

## ABSTRACT

Title of Document:                   ESSAYS ON THE RELATIONSHIP BETWEEN  
INCOME AND LIFE SATISFACTION IN THE  
UNITED STATES

Kendall Swenson, Doctor of Philosophy, 2015

Directed By:                         Carol Graham  
School of Public Policy and Brookings Institution

This dissertation presents three essays concerning the relationship between income and life satisfaction in the United States. The first essay examines whether the receipt of income assistance from public and private sources predicts life satisfaction. It identifies a negative association between the receipt of income assistance from government and private sources and life satisfaction, and finds that the association remains significant even after controlling for family income and other factors. The negative association between the receipt of income assistance and life satisfaction continues to exist across most of the income distribution, although the correlation is more uncertain for respondents in the very lowest income quartile. Another noteworthy finding from this essay is that income assistance from non-governmental sources is just as predictive of lower life satisfaction scores as is assistance from government means-tested welfare programs

The second essay examines whether consumption is a better predictor of life satisfaction than is income. The essay finds that income and consumption are both predictors of life satisfaction, but that several other factors are even more predictive of well-being. In the full regression models health, marriage, and unemployment are much more predictive of life satisfaction than either income or consumption.

The third essay examines the link between childhood family incomes and future life satisfaction. To analyze this topic, longitudinal data from the PSID is used to obtain mean family incomes when people were ages 13 to 17 between 1968 and 1994 and examines the life satisfaction of these individuals as adults in 2011. The primary finding from this essay is that the family incomes of youths are not strongly predictive of their future life satisfaction scores.

ESSAYS ON THE RELATIONSHIP BETWEEN INCOME AND LIFE  
SATISFACTION IN THE UNITED STATES

By

Kendall Swenson

Dissertation submitted to the Faculty of the Graduate School of the  
University of Maryland, College Park, in partial fulfillment  
of the requirements for the degree of  
Doctor of Philosophy

2015

Advisory Committee:  
Professor Carol Graham, Chair  
Professor Katharine Abraham  
Professor Christopher Foreman  
Professor Steven Heeringa  
Professor Phillip Swagel

© Copyright by  
Kendall Swenson  
2015

## **Acknowledgements**

Like all PhD students, I received considerable support from a great number of people whom I would like to acknowledge. My thesis advisor, Carol Graham, was especially vital to my studies and a great mentor. I had much more confidence in my research knowing that I was working with her. It's hard to imagine a better advisor to shepherd me through the dissertation process.

I also benefitted greatly from working with the other members of my committee. Few graduate students have the opportunity to work with a world class statistician like Steven Heeringa and he provided me with guidance that would be difficult to obtain elsewhere. I was also fortunate to have Phillip Swagel, Christopher Foreman, and Katharine Abraham on my committee as well. They are great professors and I benefited from their counsel.

In addition to my help at the University of Maryland, I also received support from a number of professionals and scholars in the social welfare field. James Sullivan, Sara Kimberlin, and Thesia Garner provided great methodological suggestions for constructing a measure of consumption. Linda Giannarelli and Laura Wheaton at the Urban Institute provided a lot of technical assistance when I needed help estimating the market values of social welfare programs. Charles Nelson, Edward Welniak, Kathleen Short, and Fritz Scheuren, my colleagues at the U.S. Census Bureau, were also crucial and supportive throughout my studies. Christopher Wimer, Shanshan Li, and Scott Winship were especially helpful when I developed my research methodology.

I also received considerable support and assistance from my colleagues in the Office of the Assistant Secretary for Planning and Evaluation (ASPE) at the United States Department of Health and Human Services. Ann McCormick, Susan Huan, Laura Chadwick, and Joan Turek were particularly supportive and encouraging. My fellow students at the University of Maryland were supportive and valuable throughout my course work, examinations, and dissertation research. Finally, I had unwavering support from my family and friends.

College Park Maryland

April 15, 2015

# Table of Contents

Acknowledgements.....	ii
Table of Contents .....	iv
List of Tables .....	v
List of Figures .....	vii
Chapter 1: The Relationship between Income Assistance and Life Satisfaction.....	1
1.1 Introduction.....	1
1.2 Literature Review .....	2
1.3 Methodology.....	12
1.4 Results.....	20
1.5 Discussion.....	32
Chapter 2: The Relationship between Consumption and Life Satisfaction .....	37
2.1 Introduction.....	37
2.2 Literature Review .....	39
2.3 Methodology.....	47
2.4 Results.....	53
2.5 Discussion.....	64
Chapter 3: The Intergenerational Influence of Income on Life Satisfaction .....	68
3.1 Introduction.....	68
3.2 Literature Review .....	69
3.3 Methodology.....	75
3.4 Results.....	81
3.5 Discussion.....	93
Appendix Tables .....	96
Bibliography .....	109

## List of Tables

Table 1.1: Sources of Income Assistance Included in Family Income.....	16
Table 1.2: Characteristics of Respondents in the PSID Compared to Population Estimates of Persons Ages 18 and Older in the CPS-ASEC.....	22
Table 1.3: Characteristics of Respondents in the PSID by Whether Their Families Received Any Income Assistance in the Prior Year .....	23
Table 1.4: Percent Distribution of Life Satisfaction Scores by Receipt of Any Assistance during the Previous Year.....	25
Table 1.5: Ordered Logistic Model Predicting Life Satisfaction with a Dummy Variable Indicating Receipt of Any Assistance in the Prior Year.....	29
Table 1.6: Ordered Logistic Model Predicting Life Satisfaction Including Interaction Variables for Income Quartiles and Receipt of Assistance.....	30
Table 1.7: Ordered Logistic Models Predicting Life Satisfaction Using Family Equivalent Income and Receipt of Assistance from Specific Sources of Assistance .....	31
Table 2.1: Mean Consumption Amounts by Category .....	55
Table 2.2: Mean Life Satisfaction Scores, After-Tax Income, and Consumption.....	57
Table 2.3: Ordered Logistic Model Predicting Life Satisfaction with Income.....	60
Table 2.4: Ordered Logistic Model Predicting Life Satisfaction with Consumption .	61
Table 2.5: Ordered Logistic Models Predicting Life Satisfaction Using Alternative Definitions of Equivalent Consumption.....	63
Table 3.1: Characteristics of Respondents Ages 32 to 56 in the 2011 PSID Wave ...	82
Table 3.2: Ordered Logistic Model Predicting Life Satisfaction Using Nominal Income (\$2010) .....	89
Table 3.3: Ordered Logistic Model Predicting Life Satisfaction with a Variable Indicating Intergenerational Increase in Nominal Income (\$2010) .....	91
Table 3.4: Ordered Logistic Model Predicting Life Satisfaction Using Relative Income Centiles.....	92
Appendix Table 1.1: Percent Distribution of Life Satisfaction Scores by Family Income (SE in Parenthesis) .....	96
Appendix Table 1.2: Mean Life Satisfaction Scores by Family Income .....	96
Appendix Table 1.3: Ordered Logistic Model Predicting Life Satisfaction with a Dummy Variable Indicating Receipt of Any Assistance in the Prior Year <sup>97</sup>	97
Appendix Table 1.4: OLS Model Predicting Life Satisfaction with a Dummy Variable Indicating Receipt of Any Assistance in the Prior Year .....	98

Appendix Table 2.1: Additional Expenditure Means .....	99
Appendix Table 2.2: Mean Life Satisfaction Scores by Equivalent Consumption Amounts .....	99
Appendix Table 2.3a: Mean Life Satisfaction Scores by Equivalent Income Quintile .....	100
Appendix Table 2.3b: Mean Life Satisfaction Scores by Equivalent Consumption Quintile.....	100
Appendix Table 2.4: OLS Model Predicting Life Satisfaction with Income .....	101
Appendix Table 2.5: OLS Model Predicting Life Satisfaction with Consumption..	102
Appendix Table 3.1a: Respondents' Family Income Quintiles as Adults (2003-2011) by Their Parents' Average Family Income Quintiles When They Were Ages 13-17 (Percentages).....	103
Appendix Table 3.1b: Respondents' Family Income Quintiles as Adults (2003-2011) by Their Parents' Average Family Income Quintiles When They Were Ages 13-17 (SE) .....	103
Appendix Table 3.2a: Mean Life Satisfaction Score by Equivalent Family Nominal Incomes When Ages 13-17 .....	104
Appendix Table 3.2b: Mean Life Satisfaction Score by Equivalent Family Nominal Incomes as Adults in 2003-2011 .....	104
Appendix Table 3.3a: Mean Life Satisfaction Score by Equivalent Family Income Quintiles When Ages 13-17 .....	105
Appendix Table 3.3b: Mean Life Satisfaction Score by Equivalent Family Incomes Quintiles as Adults in 2003-2011 .....	105
Appendix Table 3.4a: OLS Model Predicting Life Satisfaction with Income.....	106
Appendix Table 3.4b: OLS Model Predicting Life Satisfaction with Income .....	107
Appendix Table 3.4c: OLS Model Predicting Life Satisfaction with Income.....	108

## List of Figures

Figure 1.1: Percent Distribution of Life Satisfaction Scores by Receipt of Any Income Assistance during the Previous Year .....	25
Figure 1.2: Percent Distribution of Life Satisfaction Scores by Equivalent Family Income .....	26
Figure 1.3: Mean Life Satisfaction Scores by Annual Equivalent Family Income ....	27
Figure 2.1: Mean Life Satisfaction Scores by Equivalent Consumption Amounts ....	58
Figure 2.2: Mean Life Satisfaction Scores by Equivalent Income and Equivalent Consumption Quintile .....	58
Figure 3.1: Respondents' Family Income Quintiles as Adults (2003-2011) by Their Parents' Income Quintiles When They Were Ages 13-17 .....	84
Figure 3.2: Mean Life Satisfaction Scores in 2011 by Respondents' Equivalent Family Incomes as Youths (Ages 13-17) and As Adults (2003-2011) ....	86
Figure 3.3: Mean Life Satisfaction Scores in 2011 by Respondents' Equivalent Family Income Quintiles as Children (Ages 13-17) and As Adults (2003-2011).....	86

# Chapter 1: The Relationship between Income Assistance and Life Satisfaction

## 1.1 Introduction

Recent scholarly publications have observed a positive correlation between income and several dimensions of subjective well-being (SWB). These associations are consistently found in a variety of contexts and across different populations, although there remains considerable discussion regarding the underlying causes of the association and whether absolute or relative income is the primary explanatory factor in the relationship. In the context of the United States, much of the extant literature addressing this connection has studied income using a relatively simple set of survey questions that may not provide a full illustration of a household's financial situation. For example, many of the surveys used to study subjective well-being ask their respondents for their total personal or household income and lack discrete questions to document the sources of their incomes. This essay expands our understanding of this issue by examining the influence of means-tested government transfers on life satisfaction, one type of subjective well-being, using the rich income data from the U.S.-based Panel Survey of Income Dynamics (PSID). Specifically, the essay addresses the following question:

*Does the receipt of income assistance from public and private sources influence the relationship between income and life satisfaction?*

The findings from this essay are important because people may feel different about their lives based on their sense of self-sufficiency and whether their professional accomplishments meet their expectations. Participation in public

assistance and other social programs sometimes brings stigma and many recipients of social transfers encounter various challenges associated with having to interact with social service agencies. People that are not self-sufficient could also have less self-worth and feel a lack of purpose. These combined factors could theoretically reduce the life satisfaction of program recipients. On the other hand, if social welfare benefits are able to reduce various types of hardships then the transfers could have as much of a positive effect on the subjective well-being of their recipients as do earnings. This essay begins with a review of the literature regarding the relationship between income and subjective well-being and follows with an analysis using descriptive statistics and ordered logistic models. The results from this essay are consistent with the hypothesis that people who receive income assistance have lower life satisfaction scores, on average, than respondents who do not receive assistance. The negative correlation between income and assistance does not appear to be impacted by whether the income assistance is received from government or from private sources.

## **1.2 Literature Review**

Subjective well-being is often considered a field of study consisting of several components (Diener, Suh et al. 1999). A recent report from the National Academy of Sciences defined several of these classifications (Stone, Bradburn et al. 2013). Experienced well-being (ExWB) is focused on emotions and sensations such as pain, arousal, sadness, stress, and enjoyment. The NAS panel argued that both positive and negative emotions are important components of ExWB and they may occur at the same time. Evaluative well-being, another component of SWB and the construct

analyzed in this essay, reflects how satisfied and fulfilled people are with their lives. While experienced well-being and evaluative well-being overlap and correlate to some degree, many scholars prefer to conceptualize the two constructs as “distinct dimensions” (Schimmack 2008). For example, the act of helping others or caring for sick family members may bring great value to someone in terms of life satisfaction or global happiness but these acts are not always enjoyable on a moment-to-moment basis (Kahneman and Krueger 2006, Stone, Bradburn et al. 2013). In general, the literature suggests that life satisfaction associates better with external factors such as income, while ExEB measures correlates better with personality (Diener, Ng et al. 2010, Stone, Bradburn et al. 2013). For instance, unemployed people often report lower life satisfaction even when they do not experience changes to their momentary emotional states of pain or comfort.

The term “happiness” is also common in the subjective well-being literature, but has a less precise definition and has been used in connection with both transitory emotional states and overall life evaluations. An example of a happiness question that is similar to a life satisfaction question is from the General Social Survey (GSS) which asks its respondents “Taken all together, how would you say things are these days—would you say that you are very happy, pretty happy, or not too happy?” Although question wording appears to alter people’s answers to SWB questions in many cases, global happiness measures and life satisfaction have been shown to correlate fairly well in this context (Graham and Pettinato 2002, Blanchflower and Oswald 2004). On the other hand, the term happiness also can be used in an ExWB context such as “how happy are you with your pain level at this moment”.

A current topic of conversation is the extent to which income and wealth influence experienced and evaluative well-being. There are several reasons to theorize how income could influence life satisfaction. The classic, and most dominant, theory for linking pecuniary outcomes and life satisfaction is that people feel more satisfied with their lives when they placate their desires for consuming goods and services. This theory is particularly salient because people across the globe bestow a considerable amount of emphasis on obtaining income through schooling, training, and labor. Income could also influence life satisfaction if it increases liberty and choice, or if it assists in goal fulfillment. In many societies income improves people's agency to live in the places and to participate in the political and social organizations they desire. Income may provide people with respect in their communities and for some people may be linked with the achievement of personal and family goals. In addition to enabling the acquisition of goods and services, income and wealth may also increase life satisfaction by providing a sense of security or stability. For instance, an elderly couple may experience a greater piece of mind knowing they are unlikely to outlive their assets even if they never consume the majority of their savings.

Despite the widespread observation that humans constantly desire additional income, even when they have already met basic necessities, the empirical evidence documenting the association between income and well-being has been mixed. Much of the recent scholarship on the relationship has been influenced by the seminal work of Richard Easterlin (1974) who compared the per capita gross national product (GNP) of several nations to their personal happiness ratings derived from survey

responses. He found that income was positively associated with self-reported happiness for individuals living within the same countries, but that there was less association between average happiness scores and national income across countries. He also found that as countries increased their wealth they didn't necessarily get happier. These findings became known as the "Easterlin paradox" and his study has invited a considerable amount of debate that extends to the present.

Some evidence suggests that Easterlin's findings may at least partly be attributable to the methods and data that he used. For example, some authors have noted that logged incomes (i.e., percent changes in income) are more likely to be associated with subjective well-being in regression models than absolute incomes (Deaton 2008). This means that upper income persons may need larger nominal increases in income to improve SWB than lower-income persons, but that income and well-being are still correlated. Another set of findings suggest that the association between income and well-being is greater when alternative data is used. This appears to be particularly true when the association is measured with the more recent data collected from the Gallup World Poll, which uses a different question wording and includes more observations from developing countries than what was included in Easterlin's original analysis (Stevenson and Wolfers 2008). Moreover, some previous studies used data that were overrepresented by countries that were formerly part of the Soviet Union, which had lower mean life satisfaction scores than other developing countries (Deaton 2008).

The most recent evidence reveals that richer nations, on average, have higher levels of SWB than less affluent countries, at least until a certain minimal income

level is reached. The minimum levels are often referred to as satiation points and vary across studies and data sources. For example, an analysis from Frey and Stutzer (2002) from the World Values Survey in the 1990s found that the association between national income and happiness was strongest for incomes under \$10,000. In contrast, using more recent data from the Gallup World Poll (Deaton 2008) found that larger national incomes were associated with increases in well-being, even at the upper end of the income distribution, and an article by Stevenson and Wolfers (2008) came to similar conclusions using data from several surveys.

Recent analysis also has reexamined Easterlin's finding that individuals within a specific geographic location show positive associations between income and well-being, although the strength of the correlation varies across studies and is sometimes found to be weak (Diener 2009). Similar to studies examining SWB using countries as units of analysis, studies of individuals sometimes find levels of satiation. For example, Kahneman and Deaton (2010) estimate that additional incomes above \$75,000 are not associated with additional emotional well-being but are correlated with improved life evaluations, even at the higher income levels. Other studies do not observe a satiation level. Lucas and Schimmack (2009) examine data from the World Values Survey and the German Socio-Economic Panel Study (GSOEP) and find that, although the correlation between income and well-being is not large when considering small changes in income, the effect of income becomes greater when comparing larger discrepancies in income between the rich and the poor.

Some studies have examined how changes in people's fortunes affect their well-being. Using data from the longitudinal German Socio-economic Panel (GSOEP) Di Tella, Haisken-De Ne et al. (2010) examined the long-term effects of changes in income and status at work. While the authors were not able to reject the hypothesis that income did not increase happiness, they did find that increases in status appear to have had longer positive impacts on happiness than increases in income. Other studies have examined well-being using a natural experiment of lottery winners. An early study by Brickman et al. (1978) found that lottery winners were not significantly happier with their winnings compared to a control group, although two similar studies found the opposite result (Smith and Razzell 1975, Gardner and Oswald 2007).

The literature has examined whether the association between income and well-being could be influenced, or possibly explained, by other economic and sociological factors. One of the factors considered is unemployment, which is consistently found to be negatively associated with well-being. For example, using data from the German Socio-Economic Panel Winkelmann and Winkelmann (1998) found that unemployment has a harmful effect on subjective well-being and the losses in income resulting from the absence of work appear to be only a minor factor influencing the relationship. Studies using data from other countries also have found a detrimental effect of unemployment on well-being, including data from a British Household Panel Survey, a panel of Swedish youth, and data from the Panel Study of Income Dynamics (PSID) in the United States (Korpi 1997, Clark and Oswald 2002, Young 2012).

The literature has found that factors outside of the economic sphere may be important to consider when examining subjective well-being. Scholars have noticed a “U-Shape” correlation between SWB and age in regression models, where people report, on average, higher levels of well-being when they are younger and older than when they are in their prime working years (Blanchflower and Oswald 2008). This “U-Shape” correlation has been consistently found around the world in regression models predicting SWB (Graham 2009). Marital status also appears to influence well-being (Diener, Suh et al. 1999, Easterlin 2003, Blanchflower and Oswald 2004). On average, married persons report higher levels of well-being than non-married persons, and separated persons and widowed persons often have lower levels of well-being. However, the direction of causality between marriage and SWB is not always certain because happy people are more likely to marry.

In addition to income and demographic factors, the receipt of income assistance could potentially impact well-being. One way to examine this issue is to study how well-being varies across countries with different types of social welfare structures. An article that examined the topic was Bjornskov, Dreher et al. (2007) which observed a negative association across countries between aggregate government spending and life satisfaction. The authors argued that the findings support a public choice hypothesis, which theorizes that governmental intervention diverts resources from more utility-maximizing areas of the economy. While informative, the study did not directly examine the relationship between government transfers because it used as its primary independent variable total government spending (i.e., instead of social welfare spending).

A few studies have examined the relationship more directly. Veenhoven (2000), for example, examined the correlation between country-level expenditure data on social insurance and life satisfaction data from 40 nations between 1980 and 1990 from the World Value Surveys. He did not find that government spending on social insurance was associated with greater average scores of life satisfaction across the nations. In contrast, Radcliff (2001) examined cross-sectional data from individuals in the 1990 wave of the World Values Survey and compared their life satisfaction scores by controlling for certain demographic characteristics and the political attributes of their nations. He found that respondents reported higher life satisfaction answers when they lived in countries with stronger social welfare commitments. His findings may be less applicable to less developed countries because the analysis primarily examined countries with good public institutions and efficient public expenditures. Another study by Pacek and Radcliff (2008) used individual-level data from the World Values Study from 1981 to 2000 and found a positive association between “welfare state generosity” and life-satisfaction and happiness.

Studies examining the impact of country-level social welfare systems measure their influences in the aggregate, but are unable to explain whether the transfers increase the well-being of the individual recipients of the programs. There are many reasons to hypothesize that government transfers can improve the subjective well-being of their recipients. One obvious possibility is that the programs could lead to results that are consistent with their purposes, which are generally to reduce various types of material hardship. The material hardships documented in the poverty literature include subjective and objective measures such as problems with housing,

meeting basic needs, the presence of food insecurity, a lack of consumer durables, and fear of crime (Ouellette, Burnstein et al. 2004).

Since most studies examining various forms of material hardship have found that households with more income experience fewer hardships, government programs that increase household resources could theoretically reduce these destitutions (Boushey, Brocht et al. 2001). These reductions may originate from direct and indirect aspects of the programs. For example, the Supplemental Nutritional Assistance Program (SNAP), previously called the Food Stamps Program, may reduce food insecurity by increasing the resources available to purchase food, but may potentially reduce other forms of material hardship by freeing up cash for non-food expenditures that would have to be used to purchase food in the absence of the program. Moreover, participation in certain government programs may reduce hardship through other channels if they allow households to access additional benefits such as job training, counseling, health and well-being programs, or child care assistance.

Participation in social welfare programs also could alter the subjective well-being of their recipients if the programs have externalities. For example, over the past several decades there have been a series of academic works critical of income transfer programs. This literature argues that government benefits often do harm to their recipients by discouraging marriage and employment, promoting nonmarital births, and encouraging various behaviors linked to social problems (Murray 1984, Mead 1986, Tanner 2003). Even when the programs are successful in reducing various types of material hardship they could also decrease subjective well-being if

people have bad experiences when they interact with social service agencies. Many recipients of government assistance programs feel they are treated poorly by social service staff, and they often have to deal with frustrating administrative procedures during the application and recertification processes. These experiences seem to differ by the types of programs utilized. In general, programs that serve middle and upper class recipients (for example, unemployment insurance) are more customer friendly than other programs.

Another relevant study was conducted by Ahn, Ateca-Amestoy et al. (2014), which examined data for Spain and Denmark in the European Community Household Panel (ECHP). The study found that the share of income from labor was positively predictive of the respondents' satisfaction with their current financial situation. The authors concluded that the findings support the procedural utility hypothesis outlined by Frey, Benz et al. (2004), which predicts that well-being is influenced not only by outcomes but also the processes that lead to the outcomes. The well-being derived from earnings and income assistance, however, could differ across locations with dissimilar public attitudes toward people's potential for obtaining self-sufficiency. For example, a report by Isaacs (2008) presented tabulations from the International Social Survey Program, 1998-2001. Of the 27 countries participating in the survey, respondents from the United States were much more likely to perceive that "people get rewarded for their effort" and were less likely to agree that "it is responsibility of the government to reduce the differences in income" and "coming from a wealthy family is essential or very important to getting ahead".

### **1.3 Methodology**

The data used in this essay were from the Panel Study of Income Dynamics (PSID), a survey administered by the Institute for Social Research at the University of Michigan. The PSID is a longitudinal survey that began collecting information in 1968 in the United States and included an oversample of low-income families (Andreski, Beaulé et al. 2013). The data were collected annually between 1968 and 1997, and collected biannually thereafter. The data are currently collected every two years through computer-assisted telephone interviews. The members and the descendants of the original 1968 panel have been followed since. While over time the survey has experienced some attrition, most examinations of the survey have shown that the survey remains generally representative of the United States population because of the addition of new members through births and marriages of the original sample and an immigrant refresher added in 1997 (Andreski, Beaulé et al. 2013). In 2011, 8,907 families were available in the data file.

Most of the data in the PSID were collected through an interview with the heads of household or the wife/cohabiting partner of the heads of household. The survey collected basic demographic information on the rest of the family members that lived with the head and wife and used poststratification weighting techniques to make the sample near-representative of the United States population. However, the respondents that answered the life satisfaction question were not reweighted to represent the total adult population. For example, the survey only asked the life satisfaction question to one person in married couple families and, therefore, married persons were underrepresented. In addition, adult children that had not yet left their

parental homes were normally not the respondents for their respective families and, therefore, did not answer the life satisfaction question. The analysis excluded 239<sup>1</sup> respondents because they were:

- Not living in the United States at the time of the survey (48 respondents)
- Living in institutions (77 respondents)
- Under 18 years old (2 respondents)
- Not the head, or wife/cohabiting partner of the head (159 respondents)

After these exclusions, 8,668 respondents remained for analysis. The primary measurement of well-being throughout this essay was derived from the responses to a life satisfaction question presented as the first question on the survey. The life satisfaction question was added in 2009 and was included again in the 2011 survey. The question wording was the following:

*Please think about your life-as-a-whole. How satisfied are you with it? Are you completely satisfied, somewhat satisfied, not very satisfied, or not at all satisfied?*

In addition to a life satisfaction question, the PSID data also included detailed information on household income, government transfers, family expenditures, marital status, housing, and the health status of the heads of households and their wives/cohabiting partners.

As its name implies, the PSID's strength is its abundant questions about the detailed incomes of its respondents and their families. For this essay, total family income included after-tax cash income from private and government sources, as well

---

<sup>1</sup> The sum of the four reasons for exclusion does not add perfectly to 239 because some respondents are represented in more than one exclusion category.

as non-cash income from the Supplemental Nutrition Assistance Program (SNAP), the School Lunch Program, Women, Infants, and Children (WIC), and government housing and heating assistance programs. To adjust for different family compositions, family income is divided by the square root of the family size. This adjustment is important and is standard practice in economic measurement because it reflects the fact that larger families require more income to sustain themselves than do smaller families, although there is an economy of scale. For example, as families get larger they may need more clothing and food but probably do not require more kitchens, lawn mowers, and washing machines (Citro and Michael 1995).

The National Bureau for Economic Research's TAXSIM model was used to estimate values for federal, state, and FICA payroll taxes. Following Butrica and Burkhauser (1997), I assumed that all married couples filed jointly. I also assumed that household heads would declare their grandchildren as dependents if there were no adult children living in the units. One disadvantage of using the PSID was that the public-use version of the data combined the incomes of the family members that were not the heads or wife/cohabiting partner of the heads. Following Kimberlin (2014), all members other than the head's and wife's families were treated as one tax unit.<sup>2</sup> For example, if the head's brother, cousin, and niece lived in the units they were treated as one tax unit since their incomes could not be individually identified. Respondents were assumed to use the standard deductions unless they responded that

---

<sup>2</sup> The PSID prorates the incomes of part-year residents to reflect the amount of time that the individuals resided in the housing units. Since the remaining income is not collected for the time these individuals lived in other housing units, the annual incomes used to estimate tax liability are underestimates in some cases.

they itemized their taxes and listed valid entries for the deductions for mortgage interest, property taxes, charities, and health expenses.

The PSID collected the values of non-cash transfers for SNAP and government heating assistance programs, but did not include the values for WIC, the School Lunch program, and the rental equivalence of government housing assistance programs. Estimated values for these assistance programs were assigned to families indicating participation in the programs. The estimated values for housing assistance were estimated with a cold-deck procedure, using the Current Population Survey, Annual Demographic and Economic Supplement (CPS-ASEC) as its donor source. The cold-deck approach was chosen because the CPS-ASEC housing assistance estimates were derived from restricted-use administrative data from the Department of Housing and Urban Development (HUD), which provided more detailed estimates than what was available from other data sources. Each PSID respondent reporting that he or she lived in a public or subsidized housing unit was randomly matched to a record in the CPS-ASEC based on family income, state of residence, and family size. Only CPS-ASEC records that had assigned values for housing subsidies were allowed to be donor candidates. The PSID respondents were assigned the value of subsidized housing from the matched CPS-ASEC households.

**Table 1.1: Sources of Income Assistance Included in Family Income**

<b>Source of Assistance</b>	<b>Description</b>
Unemployment Insurance (UI)	This program provides cash assistance to individuals based on their employment history and current employment status. It does not base its payments on family income and is time-limited.
Supplemental Security Income (SSI)	SSI provides cash transfers to low-income persons with disabilities who do not qualify for Social Security disability assistance.
Temporary Assistance for Needy Families (TANF)	TANF provides cash assistance and other services to low-income families with children. Time limits and work requirements apply in many circumstances. Participation among the eligible population is low.
Supplemental Nutrition Assistance Program (SNAP)	Previously called food stamps, SNAP provides food vouchers to low-income families. Participation among the eligible population is relatively high and serves a diverse group of persons.
Women, Infants, and Children (WIC)	WIC provides food support to pregnant women and young children.
School Lunch Program	This program provides free and reduced-cost lunches to low-income children.
Government Housing Programs	These programs provide free or reduced-cost housing to low-income families. Assistance may be in the form of vouchers or through direct public housing structures.
Government Heating Assistance	These programs provide heating assistance to low-income families.
Help from Relatives	This includes cash assistance from relatives of the respondents' families. It does not include non-cash assistance such as reduced fees and donations from food pantries.
Help from Non-Relatives	This includes cash assistance from non-relatives of the respondents. It does not include non-cash assistance such as reduced fees and donations from food pantries.

For this essay, the term assistance is used to describe income from the ten sources presented in Table 1. These programs include cash and non-cash government transfers, and cash transfers from non-government sources. The programs were chosen because they base eligibility on the income or unemployment status of the recipients. Cash assistance from relatives and non-relatives was included but non-cash assistance from private sources such as donations from food pantries and fee reductions were excluded because of data limitations. Income from the Earned Income Tax Credit was not considered assistance income in this analysis but was included in total family income. The definition of assistance also excluded transfers from Social Security Disability Income (SSDI) because the PSID did not differentiate between this program and other Social Security (SSA) income such as survivors and retirement benefits. Other non-cash assistance such as child care subsidies, subsidized health insurance, and transportation vouchers were not included.

The PSID received high response rates for the majority of the questions asked on the survey. However, most of the variables had at least some instances where the respondents reported “don’t know” or “refused”. When these cases occurred, imputation was conducted. Most of the income and expenditure variables had imputations made by PSID staff and these allocations were treated the same as normal responses. Imputations were made for the remaining variables with missing values. The values for alimony income were imputed using a single hotdeck approach for four respondents. This method was chosen because TAXSIM does not currently allow for multiple imputations. Each of the four PSID respondents with missing values was randomly matched to another PSID respondent that reported

receiving alimony income. The match was based on income, home ownership, age, and marital status.

Values for the remaining 18 variables with missing values used in my analysis were conducted with five multiple regression-based imputations. Of the 8,668 observations analyzed, 195 of them (2.19 percent of the total) received imputations for the outcome life satisfaction variable. As recommended by Little and Rubin (2014), multiple imputation produces multiple sets of values for missing observations to permit estimation of the extra variance that is attributed to the imputation process.<sup>3</sup>

My analysis begins with descriptive statistics comparing the means of the PSID variables used in my analysis with comparable means from the Current Population Survey, Annual Social and Demographic Supplement (CPS-ASEC). These comparisons allow the reader to compare the demographic composition of the PSID respondent sample (i.e., the people answering the life satisfaction question) to the characteristics of the adult population ages 18 and older. The reference timing for the demographic characteristics in both the 2011 PSID and the 2011 CPS-ASEC was the time that the surveys were conducted in early 2011. However, the reference period for the family income data was the previous calendar year, which in this case was calendar year 2010. The unweighted sample size for the CPS- ASEC was 146,109 adults ages 18 and older.<sup>4</sup> These results are presented in Table 1.2.

My analysis continues (see Table 1.3) by comparing the means of the PSID analysis variables for respondents that received income assistance to those that did

---

<sup>3</sup> The imputations were created using STATA's Multiple Imputation (MI) commands.

<sup>4</sup> An alternative approach would have been to compare the characteristics of the PSID respondents with the characteristics of all of the persons in the PSID. This option was not chosen because the PSID survey collected only minimal information on the family members that were not the head, spouse, or cohabiting partners of the heads.

not. The analysis then examines the distribution of life satisfaction scores in the PSID (Table 1.4 and Figure 1.1). Since family income is an important part of the analysis, the relationship between income and life satisfaction is explored and shown in Figure 1.2 and Figure 1.3. After the descriptive statistics are shown the essay presents the results from several ordered-logistic models with the following framework:

$$LifeSati = Xi\beta1 + Inci\beta2 + AssistDummyi\beta3 + \epsilon_i$$

LifeSati is the ordinal life satisfaction measure for person  $i$ , ranging from 1 to 5 in ascending order: (1) not at all satisfied, (2) not very satisfied, (3) somewhat satisfied, (4) very satisfied, and (5) completely satisfied.  $Xi\beta1$  represents a vector of demographic and employment variables for person  $i$  at the time of the 2011 wave. This includes variables for race and Hispanic ethnicity, age and age squared, educational attainment, employment status, health insurance status, number of children under age 18 residing in the housing unit, weekly attendance at religious services, self-reported health status, and region. Sex and marital status are combined into a categorical variable series consisting of single females (omitted category), single males, married females, and married males. Health status is self-reported and is presented as a continuous variable: (1) poor, (2) fair, (3) good, (4) very good, and (5) excellent.  $Inci\beta2$  represents the total household incomes of the respondents from the previous calendar year (i.e., the 2010 calendar year), which includes the post-tax incomes from earned and unearned sources, including government cash and noncash transfers. For ease of presentation, family income is scaled to \$10,000 increments and, as stated earlier, is adjusted for family composition by dividing the sum by the square root of family size.  $AssistDummyi\beta3$  is the primary variable of interest and

consists of a binary variable indicating the receipt of any assistance during the previous year. The results of this model are shown in Table 1.5.

The ordered logistic model is repeated by substituting the income assistance dummy variable with four interaction binary variables indicating the presence of assistance and having family income within one of four quartiles (see Table 1.6). The four quartiles are mutually exclusive and would be exhaustive in the presence of an omitted variable for respondents without any assistance. These variables test whether the presence of income assistance is predictive of life satisfaction throughout the income distribution.

Table 1.7 provides additional analysis using alternative definitions of assistance. Each row in these tables represents a separate ordered logistic model similar to that displayed in Tables 1.5, except that the dummy variable for assistance is replaced with a dummy variable indicating assistance from the specific source displayed in column 1 of the table.

## **1.4 Results**

Table 1.2 compares the weighted means of the major variables analyzed in this essay to comparable weighted population means from the 2011 Current Population Survey, Annual Social and Economic Supplement (CPS-ASEC). The mean equivalent family incomes of the PSID respondents were about \$3,300 larger than the mean incomes of the CPS-ASEC respondents. This is consistent with prior studies that have found somewhat higher reported incomes in the PSID than in the CPS-ASEC (Gouskova and Schoeni, 2010). The PSID respondents were also more likely to be single females, non-Hispanic White, have a B.A. college degree, have

health insurance, and to be employed at the time of the survey. However, compared to the adults in the CPS-ASEC, the PSID respondents had lower self-reported health status and were somewhat older. The average PSID family size was smaller than the mean for the CPS-ASEC, which is partially a reflection of differences in the way the two surveys define family structures.

Table 1.3 compares the characteristics of the PSID respondents that received income assistance from government and private sources to respondents that did not receive income assistance. In the aggregate, respondents that received income assistance had lower mean life satisfaction scores than other respondents that did not receive income assistance (3.6 compared to 3.9 respectively). As expected, the respondents that received income assistance were more disadvantaged than other respondents. The mean after-tax family equivalent income, including the estimated values of non-cash transfers, of the PSID respondents that received income assistance was about \$21,600 lower than the mean income of respondents that did not receive income assistance. Moreover, in comparison to respondents that did not receive assistance the respondents that did receive income assistance were more likely to be single, without college and high school degrees, unemployed, and to have lower self-reported health status. They were also more likely to be Hispanic or non-Hispanic Black. The PSID respondents who received income assistance had mean ages that were almost 9 years younger than the other respondents and were less likely to attend weekly religious services.

**Table 1.2: Characteristics of Respondents in the PSID Compared to Population Estimates of Persons Ages 18 and Older in the CPS-ASEC**

<b>Demographic Characteristic</b>	<b>PSID Respondents Mean (SE)</b>	<b>CPS-ASEC Adults Mean (SE)</b>	<b>Difference</b>
<b>Life Satisfaction</b>	3.8105 (.0149)	N/A	N/A
<b>After-Tax Family Eq. Income</b>	\$40,489 (\$883)	\$37,192 (\$154)	\$3,298**
<b>Sex &amp; Marital Status</b>			
Single Female	.3130 (.0094)	.2475 (.0012)	.0655**
Single Male	.2077 (.0053)	.2181 (.0012)	-.0104
Married Female	.2545 (.0059)	.2684 (.0012)	-.0140
Married Male	.2248 (.0081)	.2660 (.0012)	-.0412**
<b>Race &amp; Ethnicity</b>			
Hispanic	.0926 (.0094)	.1405 (.0001)	-.0479**
Non-Hispanic White	.7291 (.0189)	.6778 (.0004)	.0513**
Non-Hispanic Black	.1225 (.0133)	.1153 (.0003)	.0072
Non-Hispanic Other	.0559 (.0045)	.0665 (.0004)	-.0106**
<b>Education</b>			
Less Than a HS Diploma	.1212 (.0082)	.1340 (.0014)	-.0128
HS Diploma, No College	.2709 (.0094)	.3043 (.0016)	-.0334
Some College, No BA	.2767 (.0078)	.2842 (.0016)	-.0074
BA or More	.3312 (.0132)	.2776 (.0017)	.0536**
<b>Employment Status</b>			
Employed	.6483 (.0079)	.5961 (.0016)	.0522**
Unemployed	.0669 (.0033)	.0606 (.0009)	.0063
Not in Labor Force	.2848 (.0071)	.3432 (.0015)	-.0584**
<b>Other Characteristics</b>			
Lived Both Parents to Age 16	.7679 (.0089)	N/A	N/A
Attends Rel. Services Weekly	.2906 (.0106)	N/A	N/A
No Health Insurance	.1628 (.0076)	.1850 (.0016)	-.0222**
Self-Reported Health Status	3.4777 (.0228)	3.6418 (.0047)	-.1642**
# Persons in the Family	2.3014 (.0222)	2.8968 (.0082)	-.5955**
# Children in Family	.5732 (.0143)	.6774 (.0051)	-.1042**
Age	48.8998 (.2644)	46.3035 (.0123)	2.5963**
<b>Region of Residence</b>			
Northeast	.1833 (.0162)	.1840 (.0006)	-.0007
North Central	.2194 (.0111)	.2175 (.0006)	.0019
South	.3769 (.0170)	.3670 (.0007)	.0099
West	.2204 (.0164)	.2315 (.0006)	-.0111

**Table 1.3: Characteristics of Respondents in the PSID by Whether Their Families Received Any Income Assistance in the Prior Year**

<b>Demographic Characteristic</b>	<b>Assistance Mean (SE)</b>	<b>Non-Assistance Mean (SE)</b>	<b>Difference</b>
<b>Life Satisfaction</b>	3.6377 (.0256)	3.8962 (.0134)	-.2585**
<b>After-Tax Family Eq. Income</b>	\$26,052 (\$579)	\$47,649 (\$940)	-\$21,597**
<b>Sex &amp; Marital Status</b>			
Single Female	.4067 (.0141)	.2665 (.0099)	.1401**
Single Male	.2301 (.0092)	.1967 (.0070)	.0334**
Married Female	.2241 (.0090)	.2695 (.0077)	-.0454**
Married Male	.1391 (.0091)	.2673 (.0094)	-.1282**
<b>Race &amp; Ethnicity</b>			
Hispanic	.1451 (.0167)	.0665 (.0074)	.0786**
Non-Hispanic White	.5903 (.0267)	.7979 (.0161)	-.2076**
Non-Hispanic Black	.1986 (.0219)	.0847 (.0099)	.1139**
Non-Hispanic Other	.0660 (.0063)	.0509 (.0055)	.0151
<b>Education</b>			
Less Than a HS Diploma	.2080 (.0123)	.0782 (.0063)	.1298**
HS Diploma, No College	.3003 (.0122)	.2563 (.0106)	.0440
Some College, No BA	.2829 (.0105)	.2737 (.0087)	.0092
BA or More	.2088 (.0110)	.3919 (.0139)	-.1831**
<b>Employment Status</b>			
Employed	.5710 (.0127)	.6867 (.0086)	-.1157**
Unemployed	.1536 (.0074)	.0239 (.0023)	.1297**
Not in Labor Force	.2754 (.0107)	.2894 (.0090)	-.0140
<b>Other Characteristics</b>			
Lived Both Parents to Age 16	.6851 (.0130)	.8090 (.0081)	-.1239**
Attends Rel. Services Weekly	.2454 (.0113)	.3130 (.0125)	-.0675**
No Health Insurance	.2848 (.0098)	.1023 (.0073)	.1825**
Self-Reported Health Status	3.2832 (.0326)	3.5741 (.0190)	-.2909**
# Persons in the Family	2.6115 (.0421)	2.1476 (.0220)	.4639**
# Children in Family	.9001 (.0307)	.4111 (.0129)	.4890**
Age	42.9234 (.3273)	51.8637 (.3407)	-8.9403**
<b>Region of Residence</b>			
Northeast	.1689 (.0233)	.1904 (.0148)	-.0216
North Central	.2080 (.0141)	.2250 (.0134)	-.0170
South	.3906 (.0211)	.3702 (.0197)	.0204
West	.2325 (.0259)	.2143 (.0150)	.0181

Table 1.4 and Figure 1.1 present the responses to the life satisfaction variable, first for the total population and then separately for respondents that did and did not receive income assistance. The percentage of respondents that reported that they were “not at all satisfied” and “not very satisfied” was very small among the PSID respondents, although there were differences between the two groups. While about eight percent of respondents that received income assistance reported being “not at all satisfied” or “not very satisfied”, only about three percent of other respondents reported the same. The discrepancies between the two groups were larger for the “somewhat satisfied” and the “very satisfied” categories. About 36 percent of respondents with income assistance reported being “somewhat satisfied” compared to only 25 percent for respondents that did not receive income assistance. In contrast, about 38 percent of respondents with income assistance reported being “very satisfied” compared to 50 percent of the non-assistance respondents. The respondents that received income assistance were somewhat less likely to report being “completely satisfied” than the other respondents (18 percent compared to 22 percent, respectively).

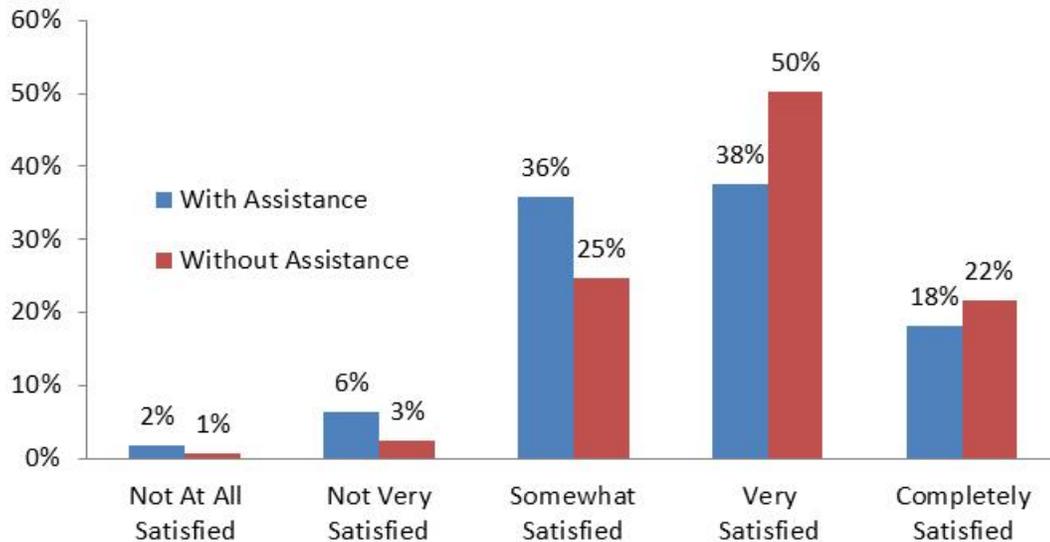
Since income assistance is generally overrepresented by low-income people it is important to examine the relationship between family income and life satisfaction scores. This association is shown in Figure 1.2, which presents the percent distribution of the life satisfaction scores across family incomes at \$25,000 intervals. For ease of visualization, the responses for “not at all satisfied” and “not very satisfied” are summed for this graph but are not summed for the remaining results in this essay. As predicted from the literature, income is positively associated with

higher life satisfaction scores. For example, whereas nine percent of respondents with family incomes under \$25,000 reported scores in the lowest two categories, only one percent with family incomes at or above \$100,000 did.

**Table 1.4: Percent Distribution of Life Satisfaction Scores by Receipt of Any Assistance during the Previous Year**

Survey Response	All Respondents	With Assistance	Without Assistance	% With Minus % Without
Not At All Satisfied	1.16 (0.15)	1.93 (0.37)	0.77 (0.15)	1.16**
Not Very Satisfied	3.82 (0.30)	6.40 (0.69)	2.54 (0.25)	3.86**
Somewhat Satisfied	28.44 (0.81)	35.87 (1.13)	24.76 (0.93)	11.12**
Very Satisfied	45.99 (0.87)	37.56 (1.28)	50.17 (0.92)	-12.61**
Completely Satisfied	20.60 (0.54)	18.23 (0.75)	21.77 (0.69)	-3.53**

**Figure 1.1: Percent Distribution of Life Satisfaction Scores by Receipt of Any Income Assistance during the Previous Year**



**Figure 1.2: Percent Distribution of Life Satisfaction Scores by Equivalent Family Income**

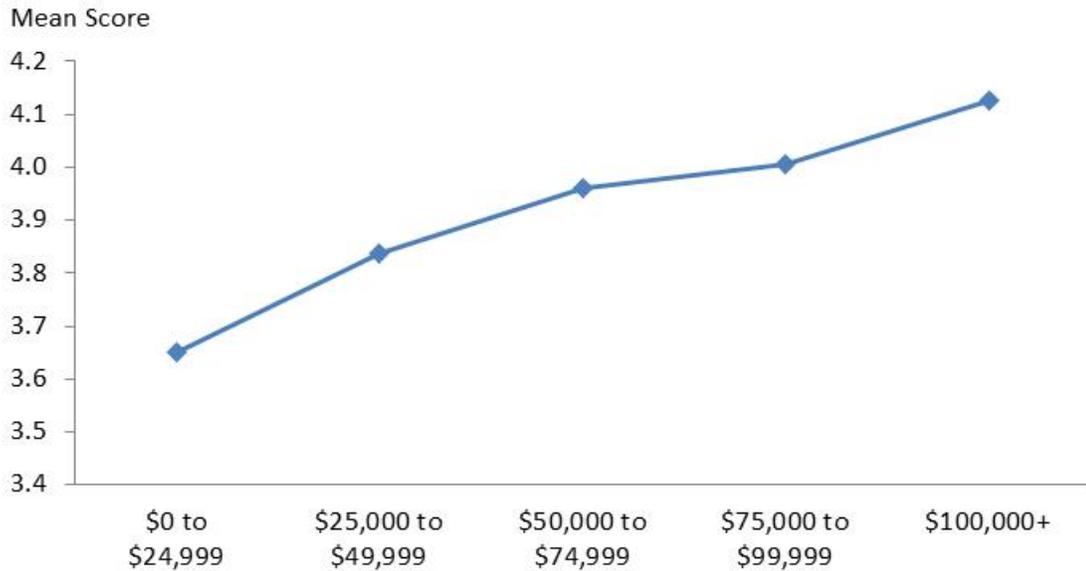


The mean life satisfaction scores are displayed in Figure 1.3 across \$25,000 bands of family equivalent income.<sup>5</sup> The association between income and mean life satisfaction scores is positive across the family income distribution. The available data show a positive relationship through at least \$75,000 to \$99,999. Every increase in \$25,000 corresponds to a higher mean life satisfaction score, although the increase in scores between the \$75,000 to \$99,999 band and the scores for the \$100,000 and greater group is not statistically significant.<sup>6</sup>

<sup>5</sup> The data for the graphs in this dissertation are shown in the Appendix.

<sup>6</sup> The sample size for the \$100,000 group is much smaller than the other categories presented in Figure 1.3.

**Figure 1.3: Mean Life Satisfaction Scores by Annual Equivalent Family Income**



The differences in the demographic characteristics between respondents that did and did not receive income assistance the year before the survey underlie the importance of examining the relationship with models that control for other variables in addition to income. Figure 1.5 displays the results of an ordered logistic regression model predicting life satisfaction with control variables and a dummy variable indicating receipt of any assistance income the previous year. Family equivalent income is factored to \$10,000 increments and continues to be positively correlated with life satisfaction, even in the presence of the other variables. The primary explanatory factor, the income assistance dummy variable, has a coefficient of -0.2689, revealing a negative association with life satisfaction.

Since life satisfaction has not been extensively explored with the PSID data it is worthwhile to report the relationships between life satisfaction and the other key variables. On average, married respondents reported higher life satisfaction than non-married respondents, which is consistent with much of the literature. The coefficients

for variables for Hispanic, non-Hispanic Black, and non-Hispanic other race were all positive, though not statistically significant. This finding is somewhat surprising since previous studies in the United States have sometimes shown lower average SWB scores for Blacks than for Whites (Blanchflower and Oswald 2004). Holding all else constant, respondents without a high school diploma had higher life satisfaction scores and respondents who were unemployed or did not have health insurance at the time of the survey had lower life satisfaction scores than other respondents. Respondents that attended religious services at least one time per week and respondents that had higher self-reported health status did have higher scores. Like previous studies, age displayed a “U-shaped” curve where life satisfaction decrease to about age 44 and then slowly increase thereafter. The life satisfaction scores of the respondents in the northeast United States had lower life satisfaction scores than those that lived in the other geographical regions. It is noteworthy that, although the receipt of assistance was predictive of lower life satisfaction scores, the coefficients for marital status, employment, and health status were more predictive.

The ordered logistic model was repeated by substituting the income assistance dummy variable with four interaction binary variables (Table 1.6). The four quartiles are mutually exclusive and would be exhaustive in the presence of an omitted variable for respondents without any assistance. In general, the results from this model show that the negative association between assistance and life satisfaction is fairly consistent across most of the income distribution. However, the p-value for the first quartile is .06, which is low, but statistically insignificant when using a conservative .05 significance threshold.

**Table 1.5: Ordered Logistic Model Predicting Life Satisfaction with a Dummy Variable Indicating Receipt of Any Assistance in the Prior Year**

Variable	Coefficient	Std. Error	t	P>t
<b>Income &amp; Assistance</b>				
Family Eq. Income (\$10,000s)	0.0282	0.0067	4.21	0.000
Any Assistance (Dummy)	-0.2689	0.0631	-4.26	0.000
<b>Gender and Marital Status</b>				
Single Female (Omitted)				
Single Male	-0.1938	0.1011	-1.92	0.060
Married Female	0.6507	0.0914	7.12	0.000
Married Male	0.5734	0.1060	5.41	0.000
<b>Race &amp; Ethnicity</b>				
Hispanic	0.1595	0.1229	1.30	0.199
Non-Hispanic White (Omitted)				
Non-Hispanic Black	0.1302	0.0975	1.33	0.187
Non-Hispanic Other	0.0976	0.1208	0.81	0.422
<b>Education</b>				
Less Than a HS Diploma	0.2872	0.1069	2.69	0.009
HS Diploma, No College (Omitted)				
Some College, No BA	-0.1224	0.0721	-1.70	0.095
BA or More	-0.1050	0.0632	-1.66	0.102
<b>Employment Status</b>				
Employed (Omitted)				
Unemployed	-0.5983	0.1468	-4.08	0.000
Not in Labor Force	0.2347	0.0781	3.01	0.004
<b>Other Variables</b>				
Lived Parents Until Age 16	0.0171	0.0653	0.26	0.795
Attends Rel. Services 1x Week	0.2319	0.0582	3.98	0.000
Uninsured at Time of Survey	-0.2321	0.0851	-2.73	0.009
Self-Reported Health Status	0.6516	0.0338	19.25	0.000
# Family Members	0.0942	0.0498	1.89	0.063
# Children	-0.0145	0.0607	-0.24	0.812
Age	-0.0450	0.0108	-4.17	0.000
Age <sup>2</sup>	0.0005	0.0001	4.25	0.000
<b>Region</b>				
Northeast (Omitted)				
North Central	0.1794	0.0562	3.19	0.002
South	0.2209	0.0747	2.96	0.004
West	0.2019	0.0883	2.29	0.026
/cut1	-3.0535	0.3231	-9.45	0.000
/cut2	-1.4857	0.2980	-4.99	0.000
/cut3	1.0745	0.2816	3.82	0.000
/cut4	3.4304	0.2873	11.94	0.000

**Table 1.6: Ordered Logistic Model Predicting Life Satisfaction Including Interaction Variables for Income Quartiles and Receipt of Assistance**

Variable	Coefficient.	Std. Error	t	P>t
<b>Income &amp; Assistance</b>				
Family Eq. Income (\$10,000s) No Assistance (Omitted)	0.0303	0.0069	4.36	0.000
Any Assistance & Income in Q1	-0.2285	0.1190	-1.92	0.060
Any Assistance & Income in Q2	-0.1908	0.0739	-2.58	0.012
Any Assistance & Income in Q3	-0.2887	0.1057	-2.73	0.008
Any Assistance & Income in Q4	-0.4876	0.1377	-3.54	0.001
<b>Gender and Marital Status</b>				
Single Female (Omitted)				
Single Male	-0.1881	0.1016	-1.85	0.069
Married Female	0.6629	0.0930	7.13	0.000
Married Male	0.5850	0.1063	5.50	0.000
<b>Race &amp; Ethnicity</b>				
Hispanic	0.1502	0.1238	1.21	0.230
Non-Hispanic White (Omitted)				
Non-Hispanic Black	0.1279	0.0973	1.31	0.194
Non-Hispanic Other	0.0905	0.1209	0.75	0.457
<b>Education</b>				
Less Than a HS Diploma	0.2822	0.1048	2.69	0.009
HS Diploma, No College (Omitted)				
Some College, No BA	-0.1205	0.0716	-1.68	0.097
BA or More	-0.0982	0.0629	-1.56	0.124
<b>Employment Status</b>				
Employed (Omitted)				
Unemployed	-0.6022	0.1477	-4.08	0.000
Not in Labor Force (Omitted)	0.2267	0.0780	2.91	0.005
<b>Other Variables</b>				
Lived Parents Until Age 16	0.0198	0.0658	0.30	0.765
Attends Rel. Services 1x Week	0.2307	0.0586	3.94	0.000
Uninsured at Time of Survey	-0.2427	0.0853	-2.84	0.006
Self-Reported Health Status	0.6551	0.0342	19.15	0.000
# Family Members	0.0946	0.0494	1.92	0.060
# Children	-0.0205	0.0589	-0.35	0.730
Age	-0.0449	0.0109	-4.13	0.000
Age <sup>2</sup>	0.0005	0.0001	4.24	0.000
<b>Region</b>				
Northeast (Omitted)				
North Central	0.1757	0.0551	3.19	0.002
South	0.2195	0.0736	2.98	0.004
West	0.1984	0.0893	2.22	0.030
/cut1	-3.0114	0.3358	-8.97	0.000
/cut2	-1.4437	0.3119	-4.63	0.000
/cut3	1.1165	0.2952	3.78	0.000
/cut4	3.4738	0.3021	11.50	0.000

Table 1.7 examines these associations with alternative definitions of assistance. The results displayed in the table reveal that these relationships change in some cases when receipt of income from specific sources is substituted for any assistance. For example, assistance from SSI, TANF, and other means-tested programs, when evaluated alone, did not have statistically significant coefficients, but assistance from unemployment insurance, SNAP, and assistance from private cash sources did have significant negative coefficients. The results for the TANF and SSI program should be interpreted with some caution, however, because the sample size was fairly small. The coefficients were negative, and statistically significant, for transfers from both relatives and for non-relatives and they were larger than the coefficient for government means-tested assistance.

**Table 1.7: Ordered Logistic Models Predicting Life Satisfaction Using Family Equivalent Income and Receipt of Assistance from Specific Sources of Assistance**

Type of Assistance Income	Coefficient.	Std. Error	t	P>t
<b>Any Assistance</b>	-0.2689	0.0631	-4.26	0.0000
<b>Unemployment Insurance</b>	-0.2452	0.0732	-3.35	0.0010
<b>Gov. Means-Tested Assistance</b>	-0.1794	0.0779	-2.30	0.0250
SSI	0.0449	0.1567	0.29	0.7750
TANF	-0.2972	0.2775	-1.07	0.2880
SNAP	-0.3130	0.0994	-3.15	0.0030
Other Means-Tested	-0.0496	0.0822	-0.60	0.5490
<b>Private Cash Transfers</b>	-0.3710	0.0720	-5.15	0.0000
Help from Relatives	-0.3727	0.0761	-4.90	0.0000
Help from Non-Relatives	-0.3905	0.1441	-2.71	0.0090

Note: Each row displays the coefficient from a separate regression that included after-tax family income and the single income dummy variable listed in the first column and other control variables shown in Table 1.5.

## **1.5 Discussion**

The subjective well-being of people receiving income assistance is important because current policy debates continually evaluate and re-evaluate the extent to which income transfers improve the lives of the disadvantaged and to what degree various types of assistance should be expanded or reduced. This is especially true in the United States, where support for transfer programs has traditionally been more tentative than in other developed countries and where policymakers are especially eager to measure program effectiveness. The findings from this essay make a special contribution to these discussions because the existing literature on this topic has primarily focused on objective measures of well-being such as food security, material hardships, poverty status, and employment outcomes. Although objective outcomes are important to understanding the impacts of transfers, these metrics can be supplemented with measures of subjective well-being to provide a broader examination of the impact that assistance has on its recipients.

The findings from my essay increased our knowledge of the relationship between income, receipt of income assistance, and life satisfaction. Consistent with much of the existing literature, I found that income was somewhat predictive of life satisfaction, although other factors such as health status, unemployment, and marriage were stronger correlates. I identified a negative association between life satisfaction and the receipt of income assistance from government and private sources, and found that the association remained predictive even after controlling for family income and other factors. The negative relationship between life satisfaction and the receipt of

income assistance continued to exist across most of the income distribution, although the correlation was more uncertain for respondents in the lowest income quartile.

Overall, it appears that people who receive income assistance are somewhat less satisfied with their lives than other people. A possible explanation for this finding is that individuals may obtain a certain degree of self-fulfillment and pride from supporting themselves and they obtain less, or possibly negative, well-being from income transfers. This explanation is consistent with political arguments advocating for the personal and societal advantages of personal responsibility and economic independence. Some may argue that these findings support policies that encourage self-sufficiency through job placement and training services, low-income tax credits, child care subsidies, and work requirements and time limits for those that receive assistance from government programs.

An alternative explanation for the negative association between income assistance and life satisfaction is that people who received income assistance had health and well-being disadvantages that were not observed in the data. This is a concern because, although the PSID produces high-quality data and collects information on a broad set of health and family characteristics, the analysis was not able to control for many of the factors that could affect life satisfaction. Many recipients of assistance have experienced domestic and sexual violence, substance abuse, low aptitude, disabilities, housing instability, discrimination, incarceration, and poor neighborhood conditions, among other challenges. Many of these factors are difficult to measure and their absence from the models could have biased some of the

results presented here and possibly misrepresented the positive net impact that assistance has on people in need.

Another consideration for interpreting these findings is that, while the study found a negative association between income assistance and life satisfaction, it didn't investigate the relationship between income assistance and other forms of material hardship. It also didn't examine the relationship between income assistance and experienced well-being outcomes such as pain, pleasure, and stress. The negative association between income assistance and life satisfaction does not necessarily mean that income assistance reduces overall well-being. For example, it's possible that the low-income families who are able to obtain enough resources to avoid income assistance have higher life satisfaction scores, but lower well-being outcomes in other areas of their lives, than families that do receive assistance. Some family heads may feel less positive about their lives when they receive income assistance, but accept the help in order to provide basic necessities to their families. It's difficult to know whether respondents would have higher life satisfaction scores if they were denied benefits for which they currently receive.

A notable finding in this essay was that the receipt of income assistance had a statistically insignificant association with life satisfaction among the most disadvantaged families in the lowest quartile. A possible explanation for this finding is that the most destitute families are experiencing enough hardship that the receipt of income assistance does not decrease their self-image even though they may face stigma for participating in the programs. For these families, obtaining basic necessities may consume their cognitive functioning to a degree where other priorities

become less important. This point is important because low-income workers often struggle with unpredictable hours, have troubles securing child care arrangements, and are often not treated as valuable employees (Newman 1999, Ehrenreich 2001, Chaudry 2004). Moreover, recent psychological research suggests that the daily stresses of being poor reduce the cognitive functioning of the brain (Mullainathan and Shafir 2013). Therefore, policymakers should consider a broad range of well-being outcomes when evaluating the effects of social welfare programs.

An alternative explanation is that income assistance decreases material hardship in greater amounts for the poorest families than it does for families with higher incomes. In other words, the decrease in life satisfaction derived from receiving income assistance could be neutralized by the well-being gain from the transfer's ability to reduce material hardship to the neediest families. For example, it is noteworthy that there was no association between life satisfaction and receipt of SSI and TANF, whose participants were among the nation's most disadvantaged persons. The lack of statistical prediction for income assistance in the lowest quartile, however, should be considered with caution because the p-value for its coefficient was small ( $p > t = .06$ ) enough that a type-2 statistical error could have occurred (i.e., a false negative).

Another noteworthy finding from my essay was that income assistance from non-governmental sources was just as predictive of lower life satisfaction scores as was assistance from government means-tested welfare programs. This is an important finding because policymakers sometimes argue that assistance from families, friends, not-for-profit organizations, and religious institutions is superior to

assistance from government programs. In terms of predicting life satisfaction, the findings do not support this argument. A possible explanation for this finding could be that assistance from relatives and non-governmental organizations were more often in response to short-term challenges than was assistance from government income assistance. In other words, the circumstances leading to the income transfers may not be the same, which makes it challenging to compare outcomes that may be influenced by these two types of income transfers.

One way that future research could examine this issue would be to include subjective well-being evaluations in randomized demonstration projects. Mainstream research in the United States continues to emphasize traditional economic outcomes such as employment and earnings over subjective well-being outcomes such as life satisfaction, pain, and comfort. The addition of these components to experimental research would provide a more well-rounded set of indicators to evaluate income assistance programs. Although increasing the life satisfaction of people is a worthy end in itself, it may also be viewed as a potential way to support other types of well-being. A relevant finding from the subjective well-being literature is that well-being can be bidirectional with many outcomes that policymakers deem desirable such as marriage, employment, and health (Lyubomirsky, King et al. 2005). If policymakers could find ways to increase the subjective well-being of low-income populations, these changes could lead to gains in objective measures as well.

# **Chapter 2: The Relationship between Consumption and Life Satisfaction**

## **2.1 Introduction**

Economic theory often assumes that utility is gained through the consumption of desirables such as goods, services, and leisure. Since data on consumption is difficult and time consuming to obtain income is the more common metric used by researchers to conduct economic analysis. Although income and consumption are closely related and are both linked to economic welfare, they are not the same construct. People frequently consume more than their current incomes when they are young and old, and commonly consume less than their current incomes when they are in their prime professional years. Consumption can be maintained to some degree during periods of unemployment or times of temporary reductions in income by borrowing, using savings, or receiving assistance from family and friends. Some people also can maintain living standards and consumption levels by selling their belongings or financial assets. Moreover, some people choose to consume more during their professional years, while others choose to allocate more resources to savings.

The difference between consumption and income may have implications for the growing literature on measures of subjective well-being (SWB). Economists have observed a statistical association between income and several types of subjective well-being measures. However, most of the literature has not examined whether income directly influences SWB, or whether it is primarily relevant because it acts as a proxy for consumption. Based on the results of previous work, it appears possible

that income and consumption may predict subjective well-being somewhat differently. Income could increase life satisfaction independently of material comforts if higher incomes increase people's sense of accomplishment and feelings of purpose. Consumption, on the other hand, could predict life satisfaction separately from income if it is a better reflection of people's current material living standards. For example, the ability to smooth consumption during periods of unemployment or income loss may bring some comfort to households, especially if maintaining their consumption allows them to continue their social interactions. However, people that consume more than their current income may have depressed levels of well-being if they have a lower self-image from not having a job or if they have to sell their possessions in order to maintain a particular lifestyle.

While studies by Meyer and Sullivan (2012), Fisher, Johnson et al. (2009), and others have provided evidence that consumption is predictive of material hardships and other objective measures of well-being, the relationship between consumption and subjective well-being has received far less attention. This can be partly attributed to the small number of datasets that have collected data on both consumption and subjective well-being in the United States. For example, the primary survey that collects detailed information on expenditures, the Consumer Expenditures Survey (CE), does not capture information on subjective well-being, and the General Social Survey (GSS) collects data on subjective well-being but lacks detailed questions concerning income and expenditures.

This essay uses data from the 2011 wave of the Panel Study of Income Dynamics (PSID) to explore the extent to which income and consumption are predictive of life satisfaction. It seeks to answer the following question:

*Is consumption a better predictor of life satisfaction than income?*

This essay begins with a review of the literature concerning the conceptual differences between income and consumption, and the interaction between subjective well-being and various pecuniary measures. After this review the essay examines the interaction between income, consumption, and life satisfaction through descriptive statistics and several ordered-logistic regression models. The interaction between consumption and life satisfaction is further examined using alternative definitions of consumption. The results conclude that, at least for the respondents in the PSID, consumption and income are similarly predictive of higher life satisfaction. The results also suggest that the relationship between consumption and life satisfaction is not highly sensitive to the expenditure categories included in the consumption metric.

## **2.2 Literature Review**

Statistical surveys have recently increased the amount of data documenting household expenditures and this has inspired a flurry of analysis examining the relationship between consumption and various economic and sociological outcomes. While this research has confirmed that income and consumption are highly correlated, as predicted by theory, the substitution of consumption for income (and vice versa) in economic analysis sometimes leads to different outcomes. For example, several studies have found that many low-income households report expenditures far above their reported incomes (Sabelhaus and Groen 2000, BLS 2015). In addition, poverty

rates are generally lower when measured with consumption than when measured with income (Cutler, Katz et al. 1991, Slesnick 1993, Meyer and Sullivan 2003, Hurd and Rohwedder 2006). In a series of articles, Meyer and Sullivan (2003, 2011, & 2012) argued that consumption measures are better predictors of impoverishment and material well-being than are income measures. As explained below, inter-temporal theories of savings, dissaving, and borrowing, as well as problems associated with underreporting of income, are often cited as reasons why these two metrics do not always lead to congruent empirical findings.

There are several theoretical reasons why levels of consumption and income may be unequal for many households at any given point in time. One reason is that people may adjust their spending and savings patterns to smooth consumption over their life-spans. For instance, Milton Friedman's (1957) permanent income hypothesis theorizes that income has permanent and transitory aspects which allow people to determine their consumption patterns based on their long-term incomes. This hypothesis suggests that people have a reasonably good idea of what their long-term incomes (i.e., their permanent income) will be based on their education and skill sets, as well as their wealth and financial assets. Their transitory income is less predictable, however, and is impacted by windfall income, one-time inheritances, short-term unemployment or illness, and other unexpected events. Transitory income is calculated by comparing a person's current income with their permanent income. Friedman suggested that people's consumption levels are more likely to be influenced by their permanent income than by their transitory income. He theorized that people will be inclined to borrow or access savings during time periods when their transitory

income is below their permanent income, and they will be inclined to save during periods when their transitory income is above their permanent income.

A related inter-temporal consumption theory is the life-cycle hypothesis advanced by Modigliani and Brumberg (1954). They argued that people build assets during the working period of their lives which they can then use to finance their expenditures during their non-working retirement years. People alter their consumption patterns during different periods in order to maintain a stable standard of living throughout their lives. The life-cycle and permanent income hypotheses suggest that consumption measures may be better indicators of long-term economic well-being than income-based measures because income-based measures do not consider accumulated wealth, liabilities, and access to credit (Slesnick 2001).

Overall, the literature generally confirms that some inter-temporal smoothing occurs in the economy, but the predictions from the life-cycle and permanent income hypotheses do not always fully materialize for many households. Several studies using macroeconomic data have observed that inequality is lower when measured with consumption instead of income, which suggests that not all income is consumed at the time of receipt (Cutler, Katz et al. 1991, Barrett and Crossley 2000, Fisher, Johnson et al. 2013). A study of older people in the United States by Fisher, Johnson et al (2009) found that, while many households lacked significant assets, those households with assets had higher consumption levels than households with lower levels of assets. Other studies have shown that income is more variable over the short-term than in the long-term and that the discrete point-in-time income

measurements collected on many surveys may not provide a complete picture of the economic status of households (Mazumder 2001, Haider and Solon 2006).

While some inter-temporal smoothing of consumption appears to transpire, many studies have found that it occurs at lower levels than suggested by theory, especially among low-income households (Thurow 1969, Hayashi 1985, Mankiw, Rotemberg et al. 1985). One reason cited to explain these findings is that liquidity constraints and the lack of access to credit markets may restrict the ability of some households to fully adapt to income fluctuations (Hayashi 1985, Zeldes 1989). Many households are unable to save and cannot access credit in ways that allow consumption to be maintained when incomes are temporarily low. For example, data from the Survey of Consumer Finances consistently show that many households have very low levels of assets that can be used to smooth expenditures (Bricker, J., et al. 2014). Another reason why consumption smoothing may be lower than what is predicted by theory is that many households often do not exercise what some economists call “rational” economic behaviors by over or under consuming during certain periods in a manner that does not maximize their long-term consumption levels (Shea 1995, Laibson 1997, Camerer, Loewenstein et al. 2011). Many of these studies show that households place greater emphasis on current consumption than on future consumption even when these spending patterns result in reductions in long-term aggregate consumption.

Theories concerning the inter-temporal spending and saving behavior of agents are not the only explanations offered to clarify why some households report very different levels of income and consumption on household surveys. An

explanation offered by Meyer and Sullivan (2003) is that the discrepancies primarily result from misreporting of income, especially among low-income households. For example, Meyer, Mok et al. (2009) found significant levels of underreporting of various types of transfer incomes on several household surveys in the United States. These patterns also have been found by other scholars as well. For example, a study by Davies and Fisher (2009) found that Supplemental Security Income (SSI) is misreported in the Current Population Survey (CPS-ASEC) and poverty rates are decreased when SSI administrative data are substituted for self-reported data. A study by Wheaton (2007) documented underreporting of benefits from means-tested transfer programs, including income from Temporary Assistance for Needy Families (TANF) and food stamps from the Supplemental Nutrition Assistance Program (SNAP). Moreover, income from illicit sources and “off-the-book” income such as tips are believed to be underreported on household surveys.

Like income-based measures, consumption-based measures may have their own limitations. For example, expenditures have been shown to be underreported to some degree in the Consumer Expenditure Survey (CE), the primary expenditure survey conducted in the United States, although the misreporting appears to be more prevalent for certain items than for others (Sabelhaus, Johnson et al. 2012, Bee, A., et al 2012). However, Meyer and Sullivan (2013) argue that aggregate estimates of underreporting overstate the weakness of using expenditure data in the CE to analyze the economic well-being of typical families because the misreporting is overrepresented among upper-income households.

Another challenge to measuring consumption is that the reference periods used in some surveys are sometimes too short to obtain a precise measurement of families' normal expenditure levels (Johnson 2004). This is especially problematic because most data collection instruments gather information on expenditures, which is not exactly the same as consumption because some durables are not fully consumed at the time of purchase. For example, motor vehicles, housing, and household appliances are generally purchased infrequently but are "consumed" for a long-time and using data that does not properly adjust for these periodic purchases can provide an inaccurate estimate of families' consumption levels at a given point in time. This problem is difficult to rectify entirely, but is partly mitigated by imputing "service flows" (Slesnick 2001), which are the estimated benefits of possessing durable items for a particular period of time.

Johnson (2004) argues that if consumption and income are not definitively better than each other then it may be preferable to use both measures to evaluate the economic condition of families because they each have important advantages over the other. For example, consumption measures might be preferable for examining the economic conditions of people that consume more than their income levels during their younger years when they are in school and later when they are retired, but consume less than their incomes during their working years. However, income measures may be preferable to consumption measures when examining people that over consume while they obtain excessive debt, or encounter a life-changing problem that decreases their long-term incomes. A problem with cross-sectional measurements of both income and poverty measures is that they do not explain

whether families are currently consuming more or less than their long-term incomes. Using both income and consumption measures simultaneously mitigates this problem to some degree. For example, in their analysis of older persons in the United States Fisher, Johnson et al. (2009) found that the “poorest among the older population are those who are income and consumption poor”.

Theoretically, consumption could increase life satisfaction through several channels. A common prediction in the economics literature is that the acquisition of more desired goods and services should increase well-being by reducing material hardship, making life easier, or providing entertainment. The vast majority of economic arguments are based on this assumption and society’s drive for larger and more luxurious consumer items have been used as evidence to support it. However, consumption could influence life satisfaction in other ways. Expensive purchases of clothing, jewelry, and vehicles could be coveted by some people because these items increase people’s social standing and, possibly, respect in some social circumstances. In addition, consumption of goods that foster social interactions could increase well-being independent of the utility derived from the purchase of the item or service. For example, a ticket to a charity event may increase someone’s well-being even after the evening is over if the event increases their social bond with a friend or relative at the event.

Recent scholarly publications have observed a positive correlation between income and several dimensions of SWB, although there remains considerable discussion regarding the underlying causes of the association and whether absolute or relative income is the primary explanatory factor in the relationship. Some scholars

argue that a certain amount of adaptation occurs when income or events change in people's lives. This adaptation could theoretically impact some types of consumption more than other types. For example, Scitovsky (1976) argued that cultural goods such as art, music, and beautiful scenery are less subject to hedonic adaptation than consumption of comfort goods like furniture and cars and are better long-term investments for happiness.

While there is a rich literature examining the association between income and subjective well-being, there have not been a lot of studies directly examining the relationship between consumption and well-being (Prapaipanich 2012). One study that did examine the role of consumption was conducted by DeLeire and Kalil (2010) by observing life satisfaction using a five-component scale derived from the Health and Retirement Survey (HRS), a nationally representative survey of persons ages 50 and older. Their model regressed life satisfaction on income, wealth, personality characteristics, a range of demographic variables, and consumption amounts. They found that only spending on leisure items such as tickets to movies, sporting events, performing arts, and physical activities was associated with increases in life satisfaction. Expenditures on other items did not statistically predict higher SWB. However, the authors suggested that the benefits of leisure could be realized through the social connections that they create. Other types of spending such as food, utilities, and health care were not associated with higher levels of life satisfaction.

One other study that examined the effects of consumption on life satisfaction was conducted by Headey, Muffels et al. (2004). This study examined data from Great Britain and Hungary in the 1990s and found mixed results regarding the

relationship between consumption and well-being while simultaneously controlling for income and wealth. The results from an Ordinary Least Squares (OLS) analysis of cross-sectional data found that income and wealth had positive effects on life satisfaction in both countries, but that consumption was positively associated with life satisfaction only in Hungary. The authors noted that some of the differences could be attributed to the different methods used to collect data on consumption in Great Britain and Hungary. However, the authors repeated the cross-sectional analysis and found that for both Great Britain and Hungary consumption was positively associated with satisfaction when the outcome variable was changed to “satisfaction with material standard of living”.

### **2.3 Methodology**

The data used in the analysis were from the Panel Study of Income Dynamics (PSID), a longitudinal survey that began collecting information on U.S. families in 1968 (Li, Schoeni et al. 2010). The data were collected annually between 1968 and 1997, and collected biannually thereafter. The PSID provides a rich dataset to analyze predictors of life satisfaction because it includes detailed information on family structure, assets and debts, income by source, health status, receipt of government benefits, and consumer expenditures.

Although food and housing expenditures have been collected for many years, the PSID added questions to the survey beginning in 1999 to provide a more comprehensive picture of household consumption. The 1999 expansion added questions concerning out-of-pocket medical spending, educational expenses, and transportation-related expenses, including outlays for up to three vehicles

(Samancioglu, Andreski et al. 2014). In 2005, the expenditures questions were further expanded to include information on home maintenance and repairs, household furnishings, clothing, vacations and entertainment, and trips. An analysis by Li, Schoeni et al. 2010 examined the expenditure data in the PSID and found that its estimates were similar to those compiled from the Bureau of Labor Statistic's Consumer Expenditure Survey (CE).

Most of the data in the PSID were collected through interviews with the heads of households or the wives/cohabiting partners of the heads of households. The survey collected basic demographic information on the rest of the family members that lived with the respondents and used poststratification techniques to align the sample weights to represent the United States. However, the respondents that answered the life satisfaction question were not reweighted to represent the total adult population. For example, the survey only asked the life satisfaction question to one person in married couple families and, therefore, married persons were underrepresented. Table 1.1 in the first essay compared the characteristics of the PSID respondents to the characteristics of persons age 18 and older in the Current Population Survey. The PSID respondents were more likely to be single females, non-Hispanic White, have a B.A. college degree, have health insurance, to have somewhat higher family incomes, and to be employed at the time of the survey. However, compared to the adults in the CPS-ASEC, the PSID respondents had lower self-reported health status and were somewhat older. In addition, adult children that had not yet left their parental homes were normally not the respondents for their

respective families and, therefore, did not answer the life satisfaction question. My analysis excluded 237 respondents because they were:

- Not living in the United States at the time of the survey (48 respondents)
- Living in institutions (77 respondents)
- Under 18 years old (2 respondents)
- Not the heads, or wives/cohabiting partners of the heads (159 respondents)

After these exclusions, 8,668 respondents remained for analysis. The primary measurement of well-being throughout my analysis was derived from the responses to a life satisfaction question presented as the first question on the survey. The life satisfaction question was added in 2009 and was included again in the 2011 wave.

The question wording was the following:

*Please think about your life-as-a-whole. How satisfied are you with it? Are you completely satisfied, somewhat satisfied, not very satisfied, or not at all satisfied?*

In addition to a life satisfaction question, the PSID also collected detailed information on household incomes, government transfers, family expenditures, marital status, housing, and the health status of the heads of households and their wives. The PSID contained a series of questions that documented the consumer expenditures of the respondents. The questions about food, housing, and transportation primarily referred to current expenditures at the time of the 2011 survey. In contrast, the reference period for expenditures on health care, child care,

---

<sup>7</sup> The sum of the four reasons for exclusion did not add perfectly to 239 because some respondents were represented in more than one exclusion category.

clothing, housing furnishings, education, and recreation was the previous calendar year. All consumption figures were adjusted to reflect annual estimates.

Consistent with prior findings, total expenditures estimated from the 2011 PSID were similar to the expenditure totals reported by the Bureau of Labor Statistics (BLS) from the Consumer Expenditures Survey (CE). For example, after subtracting personal insurance and pensions from the total expenditures, the average family expenditure sum in the 2011 PSID was \$45,150, compared to average household expenditures of \$44,281 reported in the 2011 CE.<sup>8</sup>

A few adjustments were made to the summation of total expenditures to produce an estimate of family consumption. To adjust the metrics for different family compositions, family incomes and expenditures were divided by the square root of family size. This adjustment was important and is standard practice in economic measurement because it reflects the fact that larger families require more income to sustain themselves than do smaller families, although there is an economy of scale in the relationship. For example, as families get larger they may need more clothing and food but probably do not require additional kitchens, lawn mowers, and washing machines (Citro and Michael 1995).

The PSID collects expenditures for food consumed at home separately from food purchases made with SNAP (i.e., food stamps). In order to be consistent with expenditure data from the Consumer Expenditure Survey, and for theoretical reasons, the estimated market values of SNAP benefits were added to expenditures for total food and the food at home subcategory presented in Table 1. Expenditures on

---

<sup>8</sup> Unlike the expenditure values presented in the Results section, the numbers for this comparison were not adjusted with an equivalence scale in order to produce a figure that was consistent with the estimates published by the Bureau of Labor Statistics.

charitable contributions were excluded because these transfers were primarily intended to increase the consumption or well-being of persons outside of the respondents' families.

Expenditures for mortgages, insurance, property taxes, and repairs were excluded for homeowners and replaced with a rental equivalent. Following Garner and Short (2009), the rental equivalent for homeowners was estimated using capitalization rates derived from the restricted-use version of the 2003 Consumer Expenditure Survey (CE)<sup>9</sup>. As explained by Garner and Short (2009) the capitalization rate represents the “tradeoff between investing in one’s own home or placing the capital in other investments that would yield a return in income flow over time.” The rental equivalent was derived by multiplying the self-reported house values by their respective regional capitalization rates. The estimated rental benefits of living in public and subsidized housing were added to rent totals for families that resided in free or reduced-cost units paid by government programs using a methodology explained in detail in the first essay of my dissertation.

Another adjustment made to expenditures was to replace vehicle loans, down payments, and leases with a service flow for these vehicles. Following Johnson, Smeeding et al. 2005 and Meyer and Sullivan (2013), I used the purchase price of the vehicle and estimated the flow with the change in the value of the vehicle as follows:

---

<sup>9</sup> The capitalization rates were based on additional tabulations provided by Thesia Garner. They were as follows: Northeast = 7.698, Midwest = 6.886, South = 7.731 and West = 5.352.

$$S = (r + d) * (1 - d)^a * P$$

S = estimated service flow

r = interest rate<sup>10</sup>

d = depreciation rate<sup>11</sup>

a = age of the vehicle

P = purchase price

The PSID began collecting information on the ownership of up to three vehicles beginning with the 1999 wave, including the purchase price of the vehicles if purchased in the two years before the survey. My analysis used the 2011 wave to obtain the list of vehicles in possession of the respondents at the time of the survey and obtained the purchase prices of the vehicles by matching data from the 1999-2011 waves. For example, the vehicle price of a car purchased in 2006 would have been reported on the 2007 survey wave, but would be matched to the same vehicle reported in the 2011 wave using the family's identification number and the vehicle make and model year. When the purchase prices of the vehicles were not available in the current or previous waves the values were assigned based on the mean values of all of the vehicles in the PSID with the same manufacturer, model, and model year. In the few occurrences where a match was not possible, the mean vehicle flow value for all vehicles was assigned. The National Bureau for Economic Research's TAXSIM model was used to estimate values for federal, state, and FICA payroll taxes. The methodology used to make these estimations is discussed in the first essay of my dissertation.

---

<sup>10</sup> The interest rate was based on the Consumer Price Index Research Series (CPI-U-RS)

<sup>11</sup> Following Meyer and Sullivan (2013) I use a depreciation rate of .13559. This number was obtained from the authors.

The PSID collected the values of non-cash transfers for SNAP and government heating assistance programs, but did not include the values for WIC, the School Lunch program, and the rental value of government housing assistance programs. The benefits received from the School Lunch Program were estimated by assuming that all age-eligible children received benefits if the respondents indicated that their families participated in the program. Family income was used to estimate whether the participating families' received free or reduced-price meals.<sup>12</sup> Estimated benefits were assigned to participating families using the U.S. Department of Agriculture's reimbursement rates.<sup>13</sup> Benefits for the WIC were estimated by multiplying the number of age-eligible persons in the families by the average benefit per person, differentiated by state of residence. The estimated values for housing assistance were estimated with a "cold-deck" matching approach, using the Current Population Survey, Annual Demographic and Economic Supplement (CPS-ASEC) as the donor source. The methodology used to assign the tax estimates is discussed in more detail in the first essay of this dissertation.

The PSID generally received high response rates for a majority of the questions asked on the survey. However, most of the variables had at least some instances where the respondents reported "don't know" or "refused". When these cases occurred, multiple imputation techniques from multivariate models were used.

## **2.4 Results**

The mean consumption values from the 2011 PSID respondents are presented in Table 2.1 by category. As stated in the Methodology section, all consumption

---

<sup>12</sup> [http://www.fns.usda.gov/sites/default/files/SP\\_30\\_CACFP\\_16\\_SFSP\\_14-2010os.pdf](http://www.fns.usda.gov/sites/default/files/SP_30_CACFP_16_SFSP_14-2010os.pdf)

<sup>13</sup> <http://www.fns.usda.gov/sites/default/files/NSLPFactSheet.pdf>

values were divided by the square root of family size to adjust for differences in family composition. The average respondent lived in a family with a consumption amount of about \$30,800, with food, housing, and transportation combining for almost 80 percent of this total. Mean housing consumption was about \$13,200, which constituted 43 percent of the total, by far the largest share of the major categories shown. Rent and the rental equivalent of owner-occupied housing had a mean value of \$9,260, underlying its large influence on overall consumption. The remaining mean housing expenditures on utilities, telephone and internet, and home furnishings combined to almost \$4,000.

The second largest consumption category was transportation. The estimated vehicle service flows consisted of a little less than six percent of total consumption. The mean expenditures for gas, auto insurance, and upkeep had a combined value of \$4,344, more than double the value of the vehicle service flows. Mean expenditures on other transportation, including taxis and public transportation, summed to about \$200. After housing and transportation, food constituted the third largest source of consumption among the PSID respondents, with a mean value of about \$5,100. Food at home, including the value for SNAP benefits, was about two-thirds of total food expenditures (69 percent) and food away consisted of the remaining third (31 percent). The mean expenditure values for clothing (\$891), health care (\$2,142), trips and recreation (\$1,823), education (\$1,041), and child care (\$232) together represented about 20 percent of total consumption.

**Table 2.1: Mean Consumption Amounts by Category**

<b>Type of Consumption</b>	<b>Mean</b>	<b>Std. Error</b>	<b>95% CI Low</b>	<b>95% CI High</b>
<b>Total Consumption</b>	30,763	596	29,571	31,955
<b>Food</b>	5,108	57	4,995	5,222
Food At Home	3,517	34	3,449	3,586
Food Away & Delivery	1,591	32	1,527	1,655
<b>Housing</b>	13,243	324	12,596	13,891
Rent or Ownership Equivalents	9,260	284	8,692	9,829
Utilities	1,818	25	1,767	1,869
Telephone & Internet	1,440	16	1,407	1,472
Home Furnishings	725	50	625	825
<b>Clothing</b>	891	33	826	956
<b>Transportation</b>	6,283	107	6,069	6,497
Vehicle Service Flows	1,696	40	1,615	1,777
Gas	1,665	22	1,620	1,710
Auto Insurance & Other Exp.	2,679	69	2,542	2,817
Other Transportation	243	26	191	294
<b>Health Care</b>	2,142	71	1,999	2,285
Health Insurance	1,119	45	1,030	1,209
Other Health Exp.	1,023	40	942	1,104
<b>Trips &amp; Recreation</b>	1,823	76	1,670	1,975
Trips	1,183	47	1,090	1,276
Other Recreation	640	41	557	723
<b>Education</b>	1,041	59	923	1,159
<b>Child Care</b>	232	14	205	259

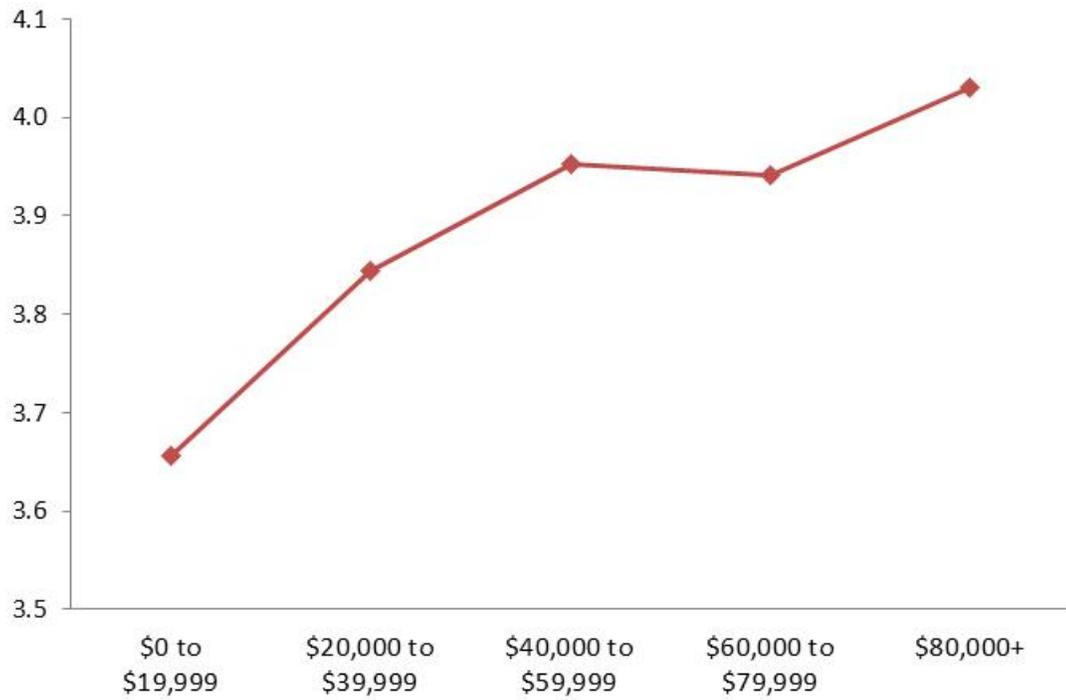
Table 2.2 displays mean values for life satisfaction scores, equivalent after-tax income, including estimated values for non-cash government transfers, and equivalent consumption by the demographics of the respondents. In the aggregate, the respondents reported mean life satisfaction scores of 3.8 out of a maximum of 5. On average, married males and married females had higher life satisfaction scores than single respondents. Mean life satisfaction scores for respondents with a bachelor's degree were higher than those without bachelor's degrees. Respondents that were employed and not in the labor force had mean life satisfaction scores that were higher than respondents that were unemployed. Respondents that attended religious services an average of at least one time per week had higher mean scores, and respondents that did not have health insurance had lower mean scores than other respondents.

Table 2.2 also displays the mean equivalent after-tax incomes and equivalent consumption amounts for the respondents' families. Overall, mean consumption was \$30,763, or about 76 percent of the mean after-tax cash income of \$40,489. However, the differences between the consumption and income means varied across the demographic groups. Single female respondents, for example, had a mean consumption value of \$25,445, which was 87 percent of the mean value for their after-tax cash income (\$29,246). In comparison, the mean consumption amount for married men was \$38,196, which was 70 percent of the mean value of their after-tax income (\$54,574). As expected, respondents with higher consumption amounts usually had higher income amounts. For example, respondents who were single, non-Hispanic Black, had less formal education, did not have health insurance, or were unemployed had lower mean values for consumption and for after-tax cash income.

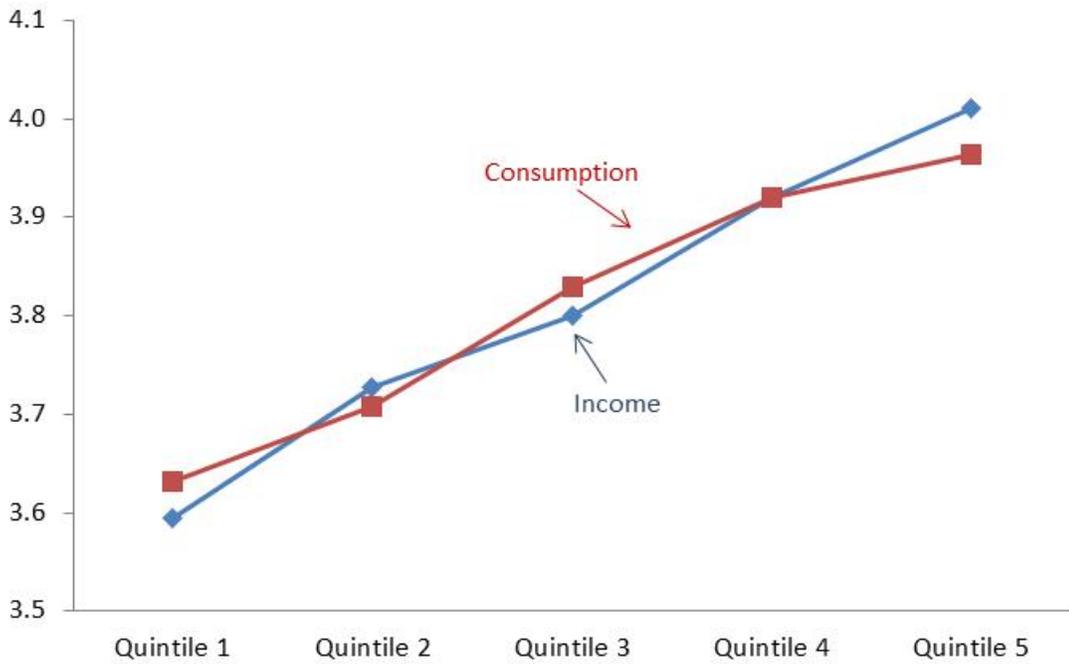
**Table 2.2: Mean Life Satisfaction Scores, After-Tax Income, and Consumption**

<b>Demographic Characteristic</b>	<b>Life Satisfaction Mean (SE)</b>	<b>After-Tax Income Mean (SE)</b>	<b>Consumption Mean (SE)</b>
<b>All Respondents</b>	3.8105 (.0149)	\$40,489 (883)	\$30,763 (596)
<b>Sex &amp; Marital Status</b>			
Single Female	3.6470 (.0194)	\$29,246 (711)	\$25,445 (693)
Single Male	3.5466 (.0333)	\$35,836 (1748)	\$28,023 (1139)
Married Female	4.0240 (.0213)	\$45,673 (1188)	\$32,974 (667)
Married Male	4.0403 (.0265)	\$54,574 (1497)	\$38,196 (678)
<b>Race &amp; Ethnicity</b>			
Hispanic	3.8450 (.0530)	\$30,099 (1379)	\$24,492 (983)
Non-Hispanic White	3.8283 (.0168)	\$44,298 (1014)	\$33,131 (709)
Non-Hispanic Black	3.6827 (.0338)	\$25,880 (767)	\$21,799 (556)
Non-Hispanic Other	3.0801 (.0525)	\$40,027 (2517)	\$29,907 (1211)
<b>Education</b>			
Less Than a HS Diploma	3.7380 (.0390)	\$20,451 (585)	\$18,544 (620)
HS Diploma, No College	3.7642 (.0249)	\$30,598 (790)	\$24,859 (634)
Some College, No BA	3.7634 (.0220)	\$37,428 (762)	\$29,411 (535)
BA or More	3.9143 (.0209)	\$58,472 (1394)	\$41,194 (767)
<b>Employment Status</b>			
Employed	3.8379 (.0147)	\$45,340 (1010)	\$32,776 (522)
Unemployed	3.4512 (.0619)	\$22,846 (1136)	\$20,149 (1181)
Not in Labor Force	3.8326 (.0269)	\$33,591 (1174)	\$28,674 (930)
<b>Other Characteristics</b>			
Lived Both Parents to Age 16	3.8360 (.0171)	\$43,140 (906)	\$32,361 (615)
Attends Rel. Services Weekly	3.9540 (.0229)	\$38,441 (879)	\$30,451 (586)
No Health Insurance	3.5761 (.0373)	\$22,466 (753)	\$20,389 (540)
<b>Region of Residence</b>			
Northeast	3.7588 (.0191)	\$48,913 (2271)	\$38,506 (1873)
North Central	3.8156 (.0317)	\$36,505 (1223)	\$26,570 (828)
South	3.8102 (.0259)	\$38,002 (1545)	\$29,407 (960)
West	3.8490 (.0335)	\$41,704 (1622)	\$30,816 (695)

**Figure 2.1: Mean Life Satisfaction Scores by Equivalent Consumption Amounts**



**Figure 2.2: Mean Life Satisfaction Scores by Equivalent Income and Equivalent Consumption Quintile**



Mean life satisfaction scores are presented graphically in Figure 2.1 using equivalent consumption multiples of \$20,000. As predicted by economic theory, mean life satisfaction values reveal a positive relationship with consumption. These patterns are further displayed in Figure 2.2, which shows mean life satisfaction scores across income and consumption quintiles. A key finding from this graph is the close association between the mean life satisfaction values across the distribution for both income and consumption. In each of the five quintiles, the differences in life satisfaction scores were not statistically different from each other.

Table 2.3 and Table 2.4 present the results of the ordered-logistic models that predict life satisfaction based on logged income and logged consumption. When controlling for the variables in the tables, the coefficients for logged income (0.1378) and logged consumption (0.1370) were both positive and statistically significant. Their coefficients were not statistically different from each other, suggesting that both measures similarly predict life satisfaction scores, even after controlling for other factors. The other control variables were generally similar with what has been found elsewhere in the literature and were similar to what was found in the first essay of my dissertation.

**Table 2.3: Ordered Logistic Model Predicting Life Satisfaction with Income**

Variable	Coefficient	Std. Error	t	P>t
<b>Family Income</b>				
Logged After-Tax Family Income	0.1378	0.0404	3.41	0.001
Logged Non-Cash Gov. Transfers	-0.0241	0.0133	-1.82	0.074
<b>Gender and Marital Status</b>				
Single Female (Omitted)				
Single Male	-0.1923	0.1024	-1.88	0.065
Married Female	0.6508	0.0907	7.17	0.000
Married Male	0.5828	0.1011	5.76	0.000
<b>Race &amp; Ethnicity</b>				
Hispanic	0.1612	0.1226	1.31	0.194
Non-Hispanic White (Omitted)				
Non-Hispanic Black	0.1123	0.1010	1.11	0.271
Non-Hispanic Other	0.0927	0.1249	0.74	0.461
<b>Education</b>				
Less Than a HS Diploma	0.2933	0.1039	2.82	0.007
HS Diploma, No College (Omitted)				
Some College, No BA	-0.1243	0.0743	-1.67	0.100
BA or More	-0.1035	0.0671	-1.54	0.128
<b>Employment Status</b>				
Employed (Omitted)				
Unemployed	-0.3815	0.1532	-2.49	0.016
Not in Labor Force	0.2489	0.0802	3.10	0.003
<b>Other Variables</b>				
Lived Parents Until Age 16	0.0247	0.0666	0.37	0.712
Attends Rel. Services 1x Week	0.2342	0.0593	3.95	0.000
Uninsured at Time of Survey	-0.2372	0.0871	-2.72	0.009
Self-Reported Health Status	0.6557	0.0331	19.82	0.000
# Family Members	0.0865	0.0494	1.75	0.085
# Children	-0.0052	0.0607	-0.09	0.932
Age	-0.0442	0.0111	-3.97	0.000
Age <sup>2</sup>	0.0005	0.0001	4.11	0.000
<b>Region</b>				
Northeast (Omitted)				
North Central	0.1821	0.0609	2.99	0.004
South	0.2209	0.0750	2.95	0.005
West	0.1967	0.0889	2.21	0.031
/cut1	-1.4143	0.5119	-2.76	0.008
/cut2	0.1607	0.4947	0.32	0.746
/cut3	2.7241	0.4789	5.69	0.000
/cut4	5.0828	0.4911	10.35	0.000

**Table 2.4: Ordered Logistic Model Predicting Life Satisfaction with Consumption**

Variable	Coefficient	Std. Error	t	P>t
<b>Consumption</b>				
Logged Consumption	0.1370	0.0479	2.86	0.006
<b>Gender and Marital Status</b>				
Single Female (Omitted)				
Single Male	-0.1648	0.0995	-1.66	0.103
Married Female	0.7019	0.0869	8.08	0.000
Married Male	0.6314	0.1012	6.24	0.000
<b>Race &amp; Ethnicity</b>				
Hispanic	0.1349	0.1219	1.11	0.273
Non-Hispanic White (Omitted)				
Non-Hispanic Black	0.1043	0.0980	1.06	0.291
Non-Hispanic Other	0.0877	0.1216	0.72	0.474
<b>Education</b>				
Less Than a HS Diploma	0.2714	0.1054	2.58	0.013
HS Diploma, No College (Omitted)				
Some College, No BA	-0.1213	0.0728	-1.67	0.101
BA or More	-0.0791	0.0663	-1.19	0.237
<b>Employment Status</b>				
Employed (Omitted)				
Unemployed	-0.4247	0.1505	-2.82	0.006
Not in Labor Force	0.2038	0.0770	2.65	0.010
<b>Other Variables</b>				
Lived Parents Until Age 16	0.0296	0.0656	0.45	0.653
Attends Rel. Services 1x Week	0.2218	0.0590	3.76	0.000
Uninsured at Time of Survey	-0.2597	0.0836	-3.11	0.003
Self-Reported Health Status	0.6627	0.0332	19.95	0.000
# Family Members	0.0787	0.0485	1.62	0.110
# Children	-0.0186	0.0602	-0.31	0.759
Age	-0.0418	0.0107	-3.92	0.000
Age <sup>2</sup>	0.0005	0.0001	4.17	0.000
<b>Region</b>				
Northeast (Omitted)				
North Central	0.2021	0.0539	3.75	0.000
South	0.2373	0.0736	3.23	0.002
West	0.2110	0.0907	2.33	0.023
/cut1	-1.2923	0.5637	-2.29	0.025
/cut2	0.2743	0.5268	0.52	0.605
/cut3	2.8317	0.5156	5.49	0.000
/cut4	5.1778	0.5069	10.21	0.000

The model used to produce the results presented in Table 2.4 is repeated 12 more times using alternative constructions of consumption and the coefficients from these models, along with their standard errors, are presented in Table 2.5. Each line represents a separate model based on the consumption definition shown in the first column. The first half of the table presents the results using definitions of expenditures that do not make any adjustments for the housing and transportation durables. This means that rents, mortgage payments, property taxes, home insurance, and household repairs are included in the measure, but the rental equivalents from owner-occupied homes are excluded. In addition, the estimated values from owning a vehicle are replaced with vehicle loans, down payments, and leases. Line two on this table labeled “Expenditures” is based on a definition of expenditures that is similar to what BLS reports in its expenditure reports, minus expenditures for pensions and personal insurance.

The next lines in Table 2.5 present additional models under the label “Adjust Housing and Vehicle Expenditures with Service Flows”. These models are based on expenditure totals that subtract various expenses from the consumption totals. Unlike the coefficients shown in the first half of the table, the coefficients presented in this section continue to include the values for housing rental equivalents and vehicle service flows. The line that subtracts charities from the total uses the same definition for consumption used to produce the results in Table 2.4.

The primary take-away finding from this table is that the coefficients do not vary statistically when alterations are made to the definition of consumption. For example, although the coefficients are somewhat lower for the models based on pure

expenditures (i.e., without adjusting for rental equivalents and vehicle service flows), the differences are not statistically significant. The same can be said for comparisons of the other coefficients. The subtraction of health expenses, child care, and educational expenditures do not appear to affect the primary results of the model to any significant degree.

**Table 2.5: Ordered Logistic Models Predicting Life Satisfaction Using Alternative Definitions of Equivalent Consumption**

Consumption Definition	Coefficient.	Std. Error	t	P>t
<b>Expenditures</b>	0.1296	0.0473	2.74	0.008
- Health	0.1228	0.0427	2.88	0.006
- Charities	0.1221	0.0464	2.63	0.011
- Charities & Health	0.1161	0.0419	2.77	0.007
- Charities & Health & Child Care	0.1174	0.0418	2.81	0.007
- Charities & Health & Child Care & Education	0.1264	0.0454	2.78	0.007
<b>Adjust Housing and Vehicle Expenditures With Service Flows</b>	0.1425	0.0488	2.92	0.005
- Health	0.1342	0.0446	3.01	0.004
- Charities (Main Definition)	0.1370	0.0479	2.86	0.006
- Charities & Health	0.1248	0.0424	2.95	0.005
- Charities & Health & Child Care	0.1262	0.0424	2.98	0.004
- Charities & Health & Child Care & Education	0.1342	0.0461	2.91	0.005
<b>Food Expenditures Only</b>	0.1013	0.0290	3.50	0.001

## 2.5 Discussion

The purpose of the study was to determine whether consumption is a better predictor of life satisfaction than income in the United States. To study this topic, a consumption measure was constructed by summing household expenditures reported by respondents participating in the PSID and adjustments were made to these sums to account for the possession of vehicle and housing durables and government benefits received through participation in housing programs and the Supplemental Food Assistance Program (SNAP). A discretionary income measure was created by subtracting federal, state, and payroll taxes from total family cash income and adding the estimated value of non-cash benefits from several government programs. The relationship between these two metrics and self-reported life satisfaction scores was examined using descriptive statistics and ordered-logistic regression models. Checks of robustness were made to determine whether alternative consumption metrics altered these relationships.

If, as its proponents argue, consumption is better reported in household surveys and if consumption is superior at measuring long-term material living standards than income then it would seem likely that consumption would be a better predictor of life satisfaction than income, assuming that materialistic gains increase well-being. Despite its possible theoretical advantages, the analysis did not find that consumption was more statistically predictive of life satisfaction than is income. One possible reason why consumption and income could be similarly predictive of life satisfaction is that income may have nonpecuniary effects on well-being which counterbalances the potential advantages of the consumption metric. In general,

higher income people are generally more successful in their careers and sometimes get treated with greater respect than lower income people in the workplace. Low-income working families often work unpredictable hours, have troubles securing child care arrangements, do not get paid leave or sick days, and are less likely to be treated as valuable employees because their skill sets are easier to replace than are upper-income persons.

Low-income persons also are more likely to work in industries with more layoffs and turnover. High paying jobs may bring prestige and a sense of accomplishment that influences life satisfaction above the material lifestyles they support. Therefore, it's possible that consumption is a better indication of economic living standards than is income, but that its advantage is neutralized because of the psychological externalities that accompany many high income professions. Another consideration is that consumption and income may have different impacts on other forms of hedonic well-being that were not captured in this essay. For example, it might be possible that additional consumption leads to modest increases in life satisfaction, but produces gains in hedonic well-being areas such as pain and comfort. For example, spending additional money to purchase better food may not increase someone's overall life satisfaction but may bring temporary comfort. It may also be possible that consumption and income are similar predictors of subjective well-being but that consumption is a better predictor of material hardships and other objective measure of well-being. The literature in this area is underdeveloped but some studies have found that consumption is a better predictor of some material hardship outcomes than is income (Meyer and Sullivan 2003).

The second finding from the analysis is that the predictions of life satisfaction do not appear to be extremely sensitive to the definition of consumption used. This finding was somewhat surprising because some expenditure types are associated with positive well-being more than for others. For example, expenditures on education, health and medicine, and child care are often not people's most exciting purchases, at least when compared to food, trips, and recreation. In addition, it was also noteworthy that the inclusion of the rental equivalent for owner-occupied homes and the vehicle service flows did not create a significantly more predictive metric of life satisfaction than the models based on the raw expenditures. It might be possible that the metrics really were different, but not enough to be detected with the relatively small sample size of the PSID. The regression coefficients that incorporated the rental equivalent for owner-occupied homes and the vehicle service flows were higher, though not statistically significant than the coefficients based exclusively on expenditures.

The degree of association between income and life satisfaction among the PSID respondents was similar to what has previously been found in the literature. After controlling for an array of social and demographic factors, the predictive power of income on life satisfaction was positive, though lower than what mainstream economic models often expect. In the full regression models, health, marriage, and unemployment were much more predictive of life satisfaction than either income or consumption. The relationship between income and life satisfaction in the analysis was not surprising, but it is important to the literature because it is one of the first studies to examine this relationship using the new PSID life satisfaction question.

The ordered logistic regressions conducted in this essay examined the influence of consumption on life satisfaction across the entire distribution. Future analysis may want to examine to what extent these relationships vary across the income distribution and across age cohorts. For example, it's possible that people of a particular age group or social class may place a different emphasis on their consumption levels than other people.

These findings add to this discussion because they confirm a positive relationship between material prosperity and life satisfaction using an alternative metric. All economic measurements, including income and consumption, have strengths and weaknesses in the way in which they are collected and findings that are replicated using different methodological approaches increase our confidence in the relationships. The relationship between pecuniary measures and life satisfaction is potentially policy relevant because many governments favor growth-centered ideologies. However, if non-pecuniary factors are more influential on well-being than income then governments may want to concentrate on alternative priorities in addition to economic growth. These policy recommendations have come from a diverse group of advocates. For example, the conservative author Charles Murray (2012) has argued that happiness research supports policies promoting traditional values such as marriage, family, and hard work through employment. Richard Layard (2011), on the other hand, argues that happiness research supports helping the poor, especially in the developing world, and supports implementing family-friendly policies such as parental leave and access to child care.

## Chapter 3: The Intergenerational Influence of Income on Life Satisfaction

### 3.1 Introduction

The topic of intergenerational income mobility has received considerable attention in recent years in the United States and elsewhere. The most contemporary findings reveal that, although many adult persons live in households with different incomes than the households they lived in as children, there is an association between childhood socio-economic status and future life outcomes (Duncan and Brooks-Gunn 1997, Chadwick and Solon 2002, Isaacs 2007, Ermisch, Jantti et al. 2012). The potential social and economic consequences of this association are frequently discussed in political and academic areas. Thus far, most of the related literature has examined the impact of family background on well-being using objective measures such as income, education, and health outcomes. The literature is less developed concerning the link between family background and subjective well-being (SWB), which refers to how people self-evaluate and experience various aspects of their lives. This article explores the connection between childhood family incomes and future life satisfaction, one type of subjective well-being. Specifically, the essay addresses the following question:

*Do parental incomes influence the life satisfaction of their children when they are adults?*

Recent evidence has shown that people in the upper part of the income distribution report higher life satisfaction scores, on average, than lower income persons. If family background influences eventual success and if future success

influences life satisfaction, then it may be that family background impacts long-term life satisfaction. On the other hand, adults that live in families with higher incomes when they were children may have higher material expectations that could decrease their well-being, especially if their own financial situation is lower than what they experienced as children and what they had expected in their adult lives.

To analyze this topic, the longitudinal data from the Panel Study of Income Dynamics (PSID) was used to obtain the family incomes of people when they were ages 13 to 17 and examined their association with life satisfaction as adults in 2011. The primary finding from the essay is that the family incomes of teenagers are not strongly predictive of their future life satisfaction as adults.

### **3.2 Literature Review**

The academic literature on intergenerational mobility has focused primarily on how income and occupational inequality influences objective measures of well-being, which are concerned with features considered broadly important to society but that are independent of individuals' own values and perceptions. Examples of objective measures of well-being include: literacy rates, income, unemployment, cortisol levels, longevity, and income. While objective measures have tended to dominate much of the research in the fields of economics and public policy, subjective measures have recently received greater attention. These measures are concerned with how individuals evaluate and experience various aspects of their lives. Examples of SWB measures include: happiness, sadness, life satisfaction, pain, and arousal.

Subjective well-being measures have several desirable qualities that complement objective measures of well-being. One of these is that they are agent – oriented; they allow individuals to evaluate their circumstances instead of applying the same global measures to all persons. While most people desire, at least to some degree, similar things such as physical comforts, positive inter-personal relationships, safety, health, sexual intimacy, and material possessions, measures of subjective well-being allow people to weight various aspects of their lives with their own perception of what is important to them (Stone, Bradburn et al. 2013). For example, although many people value personal relationships as a part of their well-being, these relationships influence the happiness of some people more than others. Another advantage of subjective well-being measures is that they are global in nature; asking people how happy or satisfied they are captures a greater number of influential elements than a series of objective indicators directed towards particular goals or outcomes (Graham 2005). In other words, it would be difficult to create an exhaustive series of objective measures that include everything important to people’s well-being.

SWB measures also provide an alternative way of examining welfare outcomes than traditional models based on revealed preferences (Graham, Chattopadhyay et al. 2010). Revealed preferences models such as observed behavior are well suited to study constructs like expenditure choices, but may be less appropriate for examining situations when people often make decisions that do not maximize their long-term utility and well-being (e.g., smoking, eating junk food, overspending) or when they encounter information asymmetry and do not have a

perfect understanding of how to maximize their positions. SWB measures may also be more desirable than rational choice models when people lack control over certain elements in their lives such as cultural traditions or government institutions.

Subjective well-being measures can potentially help with measuring the effects of crime, corruption, and inequality on people's lives. Moreover, SWB measures potentially provide a way of measuring well-being when people make choices that do not bring them as much happiness as they had envisioned when they made the decisions (Kahneman and Krueger 2006). One practical benefit of subjective well-being measures is that they often receive higher response rates in surveys than many objective well-being measures. For example, the happiness question asked on the General Social Survey (GSS) in the United States receives higher response rates than the income questions in most household surveys (Kahneman and Krueger 2006).

People's parental incomes could have long-term effects on their subjective well-being. One way this could occur is if parents are able to influence the economic and social mobility of their children by providing additional resources toward child development, providing stable family situations, and transferring values that are correlated with future achievement (Hout 2015, Reeves 2015). In other words, parents could influence their children's life satisfaction by altering their life chances of success. The literature linking childhood background with long-term prosperity is extensive and generally confirms that intergenerational transfers occur among a variety of social and economic domains (Duncan and Brooks-Gunn 1997, Isaacs 2007, Ermisch, Jantti et al. 2012).

There are many ways to measure economic mobility. One method is called absolute mobility, which is the degree to which a generation's incomes compare to earlier generations without considering changes in the standard of living, except for inflation. In contrast, relative mobility measures the degree to which children move up or down the income distribution relative to the positions of their parents. With absolute mobility measures, it is possible for all persons to alter their standards of living across their lives. In contrast, relative measures always have winners and losers when mobility occurs.

In general, the literature for the United States has documented that absolute mobility has been more common over the last 50 years than relative mobility, although the estimates vary based on the time period and data source examined. For example, using the PSID Isaacs (2007) found that a considerable amount of absolute upward mobility occurred for adults who were children in 1968. In the sample she analyzed, about two out of three people had higher family incomes than their own parents had when they were children. She estimates that median family incomes grew by 29 percent between the generations. In contrast, she found significantly less relative income mobility and found "stickiness" at the upper and lower quintiles of the income distribution. For example, of the children born in the lowest quintile, 42 percent ended up in the lowest income quintile, and only 6 percent ended up in the highest quintile as adults. Other researchers also have studied intergenerational mobility. While the statistics and parent-to-child elasticities differ across investigations and methodologies, most of the studies are more or less consistent with Isaacs' findings that absolute mobility has been more common than relative mobility

in recent decades, and there remains a certain amount of “stickiness” in the upper and lower parts of the income distribution.

Several additional findings from these studies are relevant to the present study. One finding is that intergenerational elasticities of income can vary by the time period measured. Several studies have documented that individual and family incomes vary year to year and that averaging incomes across several years produce different estimates of intergenerational mobility than comparisons made from one year of income data (Lee and Solon 2009). It also appears that diverse mobility estimates are made when comparing the incomes of younger adults to those of their parents rather than when the incomes of older adults are compared to those of their parents as income is more varied for the younger adults. Younger people are more likely than older people to be in school, reduce work to spend time with children, and change jobs.

Certain groups of persons appear to have higher rates of mobility than others. Several studies have found differences in mobility based on race; for example, blacks appear to have had less upward and more downward mobility than have whites in recent decades (Isaacs, Sawhill et al. 2008, Sharkey 2013). Studies also show that family structure predicts mobility and that children with an absent parent are at a disadvantage (DeLeire and Lopoo 2010). In addition, incarceration and drug use have been shown to have a strong negative effect on upward mobility (Acs 2011).

In addition to inter-generational transfers of advantage and disadvantage, parent’s incomes may also affect the life satisfaction of their children by altering their pecuniary expectations. In general, the literature suggests that people’s material

expectations have increased during times of prosperity and economic growth. For example, survey data from the United States regarding how much money respondents report they need to meet the minimum living standards of their communities has increased over time, and poverty lines created by budget experts also have increased over the last century, apparently reflecting rising consumption expectations (Kilpatrick 1973, Rainwater 1990, Fremstad 2010). If societies' material expectations increase between generations then it may be possible that people may feel less satisfied with their material living standards if they have not risen along with the rest of society. It might also be possible that life satisfaction can be impacted by people's aspirations and that higher ambitions may reduce well-being (Easterlin 2001, Stutzer 2004). If this is true, then it might be possible that children that grew up in higher income families may have a harder time achieving high levels of life satisfaction, *ceteris paribus*, compared to other children. It's possible that the benefits in well-being from additional income are negated when expectations are high.

While the literature on inter-generational mobility suggests that family background may influence life satisfaction, there is a related literature that suggests that life circumstances may have less of an impact than what may be expected. This literature is discussed in the first essay in this dissertation, but a couple of points should be repeated. A concept commonly discussed in the subjective well-being literature is the theory that people adapt their perception of well-being based on changes in their own life conditions and changing norms in societies. These adaptations reduce or negate the long-term impact of various economic inputs and life events on subjective well-being. Scholars examining these issues have also referred

to adaptation theories where people have a “set point” of happiness which is influenced primarily by genetics and personality and that people soon return to these set points after various events in their lives (Headey and Wearing 1992, Lykken and Tellegen 1996). In general, the literature has supported the argument that people’s well-being adapts to important events, at least to some degree, although there remains considerable debate as to the extent of the adaption and whether it is total or partial.

The literature is underdeveloped in understanding the extent to which mobility and family background influence adult subjective well-being (Clark 2014). A few studies have been conducted. Layard and Clark (2014) analyzed data from the British Cohort Study and found that childhood family income was not strongly predictive of people’s life satisfaction as adults. They also found that a child’s emotional health and conduct was positively associated with future life satisfaction. Another study by Frijters et al. (2014) data examined data from two British cohort studies and found that log household weekly income at age 16 was not strongly predictive of future life satisfaction as adults.

### **3.3 Methodology**

The data for this essay were from the Panel Study of Income Dynamics (PSID), a longitudinal survey that began collecting information on U.S. families in 1968 (Li, Schoeni et al. 2010). The data were collected annually between 1968 and 1997, and collected biannually thereafter. The original PSID included a core group consisting of a cross-sectional national sample sometimes called the Survey Research Center (CRS) sample, and an oversample of low-income respondents referred to as the Survey of Economic Opportunity (SEO) sample. In order to trim costs, a portion

of the SEO sample was discontinued in 1997. My analysis included the original SRC and the portion of the SEO sample that was retained past 1997, along with their descendants. This excluded the immigrant refresher sample that was added in 1997 because the family incomes of the adult respondents in this sample were not available when they were youths.

The PSID provides a rich dataset to analyze predictors of life satisfaction because it includes detailed information on family structure, assets and debts, income by source, health status, receipt of government benefits, and consumer expenditures. Most of the data in the PSID were collected through an interview with the heads of households or the wives/cohabiting partners of the heads of households. The survey collected basic demographic information on the rest of the family members that lived with the respondents and used poststratification techniques to align the sample weights to represent the United States population. However, the respondents that answered the life satisfaction question were not reweighted to represent the total adult population. For example, the survey only asked the life satisfaction question to one person in married couple families and, therefore, married persons were underrepresented. In addition, adult children that had not yet left their parental homes were normally not the respondents for their respective families and, therefore, did not answer the life satisfaction question.

Table 1.1 in the first essay compares the characteristics of the PSID respondents to the characteristics of persons ages 18 and older in the Current Population Survey (CPS-ASEC). Compared to the adults respondents in the CPS-ASEC, the PSID respondents were more likely to be single females, non-Hispanic White, have a B.A.

college degree, have health insurance, to have somewhat higher family incomes, and to be employed at the time of the survey. However, compared to the adults in the CPS-ASEC, the PSID respondents had lower self-reported health status and were somewhat older.

The analysis excluded respondents that were:

- Not living in the United States at the time of the survey
- Living in institutions
- Under 18 years old
- Not the heads, or wives/cohabiting partners of the heads
- Did not have at least three years of valid income data when the respondents were ages 13 to 17 or did not have at least three years of valid income data in the 2003, 2005, 2007, 2009, and 2011 waves of the survey

After making these adjustments, 2,450 respondents between the ages of 32 and 56 at the time of the 2011 survey remained for analysis. Income for both the adult children and their parents were based on pre-tax cash income. This included income from earnings, interest, rents received, child support and alimony, cash transfers, and retirement income. It excluded non-cash income such as food stamps, public health insurance, and the Earned Income Tax Credit (EITC). Incomes were bottom coded at \$1.<sup>14</sup> To adjust for different family compositions, family income was divided by the square root of the family size. This adjustment was important and is standard practice in economic measurement because it reflects the fact that larger families require more income to sustain themselves than do smaller families, although

---

<sup>14</sup> The PSID staff bottom coded the family incomes for years before 1994. We bottom coded the incomes for the remaining years to produce a consistent series for analysis.

there is an economy of scale. All incomes were adjusted to reflect \$2010 using the Consumer Price Index Research Series (CPI-U-RS). All figures were created using the longitudinal weights produced by the PSID staff.

The family incomes of the youths were derived from averaging five years of income when the respondents were ages 13 to 17.<sup>15</sup> The family incomes of the respondents included income from all family members living in the units including grandparents, siblings, and other extended family members. Family income also included income from any unmarried cohabiting partners of the sample members and in some cases non-family members that shared resources with the families.

Since the survey began in 1968, the analysis was not able to include respondents who were older than age 13 at the time of the 1968 survey. The analysis also excluded respondents who were under the age of 13 in 1991. In other words, the population analyzed included respondents who were age 13 between the 1968 and 1993 waves of the survey. The incomes for the adult respondents were based on five-year averages for the survey years 2003, 2005, 2007, 2009, and 2011 waves of the PSID.<sup>16</sup> In some situations only three or four years of income data were used for the averages if there was missing data for those years. Respondents that had missing data for four or five years for either their parents' incomes or their own incomes as adults were not included in the analysis.

My analysis included two types of income measures. The first was an absolute income measure based on the five-year averages of nominal incomes. The purpose of this metric was to allow absolute comparisons of income across

---

<sup>15</sup> The ages 13 to 17 were chosen in order to maximize the available sample size.

<sup>16</sup> The reference periods for the incomes were the years before the survey. Therefore, the respondents' incomes were based on income in the years 2002, 2004, 2006, 2008, and 2010.

generations. In addition to the analysis using the absolute measure, the analysis also examined these relationships with a relative income measure that averaged the income centiles of the respondents across the five years as youths and as adults. The family income centiles during the respondents' teenage years were created by calculating the distribution of family incomes for all PSID families with adolescents ages 13-17. Therefore, the incomes of the children were placed into centiles based on the family incomes of their peers and not the entire population. The five centiles were averaged to produce one number. Similarly, the relative measure for the adult incomes was based on the five-year family income averages of the respondents included in this analysis for the years 2003 to 2011.

The life satisfaction question had the following wording:

*Please think about your life-as-a-whole. How satisfied are you with it? Are you completely satisfied, somewhat satisfied, not very satisfied, or not at all satisfied?*

In addition to a life satisfaction question, the PSID data also included detailed information on household incomes, government transfers, family expenditures, marital status, housing, and the health status of the heads of households and their wives/cohabiting partners. The PSID received high response rates for the majority of the questions asked on the survey. However, most of the variables had at least some instances where the respondents reported "don't know" or "refused". When these cases occurred, imputation was conducted. The income variables had imputations made by PSID staff and these allocations were treated the same as normal responses. Values for the remaining 18 variables with missing values that were not imputed by the PSID staff and that were used in the analysis were imputed using five multiple

regression-based imputations. Of the 2,450 observations analyzed, five of them (0.20 percent of the total) received imputations for the outcome life satisfaction variable.

The analysis begins with descriptive statistics for the respondents that were included in the analysis (Table 3.1). As a reminder, the population examined for this essay was a subset of the respondents analyzed in the other two essays because it included only respondents between the ages of 32 and 56 with valid income data when they were youths and again as adults in 2003 to 2011. The table showing descriptive statistics is followed by a graph comparing the relative incomes of the respondents analyzed for this essay in their teenage years to their adult incomes in 2003-2011. The results continue with two figures presenting mean life satisfaction scores across the relative income and nominal income distributions. Two separate lines for each graph are included to compare the incomes of the respondents as youths ages 13-17 and as adults at the time of the survey.

A series of ordered logistic regressions are presented in Table 3.2, Table 3.3, and Table 3.4. The dependent variable for each of these regressions is the self-reported life satisfaction score. As stated earlier, family incomes are divided by the square root of the family size and presented as equivalent incomes. Table 3.2 presents regressions using nominal income as the primary variables of interest for the youth and adult logged incomes. Table 3.3 again uses nominal incomes but substitutes the variable indicating the incomes of the respondents during their teenage years with a dummy variable indicating whether their adult incomes were greater than their incomes as youths. Table 3.4 presents regressions using income centiles varying from 0 to 99 as the primary variables of interest for the youth and adult incomes.

### 3.4 Results

The descriptive statistics of the 2,450 respondents are presented in Table 3.1. The respondents analyzed had a mean age of 45 at the time of the 2011 survey. Since the analysis group excluded the elderly and young adult respondents, as well as recent immigrants, the mean incomes were somewhat higher than the incomes of the entire population. The five-year average equivalent income across the biannual surveys in 2003 to 2011 was \$66,407. The mean family income was almost \$27,000 more than their family's incomes when they were ages 13 to 17.

The median equivalent family incomes (not shown in the table) were \$34,473 when the respondents were teenagers and \$54,183 when they were adults. Although part of the increase in incomes was a result of increases in the nominal incomes and standards of living, much of the increase can be attributed to decreases in family size between the generations. As shown in the table, the average size of the respondent's families as teenagers was 5.0. The average family size of the respondents at the time of the 2011 wave was 2.8. As a check of robustness, I replicated the analysis using incomes that were unadjusted for family size and the primary results of this essay were not significantly affected.

In addition to parental income and family size, the PSID provides other variables concerning the family background of the respondents. For example, about 77 percent of respondents lived with both parents until age 16 and the average age of the household head was 43 when the respondents were age 13, which is somewhat lower than the average of the respondents in 2011.

**Table 3.1: Characteristics of Respondents Ages 32 to 56 in the 2011 PSID Wave**

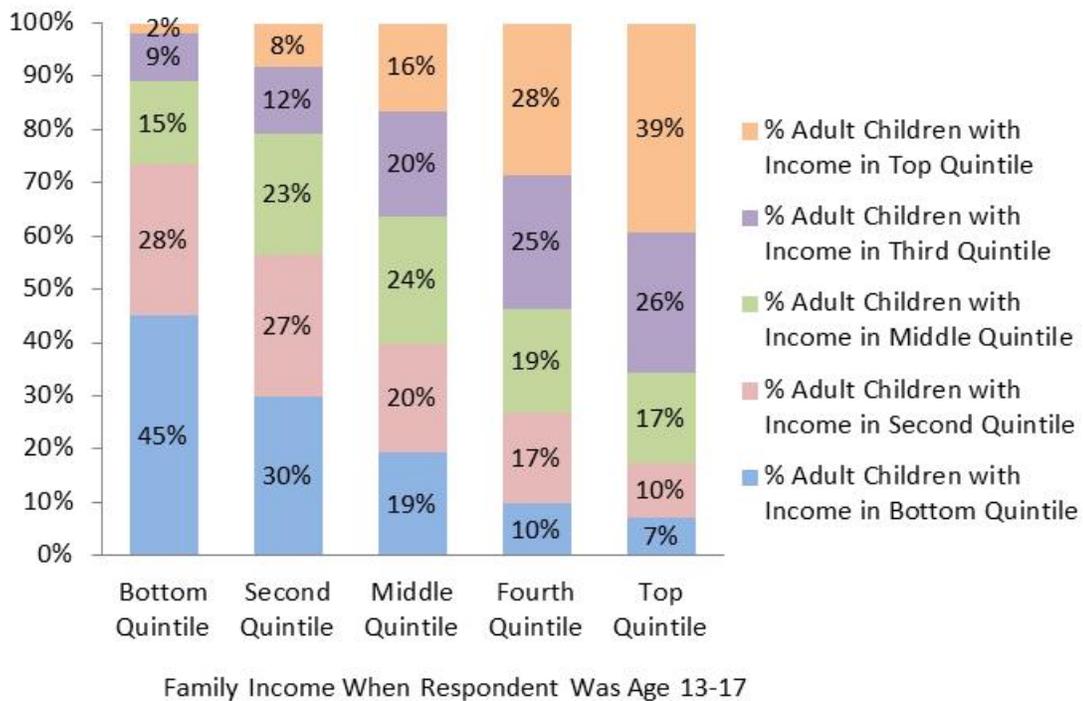
<b>Characteristic</b>	<b>Mean</b>	<b>Std. Err.</b>	<b>95% Low</b>	<b>95% High</b>
<b>Life Satisfaction</b>	3.7976	0.0192	3.7584	3.8368
<b>5-Yr Eq. Ave. Family Income (\$2010)</b>				
As a Child (Ages 13-17)	39,412	1,309	36,740	42,084
As an Adult (Yrs. 03,05,07,09,11)	66,407	2,518	61,265	71,548
<b>Sex &amp; Marital Status</b>				
Single Female	0.2284	0.0128	0.2022	0.2545
Single Male	0.1711	0.0103	0.1501	0.1921
Married Female	0.3276	0.0107	0.3057	0.3495
Married Male	0.2730	0.0116	0.2493	0.2966
<b>Race &amp; Ethnicity</b>				
Hispanic	0.0346	0.0091	0.0160	0.0532
Non-Hispanic White	0.7831	0.0234	0.7353	0.8310
Non-Hispanic Black	0.1466	0.0189	0.1081	0.1850
Non-Hispanic Other	0.0357	0.0042	0.0271	0.0444
<b>Education</b>				
Less Than a HS Diploma	0.0918	0.0106	0.0701	0.1135
HS Diploma, No College	0.2648	0.0145	0.2352	0.2945
Some College, No BA	0.2980	0.0124	0.2726	0.3233
BA or More	0.3454	0.0172	0.3103	0.3806
<b>Employment Status</b>				
Employed	0.7770	0.0103	0.7559	0.7981
Unemployed	0.0762	0.0063	0.0634	0.0890
Not in Labor Force	0.1468	0.0087	0.1289	0.1647
<b>Other Characteristics</b>				
Lived Both Parents to Age 16	0.7704	0.0124	0.7451	0.7957
Attends Rel. Services Weekly	0.2579	0.0139	0.2294	0.2864
No Health Insurance	0.1551	0.0107	0.1333	0.1768
Self-Reported Health Status	3.5498	0.0294	3.4899	3.6098
# Persons in the Family at Age 13	4.9595	0.0457	4.8661	5.0529
# Persons in the Family in 2011	2.7735	0.0391	2.6937	2.8533
# Children in Family in 2011	0.8835	0.0327	0.8166	0.9503
Age of Parental Head at Age 13	42.6121	0.2777	42.0451	43.1790
Age of Child in 2011	45.0404	0.1951	44.6420	45.4388

The majority of the respondents (78 percent) were employed at the time of the 2011 survey, while about eight percent were unemployed. A little over a third (35 percent) had a bachelor's degree and about nine percent did not have a high school diploma. Almost six out of ten respondents were married at the time of the survey and about 26 percent attended religious services at least one time per week. Over three out of four respondents were non-Hispanic White and about 15 percent were non-Hispanic Black. Only 3.5 percent of the respondents were Hispanic. The lack of representation of Hispanic persons was partly a result of the ages examined (i.e., Hispanics were more populous among younger age cohorts) and because the immigrant refresher sample added in 1997 was excluded because their incomes as youths were not collected (i.e., they were not yet in the survey when they were teenagers).

The relative mobility of the respondents is presented in Figure 3.1, which displays their family incomes during the 2003 to 2011 periods by their parents' average income quintiles when they were ages 13 to 17. As shown in the figure, many of the respondents experienced relative mobility over this time period, although there was a degree of "stickiness" in the top and bottom quintiles. This finding is largely consistent from what was found by Isaacs (2007) and others. For respondents that were in the lowest income quintiles as youths, 45 percent of them remained in the lowest family income quintile as adults and 28 percent of them had adult incomes in the second lowest quintile. Only 11 percent of them had incomes in the highest two quintiles as adults.

Of the respondents in the highest family income quintile as youths, 39 percent of them had incomes in the highest income quintile and 65 percent of them had adult incomes in the upper two quintiles. Only 17 percent of this group had adult incomes in the bottom two income quintiles. In summary, the population analyzed in this essay showed a certain degree of mobility, but parental income was predictive of their incomes as adults, especially in the lower and upper ends of the income distribution.

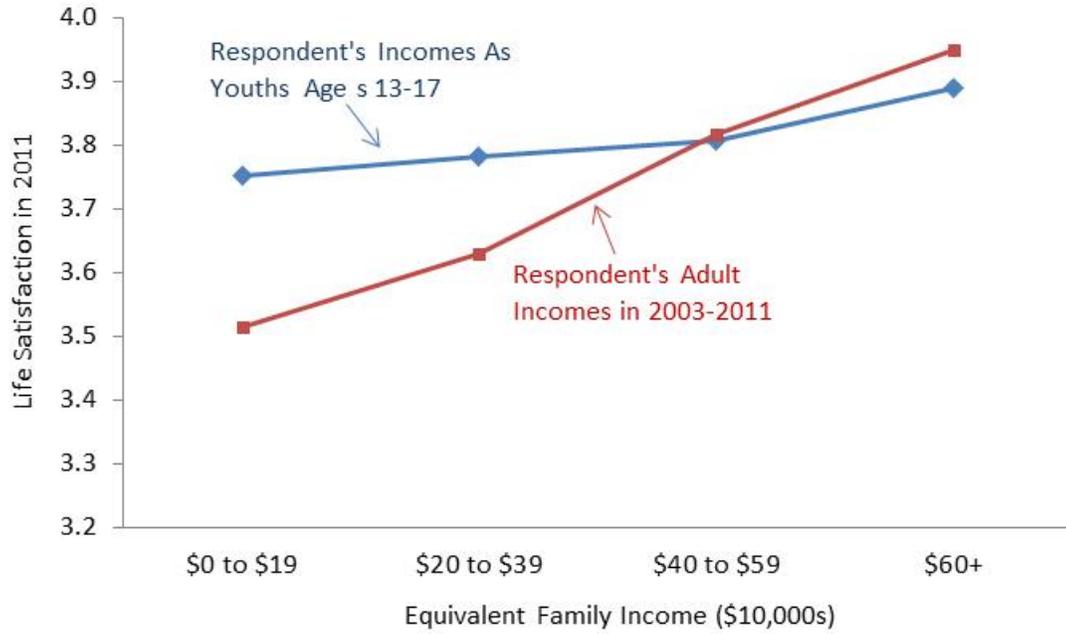
**Figure 3.1: Respondents' Family Income Quintiles as Adults (2003-2011) by Their Parents' Income Quintiles When They Were Ages 13-17**



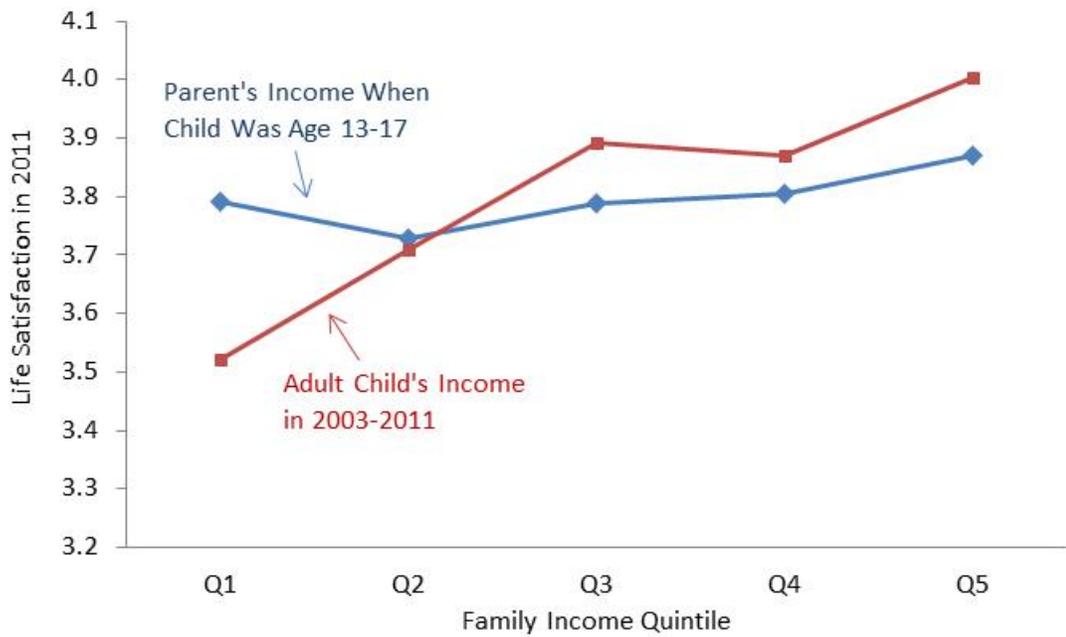
The average life satisfaction scores of the respondents in 2011 are presented in Figure 3.2 using an absolute income measure and in Figure 3.3 using a relative income measure. The y-axis values represent the life satisfaction scores of the respondents in 2011. The red line displays the correlation between these scores and the respondents' adult incomes and the blue line represents the correlation between these scores and their family incomes when they were teenagers. Both figures show that average life satisfaction scores were positively correlated with adult equivalent income. For example, the average mean life satisfaction score was 3.5 for respondents with family equivalent incomes under \$20,000 and the mean scores increased progressively to over 3.9 for respondents with equivalent incomes of at least \$60,000. Similar increases were evident when the relationship was examined with income quintiles instead of nominal incomes. Respondents in the lowest quintile as adults had a mean life satisfaction score of 3.5 compared to a mean life satisfaction score of 4.0 for respondents in the top income quintile.

Although parental income was predictive of the respondent's income as adults, and the respondent's family income as adults was predictive of life satisfaction, the association between parental income and the life satisfaction scores of their children as adults was not strong in the aggregate, as shown in Figure 3.2 and Figure 3.3. For example, the mean life satisfaction scores for respondents that had parental incomes under \$20,000 was only slightly lower, though statistically significant, than the mean scores of the respondents with parental incomes of at least \$60,000.

**Figure 3.2: Mean Life Satisfaction Scores in 2011 by Respondents' Equivalent Family Incomes as Youths (Ages 13-17) and As Adults (2003-2011)**



**Figure 3.3: Mean Life Satisfaction Scores in 2011 by Respondents' Equivalent Family Income Quintiles as Children (Ages 13-17) and As Adults (2003-2011)**



A lack of a strong association between family incomes as teenagers and adult life satisfaction later in life is also observed in Figure 3.3 using relative incomes. The mean life satisfaction scores for respondents in the lowest quintile were only slightly lower than the mean scores for respondents in the highest income quintile.

The relationship between childhood income and future life satisfaction is further investigated in Table 3.2, which presents the results of three different ordered logistic models. In each of the models, the outcome variable is adult life satisfaction in 2011 and the primary variable of interest concerns the nominal equivalent family incomes of the respondents when they were teenagers. The first model (Model 3.2.1) presents the association of nominal parental income on life satisfaction without any control variables. The second model (Model 3.2.2) adds three additional control variables concerning the families when the respondents were ages 13 to 17. The third model (Model 3.2.3) includes parental income along with a full set of control variables. None of the three models show a statistically significant coefficient for the variable indicating the equivalent family incomes of the youths when they were teenagers. For the first two models, the coefficients for the variable indicating the family incomes when the respondents were teenagers were positive, but not statistically significant from zero. Unlike the first two models, the coefficient for the respondent's family income as youths in Model 3.2.3 was negative, although it remained statistically insignificant.

The coefficient that controlled for the incomes of the respondents as adults was insignificant. The coefficients from the control variables were similar to what has been found in the literature and they were similar to what was found from the models

analyzed in the first two essays. Holding all else constant, respondents that were married, attended religious services, and reported higher health status scores had higher life satisfaction scores than other respondents. As expected, respondents that were unemployed had lower life satisfaction scores. Age and age-squared were not statistically significant, which was expected since the ages of the respondents examined for this particular analysis were similar.

**Table 3.2: Ordered Logistic Model Predicting Life Satisfaction Using Nominal Income (\$2010)**

Variable	Model 3.2.1	Model 3.2.2	Model 3.2.3
<b>Characteristics As A Child</b>			
Mean Annual Logged Equivalent Family Income At Ages 13-17	0.1447 (0.0763)	0.1364 (0.0800)	-0.1290 (0.1018)
Family Size at Age 13		0.0295 (0.0295)	0.0403 (0.0333)
Lived With Parents to Age 16		0.1150 (0.1065)	-0.0391 (0.0971)
Age of Parental Head at Age 13		-0.0101 (0.0051)	-0.0063 (0.0060)
<b>Income of Adult Child</b>			
Mean Annual Logged Equivalent Family Income Years 2003-2011			0.2085 (0.1084)
<b>Gender and Marital Status</b>			
Single Female (Omitted)			
Single Male			-0.2265 (0.1903)
Married Female			0.4637 (0.1641)*
Married Male			0.4256 (0.1719)*
<b>Race &amp; Ethnicity</b>			
Hispanic			-0.0266 (0.3251)
Non-Hispanic White (Omitted)			
Non-Hispanic Black			0.2812 (0.1730)
Non-Hispanic Other			0.1014 (0.2380)
<b>Education</b>			
Less Than a HS Diploma			0.4634 (0.2481)
HS Diploma, No College (Omitted)			
Some College, No BA			-0.0702 (0.1240)
BA or More			0.0004 (0.1169)
<b>Employment Status</b>			
Employed (Omitted)			
Unemployed			-0.4071 (0.1949)*
Not in Labor Force			0.2462 (0.1770)
<b>Other Variables</b>			
Attends Rel. Services 1x Week			0.3655 (0.1166)*
Uninsured at Time of Survey			-0.3149 (0.1456)*
Self-Reported Health Status			0.7172 (0.0603)*
# Family Members			0.2042 (0.0817)*
# Children			-0.2030 (0.1032)
Age			-0.1637 (0.0841)
Age <sup>2</sup>			0.0016 (0.0010)
<b>Region</b>			
Northeast (Omitted)			
North Central			0.1405 (0.1006)
South			0.4280 (0.1165)*
West			0.4041 (0.1694)*

Another set of three ordered logistic regression models is presented in Table 3.3. This table is similar to Table 3.2, except that the nominal incomes of the respondents' family incomes as youths are substituted with a dummy variable indicating whether or not their adult incomes exceeded their incomes when they were teenagers. The first model (Model 3.3.1) presented in the table shows a statistically significant positive coefficient for the dummy variable of interest indicating an inter-generational increase in nominal income. This shows that respondents that had incomes that were higher as adults than as children had somewhat higher life satisfaction scores than other respondents. The coefficient for this variable remained positive, though statistically insignificant, in Model 3.3.2 and Model 3.3.3 when the variable indicating adult income was added to the model.

The three models presented in Table 3.2 were replicated by substituting relative incomes for nominal incomes, and the results of these regressions are displayed in Table 3.4. In general, the results predicting life satisfaction using relative incomes were similar to the results using nominal incomes, except that the coefficient for the coefficients controlling for the incomes of the adult respondents in 2003-2011 were somewhat more predictive with the relative incomes and were statistically significant. The p-value for the adult income coefficient in Model 3.2.3 was low, but not statistically significant. Similar to the coefficients presented in the models displayed in Table 3.2, the coefficients for the parental incomes were not statistically significant for any of the three models shown in Table 3.4.

**Table 3.3: Ordered Logistic Model Predicting Life Satisfaction with a Variable Indicating Intergenerational Increase in Nominal Income (\$2010)**

Variable	Model 3.3.1	Model 3.3.2	Model 3.3.3
<b>Characteristics As A Child</b>			
Family Size at Age 13	0.0040 (0.0281)	0.0359 (0.0282)	0.0431 (0.0326)
Lived With Parents to Age 16	0.1812 (0.1024)	0.0071 (0.1012)	-0.0560 (0.0961)
Age of Parental Head at Age 13	-0.0106 (0.0052)	-0.0124 (0.0057)*	-0.0058 (0.0060)
<b>Income of Adult Child</b>			
Mean Annual Logged Equivalent Family Income Years 2003-2011		0.4758 (0.0685)	0.1486 (0.0972)
Increase in Intergenerational Income	0.5559 (0.1262)*	0.1790 (0.1369)	0.1171 (0.1607)
<b>Gender and Marital Status</b>			
Single Female (Omitted)			
Single Male			-0.2285 (0.1924)
Married Female			0.4657 (0.1654)*
Married Male			0.4219 (0.1723)*
<b>Race &amp; Ethnicity</b>			
Hispanic			-0.0342 (0.3302)
Non-Hispanic White (Omitted)			
Non-Hispanic Black			0.3336 (0.1755)
Non-Hispanic Other			0.1166 (0.2367)
<b>Education</b>			
Less Than a HS Diploma			0.4804 (0.2506)
HS Diploma, No College (Omit)			
Some College, No BA			-0.0760 (0.1222)
BA or More			-0.0201 (0.1092)
<b>Employment Status</b>			
Employed (Omitted)			
Unemployed			-0.4070 (0.1932)*
Not in Labor Force			0.2483 (0.1816)
<b>Other Variables</b>			
Attends Rel. Services 1x Week			0.3672 (0.1168)*
Uninsured at Time of Survey			-0.2988 (0.1488)
Self-Reported Health Status			0.7148 (0.0604)*
# Family Members			0.2068 (0.0823)*
# Children			-0.2068 (0.1033)
Age			-0.1671 (0.0862)
Age <sup>2</sup>			0.0017 (0.0010)
<b>Region</b>			
Northeast (Omitted)			
North Central			0.1489 (0.1001)
South			0.4379 (0.1154)*
West			0.4046 (0.1681)*

**Table 3.4: Ordered Logistic Model Predicting Life Satisfaction Using Relative Income Centiles**

Variable	Model 3.4.1	Model 3.4.1	Model 3.4.3
<b>Characteristics As A Child</b>			
Mean Inc. Centile At Ages 13-17	0.0038 (0.0019)	0.0037 (0.0020)	-0.0031 (0.0026)
Family Size at Age 13		0.0298 (0.0292)	0.0397 (0.0338)
Lived With Parents to Age 16		0.1096 (0.1089)	-0.0406 (0.0989)
Age of Parental Head at Age 13		-0.0107 (0.0050)*	-0.0055 (0.0059)
<b>Income of Adult Child</b>			
Income Centile Years 2003-2011			0.0067 (0.0030)*
<b>Gender and Marital Status</b>			
Single Female (Omitted)			
Single Male			-0.2275 (0.1900)
Married Female			0.4402 (0.1649)*
Married Male			0.3937 (0.1798)*
<b>Race &amp; Ethnicity</b>			
Hispanic			-0.0315 (0.3309)
Non-Hispanic White (Omitted)			
Non-Hispanic Black			0.2913 (0.1694)
Non-Hispanic Other			0.0950 (0.2363)
<b>Education</b>			
Less Than a HS Diploma			0.4660 (0.2473)
HS Diploma, No College (Omitted)			
Some College, No BA			-0.0800 (0.1258)
BA or More			-0.0400 (0.1194)
<b>Employment Status</b>			
Employed (Omitted)			
Unemployed			-0.4133 (0.1919)*
Not in Labor Force			0.2465 (0.1734)
<b>Other Variables</b>			
Attends Rel. Services 1x Week			0.3748 (0.1186)*
Uninsured at Time of Survey			-0.2948 (0.1496)
Self-Reported Health Status			0.7139 (0.0597)*
# Family Members			0.2050 (0.0809)*
# Children			-0.1983 (0.1024)
Age			-0.1744 (0.0859)
Age <sup>2</sup>			0.0018 (0.0010)
<b>Region</b>			
Northeast (Omitted)			
North Central			0.1471 (0.1005)
South			0.4411 (0.1173)*
West			0.4077 (0.1691)*

### **3.5 Discussion**

A social value in the United States and in many other countries is the belief that people should have the ability to strive and pursue success regardless of the social and economic backgrounds of their parents. There are many ways to define success and leaders are beginning to define prosperity with a broad range of objective and subjective outcomes. This essay examined the link between childhood family incomes and future life satisfaction, which is one type of well-being that is a universally-desired outcome. To analyze this relationship, I used longitudinal data from the PSID to obtain the family incomes of respondents when they were teenagers between 1968 and 1994 and examined the life satisfaction of these respondents as adults in 2011.

The primary finding from my essay was that the family incomes of the respondents when they were youths were not predictive of their future self-reported life satisfaction as adults. This outcome was somewhat surprising because recent evidence has shown that family background is predictive of future incomes. Since people in the upper part of the income distribution report higher life satisfaction scores, on average, than lower income persons it seemed possible that family background could influence long-term life satisfaction through intergenerational transmissions of advantage. However, the results of my analysis did not support this hypothesis.

There are several possible reasons why the analysis didn't find an association between intergenerational changes in income and adult life satisfaction. One reason is that the association might not have been strong enough to measure statistically with

the sample size available in the PSID. While current family income is predictive of life satisfaction, the literature has documented that it is not the primary predictor of life satisfaction. As summarized in the first essay of this dissertation, biology and personality are strong predictors of life satisfaction and factors such as a successful marriage, good health, and employment status remain more important than family income for most dimensions of well-being

Another possible explanation is that the family incomes experienced as youth could have resulted in higher future material living expectations. Under this hypothesis, the family incomes experienced by people when they were young may have a negative influence of their future life satisfaction, especially if their adult financial situation is lower than what they experienced as children. This may explain why the sign of the parental income coefficient changed from positive to negative once the control variables for adult incomes were added to the models. It's possible that the positive influences of family background could have been neutralized by the negative influences of high expectations.

Two caveats should be considered when interpreting these results. First, the information about the childhood social and family environments of the respondents was limited. Contemporary discussions about intergenerational influences suggest that family incomes are only one of many factors that may influence future outcomes. It may be that family income is influential but only when simultaneously considering other childhood factors such as early learning environments, social influences, and environmental and geographical influences.

A second caveat is that the family incomes were measured in this essay at the ages of 13 to 17. It is very possible that the impact of disadvantages would be greater if it were measured when the respondents were in their earliest years. This would be consistent with findings from Cunha and Heckman (2008) and Field (2010) that suggest that childhood interventions are most influential at the earliest ages. My analysis examined the respondents' incomes as teenagers instead of as young children in order to maximize the sample size available in the PSID. Future research may want to replicate the findings from this essay using family incomes when the children were young.

## Appendix Tables

**Appendix Table 1.1: Percent Distribution of Life Satisfaction Scores by Family Income (SE in Parenthesis)**

Family Income	Not Very or Not At All	Somewhat	Very	Completely
\$0 to \$24,999	8.61 (0.75)	36.14 (1.15)	34.74 (1.22)	20.50 (0.96)
\$25,000 to \$49,999	3.36 (0.32)	27.16 (0.87)	50.96 (1.07)	18.52 (0.76)
\$50,000 to 74,999	2.53 (0.68)	20.46 (1.46)	55.21 (1.84)	21.80 (1.42)
\$75,000 to \$99,999	2.46 (0.83)	20.01 (2.46)	51.62 (3.25)	25.91 (2.39)
\$100,000+	0.92 (0.66)	14.93 (2.37)	54.73 (3.38)	29.43 (2.63)

**Appendix Table 1.2: Mean Life Satisfaction Scores by Family Income**

Income Group	N*	Mean	Std. Err.
All Respondents	8,668	3.8105	0.0149
\$0 to \$24,999	3,785	3.6515	0.0237
\$25,000 to \$49,999	3,185	3.8360	0.0146
\$50,000 to 74,999	1,119	3.9615	0.0257
\$75,000 to \$99,999	307	4.0069	0.0456
\$100,000+	272	4.1267	0.0456

\*The sample size for each income group varies somewhat across the five imputations. The numbers in this column represent the unweighted count for the first imputation.

**Appendix Table 1.3: Ordered Logistic Model Predicting Life Satisfaction with a Dummy Variable Indicating Receipt of Any Assistance in the Prior Year**

Variable	Coefficient	Std. Error	t	P>t
<b>Income &amp; Assistance</b>				
Family Eq. Income (\$10,000s)	0.0281	0.0067	4.20	0.0000
Any Assistance (Dummy)	-0.2703	0.0628	-4.31	0.0000
<b>Gender and Marital Status</b>				
Single Female (Omitted)				
Single Male	-0.1952	0.1014	-1.93	0.0590
Married Female	0.6613	0.0899	7.36	0.0000
Married Male	0.5799	0.1052	5.51	0.0000
<b>Race &amp; Ethnicity</b>				
Hispanic	0.1634	0.1233	1.33	0.1900
Non-Hispanic White (Omitted)				
Non-Hispanic Black	0.1313	0.0978	1.34	0.1850
Non-Hispanic Other	0.0946	0.1213	0.78	0.4380
<b>Education</b>				
Less Than a HS Diploma	0.2900	0.1065	2.72	0.0080
HS Diploma, No College (Omitted)				
Some College, No BA	-0.1193	0.0727	-1.64	0.1060
BA or More	-0.1001	0.0633	-1.58	0.1190
<b>Employment Status</b>				
Employed (Omitted)				
Unemployed	-0.3629	0.1546	-2.35	0.0220
Not in Labor Force	0.2349	0.0778	3.02	0.0040
<b>Other Variables</b>				
Lived Parents Until Age 16	0.0155	0.0656	0.24	0.8130
Attends Rel. Services 1x Week	0.2291	0.0592	3.87	0.0000
Uninsured at Time of Survey	-0.2355	0.0843	-2.79	0.0070
Self-Reported Health Status	0.6518	0.0338	19.26	0.0000
# Family Members	0.0908	0.0488	1.86	0.0680
# Children	-0.0108	0.0603	-0.18	0.8580
Age	-0.0460	0.0108	-4.27	0.0000
Age <sup>2</sup>	0.0005	0.0001	4.36	0.0000
<b>Region</b>				
Northeast (Omitted)				
North Central	0.1806	0.0564	3.20	0.0020
South	0.2214	0.0748	2.96	0.0040
West	0.2048	0.0890	2.30	0.0250

Note: this table replicates the figures from Table 1.5 but excludes the imputations for the life satisfaction variable.

**Appendix Table 1.4: OLS Model Predicting Life Satisfaction with a Dummy Variable Indicating Receipt of Any Assistance in the Prior Year**

Variable	Coefficient	Std. Error	t	P>t
<b>Income &amp; Assistance</b>				
Family Eq. Income (\$10,000s)	0.0112	0.0023	4.78	0.0000
Any Assistance (Dummy)	-0.1136	0.0278	-4.09	0.0000
<b>Gender and Marital Status</b>				
Single Female (Omitted)				
Single Male	-0.0784	0.0410	-1.91	0.0600
Married Female	0.2563	0.0338	7.59	0.0000
Married Male	0.2251	0.0399	5.64	0.0000
<b>Race &amp; Ethnicity</b>				
Hispanic	0.0537	0.0484	1.11	0.2710
Non-Hispanic White (Omitted)				
Non-Hispanic Black	0.0684	0.0373	1.83	0.0720
Non-Hispanic Other	0.0411	0.0456	0.90	0.3710
<b>Education</b>				
Less Than a HS Diploma	0.0995	0.0408	2.44	0.0180
HS Diploma, No College (Omitted)				
Some College, No BA	-0.0521	0.0273	-1.91	0.0610
BA or More	-0.0430	0.0258	-1.67	0.1010
<b>Employment Status</b>				
Employed (Omitted)				
Unemployed	-0.1547	0.0656	-2.36	0.0220
Not in Labor Force	0.0874	0.0297	2.94	0.0050
<b>Other Variables</b>				
Lived Parents Until Age 16	0.0081	0.0264	0.31	0.7600
Attends Rel. Services 1x Week	0.0857	0.0229	3.75	0.0000
Uninsured at Time of Survey	-0.0893	0.0371	-2.41	0.0190
Self-Reported Health Status	0.2556	0.0115	22.33	0.0000
# Family Members	0.0429	0.0199	2.16	0.0350
# Children	-0.0102	0.0238	-0.43	0.6700
Age	-0.0193	0.0040	-4.88	0.0000
Age <sup>2</sup>	0.0002	0.0000	4.88	0.0000
<b>Region</b>				
Northeast (Omitted)				
North Central	0.0752	0.0244	3.09	0.0030
South	0.0947	0.0291	3.25	0.0020
West	0.0888	0.0352	2.52	0.0140
<b>Cons</b>	<b>3.0290</b>	<b>0.1148</b>	<b>26.39</b>	<b>0.0000</b>

Note: this table replicates the figures from Table 1.5 but is conducted with an OLS model.

**Appendix Table 2.1: Additional Expenditure Means**

Type of Assistance Income	Mean	Std. Error	t	P>t
<b>Housing</b>				
Mortgage	5,293	183	4,926	5,659
Rent	2,801	79	2,644	2,958
Property Tax	1,789	79	1,631	1,946
Insurance	598	16	567	629
Repair	1,864	177	1,509	2,219
<b>Transportation</b>				
Loan Payment	966	35	897	1,036
Down Payment	1,187	83	1,020	1,354
Lease Payment	179	20	138	219
<b>Charity</b>	1,483	90	1,303	1,663

**Appendix Table 2.2: Mean Life Satisfaction Scores by Equivalent Consumption Amounts**

Income Group	Mean	Std. Err.	95% CI Low	95% CI High
All Respondents	3.8105	0.0149	3.7807	3.8403
\$0 to \$19,000	3.6564	0.0253	3.6058	3.7069
\$20,000 to \$39,999	3.8448	0.0156	3.8136	3.8760
\$40,000 to \$59,999	3.9531	0.0322	3.8887	4.0175
\$60,000 to \$79,999	3.9417	0.0561	3.8294	4.0540
\$80,000+	4.0301	0.0622	3.9057	4.1544

**Appendix Table 2.3a: Mean Life Satisfaction Scores by Equivalent Income Quintile**

<b>Income Group</b>	<b>Mean</b>	<b>Std. Err.</b>	<b>95% CI Low</b>	<b>95% CI High</b>
All Respondents	3.8105	0.0149	3.7807	3.8403
Bottom Quintile	3.5950	0.0321	3.5307	3.6593
Second Quintile	3.7273	0.0252	3.6768	3.7777
Middle Quintile	3.7996	0.0199	3.7599	3.8393
Fourth Quintile	3.9200	0.0188	3.8825	3.9576
Top Quintile	4.0109	0.0236	3.9638	4.0580

**Appendix Table 2.3b: Mean Life Satisfaction Scores by Equivalent Consumption Quintile**

<b>Income Group</b>	<b>Mean</b>	<b>Std. Err.</b>	<b>95% CI Low</b>	<b>95% CI High</b>
All Respondents	3.8105	0.0149	3.7807	3.8403
Bottom Quintile	3.6282	0.0358	3.5566	3.6998
Second Quintile	3.7007	0.0281	3.6446	3.7568
Middle Quintile	3.8413	0.0242	3.7929	3.8898
Fourth Quintile	3.9183	0.0243	3.8697	3.9669
Top Quintile	3.9643	0.0236	3.9171	4.0115

**Appendix Table 2.4: OLS Model Predicting Life Satisfaction with Income**

Variable	Coefficient	Std. Error	t	P>t
<b>Income &amp; Assistance</b>				
Logged After-Tax Family Income	0.0649	0.0160	4.06	0.0000
Logged Non-Cash Gov. Transfers	-0.0139	0.0058	-2.42	0.0190
<b>Gender and Marital Status</b>				
Single Female (Omitted)				
Single Male	-0.1030	0.0443	-2.33	0.0230
Married Female	0.2338	0.0325	7.18	0.0000
Married Male	0.1851	0.0391	4.73	0.0000
<b>Race &amp; Ethnicity</b>				
Hispanic	0.0950	0.0451	2.11	0.0390
Non-Hispanic White (Omitted)				
Non-Hispanic Black	0.0701	0.0400	1.75	0.0850
Non-Hispanic Other	0.0370	0.0595	0.62	0.5370
<b>Education</b>				
Less Than a HS Diploma	0.1250	0.0467	2.68	0.0100
HS Diploma, No College (Omitted)				
Some College, No BA	-0.0353	0.0281	-1.26	0.2140
BA or More	-0.0374	0.0331	-1.13	0.2640
<b>Employment Status</b>				
Employed (Omitted)				
Unemployed	-0.1381	0.0637	-2.17	0.0340
Not in Labor Force	0.1245	0.0323	3.86	0.0000
<b>Other Variables</b>				
Lived Parents Until Age 16	0.0393	0.0307	1.28	0.2060
Attends Rel. Services 1x Week	0.1240	0.0276	4.49	0.0000
Uninsured at Time of Survey	-0.0839	0.0376	-2.23	0.0300
Self-Reported Health Status	0.2602	0.0128	20.29	0.0000
# Family Members	0.0403	0.0195	2.06	0.0430
# Children	-0.0060	0.0232	-0.26	0.7970
Age	-0.0200	0.0083	-2.41	0.0190
Age <sup>2</sup>	0.0002	0.0001	2.08	0.0410
<b>Region</b>				
Northeast (Omitted)				
North Central	0.0852	0.0280	3.05	0.0030
South	0.1098	0.0304	3.61	0.0010
West	0.1034	0.0377	2.74	0.0080
<b>Cons</b>	2.3436	0.2217	10.57	0.0000

Note: this table replicates the figures from Table 2.3 but is conducted with an OLS model.

**Appendix Table 2.5: OLS Model Predicting Life Satisfaction with Consumption**

Variable	Coefficient	Std. Error	t	P>t
<b>Income &amp; Assistance</b>				
Logged Consumption	0.0685	0.0241	2.84	0.0060
<b>Gender and Marital Status</b>				
Single Female (Omitted)				
Single Male	-0.0846	0.0430	-1.97	0.0540
Married Female	0.2663	0.0317	8.40	0.0000
Married Male	0.2164	0.0391	5.53	0.0000
<b>Race &amp; Ethnicity</b>				
Hispanic	0.0829	0.0448	1.85	0.0690
Non-Hispanic White (Omitted)				
Non-Hispanic Black	0.0636	0.0388	1.64	0.1060
Non-Hispanic Other	0.0307	0.0608	0.50	0.6150
<b>Education</b>				
Less Than a HS Diploma	0.1141	0.0487	2.34	0.0220
HS Diploma, No College (Omitted)				
Some College, No BA	-0.0301	0.0280	-1.07	0.2880
BA or More	-0.0212	0.0318	-0.67	0.5080
<b>Employment Status</b>				
Employed (Omitted)				
Unemployed	-0.1627	0.0643	-2.53	0.0140
Not in Labor Force	0.1017	0.0322	3.16	0.0020
<b>Other Variables</b>				
Lived Parents Until Age 16	0.0429	0.0303	1.42	0.1610
Attends Rel. Services 1x Week	0.1215	0.0277	4.39	0.0000
Uninsured at Time of Survey	-0.0943	0.0368	-2.56	0.0130
Self-Reported Health Status	0.2656	0.0131	20.28	0.0000
# Family Members	0.0361	0.0190	1.90	0.0620
# Children	-0.0153	0.0227	-0.67	0.5020
Age	-0.0165	0.0081	-2.04	0.0460
Age <sup>2</sup>	0.0002	0.0001	1.77	0.0810
<b>Region</b>				
Northeast (Omitted)				
North Central	0.0927	0.0261	3.55	0.0010
South	0.1144	0.0306	3.73	0.0000
West	0.1109	0.0394	2.82	0.0070
<b>Cons</b>	2.1944	0.2932	7.48	0.0000

Note: this table replicates the figures from Table 2.4 but is conducted with an OLS model.

**Appendix Table 3.1a: Respondents' Family Income Quintiles as Adults (2003-2011) by Their Parents' Average Family Income Quintiles When They Were Ages 13-17 (Percentages)**

<b>Family Income Quintile</b>	<b>Adult Q1</b>	<b>Adult Q2</b>	<b>Adult Q3</b>	<b>Adult Q4</b>	<b>Adult Q5</b>
Youth Q1	0.4504	0.2844	0.1549	0.0920	0.0183
Youth Q2	0.2969	0.2671	0.2301	0.1238	0.0820
Youth Q3	0.1958	0.2024	0.2378	0.1993	0.1648
Youth Q4	0.0939	0.1730	0.1944	0.2534	0.2852
Youth Q5	0.0699	0.1039	0.1688	0.2644	0.3930

**Appendix Table 3.1b: Respondents' Family Income Quintiles as Adults (2003-2011) by Their Parents' Average Family Income Quintiles When They Were Ages 13-17 (SE)**

<b>Family Income Quintile</b>	<b>Adult Q1</b>	<b>Adult Q2</b>	<b>Adult Q3</b>	<b>Adult Q4</b>	<b>Adult Q5</b>
Youth Q1	0.0367	0.0297	0.0297	0.0222	0.0068
Youth Q2	0.0290	0.0239	0.0245	0.0180	0.0131
Youth Q3	0.0233	0.0229	0.0198	0.0232	0.0231
Youth Q4	0.0147	0.0212	0.0237	0.0222	0.0281
Youth Q5	0.0170	0.0169	0.0172	0.0272	0.0229

**Appendix Table 3.2a: Mean Life Satisfaction Score by Equivalent Family Nominal Incomes When Ages 13-17**

<b>Income Group</b>	<b>Mean</b>	<b>Std. Err.</b>	<b>95% CI Low</b>	<b>95% CI High</b>
All Respondents	3.7976	0.0192	3.7584	3.8368
\$0 to \$19,000	3.7528	0.0365	3.6784	3.8273
\$20,000 to \$39,999	3.7832	0.0313	3.7193	3.8472
\$40,000 to \$59,999	3.8068	0.0407	3.7237	3.8899
\$60,000+	3.8903	0.0474	3.7936	3.9870

**Appendix Table 3.2b: Mean Life Satisfaction Score by Equivalent Family Nominal Incomes as Adults in 2003-2011**

<b>Income Group</b>	<b>Mean</b>	<b>Std. Err.</b>	<b>95% CI Low</b>	<b>95% CI High</b>
All Respondents	3.7976	0.0192	3.7584	3.8368
\$0 to \$19,000	3.5144	0.0638	3.3840	3.6448
\$20,000 to \$39,999	3.6292	0.0487	3.5298	3.7287
\$40,000 to \$59,999	3.8185	0.0387	3.7396	3.8975
\$60,000+	3.9489	0.0208	3.9064	3.9914

**Appendix Table 3.3a: Mean Life Satisfaction Score by Equivalent Family Income Quintiles When Ages 13-17**

<b>Income Group</b>	<b>Mean</b>	<b>Std. Err.</b>	<b>95% CI Low</b>	<b>95% CI High</b>
All Respondents	3.7976	0.0192	3.7584	3.8368
Lowest Quintile	3.7899	0.0545	3.6786	3.9012
Second Quintile	3.7291	0.0512	3.6245	3.8337
Middle Quintile	3.7888	0.0365	3.7141	3.8634
Fourth Quintile	3.8057	0.0455	3.7128	3.8987
Highest Quintile	3.8700	0.0442	3.7797	3.9603

**Appendix Table 3.3b: Mean Life Satisfaction Score by Equivalent Family Incomes Quintiles as Adults in 2003-2011**

<b>Income Group</b>	<b>Mean</b>	<b>Std. Err.</b>	<b>95% CI Low</b>	<b>95% CI High</b>
All Respondents	3.7976	0.0192	3.7584	3.8368
Lowest Quintile	3.5215	0.0371	3.4458	3.5972
Second Quintile	3.7090	0.0446	3.6181	3.8000
Middle Quintile	3.8919	0.0309	3.8288	3.9549
Fourth Quintile	3.8701	0.0355	3.7977	3.9426
Highest Quintile	4.0025	0.0396	3.9216	4.0834

**Appendix Table 3.4a: OLS Model Predicting Life Satisfaction with Income**

Variable	Coefficient	Std. Error	t	P>t
<b>Income &amp; Assistance</b>				
Mean Annual Logged Equivalent Family Income At Ages 13-17	0.0583	0.0281	2.07	0.0470
Family Size at Age 13				
Lived With Parents to Age 16				
Age of Parental Head at Age 13				
<b>Income of Adult Child</b>				
Mean Annual Logged Equivalent Family Income Years 2003-2011				
<b>Gender and Marital Status</b>				
Single Female (Omitted)				
Single Male				
Married Female				
Married Male				
<b>Race &amp; Ethnicity</b>				
Hispanic				
Non-Hispanic White (Omitted)				
Non-Hispanic Black				
Non-Hispanic Other				
<b>Education</b>				
Less Than a HS Diploma				
HS Diploma, No College (Omitted)				
Some College, No BA				
BA or More				
<b>Employment Status</b>				
Employed (Omitted)				
Unemployed				
Not in Labor Force				
<b>Other Variables</b>				
Attends Rel. Services 1x Week				
Uninsured at Time of Survey				
Self-Reported Health Status				
# Family Members				
# Children				
Age				
Age <sup>2</sup>				
<b>Region</b>				
Northeast (Omitted)				
North Central				
South				
West				
<b>Cons</b>	3.1935	0.2919	10.94	0.0000

**Appendix Table 3.4b: OLS Model Predicting Life Satisfaction with Income**

Variable	Coefficient	Std. Error	t	P>t
<b>Income &amp; Assistance</b>				
Mean Annual Logged Equivalent Family Income At Ages 13-17	0.0589	0.0307	1.92	0.0650
Family Size at Age 13	0.0170	0.0124	1.37	0.1810
Lived With Parents to Age 16	0.0444	0.0433	1.03	0.3140
Age of Parental Head at Age 13	-0.0042	0.0021	-2.03	0.0510
<b>Income of Adult Child</b>				
Mean Annual Logged Equivalent Family Income Years 2003-2011				
<b>Gender and Marital Status</b>				
Single Female (Omitted)				
Single Male				
Married Female				
Married Male				
<b>Race &amp; Ethnicity</b>				
Hispanic				
Non-Hispanic White (Omitted)				
Non-Hispanic Black				
Non-Hispanic Other				
<b>Education</b>				
Less Than a HS Diploma				
HS Diploma, No College (Omitted)				
Some College, No BA				
BA or More				
<b>Employment Status</b>				
Employed (Omitted)				
Unemployed				
Not in Labor Force				
<b>Other Variables</b>				
Attends Rel. Services 1x Week				
Uninsured at Time of Survey				
Self-Reported Health Status				
# Family Members				
# Children				
Age				
Age <sup>2</sup>				
<b>Region</b>				
Northeast (Omitted)				
North Central				
South				
West				
<b>Cons</b>	3.2493	0.3443	9.44	0.0000

**Appendix Table 3.4c: OLS Model Predicting Life Satisfaction with Income**

Variable	Coefficient	Std. Error	t	P>t
<b>Income &amp; Assistance</b>				
Mean Annual Logged Equivalent Family Income At Ages 13-17	-0.0418	0.0372	-1.13	0.2690
Family Size at Age 13	0.0198	0.0125	1.59	0.1230
Lived With Parents to Age 16	-0.0144	0.0372	-0.39	0.7020
Age of Parental Head at Age 13	-0.0023	0.0022	-1.07	0.2930
<b>Income of Adult Child</b>				
Mean Annual Logged Equivalent Family Income Years 2003-2011	0.0764	0.0407	1.88	0.0700
<b>Gender and Marital Status</b>				
Single Female (Omitted)				
Single Male	-0.0756	0.0701	-1.08	0.2900
Married Female	0.1827	0.0610	2.99	0.0050
Married Male	0.1604	0.0654	2.45	0.0200
<b>Race &amp; Ethnicity</b>				
Hispanic	-0.0107	0.1114	-0.10	0.9240
Non-Hispanic White (Omitted)				
Non-Hispanic Black	0.1105	0.0623	1.77	0.0860
Non-Hispanic Other	0.0502	0.0883	0.57	0.5740
<b>Education</b>				
Less Than a HS Diploma	0.1740	0.0840	2.07	0.0470
HS Diploma, No College (Omitted)				
Some College, No BA	-0.0274	0.0441	-0.62	0.5390
BA or More	0.0030	0.0422	0.07	0.9440
<b>Employment Status</b>				
Employed (Omitted)				
Unemployed	-0.1582	0.0770	-2.05	0.0490
Not in Labor Force	0.0919	0.0626	1.47	0.1520
<b>Other Variables</b>				
Attends Rel. Services 1x Week	0.1291	0.0423	3.05	0.0060
Uninsured at Time of Survey	-0.1169	0.0533	-2.19	0.0360
Self-Reported Health Status	0.2646	0.0209	12.66	0.0000
# Family Members	0.0741	0.0302	2.46	0.0200
# Children	-0.0742	0.0365	-2.03	0.0510
Age	-0.0606	0.0318	-1.90	0.0670
Age <sup>2</sup>	0.0006	0.0004	1.65	0.1090
<b>Region</b>				
Northeast (Omitted)				
North Central	0.0568	0.0347	1.64	0.1120
South	0.1568	0.0421	3.72	0.0010
West	0.1550	0.0583	2.66	0.0120
<b>Cons</b>	<b>3.5799</b>	<b>0.8550</b>	<b>4.19</b>	<b>0.0000</b>

## Bibliography

- Acs, Gregory. "Downward Mobility from the Middle Class: Waking up from the American Dream." PEW Charitable Trusts, 2011.
- Ahn, Namkee, Victoria Ateca-Amestoy, and Arantza Ugidos. "Financial Satisfaction from an Intra-Household Perspective." *Journal of Happiness Studies* 15, no. 5 (2014): 1109-23.
- Andreski, Patricia, April Beale, Mary Dascola, Denise Duffy, Eva Leissou, Katherine McGonagle, Jay Schlegel, and Robert Schoeni. "Psid Main Interview User Manual: Release 2013." 2013.
- Barrett, Garry F., and Thomas F. Crossley. "Consumption and Income Inequality in Australia." *Economic Record* 76, no. 233 (2000): 116.
- Bee, Adam, Bruce D. Meyer, and James X. Sullivan. "The Validity of Consumption Data: Are the Consumer Expenditure Interview and Diary Surveys Informative?", 2012.
- Bjørnskov, Christian, Axel Dreher, and Justina A. V. Fischer. "The Bigger the Better? Evidence of the Effect of Government Size on Life Satisfaction around the World." *Public Choice* 130, no. 3-4 (2007): 267-92.
- Blanchflower, David G., and Andrew J. Oswald. "Is Well-Being U-Shaped over the Life Cycle?". *Social Science & Medicine* 66, no. 8 (2008): 1733-49.
- Blanchflower, David G., and Andrew J. Oswald. "Well-Being over Time in Britain and the USA." *Journal of Public Economics* 88, no. 7-8 (2004): 1359-86.
- Bureau of Labor Statistics. "Consumer Expenditures in 2013." edited by U.S. Bureau of Labor Statistics, 2015.
- Boushey, Heather, Chauna Brocht, Bethney Gundersen, and Jared Bernstein. *Hardships in America: The Real Story of Working Families*. ERIC, 2001.
- Bricker, Jesse, Lisa J. Dettling, Alice Henriques, Joanne W. Hsw, Kevin B. Moore, John Sabelhaus, Jeffrey Thompson, and Richard A. Windle. "Changes in U.S. Family Finances from 2010 to 2013: Evidence from the Survey of Consumer Finances." *Federal Reserve Bulletin* 100, no. 4 (2014).

- Brickman, Philip, and Donald T Campbell. "Hedonic Relativism and Planning the Good Society." In *Adaptation-Level Theory*, edited by M.H. Apley, 287-305, 1971.
- Brickman, Philip, Dan Coates, and Ronnie Janoff-Bulman. "Lottery Winners and Accident Victims: Is Happiness Relative?". *Journal of Personality and Social Psychology* 36, no. 8 (1978): 917-27.
- Butrica, Barbara A., and Richard V. Burkhauser. "Estimating Federal Income Tax Burdens for Panel Study of Income Dynamics (PSID) Families Using the National Bureau of Economic Research Taxsim Model." Maxwell Center for Demography and Economics of Aging, 1997.
- Camerer, Colin F, George Loewenstein, and Matthew Rabin. *Advances in Behavioral Economics*. Princeton University Press, 2011.
- Chadwick, Laura, and Gary Solon. "Intergenerational Income Mobility among Daughters." *American Economic Review* 92, no. 1 (2002): 335-44.
- Chaudry, Ajay. *Putting Children First : How Low-Wage Working Mothers Manage Child Care*. New York: Russell Sage Foundation, 2004.
- Citro, Constance F, and Robert T Michael. *Measuring Poverty: A New Approach*. National Academies Press, 1995.
- Clark, Andrew E, and Andrew J Oswald. "Well-Being in Panels." *DELTA*, mimeo (2002).
- Clark, Andrew E. "Son of My Father? The Life-Cycle Analysis of Well-Being: Introduction." *The Economic Journal* 124, no. 580 (2014): F684-F87.
- Cunha, Flavio, and James J Heckman. "Formulating, Identifying and Estimating the Technology of Cognitive and Noncognitive Skill Formation." *Journal of Human Resources* 43, no. 4 (2008): 738-82.
- Cutler, David M., Lawrence F. Katz, David Card, and Robert E. Hall. "Macroeconomic Performance and the Disadvantaged." *Brookings Papers on Economic Activity* 1991, no. 2 (1991): 1-74.
- Davies, Paul S, and T Lynn Fisher. "Measurement Issues Associated with Using Survey Data Matched with Administrative Data from the Social Security Administration." *Social Security Bulletin* 69, no. 2 (2009): 1.
- Deaton, Angus. "Income, Health, and Well-Being around the World: Evidence from the Gallup World Poll." *The Journal of Economic Perspectives* 22, no. 2 (2008): 53-72.

- DeLeire, Thomas, and Ariel Kalil. "Does Consumption Buy Happiness? Evidence from the United States." *International Review of Economics* 57, no. 2 (2010): 163-76.
- DeLeire, Thomas, and Leonard M. Lopoo. "Family Structure and the Economic Mobility of Children." PEW Economic Mobility Project, 2010.
- Di Tella, Rafael, John Haisken-De New, and Robert MacCulloch. "Happiness Adaptation to Income and to Status in an Individual Panel." *Journal of Economic Behavior & Organization* 76, no. 3 (2010): 834-52.
- Diener, Ed. *Well-Being for Public Policy*. Oxford University Press, 2009.
- Diener, Ed, Weiting Ng, James Harter, and Raksha Arora. "Wealth and Happiness across the World: Material Prosperity Predicts Life Evaluation, Whereas Psychosocial Prosperity Predicts Positive Feeling." *Journal of Personality and Social Psychology* 99, no. 1 (2010): 52-61.
- Diener, Ed, Eunkook M. Suh, Richard E. Lucas, and Heidi L. Smith. "Subjective Well-Being: Three Decades of Progress." *Psychological Bulletin* 125, no. 2 (1999): 276-302.
- Duncan, Greg, and Jeanne Brooks-Gunn. *Consequences of Growing up Poor*. New York: Russell Sage Foundation, 1997.
- Easterlin, Richard A. "Does Economic Growth Improve the Human Lot? Some Empirical Evidence." *Nations and households in Economic Growth* 89 (1974).
- . "Explaining Happiness." *Proceedings of the National Academy of Sciences* 100, no. 19 (2003): 11176-83.
- Easterlin, Richard A. "Income and Happiness: Towards a Unified Theory." *The Economic Journal* 111, no. 473 (2001): 465-84.
- Ehrenreich, Barbara. *Nickel and Dimed : On (Not) Getting by in America*. New York: Metropolitan Books, 2001.
- Ermisch, John, Markus Jantti, and Timothy M Smeeding. *From Parents to Children: The Intergenerational Transmission of Advantage*. Russell Sage Foundation, 2012.
- Field, Frank. *The Foundation Years: Preventing Poor Children Becoming Poor Adults: The Report of the Independent Review on Poverty and Life Chances*. The Stationery Office, 2010.

- Fisher, Jonathan D, David S Johnson, Joseph T Marchand, Timothy M Smeeding, and Barbara B Torrey. "Identifying the Poorest Older Americans." *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 64, no. 6 (2009): 758-66.
- Fisher, Jonathan D., David S. Johnson, and Timothy M. Smeeding. "Inequality of Income and Consumption: Measuring the Trends in Inequality from 1985-2010 for the Same Individuals." 2013.
- Fremstad, Shawn. "A Modern Framework for Measuring Poverty and Basic Economic Security." Center for Economic and Policy Research, 2010.
- Frey, Bruno S, Matthias Benz, and Alois Stutzer. "Introducing Procedural Utility: Not Only What, but Also How Matters." *Journal of Institutional and Theoretical Economics (JITE)/Zeitschrift für die gesamte Staatswissenschaft* (2004): 377-401.
- Frey, Bruno S., and Alois Stutzer. "What Can Economists Learn from Happiness Research?". *Journal of Economic Literature* 40, no. 2 (2002): 402-35.
- Friedman, Milton. *A Theory of the Consumption Function*. princeton university press Princeton, 1957.
- Frijters, Paul, David W. Johnston, and Michael A. Shields. "Does Childhood Predict Adult Life Satisfaction? Evidence from British Cohort Surveys." *The Economic Journal* 124, no. 580 (2014): F688-F719.
- Gardner, Jonathan, and Andrew J. Oswald. "Money and Mental Wellbeing: A Longitudinal Study of Medium-Sized Lottery Wins." *Journal of Health Economics* 26, no. 1 (2007): 49-60.
- Garner, Thesia I, and Kathleen Short. "Accounting for Owner-Occupied Dwelling Services: Aggregates and Distributions." *Journal of Housing Economics* 18, no. 3 (2009): 233-48.
- Gilens, Martin. *Why Americans Hate Welfare: Race, Media, and the Politics of Antipoverty Policy*. University of Chicago Press, 2009.
- Gouskova, Elena, Patricia Andreski, and Robert F Schoeni. *Comparing Estimates of Family Income in the Panel Study of Income Dynamics and the March Current Population Survey, 1968-2007*. Survey Research Center, Institute for Social Research, University of Michigan, 2010.
- Graham, Carol. "The Economics of Happiness." *World Economics* 6, no. 3 (2005): 41-55.

- . *Happiness around the World: The Paradox of Happy Peasants and Miserable Millionaires*. Oxford University Press, 2009.
- Graham, Carol, Soumya Chattopadhyay, and Mario Picon. "Adapting to Adversity: Happiness and the 2009 Economic Crisis in the United States." *Social Research* 77, no. 2 (2010): 715-48.
- Graham, Carol, and Stefano Pettinato. *Happiness and Hardship: Opportunity and Insecurity in New Market Economies*. Brookings Institution Press, 2002.
- Grover, Shawn, and John F Helliwell. "How's Life at Home? New Evidence on Marriage and the Set Point for Happiness." National Bureau of Economic Research, 2014.
- Hagerty, Michael R., and Ruut Veenhoven. "Wealth and Happiness Revisited: Growing National Income Does Go with Greater Happiness." *Social Indicators Research* 64, no. 1 (2003): 1-27.
- Haider, Steven, and Gary Solon. "Life-Cycle Variation in the Association between Current and Lifetime Earnings." *American Economic Review* 96, no. 4 (2006): 1308-20.
- Hayashi, Fumio. "The Effect of Liquidity Constraints on Consumption: A Cross-Sectional Analysis." *Quarterly Journal of Economics* 100, no. 1 (1985): 183-206.
- Headey, Bruce, Ruud Muffels, and Mark Wooden. "Money Doesn't Buy Happiness.... Or Does It? A Reconsideration Based on the Combined Effects of Wealth, Income and Consumption." IZA Discussion paper series, No. 1218, 2004.
- Headey, Bruce, and Alexander James Wearing. *Understanding Happiness: A Theory of Subjective Well-Being*. Longman Cheshire, 1992.
- Hout, Michael. "A Summary of What We Know About Social Mobility." *The ANNALS of the American Academy of Political and Social Science* 657, no. 1 (2015): 27-36.
- Hurd, Michael D, and Susann Rohwedder. "Economic Well-Being at Older Ages: Income-and Consumption-Based Poverty Measures in the Hrs." National Bureau of Economic Research, 2006.
- Isaacs, Julia B. *Economic Mobility of Families across Generations*. Economic Mobility Project, 2007.
- Isaacs, Julia B. "International Comparisons of Economic Mobility." *Getting Ahead or Losing Ground: Economic Mobility in America* (2008).

- Isaacs, Julia B, Isabel V Sawhill, and Ron Haskins. "Getting Ahead or Losing Ground: Economic Mobility in America." *Brookings Institution* (2008).
- Johnson, David S. "Measuring Consumption and Consumption Poverty: Possibilities and Issues." In *Reconsidering the Federal Poverty Measure*. Washington, D.C.: American Enterprise Institute, 2004.
- Johnson, David S, Timothy M Smeeding, and Barbara Boyle Torrey. "Economic Inequality through the Prisms of Income and Consumption." *Monthly Lab. Rev.* 128 (2005): 11.
- Kahneman, Daniel, and Angus Deaton. "High Income Improves Evaluation of Life but Not Emotional Well-Being." *Proceedings of the National Academy of Sciences* 107, no. 38 (2010): 16489-93.
- Kahneman, Daniel, and Alan B. Krueger. "Developments in the Measurement of Subjective Well-Being." *Journal of Economic Perspectives* 20, no. 1 (2006): 3-24.
- Kilpatrick, Robert W. "The Income Elasticity of the Poverty Line." *The Review of Economics and Statistics* 55, no. 3 (1973): 327-32.
- Kimberlin, Sara. "Metrics Matter: Examining Chronic and Transient Poverty in the United States Using the Supplemental Poverty Measure." University of California, Berkeley, 2013.
- Korpi, Tomas. "Is Utility Related to Employment Status? Employment, Unemployment, Labor Market Policies and Subjective Well-Being among Swedish Youth." *Labour Economics* 4, no. 2 (1997): 125-47.
- Kuziemko, Ilyana, Michael I Norton, Emmanuel Saez, and Stefanie Stantcheva. "How Elastic Are Preferences for Redistribution? Evidence from Randomized Survey Experiments." National Bureau of Economic Research, 2013.
- Laibson, David. "Golden Eggs and Hyperbolic Discounting." *The Quarterly Journal of Economics* 112, no. 2 (1997): 443-77.
- Layard, Richard. *Happiness: Lessons from a New Science*. Penguin, 2011.
- Layard, Richard, Andrew E. Clark, Francesca Cornaglia, Nattavudh Powdthavee, and James Vernoit. "What Predicts a Successful Life? A Life-Course Model of Well-Being." *The Economic Journal* 124, no. 580 (2014): F720-F38.
- Lee, Chul-In, and Gary Solon. "Trends in Intergenerational Income Mobility." *Review of Economics & Statistics* 91, no. 4 (2009): 766-72.

- Li, Geng, Robert Schoeni, Sheldon Danziger, and Kerwin Charles. "New Expenditure Data in the Panel Study of Income Dynamics: Comparisons with the Consumer Expenditure Survey Data." *Monthly Labor Review* (2010): 29-39.
- Little, Roderick JA, and Donald B Rubin. *Statistical Analysis with Missing Data*. John Wiley & Sons, 2014.
- Lucas, Richard E, and Ulrich Schimmack. "Income and Well-Being: How Big Is the Gap between the Rich and the Poor?". *Journal of Research in Personality* 43, no. 1 (2009): 75-78.
- Lykken, David, and Auke Tellegen. "Happiness Is a Stochastic Phenomenon." *Psychological Science* 7, no. 3 (1996): 186-89.
- Lyubomirsky, Sonja, Laura King, and Ed Diener. "The Benefits of Frequent Positive Affect: Does Happiness Lead to Success?". *Psychological Bulletin* 131, no. 6 (2005): 803-55.
- Mankiw, N. Gregory, Julio J. Rotemberg, and Lawrence H. Summers. "Intertemporal Substitutions in Macroeconomics." *Quarterly Journal of Economics* 100, no. 1 (1985): 225-51.
- Mazumder, Bhashkar. "The Mis-Measurement of Permanent Earnings: New Evidence from Social Security Earnings Data." 2001.
- Mead, Lawrence M. *Beyond Entitlement*. SimonandSchuster. com, 1986.
- Meyer, B. D., and J. X. Sullivan. "Viewpoint: Further Results on Measuring the Well-Being of the Poor Using Income and Consumption." *Can. J. Econ. Canadian Journal of Economics* 44, no. 1 (2011): 52-87.
- Meyer, Bruce D, and James X Sullivan. "Winning the War: Poverty from the Great Society to the Great Recession." National Bureau of Economic Research, 2013.
- Meyer, Bruce D., Wallace K. C. Mok, James X. Sullivan, and Research National Bureau of Economic. "The under-Reporting of Transfers in Household Surveys Its Nature and Consequences." Cambridge, Mass.: National Bureau of Economic Research, 2009.
- Meyer, Bruce D., and James X. Sullivan. "Identifying the Disadvantaged: Official Poverty, Consumption Poverty, and the New Supplemental Poverty Measure." *Journal of Economic Perspectives* 26, no. 3 (2012): 111-36.
- . "Measuring the Well-Being of the Poor Using Income and Consumption." *The Journal of Human Resources* 38 (2003): 1180-220.

- Modigliani, Franco, and Richard Brumberg. "Utility Analysis and the Consumption Function: An Interpretation of Cross-Section Data." In *Post Keynesian Economics*, edited by Kenneth K. Kurihara, 388-436. New Brunswick, New Jersey: Rutgers University Press, 1954.
- Mullainathan, Sendhil, and Eldar Shafir. *Scarcity: Why Having Too Little Means So Much*. Macmillan, 2013.
- Murray, Charles A. *Losing Ground : American Social Policy, 1950-1980*. New York: Basic Books, 1984.
- Newman, Katherine S. *No Shame in My Game : The Working Poor in the Inner City*. New York: Knopf and the Russell Sage Foundation, 1999.
- Ouellette, Tammy, Nancy Burnstein, David Long, and Erik Beecroft. "Measures of Material Hardship." edited by Office of the Assistant Secretary for Planning and Evaluation United States Department of Health and Human Services, 2004.
- Pacek, Alexander C, and Benjamin Radcliff. "Welfare Policy and Subjective Well-Being across Nations: An Individual-Level Assessment." *Social Indicators Research* 89, no. 1 (2008): 179-91.
- Prapaipanich, Nattaya. "A Review of the Relationship between Subjective Well-Being and Consumption." Paper presented at the 19th International Business Research Conference, 2012.
- Radcliff, Benjamin. "Politics, Markets, and Life Satisfaction: The Political Economy of Human Happiness." *American Political Science Review* (2001): 939-52.
- Rainwater, Lee. "Poverty and Equivalence as Social Constructions " In *Seminar on Families and Levels of Living: Observations and Analysis*. Barcelona, Spain: European Association for Population Studies, 1990.
- Reeves, Richard. "The Measure of a Nation." *The ANNALS of the American Academy of Political and Social Science* 657, no. 1 (2015): 22-26.
- Sabelhaus, John, and Jeffrey A. Groen. "Can Permanent-Income Theory Explain Cross-Sectional Consumption Patterns?". *The Review of Economics and Statistics* 82, no. 3 (2000): 431-38.
- Sabelhaus, John, David Johnson, Stephen Ash, David Swanson, Thesia Garner, John Greenlees, and Steve Henderson. "Is the Consumer Expenditure Survey Representative by Income?". In *Improving the Measurement of Consumer Expenditures*: University of Chicago Press, 2012.

- Samancioglu, Mehmet Zahid, Patricia Andreski, and Robert Schoeni. "Panel Study of Income Dynamics 1999-2011 PSID Consumption Expenditure Data Technical Documentation and User Notes." 2014.
- Schimmack, Ulrich. *The Structure of Subjective Well-Being*. 2008.
- Scitovsky, Tibor. *The Joyless Economy: An Inquiry into Human Satisfaction and Dissatisfaction*. Oxford: Oxford University Press, 1976.
- Sharkey, Patrick. "Persistence, Privilege, and Parenting: The Comparative Study of Intergenerational Mobility." In *Social Service Review*, edited by Robert Erikson Timothy M. Smeeding, and Markus Jantti, eds., , 386-91: The University of Chicago Press, 2013.
- Shea, John. "Union Contracts and the Life-Cycle/Permanent-Income Hypothesis." *The American Economic Review* 85, no. 1 (1995): 186-200.
- Slesnick, Daniel T. *Consumption and Social Welfare: Living Standards and Their Distribution in the United States*. Cambridge University Press, 2001.
- Slesnick, Daniel T. "Gaining Ground: Poverty in the Postwar United States." *Journal of Political Economy* 101, no. 1 (1993): 1-38.
- Smith, Stephen, and Peter Razzell. *The Pools Winners*. Caliban Books London, 1975.
- Stevenson, Betsey, and Justin Wolfers. "Economic Growth and Subjective Well-Being: Reassessing the Easterlin Paradox." *Brookings Papers on Economic Activity* 2008, no. 1 (2008): 1-87.
- Stone, Arthur A., Norman M. Bradburn, Edward F. Diener, Paul H. Dolan, Carol L. Graham, V. Joseph Hotz, Daniel Kahneman, *et al.* "Subjective Well-Being: Measuring Happiness, Suffering, and Other Dimensions of Experience." 2013.
- Stutzer, Alois. "The Role of Income Aspirations in Individual Happiness." *Journal of Economic Behavior & Organization* 54, no. 1 (2004): 89-109.
- Tanner, Michael. *The Poverty of Welfare : Helping Others in Civil Society*. Washington, D.C.: Cato Institute, 2003.
- Thurow, Lester C. "The Optimum Lifetime Distribution of Consumption Expenditures." *The American Economic Review* 59, no. 3 (1969): 324-30.
- van Praag, B. M. S., P. Frijters, and A. Ferrer-i-Carbonell. "The Anatomy of Subjective Well-Being." *Journal of Economic Behavior & Organization* 51, no. 1 (5// 2003): 29-49.

- Veenhoven, Ruut. "Well-Being in the Welfare State: Level Not Higher, Distribution Not More Equitable." *Journal of Comparative Policy Analysis: Research and Practice* 2, no. 1 (2000): 91-125.
- Wheaton, Laura. "Underreporting of Means-Tested Transfer Programs in the Cps and Sipp." Urban Institute, 2007.
- Winkelmann, Liliana, and Rainer Winkelmann. "Why Are the Unemployed So Unhappy? Evidence from Panel Data." *Economica* 65, no. 257 (1998): 1-15.
- Young, Cristobal. "Losing a Job: The Nonpecuniary Cost of Unemployment in the United States." *Social Forces* 91, no. 2 (2012): 609-33.
- Zeldes, Stephen P. "Consumption and Liquidity Constraints: An Empirical Investigation." *Journal of Political Economy* 97, no. 2 (1989): 305-46.