membership and life satisfaction observed in the final model (Model 4). A selection of crosstabs (shown in Appendix A) also reveals differences in a number of health outcomes depending on a person's group membership status. These include respondents with higher levels of mental wellbeing being more likely to be active members of a community group, along with those who reported better levels of overall health and those who were more satisfied with their current weight. On the other hand, participants suffering from a long-term health condition were less likely to be active participants in one of these

groups. Based on these results, it is now clear why the findings were no longer significant after controlling for health indicators.

Regarding the remaining indicators of community participation, 'satisfaction with feeling part of your local community', and 'satisfaction with neighbourhood in which you live', the results indicate respondents who reported low and medium levels of life satisfaction were far less likely to be highly satisfied with their lives compared to respondents who reported a high level of satisfaction with these indicators. This was the case even after controlling for an array of community participation, socioeconomic, sociodemographic and health variables. These findings are consistent with the majority of previous research on community participation and life satisfaction (Hombrados-Mendieta et al. 2013; Muilenburg-Trevino, Pittman & Holmes 2012; Prezza & Constantini 1998; Prezza et al. 2001). Furthermore, this finding was observed after controlling for group membership, which was seldom accounted for in previous research.

6.5 Post-materialism

Looking at these findings with regard to the two theoretical frameworks described in the Introduction chapter, the results indicate mixed findings. In the case of the first selected theoretical framework, the theory of post-materialism, the results discussed in chapters 4 and 5 provide solid support for this perspective. For example, traditionally materialist needs such as income are not strongly correlated with life satisfaction, while marriage – a higher order need related to personal fulfilment – is associated with higher levels of satisfaction with life. Furthermore, in the case of employment indicators including employment status and employment contract, respondents with more stable working arrangements (i.e. full-time, permanent contract job) are no more satisfied than those with less stable employment circumstances. Despite this finding, an extremely strong correlation between job satisfaction and life satisfaction was noted, which would suggest at least some materialistic need in this context. However, the fact that the remaining employment indicators – along with income – were unrelated to satisfaction levels, would suggest the link between job and life satisfaction is strongly tied to the amount of personal fulfilment individuals obtain from their careers. This point will be discussed further in the following section with regard to low income individuals.

This finding is lent support by Inglehart (1977) who first proposed the theory of post-materialism. According to his paper, people with post-materialist values are more likely to seek a feeling of accomplishment and good interpersonal relationships out of their jobs (Inglehart 1977, p. 451). On the other hand, individuals with a materialist value tendency are more likely to seek good pay and a guarantee of future employment (Inglehart 1977, p. 451). Therefore, the apparent contrast in the results for job satisfaction and income becomes clearer when viewed in terms of post-materialist theory. Many individuals are more interested in a job which provides personal fulfilment, as opposed to financial security. This finding is consistent with the scarcity hypothesis, which claims in times of economic prosperity such as those observed in the modern Western world, including Australia, life satisfaction should be connected to higher order needs such as esteem and a sense of belonging.

Despite these results, the data do not provide unanimous support for the post-materialist perspective. For example, the multivariate regression analyses found respondents with children are no more satisfied than those without, while education – a higher order, individualistic need (Inglehart 1977, p. 449) – was not associated with life satisfaction. Concerning the findings for 'total number of children' and 'number of resident children', despite being a higher order need on Maslow's hierarchy – on which Inglehart's theory is largely based – this finding is consistent within Inglehart's framework. For example, while Inglehart reports family life as a higher order need, he also notes that it is one which tends to be prioritised fairly equally by both respondents with a more materialistic orientation and those with a more post-materialistic mindset (Inglehart 1977, p. 449). Therefore, the finding that having children does not strongly influence satisfaction in one direction or the other is consistent with this perspective, as it is when analysed in terms of the Inglehart-Welzel cultural map (Inglehart & Welzel 2015). This map is based on findings from successive waves of the World Values Survey and divides the world into nine different cultural 'zones' using two major dimensions of cross-cultural variation. The map plots one of these dimensions (survival values versus self-expression values) on the x-axis, and the other (traditional values versus secular-rational values) on the y-axis. Post-materialist theory is primarily based on the former, with post-materialist nations associated with higher levels of self-expression values and lower levels of survival values.

In their analysis of these surveys (1990-1991 and 1995-1998), Inglehart and Baker (2000) list the items characteristic of nations with stronger survival values. These include items related to family formation such as, 'A woman has to have children in order to be fulfilled', and 'A

child needs a home with both a father and mother to grow up happily' (Inglehart & Baker 2000, p. 27). Therefore, nations with higher levels of self-expression are more likely to reject these more traditionalist notions of family formation. However, these findings do not necessarily equate with people who possess stronger self-expression values being significantly less in favour of having children, especially when contemporary social norms relating to family formation are taken into account. Furthermore, when combined with Inglehart's (1977) observation that people with post-materialistic world views are equally likely to value family, this variable presents somewhat of a paradox with regard to post-materialistic theory – a paradox which is reflected by the findings of this study.

However, as already mentioned, in the case of education, the results did not support the post-materialist hypothesis. Furthermore, Inglehart and Baker (2000, p. 27) find a strong correlation between survival values, and the belief that university education is more of a priority for males than for females. This finding suggests those with a self-expression (post-materialist) orientation place a high value on education for both men and women. However, as discussed earlier, the insignificant association between education and life satisfaction is likely due, in part, to individuals feeling their levels of income and overall socioeconomic status do not reflect the amount of time and resources they invested in their education. This would suggest many individuals see education as a more materialistic need. However, future research is required to provide support for this contention.

Despite these insignificant findings for education – which appear to contradict the post-materialist hypothesis – Inglehart's original (1977) research can help shed some light on this finding. Citing data from Marsh (1975, p. 25) which asked respondents to rank ten value priorities including education, income, family and health, Inglehart finds that those who identify as post-materialist are considerably more likely to rank education as one of their lowest three priorities than they are as one of their top three (Inglehart 1977, p. 449). The only distinction between them and those who identified as materialist was that the latter were relatively speaking more likely to identify education as one of their lowest three priorities. Another possibility is that those who seek education in order to fulfil higher order needs, such as self-esteem and personal fulfilment, find that these positive effects largely wear off after their studies are complete. However, more longitudinal quantitative and also possibly qualitative research is required to determine which individual higher order, post-materialist needs, are fulfilled through higher education.

There are also problems with the theory of post-materialism as it pertains to the results observed for selected indicators of health. This is because health is classified as a material need (Inglehart 1977, p. 449), so if the post-materialist hypothesis were correct, individuals should not place a high priority on it. However, it is clear that health is always going to hold some importance as it relates to personal wellbeing. Furthermore, it should be noted that while postmodern society may be able to provide for individuals economically, that is, due to wealth, generous social safety net and so forth, it cannot guarantee good health. Remembering the scarcity hypothesis component of post-materialism, that in times of greater need, individuals place a higher priority on lower order, material needs such as food, shelter and physical security, as opposed to those who have grown up in more prosperous times, who will place a greater emphasis on post-materialistic values. When it comes to health, it could be said that to some degree, need will always exist, especially as people begin to age.

On this note, it could also be that those in good health in Inglehart's study, which took place during the 1970s when postmodern values were first becoming pertinent to society, are now older people with declining health. It is naturally easier for younger people to take good health for granted. Therefore, even though this study used a different sample to Inglehart's, many of the respondents in this sample are likely to be respondents who were socialised to adopt post-materialist values, who are now placing a greater priority on their health as they begin to age and/or are diagnosed with medical conditions. Furthermore, there is a pattern in the multivariate findings for health: mental health was found to be more important than physical health. This is consistent with the theory of post-materialism – as well as Maslow's hierarchy (Maslow, Frager & Fadiman 1970) which places health on the same step of the ladder as financial and other safety needs – to some degree. Contemporary society is certainly more able to provide effective treatments and services for physical conditions, even though funding and the range of adequate treatment options available for those with mental health conditions is still somewhat limited (Harris et al. 2015; Royal Australian and New Zealand College of Psychiatrists 2010). For example, according to the Royal Australian and New Zealand College of Psychiatrists (2010), mental health only receives 8 per cent of the Australian health budget and just 3 per cent of the research budget. If it were to reflect the burden of disease, it should receive 12 per cent of the budget (Royal Australian and New Zealand College of Psychiatrists 2010). Therefore, respondents with physical health problems are able to enjoy better outcomes and prioritise higher order, postmodern values compared to those with serious mental health conditions. Also, in modern society, weight fulfils the higher

order need of esteem. This could be why weight was significantly related to levels of life satisfaction, but the SF-36 physical component summary and long-term health condition indicators were not. The importance of taking care of health needs before being able to fulfil higher order, self-fulfilling needs also explains why group membership lost its significance after controlling for health indicators.

Finally, in the case of the remaining two indicators of community participation, 'satisfaction with feeling part of your local community', and 'satisfaction with neighbourhood in which you live', as mentioned in the previous section (6.4), it was found that these variables are strongly linked to life satisfaction. This finding would appear to support post-materialist theory, given that in periods of greater material prosperity – such as the one the world has currently been in for a number of decades – individuals tend to place a greater priority on higher order needs, including relational needs connected to individual self-esteem, such as a sense of belonging.

6.6 Social stratification

By contrast, when viewing the multivariate results through the lens of social stratification theory, the pattern is more straightforward and strongly refutes this theoretical perspective. As mentioned in the literature review chapter, stratification theory refers to the social structures and processes that result in an uneven allocation of resources and assets to members of a given society (George 2010, p. 333). Also mentioned earlier, according to George, there are three primary factors which are considered the basis for social stratification in societies around the world: socioeconomic status (SES), race/ethnicity, and gender. Therefore, individuals with higher socioeconomic status, who are part of a majority ethnic and/or language group (or from an English speaking background in the context of this study), and male should be more satisfied with their lives (George 2010, p. 333). In the case of this study, respondents with higher levels of income and education were no more satisfied than people with lower status in these areas. Furthermore, no differences in satisfaction levels were observed according to a respondent's gender or language background. As mentioned in the sociodemographic and socioeconomic sections of this chapter, previous literature provides mixed evidence concerning the correlations between these indicators and subsequent life satisfaction outcomes, with the exception of language/ethnic background which is generally found to be negatively associated with life satisfaction. Therefore, my findings would appear to completely contradict stratification theory as it pertains to life satisfaction,

strongly suggesting that levels of social stratification – or disadvantage – are not linked to levels of life satisfaction.

However, a number of points should be noted. Although George (2010) lists three main areas which American stratification researchers have traditionally focused upon, the concept of social stratification can still be applied more broadly to a range of social indicators. Furthermore, it is not necessarily that social stratification is not linked to life satisfaction; rather it may be that the concept of social stratification is a malleable concept. In other words, in an age of post-materialism, where conventional measures of social status such as income and education are arguably not as relevant to one's standing in society as they once were, the categories by which people are divided into different social strata could be adapting to changes in the society around which they are organised. For example, in the case of education, one obvious reason for this is that a higher number of people are obtaining higher education qualifications, which reduces the value of these degrees as a symbol of social status. As Davis and Moore (1945, p. 141) note, there is a variable aspect to social stratification due to variations in both the conditions faced by a given society, and the internal development within that society. This also explains why some occupational positions are of greater importance in some societies than they are in others (Davis & Moore 1945, p. 141). Similarly, the social norms of societies also change with time and with them the social status of certain groups of individuals and occupations increase or decrease. For example, in contemporary society, a number of social changes including increased life chances for women, as well as legislation designed to prevent discrimination against ethnic minorities, have seen gender and ethnic background arguably become less necessary for achieving higher social status and power in relation to stratifying socioeconomic criteria such occupation, income and education. Additionally, wealthy countries, especially those with more generous social welfare systems, provide increased rates of social mobility (Blanden 2009, p. 44) and more comfortable standards of living for those with lower incomes and overall wealth.

On the other hand, it is also possible these old categories are largely relevant, but are no longer strongly linked to levels of life satisfaction, especially in societies where most individuals enjoy a relatively high standard of living. For example, as mentioned in section 6.1, respondents who spoke a language other than English were more likely to be low income earners and less likely to be high income earners, despite being significantly more likely to have obtained a bachelor's degree or higher compared to individuals from an English-speaking background. However, this finding was not correlated with lower levels of life

satisfaction for these respondents in the final multivariate model. Another example of this was an Irish study on the socio-economic stratification of life satisfaction during Ireland's most recent economic recession in 2010 (Weckroth, Kemppainen & Dorling 2017), which found varying effects of stratification before and during the economic crisis. Pre-recession, life satisfaction was stratified mostly by income. However, during the crisis, respondents from lower educational and occupational (manual workers) strata also reported lower levels of life satisfaction compared to individuals from higher socio-economic strata (Weckroth, Kemppainen & Dorling 2017). This finding supports the contention that the theory of social stratification is less relevant in determining satisfaction levels during times of economic prosperity, while simultaneously serving as a reminder that stratification can be related to life satisfaction given the right economic and social conditions.

A further point of discussion in relation to the stratification of contemporary society is the possible effects of new technology and media in creating new social strata. For example, the internet and social media are now pivotal in the formation of social networks. Therefore, those with greater access to, and superior understanding of, these technologies are going to have advantages over those who do not utilise these resources as much, such as greater access to information, a greater number of employable skills and access to employment networks. However, whether or not possessing these advantages is linked to higher levels of life satisfaction is a factor which needs to be explored in future life satisfaction research. Finally, it should be noted that this research is the first known Australian study to empirically test the theory of social stratification specifically. Although, as mentioned previously, there have been previous Australian studies that have measured variations in life satisfaction according to socioeconomic status and gender.

In summary, the binary logit regressions provide mixed evidence concerning the two selected theoretical frameworks. In the case of the theory of post-materialism, overall the results provide solid evidence for this framework. Despite this, there were some findings which conflicted with this theory, most notably education and some indicators of health. However, many of the results provided strong support for the post-materialist perspective, especially a number of socioeconomic and sociodemographic indicators. In particular, the finding that employment indicators, including income, employment status and employment contract were unrelated to life satisfaction. By contrast, job satisfaction was strongly correlated with satisfaction levels, suggesting people's job satisfaction is strongly connected to a sense of personal fulfilment and esteem, as opposed to the amount of money they make, or their

employment security. However, future research needs more indicators which gauge people's satisfaction with other, higher order, values associated with post-materialism, such as mastery (a person's sense of control over their lives), esteem, and satisfaction with the political and social lives of their nations and/or communities. In particular, mastery has been noted by numerous scholars as crucial to individual level life satisfaction outcomes. For example, Neto (2001, p. 53) notes that, "mastery was the most important factor related to life satisfaction". While Vincent and Ericson (2012, p. 7) observed that the perceived level of choice and control individuals had over their lives was the number one factor influencing life satisfaction ratings.

By contrast, results concerning the three key domains of social stratification theory – socioeconomic status (SES), race/ethnicity and gender – provided no evidence to support this theoretical framework. It could be argued this finding is characteristic of a post-materialist society, which places less emphasis on material needs such as food, shelter and economic security. Therefore, stratification theory would be more relevant in a materialist, pre-postmodern society. However, as noted, with changes in modern society some occupations and/or social groups vary in their degree of social desirability. This in turn has the potential to alter the relationship between certain social categories (or strata) and levels of life satisfaction.

6.7 Conclusion

The results of this study revealed clear links between an array of social indicators and subsequent life satisfaction outcomes. Overall, indicators of health and community participation appear to be moderately more influential in determining life satisfaction levels than sociodemographic and socioeconomic variables, although significant associations with life satisfaction were also observed for a number of these indicators. Furthermore, job satisfaction – a socioeconomic indictor – was found to be more strongly associated with life satisfaction than any of the selected indicators. Other variables found to be positively correlated with satisfaction levels included: marital status; SF-36 health rating; satisfaction with current weight; SF-36 mental component; satisfaction with feeling part of local community; and satisfaction with neighbourhood in which you live. Indicators negatively associated with life satisfaction included: age; number of resident children aged 5-14; number of jobs; and Kessler distress scale risk categories.

With regard to the sociodemographic and socioeconomic findings, the multivariate regressions provided mixed evidence for the two selected theoretical frameworks. In the case of the theory of post-materialism, a number of these indicators supported the post-materialist perspective, most notably the finding that income and work arrangements were not significantly associated with life satisfaction, despite job satisfaction being strongly correlated with satisfaction levels. It is a finding which suggests many individuals are more motivated by the non-pecuniary benefits associated with work. Furthermore, the finding that marriage was linked to a higher level of life satisfaction supports the scarcity hypothesis element of post-materialism. Closely linked with Maslow's hierarchy of needs (Maslow, Frager and Fadiman 1970), this theoretical perspective hypothesises that in periods of economic prosperity individuals will be more greatly motivated by higher order needs which provide greater levels of personal fulfilment, such as relationships and personal accomplishments. Despite these findings, education – an individualistic pursuit associated with post-materialistic values – was not significantly related to life satisfaction. As mentioned, there are a number of possible explanations for this result, which could be investigated in future Australian life satisfaction research.

In the case of social stratification theory, the sociodemographic and socioeconomic findings, outlined in Chapter 4, provided no evidence to support the three main aspects of this theoretical framework: socioeconomic status (SES), ethnicity/language, and gender. As mentioned in the discussion, this finding is not overly surprising given that social stratification would be more relevant in a materialistic society, where more emphasis is placed on economic and other material needs. However, future research should include additional indicators of social stratification and attempt to investigate the roles of new technology and media in creating social networks which can potentially lead to new forms of social stratification, and how these factors in turn influence life satisfaction outcomes.

In relation to findings for health and community participation, the regression analyses once again provided mixed findings. For example, the strong, positive correlations between feeling a sense of belonging in one's local community and neighbourhood, and subsequent life satisfaction outcomes, would appear to support the post-material hypothesis, given that in periods of greater material prosperity, individuals place more emphasis on relational needs such as a sense of belonging. By contrast, the positive associations observed between life satisfaction and most of the selected indicators of health – traditionally considered a material need – would appear to contradict the post-materialist hypothesis. Although, as noted in the

discussion chapter, the significant correlation between 'satisfaction with current weight' and life satisfaction, could be seen as evidence supporting the post-material perspective. Furthermore, given that life satisfaction is a self-rated, subjective measure of a person's well-being, it is not surprising to find a link with mental health levels.

Finally, with regard to social stratification theory, these indicators are generally not included within the conventional social stratification framework. However, it could be argued better health – and certainly living in a more desirable community – could be seen as indicators of social status. Therefore, it could be argued these indicators lend some support to the social stratification perspective.

6.7.1 Limitations

This research contained three main limitations. One of these was that the data used to analyse the selected variables was extracted from a secondary source – the HILDA survey. One of the main drawbacks of this was that the item used to measure life satisfaction, 'All things considered, how satisfied are you with your life?' was the only item this study was able to use to determine respondents' satisfaction levels. Another problem with using data from this secondary source was that the HILDA survey was not designed primarily for collecting data on life satisfaction. It should also be noted that the life satisfaction question was only one of several items used to gauge respondents' overall levels of satisfaction.

Secondly, although HILDA is a longitudinal data set, this research only used cross-sectional data from what was at the time of collection the most recent available wave of this survey (Wave 13, 2013). This meant the obvious disadvantage of not being able to measure variations in the observed relationships between variables over an extended period of time.

Finally, after testing the selected indicators of health for association, it was found that these variables, generally, were highly correlated with one another. This finding presents potential difficulties regarding the validity of these findings, which should be noted in future research.

6.7.2 Directions for future research

The findings of this study present many possibilities for future research on life satisfaction, particularly in an Australian context. The first of these concerns the findings for number of children, which contradicted the bulk of previous research which reported a negative correlation between children and life satisfaction after controlling for marital status and other

key sociodemographic variables. Although these results found no significant association between this indicator and life satisfaction, both in terms of total number of children and number of resident children divided by age group, future studies could consider only measuring this indicator for individuals aged 25 years and over. Future research could also investigate differences in satisfaction levels according to number of children, based on variations in partnership status and family type, in more detail. Another area for consideration, based on the sociodemographic findings, is the role of cohabitation in determining satisfaction levels. Surprisingly, this study found cohabitating respondents were significantly less satisfied than those who were divorced, separated or widowed, who in turn were considerably less satisfied than married respondents. This suggests a very large gap between married and cohabitating participants in terms of life satisfaction. This poses the question of whether cohabitation is desirable. However, it is possible the small number of respondents who were listed as cohabitating may have influenced these results. Given these factors, more research is needed on this indicator in relation to life satisfaction outcomes.

Concerning socioeconomic findings, the most significant result was the strength of the correlations between job and life satisfaction, despite income and the remaining selected employment indicators – excluding number of jobs – not being associated with rates of life satisfaction. This finding could have very important implications for employment policy and the subsequent employment arrangements of Australian workers. It is imperative future life satisfaction research uncovers more about what people are looking for in a satisfying job, and whether this is linked to age cohort differences. Another key finding was the negative association between working more than one job and subsequent life satisfaction outcomes, most notably because this was the first known empirical research to measure the correlation between this indicator and life satisfaction.

With regard to these findings, more research is required to verify the post-material hypothesis. This includes more indicators which gauge people's satisfaction with post-material values, such as mastery (Diener & Diener 1995; Neto 2001; Vincent & Ericson 2012; Yetim 2003), esteem, belonging, and satisfaction with the political and social life of their respective nations and communities. Future research should also distinguish between income and total wealth, with previous studies (Diener & Biswas-Diener 2001; Headey, Muffels & Wooden 2004) finding the latter to be more relevant in determining satisfaction levels.

Regarding the health/life satisfaction relationship, there are three important points to be taken from this research. Firstly, findings from the two physical health indicators (SF-36 physical component summary, and satisfaction with current weight) imply that perception, perhaps driven by cultural forces, can be more instrumental in determining a person's evaluation of their health and subsequent sense of satisfaction with life than their true level of physical wellbeing. Given this importance, it is worth pursuing deeper investigation in the future. Secondly, the strong association between life satisfaction and mental health reaffirms the importance of these indicators in determining a person's satisfaction with life. Therefore, future research could have an increased emphasis on mental health in health funding and/or research, especially given the current lack of funding for mental health services relative to physical health (Royal Australian and New Zealand College of Psychiatrists 2010). And thirdly, more research is required to understand how health mediates the relationship between volunteering and life satisfaction in an Australian context, based on the findings for group membership, discussed in section 6.4 of this chapter. This section also confirmed the importance of satisfaction with one's local community in creating positive life satisfaction outcomes.

In summary, a number of significant causal links between life satisfaction and indicators of socioeconomic and sociodemographic difference were established which could be of great relevance in future life satisfaction research. This was also the case for indicators of health and community participation; although, as mentioned earlier, health and community participation variables were moderately more influential in determining variations in life satisfaction rates overall. Regarding the two selected theoretical frameworks, the findings strongly suggest post-materialism could be a pertinent theoretical framework for understanding the links between life satisfaction and social indicators in future research. By contrast, social stratification theory appears largely irrelevant for understanding these relationships within the current social climate, but may become more relevant if societal conditions were to revert to a more materialistic value orientation.

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Appendices: Cross tabulations between selected indicators

Appendix A: Bivariate relationships (cross tabulations) between group membership and selected health and community participation variables, HILDA 2013.

Currently an active member of a community based club or association	Yes %	No %	Total %
SF-36 Health rating			
Excellent	45.7	54.3	100
Very good	38.4	61.6	100
Good	30.3	69.7	100
Fair or poor	27.8	72.2	100
Suffer from a long term health condition			
Yes	30.6	69.4	100
No	37	63	100
SF-36 Physical Component			
Low	33.4	66.6	100
Medium	37.4	62.6	100
High	34.7	65.3	100
Satisfaction with Current Weight			
Very satisfied	42.9	57.1	100
Satisfied	37	63	100
Neither satisfied nor dissatisfied	36.6	63.4	100
Dissatisfied or very dissatisfied	33.4	66.6	100
SF-36 Mental Component			
Low	31.2	68.8	100
Medium	38.7	61.3	100
High	40.8	59.2	100
Kessler distress scale risk categories			
Low	38.6	61.4	100
Moderate	33	67	100
High	28.6	71.4	100
Very High	21.9	78.1	100
Satisfaction with feeling part of local community			

Low (0-6)	28.4	71.6	100
Medium (7-8)	39.6	60.4	100
High (9-10)	48	52	100
Satisfaction with neighbourhood in which you live			
Low (0-6)	29.5	70.5	100
Medium (7-8)	35.2	64.8	100
High (9-10)	39.7	60.3	100

Appendix B: Bivariate relationships (cross tabulations) between language and selected socioeconomic indicators, HILDA 2013.

Speak language other than English	Yes %	No %	Total %
Employment contract			
Employed on a permanent or ongoing basis	9.7	90.3	100
Employed on a fixed term contract or casual basis	10.2	89.8	100
Employment status			
Full-time	9.6	90.4	100
Part-time	10.3	89.7	100
Number of jobs			
Two or more	10.5	89.5	100
One	9.8	90.2	100
Highest level of education completed			
Bachelor's degree or higher	16.1	83.9	100
Advanced diploma, diploma or certificate III or IV	6.6	93.4	100
Year 12	8.7	91.3	100
Year 11 or below	4.8	95.2	100
Total disposable annual income			
(≤$27, 092)	11.8	88.2	100
($27,092 - $42,422)	9.2	90.8	100
($42,422 - $54,862)	10.1	89.9	100
($54,862 - $74,321)	9.9	90.1	100
(> $74,321)	8.2	91.8	100
Job satisfaction			
Job satisfaction [Low (0-6)]	12.7	87.3	100
Job satisfaction [Medium (7-8)]	9.7	90.3	100
Job satisfaction [High (9-10)]	8.3	91.7	100

Appendix C: Bivariate relationships (cross tabulations) between total number of children and selected indicators, HILDA 2013.

Total number of children	None %	1-2 %	3 or more %	Total %
Job satisfaction				
Job satisfaction [Low (0-6)]	47.1	37.4	15.5	100
Job satisfaction [Medium (7-8)]	43.1	39.1	17.7	100
Job satisfaction [High (9-10)]	39.5	39.1	21.4	100
Currently an active member of a community based club or association				
Yes	46.1	35	19	100
No	41	41	18.1	100
Satisfaction with feeling part of local community				
Low (0-6)	48.7	37.1	14.2	100
Medium (7-8)	38.6	40.9	20.5	100
High (9-10)	36.8	38.2	25	100
Satisfaction with neighbourhood in which you live				
Low (0-6)	48.7	35.2	16.1	100
Medium (7-8)	41.2	40.8	18	100
High (9-10)	42.4	37.5	20.1	100

Appendix D: Bivariate relationships (cross tabulations) between job satisfaction and selected socioeconomic indicators, HILDA 2013.

Job satisfaction	Low %	Medium %	High %	Total %
Total disposable annual income				
(≤$27, 092)	19.3	47.6	33.1	100
($27,092 - $42,422)	19.4	50.9	29.7	100
($42,422 - $54,862)	18.8	51.7	29.5	100
($54,862 - $74,321)	17.2	57.8	25.1	100
(> $74,321)	14.1	58.3	27.7	100
Highest level of education completed				
Bachelor's degree or higher	16.8	58.9	24.3	100
Advanced diploma, diploma or certificate III or IV	18.6	50.7	30.7	100
Year 12	18.2	53.5	28.3	100
Year 11 or below	17.6	46.6	35.8	100
Number of jobs				
Two or more	18.2	53.7	28.1	100
One	17.7	53.2	29.1	100
Employment status				
Full-time	17.3	55.8	26.9	100
Part-time	18.7	48	33.2	100
Employment contract				
Employed on a permanent or ongoing basis	16.6	55	28.4	100
Employed on a fixed term contract or casual basis	20.3	49.3	30.5	100

Appendix E: Bivariate relationships (cross tabulations) between total disposable annual income and selected health indicators, HILDA 2013.

Total disposable annual income	≤ $27,092 %	$27,092–$42,422 %	$42,422–$54,862 %	$54,862–$74,321 %	> $74,321 %	Total %
Age group						
15-24	61.2	22.3	12.4	3.3	0.8	100
25-39	10.5	19.5	25.9	24	20.1	100
40-65	10.1	19.3	18.9	24.3	27.5	100
SF-36 health rating						
Excellent	22	17.8	18.8	17.2	24.1	100
Very good	20.3	18.5	19	20.9	21.4	100
Good	18.7	21.7	22	20.5	17.1	100
Fair or poor	18.9	23.8	19.4	20.6	17.4	100
Suffer from a long-term health condition						
Yes	19.8	21.9	20.3	21.2	16.8	100
No	20.1	19.6	19.9	19.8	20.7	100
SF-36 physical component						
Low	19.3	20.9	21.6	21.1	17.1	100
Medium	18.8	19.3	19.7	20.2	22	100
High	25.2	20.9	18.4	17.9	17.7	100
Satisfaction with current weight						
Very satisfied	25.2	15.5	19.6	18.2	21.5	100
Satisfied	19.9	19.8	20.7	18.9	20.6	100
Neither satisfied nor dissatisfied	22.9	21.3	19.3	18.1	18.5	100
Dissatisfied or very dissatisfied	17.5	20.3	20	22.1	20.1	100
SF-36 mental component						
Low	22.6	21.7	19.9	19.1	16.7	100
Medium	18.1	18.6	20.4	21.4	21.4	100
High	18.7	19.5	18.7	18.1	25.2	100
Kessler distress scale risk categories						
Low	17.7	18.8	19.8	20.6	23	100
Moderate	22.2	21.3	20.4	20.6	15.4	100
High	26.4	24.6	19.8	16.8	12.5	100
Very high	32.9	22.4	21.9	14.3	8.4	100

Appendix F: Bivariate relationships (cross tabulations) between long-term health condition and selected health indicators, HILDA 2013.

Suffer from a long-term health condition	Yes	No	Total
SF-36 health rating			
Excellent	4.8	95.2	100
Very good	10.5	89.5	100
Good	22.5	77.5	100
Fair or poor	50.4	49.6	100
SF-36 physical component			
Low	39.3	60.7	100
Medium	10.7	89.3	100
High	8.2	91.8	100
Satisfaction with current weight			
Very satisfied	12.8	87.2	100
Satisfied	14.7	85.3	100
Neither satisfied nor dissatisfied	16.7	83.3	100
Dissatisfied or very dissatisfied	21.1	78.9	100
SF-36 mental component			
Low	23.7	76.3	100
Medium	12.8	87.2	100
High	17.2	82.8	100
Kessler distress scale risk categories			
Low	13.6	86.4	100
Moderate	21.1	78.9	100
High	30.4	69.6	100
Very high	43	57	100

Appendix G: Bivariate relationships (cross tabulations) between SF-36 physical component and selected health indicators, HILDA 2013.

SF-36 physical component	Low	Medium	High	Total
SF-36 health rating				
Excellent	20.6	56.7	22.7	100
Very good	34.1	52.9	13.1	100
Good	49.9	41.4	8.8	100
Fair or poor	68.7	25.9	5.4	100
Suffer from a long-term health condition				
Yes	58	34	8	100
No	19.4	61.3	19.3	100
Satisfaction with current weight				
Very satisfied	18.6	58.4	23	100
Satisfied	21.1	61.1	17.8	100
Neither satisfied nor dissatisfied	25.2	57	17.8	100
Dissatisfied or very dissatisfied	31.3	53.1	15.5	100
SF-36 mental component				
Low	27.3	43.3	29.4	100
Medium	21.7	66.9	11.3	100
High	40	59.9	0.1	100
Kessler distress scale risk categories				
Low	23	64	13	100
Moderate	31	46.8	22.2	100
High	33.6	34.6	31.9	100
Very high	40.1	30	30	100