UNIVERSITY OF CAPE TOWN

The Economics of Happiness: Exploring the Complex Relationship Between Income and Subjective Well-Being

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ABSTRACT

Over the past decade, economists and policy makers have become increasingly interested in the relationship between income, economic growth and happiness. Drawing on the existing literature and empirical evidence, this research seeks to contribute to a better understanding of the complex relationship between income and subjective well-being. This research uncovers a paradoxical relationship between income and subjective well-being. Specifically, at a point in time, both within and across nations, happiness varies directly with income, but over time, happiness does not increase when a country's income increases. This paradoxical relationship can be attributed to 'internal' and 'external' income comparisons and the effects these comparisons have on material aspirations and satisfaction judgements. As such, this research finds that relative income, in addition to one's own absolute income, is an important determinant of individual subjective well-being. Moreover, this research provides evidence of a possible causal relationship between income, relative income and subjective well-being. Overall, this research makes a valuable contribution to the literature by bringing together a diverse range of empirical evidence and theoretical arguments to form a holistic and in-depth understanding of the complex relationships and processes at work.

ACKNOWLEDGMENTS

I would like to express my appreciation to Martine Visser, my supervisor, for her guidance throughout the dissertation process. Thank you, Martine.

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2 INTRODUCTION

In 1974, Richard Easterlin investigated the role of economic growth in promoting a happier society. Specifically, Easterlin (1974: 90) posed the following question: "Is there evidence that economic growth is positively associated with social welfare, i.e., human happiness." In his study, Easterlin noticed a striking and paradoxical relationship between income and happiness in the United States. Easterlin began by looking at the comparative status of income groups within the United States at a given time. Easterlin (1974: 99) found that the proportion of people who reported feeling very happy" rose with income group. According to this evidence, there was an indication that income and happiness are positively associated at a point in time. However, when looking at the national time series data for the United States, Easterlin (1974) found that higher income was not systematically accompanied by greater happiness. Specifically, over time happiness remained stable despite economic growth and greater individual wealth. In more recent years, the situation in the United States has worsened, as per capita GDP is still rising, but happiness is now falling (Helliwell et al., 2017). This central paradox of the American economy has challenged the predominant political discourse aimed at raising economic growth, with the goal of restoring the American Dream and the happiness that is supposed to accompany it (Helliwell et al., 2017).

Easterlin (1974: 116) proposed "that relative considerations play an important part in explaining the evidence." The general idea is that individuals compare themselves to a series of standards or norms (McBride, 2001; Senik, 2009) which in turn affect an individual's material aspirations (Easterlin, 2003) and satisfaction judgements (Senik, 2009). As Easterlin (1974: 112) explains, there is a "consumption norm" which exists in a given society at a given time, and which enters into the reference standard of virtually everyone. This provides a common point of reference in self-appraisals of well-being, leading those below the norm to feel less happy and those above the norm, more happy. Over time, this norm tends to rise with the general level of consumption, through the two are not necessarily on a one-to-one basis. Easterlin (1974: 116) goes on to note that this upward shift in standards (tastes) tend to offset the positive effect of income growth on well-being that one would expect on the basis of economic theory.

From an economics perspective, well-being is viewed in terms of one's ability to fulfil desires or satisfy preferences rather than in terms of how people think and feel about their lives (Dolan & White, 2007). As such, economists take it as self-evident that higher income and consumption provides higher utility (Stutzer, 2004: 89). Moreover, it is assumed that people's satisfaction depends on what they have in absolute terms (Stutzer, 2004: 89). However, this

evidence brings into question the validity of the fundamental premise that more is better" and it highlights the importance of relative income for well-being. In addition, this empirical evidence challenges the presumption that if real GDP is growing, other things people want will follow, including ephemeral states of mind like happiness.

Over the past decade, economists and policy makers have become increasingly interested in the relationship between income, economic growth and happiness. Moreover, the pioneering work of Easterlin (1974) has sparked a lively debate about the role of economic growth in promoting a happier society.

This research seeks to contribute to a better understanding of the complex relationship between income and individual subjective well-being. Firstly, this research aims to shed light on the relationship between income and individual subjective well-being. Specifically, this paper will explore, in depth, the relationship between income and subjective well-being at a point-in-time and over time, both within and across countries. Secondly, this research aims to shed light on the relationship between relative income and subjective well-being. To do so, this paper will explore the role of both internal and external income comparisons in shaping material aspirations and satisfaction judgements, thereby highlighting the importance of relative income for subjective well-being. Lastly, this research aims to draw attention to a possible causal relationship between income, relative income and subjective well-being. This is important as the literature tends to focus primarily on establishing a correlation between income and subjective well-being, with little thought given to the direction of causality.

These three dimensions of this research project are usually discussed as distinct, stand-alone topics. Thus, this research is novel in the sense that it brings together a diverse range of empirical evidence and theoretical arguments to form a holistic and in-depth understanding of the complex relationships and processes at work. Overall, this paper makes a valuable contributes to the growing body of literature known as the *Economics of Happiness*.

The paper is set out as follows: *Section 3* explores the concept of subjective well-being and describes how the two dimensions of subjective well-being – happiness and life satisfaction – are measured. In addition, S*ection 3* briefly discusses the methodologies used to interrogate the relationship between income and subjective well-being. *Section 4* explores the *Economics of Happiness* literature, offering an overview of the major empirical evidence regarding the relationship between income and subjective well-being. Specifically, this section describes, compares, and contrasts the various cross-sectional evidence based on within – and across-country comparisons of income and SWB at a point in time. In addition, this section provides

a critical review of the time-series evidence regarding the relationship between economic growth and changes in subjective well-being over time. In *Section 5* the focus shifts from absolute income to relative income. Specifically, *Section 5* explores the role of income comparisons, both internal and external, in shaping material aspirations and satisfaction judgements, thereby highlighting the importance of relative income for subjective well-being. *Section 5* begins with a discussion of the dominant theoretical arguments followed by a discussion of the relevant empirical evidence. Lastly, *Section 6* provides a brief note on a possible causal relationship between income, relative income and subjective well-being by drawing on evidence from a randomized controlled trial of unconditional cash transfers in Kenya.

3 Concepts, Measurement and Methodologies

3.1 What is Subjective Well-Being?

Establishing a clear understanding of the precise concept being measured is essential if one wishes to discuss the empirical findings in any meaningful sense. Survey questions designed to measure subjective well-being (SWB) typically involve probing "happiness" or "life satisfaction". Hence, this paper adopts a broad and inclusive definition of SWB, encompassing both the affective and cognitive components of well-being. Specifically, SWB can be understood as:

"Good mental states, including all the various evaluations, positive and negative, that people make of their lives and the affective reactions of people to their experiences" (OECD, 2013: 29).

3.2 Measuring Life Satisfaction and Happiness

Questions about *life satisfaction* ask respondents to make an overall evaluation of their lives. Measures of life evaluation capture a reflective assessment, cognitive evaluation, or judgment of one's life or some specific aspect of it. According to Pavot et al. (1991), an evaluation of this sort requires one to construct a "standard" or "benchmark" against which to compare life overall or various domains of life. This "standard" would reflect what a person perceives as adequate or appropriate for themselves. The following question from the World Values Survey is an example of a question measuring life satisfaction:

"All things considered, how satisfied are you with your life as a whole these days?"

Other variants of the question, such as that in the Gallup World Poll, present respondents with the following scenario and question:

"Here is a picture of a ladder. Suppose we say that the top of the ladder represents the best possible life for you and the bottom represents the worst possible life for you. Where on the ladder do you feel you personally stand at the present time?"

Respondents are then required to select a "step" on the ladder that best represents their life on the scale from 0, indicating the worst possible life, to 10, indicating the best possible life. In this case, the respondent is required to rate his or her personal standing based on his or her own assumptions, perceptions, goals, and values (Easterlin, 1974).

On the other hand, *happiness* is an affective state. Affect refers to a person's feelings or emotional state at a point in time. Affect consists of two distinct hedonic dimensions: positive affect and negative affect (Kahneman et al., 1999; Diener et al., 1999). "Positive affect captures positive emotions such as the experience of happiness, job and contentment. Negative affect, on the other hand, comprises the experience of unpleasant emotional states such as sadness, anger, fear and anxiety" (OECD, 2013: 31). Life evaluations are based on how people remember their experiences whereas measures of affect capture how people experience life at a point of time. The following question from the World Values Survey is an example of a question measuring happiness:

"Taking all things together, would you say you are: very happy; quite happy; not very happy; not at all happy?"

A substantial methodological literature has developed on the reliability, validity, and comparability of the answers to such questions (Diener, 1984; Frey & Stutzer, 2002; Veenhoven; 1993). "The consensus is that the responses, although not without their problems, are meaningful and reasonably comparable among groups of individuals" (Easterlin, 2003: 11176).

3.3 Methodologies Used to Investigate the Relationship Between Income and Subjective Well-Being

In 1974, Richard Easterlin sparked a lively debate about the role of economic growth in promoting a happier society. This pioneering study led many economists and other social scientists to ask: "Do higher incomes created by economic growth make people happy?"

Researchers have used different methodologies to investigate the relationship between income and SWB. Researchers have used cross-sectional data to analyse the point-in-time correlation between income and SWB amongst individuals within a country (e.g., Di Tella & MacCulloch, 2006; Frey and Stutzer, 2002; Stevenson & Wolfers, 2008). While other researchers have examined the point in time relationship between per capita Gross Domestic Product (GDP) and average SWB across countries (should read Inglehart & Klingemann, 2000; Deaton, 2008; Stevenson & Wolfers, 2008). In addition, several scholars have used time-series data to investigate the correlation between economic growth and changes in SWB over time (Easterlin, 1974; Easterlin et al., 2010; Stevenson & Wolfers, 2008).

Most of the early studies considered the relationship between the level of absolute income and the level of SWB (e.g., Ingelhart & Klingemann, 2000). However, more recent studies have analysed the relationship between SWB and the *logarithm* of income, yielding very different results and conclusions to the earlier studies (e.g., Deaton, 2008; Stevenson & Wolfers, 2008).

Economists are not the only ones interested in the relationship between income and SWB. A broader survey of the literature reveals various kinds of studies investigating the relationship between income and elements of SWB, from a variety of disciplines. For example, scholars have studied the correlation between poverty and mental health (Lund et al., 2010) and the correlation between poverty and levels of the stress hormone cortisol (Cohen et al., 2006). Building on the correlational evidence, some scholars have studied the causal relationship between poverty and unhappiness, depression, anxiety and cortisol levels. For instance, randomized field experiments, such as unconditional cash transfer programs (e.g., Haushofer & Shapiro, 2013), or natural experiments, such as lottery wins, have been used to study the effect of reductions in poverty on affect and stress. In addition, some scholars have used unexpected shocks, such as severe weather conditions for farmers, to study the effect of increases in poverty on elements of subjective well-being like self-reported stress and cortisol levels (e.g., Haushofer et al., 2012).

Most of the studies in the *Economics of Happiness* literature focus on the relationship between income and SWB. However, several scholars have highlighted the importance of income comparisons and relative income for individual SWB (e.g., Easterlin, 1974, 2003, 2005, Diener, 1984; McBride, 2001, Senik, 2009, Luttmer, 2005). The general idea is that individuals compare themselves to a series of standards or norms (McBride, 2001; Senik, 2009) which in turn affect an individual's material aspirations (Easterlin, 2003) and satisfaction judgements (Senik, 2009).

As such, several scholars have investigated how inwardly oriented income comparisons affect SWB, both in theory (e.g., Stutzer & Frey, 2002) and in practice (e.g., Posel & Casale, 2011; Senik, 2009; Tibesigwa et al., 2016). Similarly, several scholars have investigated the effects of social income comparisons on SWB (e.g., Ferrer-i-Carbonell, 2005; Luttmer, 2005; Kingdon & Knight, 2007: Posel & Casale, 2011; Senik, 2009; Tibesigwa et al., 2016). There is limited experimental research on the causal relationship between relative income and SWB. However, Haushofer et al. (2015) make use of a randomized controlled trial of unconditional cash transfers in Kenya, to study the effects of exogenous changes in the wealth of neighbours on

psychological wellbeing. As such, Haushofer et al. (2015) offer novel insights into a possible causal relationship between relative income and SWB.

4 Exploring the Relationship Between Income and Subjective Well-Being

This section will explore the *Economics of Happiness* literature. Drawing on several different studies, this section will discuss the empirical evidence pertaining to the relationship between income and SWB. This section will begin by exploring, comparing, and contrasting the cross-sectional evidence based on within and across country comparisons of income and SWB at a point in time. Following this, there will be a brief discussion on the relationship between income and the two aspects of SWB - emotional well-being or affect and life evaluation – with the goal of drawing attention to the different concepts and their unique relationship with income. Lastly, this section will discuss the time-series evidence pertaining to the relationship between economic growth and changes in SWB over time. Overall, the aim of this section is to determine if there is a correlation between income and SWB both at a point-in-time and over time.

4.1 The Cross-Section Evidence: Diminishing Marginal Utility of Income and Satiation

This paper will begin by reviewing the cross-sectional empirical evidence regarding the relationship between income and SWB at a point-in-time. Many scholars have studied the correlation between income and SWB by analysing cross-sectional data in one of two ways. Firstly, by analysing cross-sectional micro-empirical data, i.e., data at the individual level and for only one country. Or alternatively, by analysing cross-sectional data on multiple countries where the relationship is studied by means of country comparisons. These types of studies look at the point-in-time correlation between income and subjective well-being, measured using survey questions on happiness or life satisfaction, the two components of SWB.

4.1.1 Within-Country Comparisons

As Frey & Stutzer (2002) explain, a higher income allows one to buy more goods and services and satisfy one's material desires. In addition, a higher income is often associated with a higher status in society. On this basis, one would expect a higher income to yield higher individual utility. In other words, those with higher income should report higher levels of subjective well-being compared to those with lower income.

As a matter of fact, Frey & Stutzer (2002) report this very finding. That is, richer people on average report higher SWB compared to those in lower income groups. Moreover, both simple bivariate regressions and multiple regressions show the relationship between income and SWB to be highly statistically significant. Indeed, Stevenson & Wolfers (2008) examine the bivariate relationship between life satisfaction and income in over a hundred countries and fail to find a statistically significant exception. As Frey & Stutzer (2002:409) write, in this sense, "income does buy happiness."

A few researchers have found the correlation between income and SWB to be strongest at lower income levels (Frey & Stutzer, 2002; Helliwell, 2001). More specifically, as one moves up the income distribution, there are progressively smaller differences in SWB between successively higher income categories. Specifically, there is "diminishing marginal utility with absolute income" (Frey & Stutzer, 2002: 409).

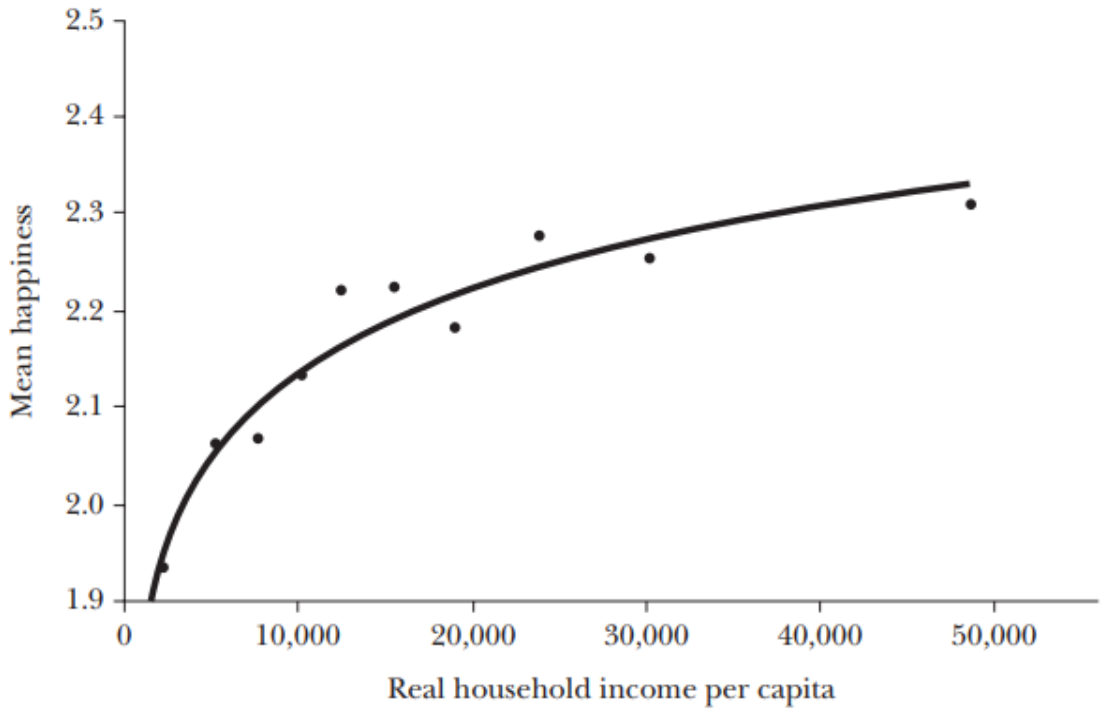
For instance, consider the data from the United States General Social Survey (GSS) in 1994 where the following question was asked:

"Taken altogether, how would you say things are these days – would you say that you are (3) very happy, (2) pretty happy, or (1) not too happy?"

This question measures the affective component of SWB and requires respondents to report on how they are experiencing their lives at that time. Figure 4.1 shows a plot of the relationship between the mean reported happiness score and real household income per capita for this cross-section of the United States.

The data shows a positive relationship between real household income per capita and mean happiness. Therefore, according to this data, people with higher income are, on average, happier than those with low income. However, as Frey & Stutzer (2002) point out, the relationship between income and happiness seems to be nonlinear; there is diminishing marginal utility with absolute income. In other words, "the same proportional increase in income yields a lower increase in happiness at higher income levels" (Frey & Stutzer, 2002: 409).

Figure 4.1: Mean Happiness and Real Household Income for a Cross-Section of the United States in 1994



(Image Source: Di Tella & MacCulloch, 2006: 27)

4.1.2 Across-Country Comparisons

As Deaton (2008) points out, several studies based on the World Values Survey find that high-income countries are happier than low-income countries. However, amongst the high-income countires there is no relationship between income and national happiness

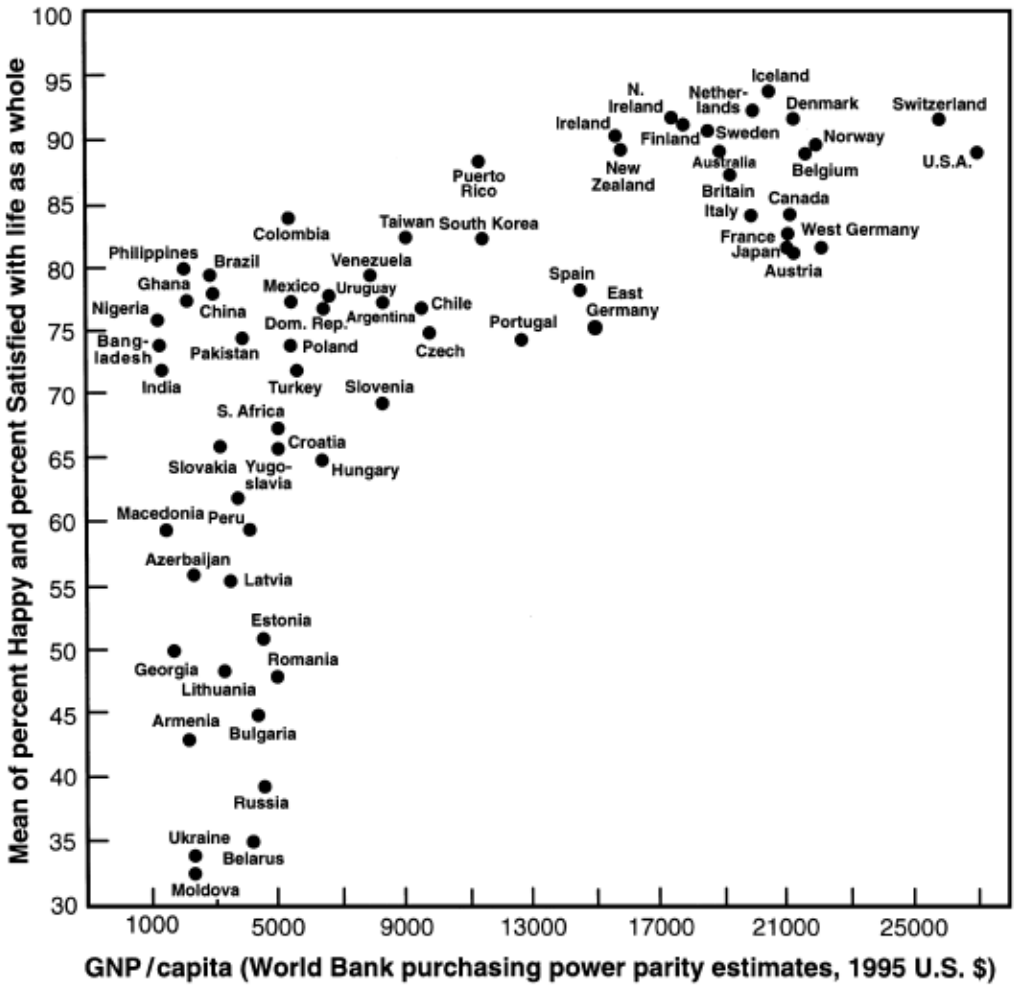
One such study is that by Inglehart & Klingemann (2000) who analyse data from the World Values Survey for 65 countries. Inglehart & Klingemann (2000) find that the cross-national differences in subjective well-being are associated with the level of economic development in a society. Furthermore, Ingelhart & Klingemann (2000) find a statistically significant correlation of 0.70 ($p < 0.0000$) between SWB and Gross National Product (GNP). This suggests that economic development, and the movement from extreme poverty to prosperity, has a positive effect on individual SWB.

However, the authors note that this relationship is not linear as the correlation between SWB and GNP weakens as one moves up the economic ladder. More specifically, the authors note that "above $13, 000 in 1995 purchasing power parity, there is no significant linkage between

wealth and subjective well-being" (Ingelhart & Klingemann, 2000: 171). This relationship between SWB and GNP per capita is illustrated in Figure 4.2.

According to these studies and others (e.g., Diener & Seligman, 2004; Frey & Stutzer, 2002; Layard, 2005; Veenhoven, 1991), there is a concave relationship between national income and the average level of SWB. In other words, increases in income result in additional happiness at low levels of economic development but once a certain threshold is reached, the average income level has a small or insignificant effect on average SWB. The lack of evidence of a clear linear relationship between income and SWB has led to theories of a satiation point, beyond which income no longer matters for SWB (Layard, 2003; Veenhoven; 1991; Clark et al., 2008; Frey & Stutzer, 2002). The conclusion that absolute income is only important at low levels of income has "far-reading policy implications" (Stevenson & Wolfers, 2008: 2). Specifically, if economic growth does little to improve social welfare, then should it remain a primary goal of government policy (Stevenson & Wolfers, 2008)?

Figure 4.2: "Subjective well-being by level of economic development"

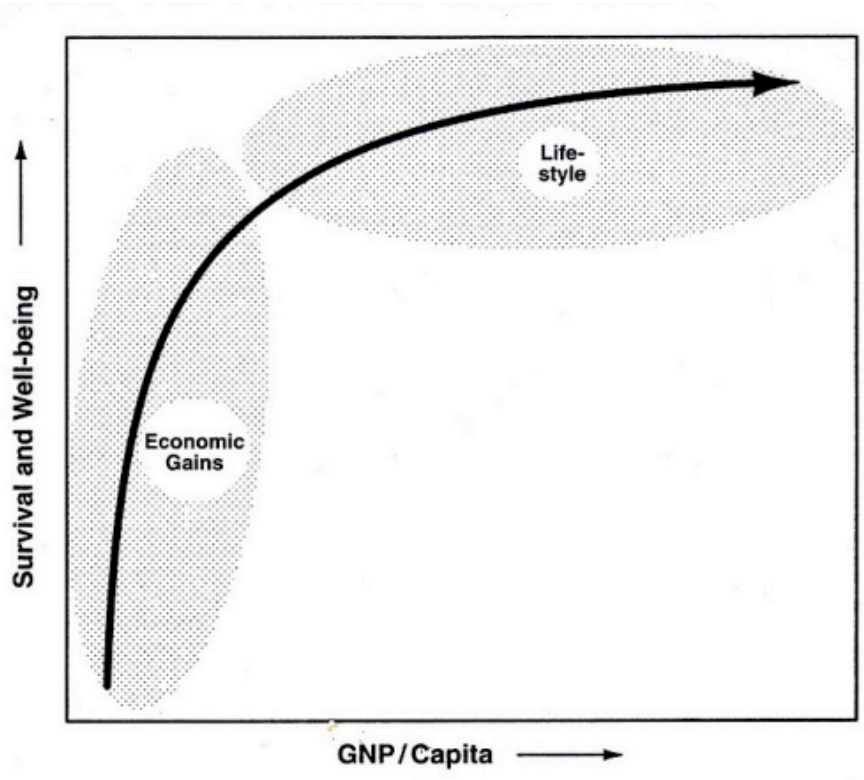


(Note: R = 0.70, N = 65, p < 0.000)
(Source: Ingelhart & Klingemann, 2000: 168)

Inglehart (1997: 64) provides a plausible and interesting explanation for this finding, hypothesising that greater GNP per capita and economic development cause a "societal-level shift" from maximising economic growth to maximising SWB. According to Inglehart (1997:64): "From a rational actor's perspective, one would expect economic development to eventually bring a shift in survival strategies."

A "societal-level shift" can be understood as the changing values within a society. At low levels of GDP per capita a society gives "top priority to economic and physical security" (Inglehart et al., 2008: 266) because "even modest gains bring a high return in terms of caloric intake, clothing, shelter, medical care and ultimately, in life expectancy itself" (Inglehart, 1997: 64).

Figure 4.3: Economic Development and the shift in survival strategies



(Image source: Inglehart, 1997)

Thus, as Inglehart (1997: 64) explains, "For individuals to give top priority to maximizing economic gains, and for a society to give top priority to economic growth, is a highly effective survival strategy."

However, as a country develops and achieves greater economic development, society shifts its focus to "non-economic aspects of life" and "places increasing emphasis on quality of life concerns, rather than to continue the inflexible pursuit of economic growth as if it were a

good in itself" (Inglehart, 1997: 64). As Inglehart et al. (2008: 266) explain, there is a shift "towards giving top priority to self-expression values that emphasize participation, freedom of expression, and quality of life." Inglehart et al. (2008:266) explain how economic development creates a sense of existential security that allows people to shift their emphasis from survival towards other goals such as the quality of life, freedom, happiness and greater life satisfaction.

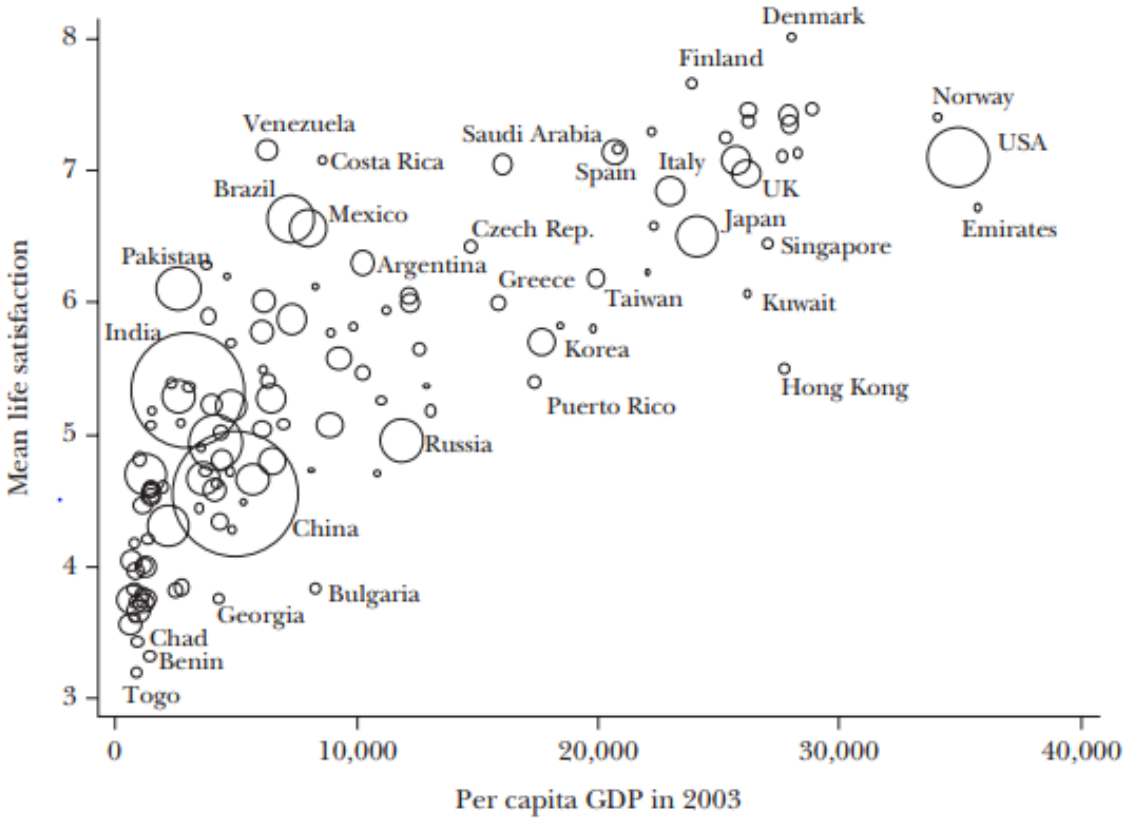
This explanation suggests that income and material pursuits are the greatest contributors to SWB at low levels of income. However once basic needs are met, the focus is less on economic aspects of life and more on the non-economic aspects that allow people to achieve a greater quality of life and sense of fulfilment, freedom and self-expression (Inglehart, 1997; Ingelhart et al., 2008). This theoretical explanation points to the importance of non-economic factors for SWB, particularly at higher income levels. Specifically, once a certain threshold of income is achieved and basic material needs are met, factors relating to quality of life and the quality of social and political institutions may become increasingly important for SWB.

4.2 The Cross-Section Evidence: A Counter Argument

As explained above, if one assesses the relationship between the level of SWB and the level of GDP per capita in absolute dollar value, the well-being-income gradient appears less steep among wealthier countries. However, as Easterlin (2013: 2) points out, if GDP is plotted on a log scale, "so that equal distances on the horizontal axis represent equal percentage change in GDP per capita, not equal absolute increments", there is no evidence of satiation in the cross-sectional data.

In 2008, Deaton produced a comprehensive cross-sectional study using the 2006 Gallup World Poll data for 123 countries. Deaton (2008) began by analysing the relationship between the level of life satisfaction and the level of national income across countries. Figure 4.4 shows that life satisfaction is highest in countries with higher GDP per head. According to Deaton (2008) the slope of the income-life satisfaction curve is steepest amongst the poorest countries, indicating a strong association between income and life satisfaction. While the slope of the income-life satisfaction curve is less steep amongst the rich countries, there is still indication of a positive association. Thereby, falsifying the claim that there is some threshold level of GDP per capita above which income has no further effects on life satisfaction.

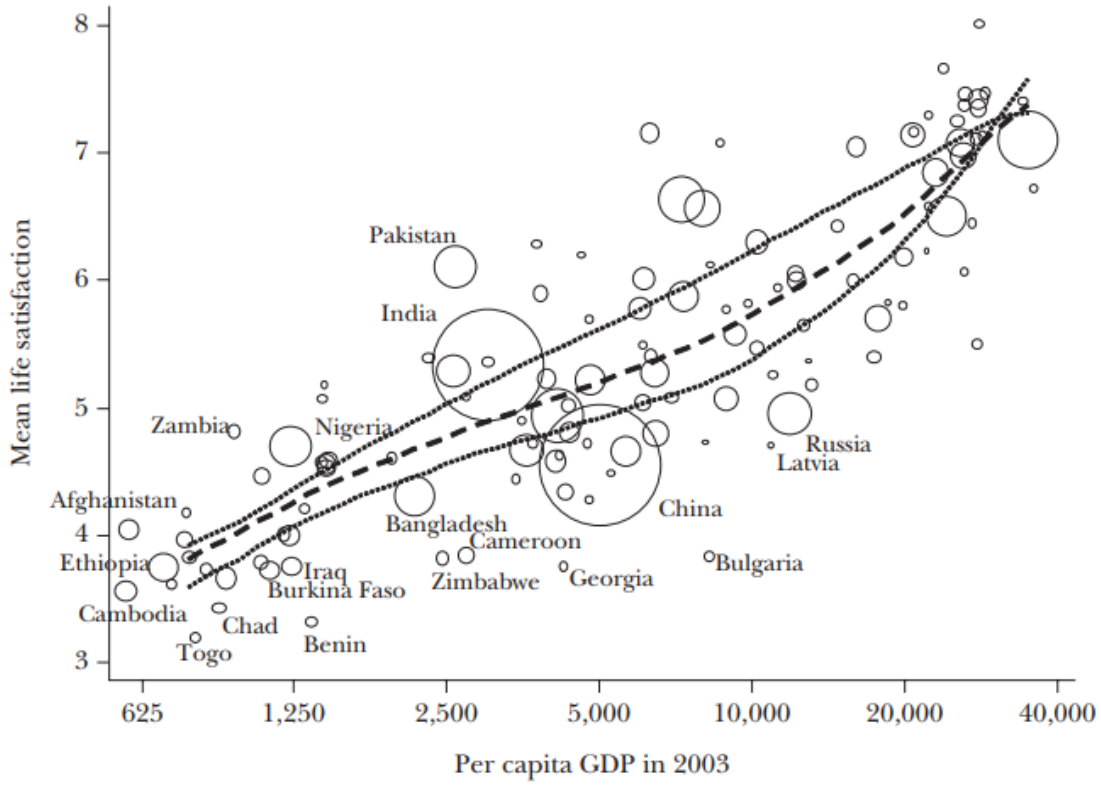
Figure 4.4: "Life Satisfaction and Per Capita GDP around the World"



("Note: Each circle is a country, with diameter proportional to population. GDP per capita in 2003 is measured in purchasing power parity chained dollars at 2000 prices." (Deaton, 2008: 56))
(Image source: Deaton, 2008: 56)

Looking at Figure 4.5 if one plots average life satisfaction against the *logarithm* of per capita income, the relationship between per capita income and life satisfaction is close to linear (Deaton, 2008). The correlation between life satisfaction and the logarithm of per capita GDP is "0.838, with a small standard error" (Deaton, 2008: 58). Deaton (2008) investigates whether this overall correlation hides a different pattern for the low-income and high-income countries and finds this not to be the case. In fact, the "results support a finding that the relationship between log of income and life satisfaction offers a reasonable fit for all countries, whether high-income or low-income, and if there is any evidence of deviation, it is small and probably in the direction of the slope being higher among the high-income countries" (Deaton, 2008: 58).

Figure 4.5: "Each Doubling of GDP is Associated with a Constant Increase in Life satisfaction"



("Note: Each circle is a country, with diameter proportional to population. The scale on the x-axis is logarithmic. The middle line shows average life satisfaction for each level of per capita GDP while the outer two lines show the same thing, but for two age groups. GDP per capita in 2003 is measured in purchasing power parity chained dollars at 2000 prices." (Deaton, 2008: 57))
(Image source: Deaton, 2008:57)

Therefore, Deaton's study shows that equal percentage differences in GDP are associated with equal differences in happiness between countries, irrespective of whether the countries are rich or poor (Easterlin, 2013). Overall, Deaton (2008: 55) finds that "high-income countries have greater life satisfaction than low-income countries, and when income is measured in logarithmic terms, there is no evidence that the cross-country effects of greater income fade out or vanish as countries increase their income."

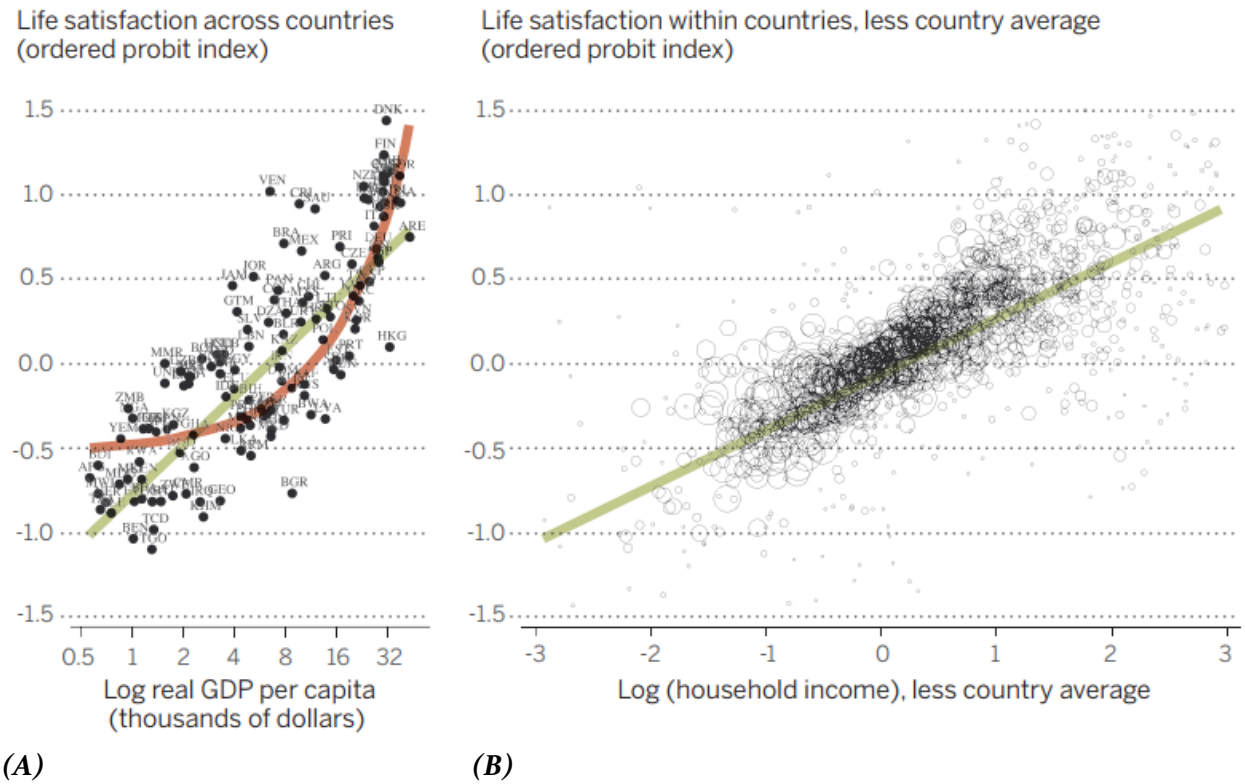
Comparable results are found by Stevenson & Wolfers (2008). To date, Stevenson & Wolfers (2008) have produced the most comprehensive study using larger and newer data sets. Figure 4.6 has been adapted from Stevenson & Wolfers (2008) by Haushofer and Fehr (2014) and show the relationship between income and life satisfaction, across and within countries, using data from the Gallup World Poll. Haushofer & Fehr (2014) plot standardised responses of 102, 583 respondents from 131 countries to the ladder of life question:

"Please imagine a ladder with steps numbered from zero at the bottom to ten at the top. Suppose we say that the top of the ladder represents the best possible life for you and the bottom of the

ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?"

As Haushofer & Fehr (2014: 863) explain: "In (A), we plot country mean responses against country gross domestic product (GDP) per capita (purchasing power parity in constant 2000 international dollars). The dashed line is fitted from an ordinary least squares (OLS) regression; the dotted line is fitted from a lowess estimation. In (B), each circle represents one income bracket in one country, with its diameter proportional to the population of that income category in that country, and the horizontal axis represents the log of household income after subtracting the country average." As Figure 4.6 shows, there is a positive correlation between self-reported life satisfaction and income across countries (A) and within countries (B), at a point in time.

Figure 4.6: Life Satisfaction Across and Within Countries



(A) ***(B)***

(Image source: Haushofer and Fehr, 2014: 863)

The conflicting findings, between these two studies and the studies discussed earlier, can be attributed to the differences in the assumed functional form of the relationship between SWB and GDP. According to Kahneman & Deaton (2010: 16489): "The logarithmic transformation

represents a basic fact of perception known as Weber's Law, which applies generally to quantitative dimensions of perception and judgement (e.g., the intensity of sounds and lights). The rule is that the effective stimulus for the detection and evaluation of changes in differences in such dimensions is the percentage change, not its absolute amount. In the context of income, a $100 raise does not have the same significance for a financial services executive as for an individual earning the minimum wage, but a doubling of their respective incomes might have a similar impact on both. The logarithmic transformation reveals an important regularity of judgement that risks being masked when a dollar scale is used." Thus, if appropriately plotted against the logarithm of GDP, average national SWB varies linearly with income (Deaton, 2008).

4.3 Decomposing Subjective Well-Being: The Effects of Income on Life Evaluation and Emotional Well-Being

The literature makes a distinction between two aspects of SWB: emotional well-being or affect and life evaluation. According to Kahneman & Deaton (2010: 16489): "Emotional well-being refers to the emotional quality of an individual's everyday experience – the frequency and intensity of experiences of joy, stress, sadness, anger, and affection that make one's life pleasant or unpleasant. Life evaluation refers to the thoughts that people have about their life when they think about it."

Emotional well-being and life evaluation are two concepts that are often confounded in the literature. Thus, Kahneman & Deaton (2010) studied the relationship between income and emotional well-being and income and life evaluation separately. Kahneman & Deaton (2010): 16489) found that "emotional well-being and life evaluation have different correlates in the circumstances of people's lives." Specifically, Kahneman & Deaton (2010: 16489) "observe striking differences in the relationship of these aspects of well-being to income."

The authors analysed the responses of more than 450, 000 United States residents, surveyed in 2008 and 2009, to several questions about their SWB. Emotional well-being and life evaluation were measured as follows:

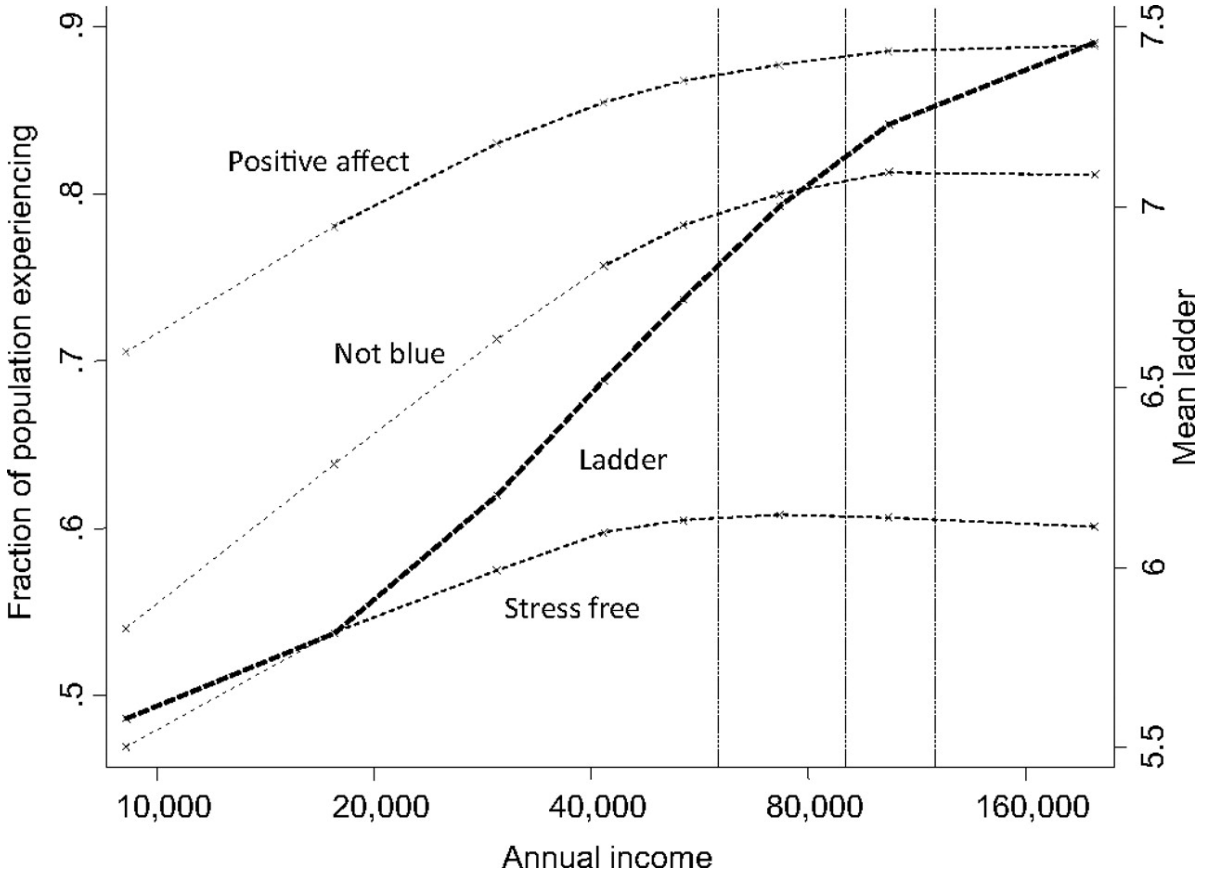
1. Emotional well-being was divided into three categories:
    - Positive affect which is measured by taking the average of reports of happiness, enjoyment, and frequent smiling and laughter;

- Negative affect (or as the authors refer to it, "blue affect") which is measured by taking the average of worry and sadness scores; and
- Reports of stress.

2. Life Evaluation was measured using the Cantril ladder.

Figure 4.7 shows the relationship between the dimensions of subjective well-being and household income. As Kahneman & Deaton (2010: 16491) explain: "Positive affect is the average of the fractions of the population reporting happiness, smiling, and enjoyment. Not blue is 1 minus the average of the fractions of the population reporting worry and sadness. Stress free is the fraction of the population who did not report stress for the previous day. These three hedonic measures are marked on the left-hand scale. The ladder is the average reported number on a scale of 0–10, marked on the right-hand scale." In addition, it should be noted that income is converted to an annual basis and plotted on a log scale.

Figure 4.7: "Positive affect, blue affect, stress, and life evaluation in relation to household income"



(Images source: Kahneman & Deaton, 2010: 16491)

Kahneman & Deaton (2010) find "for all measures of experienced well-being, individuals in the lower-income groups do worse on average than those above them, but that those in the top two groups do not differ." According to Kahneman & Deaton (2010: 16491), "this observation implies that emotional well-being satiates somewhere above the third category of income from the top. We infer that beyond about $75, 000/year, there is no improvement whatsoever in any of the three measures of emotional well-being." On the other hand, there is a "steady rise in life evaluation with log income over the entire range; the effects of income on individuals' life evaluation show no satiation, at least to an amount well over $120,000" (Kahneman & Deaton, 2010: 16491).

Table 4.1: "Tests for income satiation of life evaluation and emotional well-being"

	Positive affect	*Blue affect*	*Stress*	*Ladder of life*
	Coefficients are the difference in mean outcomes			
Top (> $120, 000) vs. second ($90,000 - $120,000)	0.0035	0.0013	0.0055	0.2264
t value	(1.9)	(0.6)	(1.5)	(19.4)
Second vs. third ($60,000 - $90,000)	0.0082	-0.0131	0.0016	0.2268
t value	(4.4)	(5.7)	(0.4)	(19.7)
Observations				
Top group	72, 744	73, 104	73,109	73, 068
Second group	40,136	40,291	40,301	40,283
Third group	88,887	89,278	82,290	89,245

(Source: table adapted from Kahneman & Deaton, 2010: 16491)

When looking at how the second income group differs from the third income group, positive affect, blue affect, and Cantril ladder scores are all significantly improved except for stress, "which appears to satiate at a lower income level" (Kahneman & Deaton, 2010: 16491). When comparing the top two income categories, only the ladder score shows a significant improvement with higher income. Thus, Kahneman & Deaton (2010: 16491) find that "lack of money brings both emotional misery and low life evaluation." However, beyond a threshold, of around $75,000, income fails to improve emotional well-being, although income continues to improve individuals' life evaluation. According to Kahneman & Deaton (2010: 16492) "What the data suggests is that above a certain level of stable income, emotional well-being is constrained by other factors in their temperament and life circumstances."

Kahneman & Deaton (2010: 16489) "conclude that high income buys life satisfaction but not happiness, and that low income is associated both with low life evaluation and low emotion well-being."

4.4 The Time-Series Evidence: The Relationship Between Economic Growth and Subjective Well-Being Over Time

4.4.1 The Happiness-Income Paradox

Several scholars have identified a striking and curious relationship between income and happiness over the long-term, known as the happiness-income paradox. According to Easterlin et al. (2010: 22463), "Simply stated, the happiness-income paradox is this: at a point in time both among and within nations, happiness varies directly with income, but over time, happiness does not increase when a country's income increases. We are talking here about the timeseries relationship of happiness and income in the long term, usually at least 10 years, sometimes more."

In 1974, Richard Easterlin introduced happiness data into economics when he asked the question: "As a country's income grows during the course of economic development, does human happiness advance – does economic growth improve the human lot?" Easterlin (1974) acknowledged that happiness is, of course, not confined to economic well-being. Moreover, Easterlin (1974) distinguished between social welfare and the narrower concept of economic welfare. According to Easterlin (1974), happiness is related to social wellfare, or welfare at large.

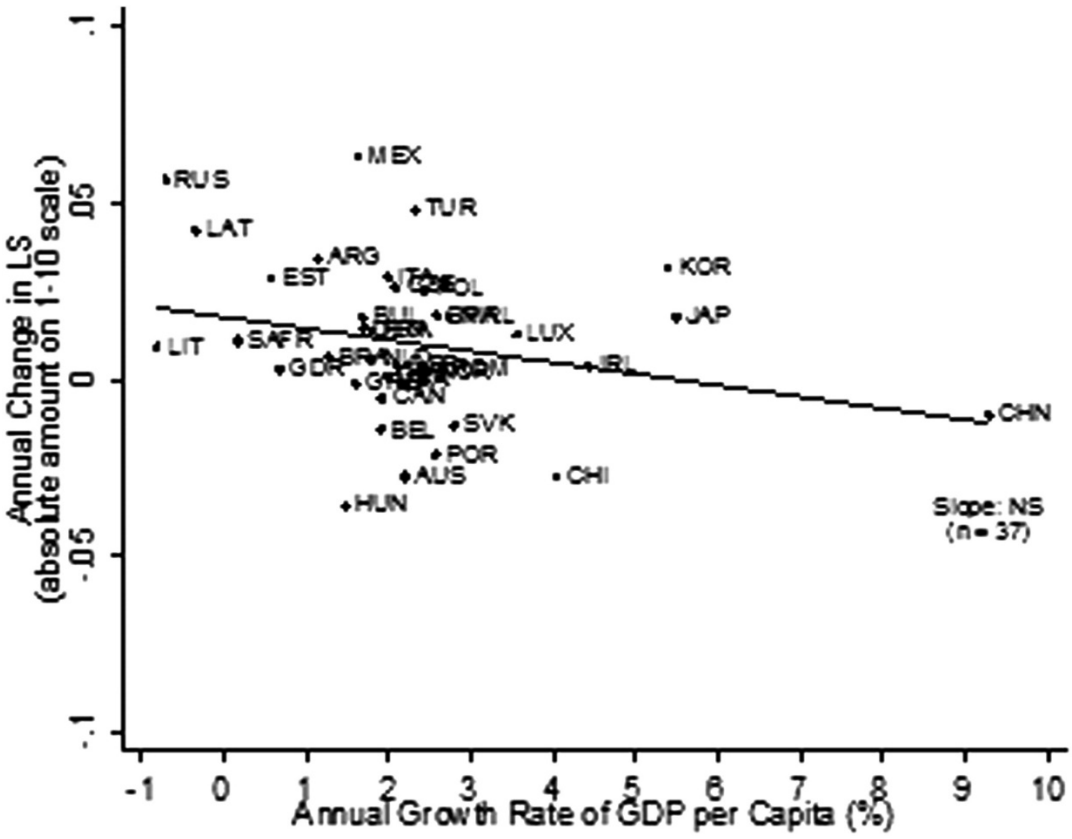
Despite this clear distinction, Easterlin (1974) pointed out that many economists disregard possible divergences between these two welfare concepts and assume that changes in economic welfare translate into changes in social welfare in the same direction, if not to the same degree. It is this presumption that was the central concern of Easterlin's (1974: 90) pioneering study, that is: "Is there evidence that economic growth is positively associated with social welfare, i.e., human happiness?"

Easterlin (1974) observed that happiness responses are positively correlated with individual income. Specifically, at any given point in time the rich report greater happiness than the poor within the United States. Yet, over time, happiness responses remained stable in the United States, with no noticeable trend up or down, despite considerable economic growth and increases in average wealth. This pattern was at odds with the assumption that economic

growth is positively associated with social welfare, i.e., human happiness. This finding prompted a call for more research on the nature and causes of human welfare. As Bradburn (1969: 233) states: "Insofar as we have greater understanding of how people arrive at their judgements of their own happiness and how social forces are related to those judgements, we shall be in a better position to formulate and execute effective social policies."

For several years the evidence for the happiness-income paradox was limited to developed countries (i.e., the United States and Japan). However, more recently Easterlin and colleagues (2010) used time-series data from 37 countries to analyse the relationship between the annual growth rate of GDP per capita (%) and the annual change in life satisfaction for periods ranging 12 to 34 years, up to 2005. The countries analysed included 17 developed, 11 transitioning and 9 developing countries. Easterlin et al. (2010) found there to be no signigacant relationship between the rate of economic growth in a country and improvements in life satisfaction.

Figure 4.8: "Average annual rate of change in life satisfaction and in GDP per capita, 17 developed, 11 transitioning, and 9 developing countries"



(Image Source: Easterlin et al., 2010: 22464)

This is not to say that macroeconomic movements do not have effects on the happiness of a nation. Di Tella et al. (2003) find that movements in self-reported happiness, or well-being, are correlated with macroeconomic variables and economic fluctuations over time. Specifically, people's happiness responses are, on average, strongly correlated with movements in current and lagged GDP per capita. In addition, the decline in happiness resulting from an economic recessions are large. An economic downturns results in losses far beyond those measured by economists, causing psychic losses such as the "fear-of-unemployment effect" (Di Tella et al., 2003: 823). Conversly, economic upturns positively affect peoples' reported happienss or life satisfaction. With this said, Di Tella et al. (2003) note that it is likely that some of the gains in happiness resulting from an economic boom may wear off over time due to habituation. Thus, while changes in GDP do effect happiness in the short run, the effects are usually only transitory and dissipate, to some extent, in the long run.

4.4.2 Critiques of the Happiness-Income Paradox

The core of the happiness-income paradox lies in the failure to isolate statistically significant relationships between average levels of happiness and economic growth over time. There are two arguments, the first based on cross-sectional evidence and the second based on time-series evidence, claiming to disprove the happiness-income paradox. Each of the arguments are briefly discussed below.

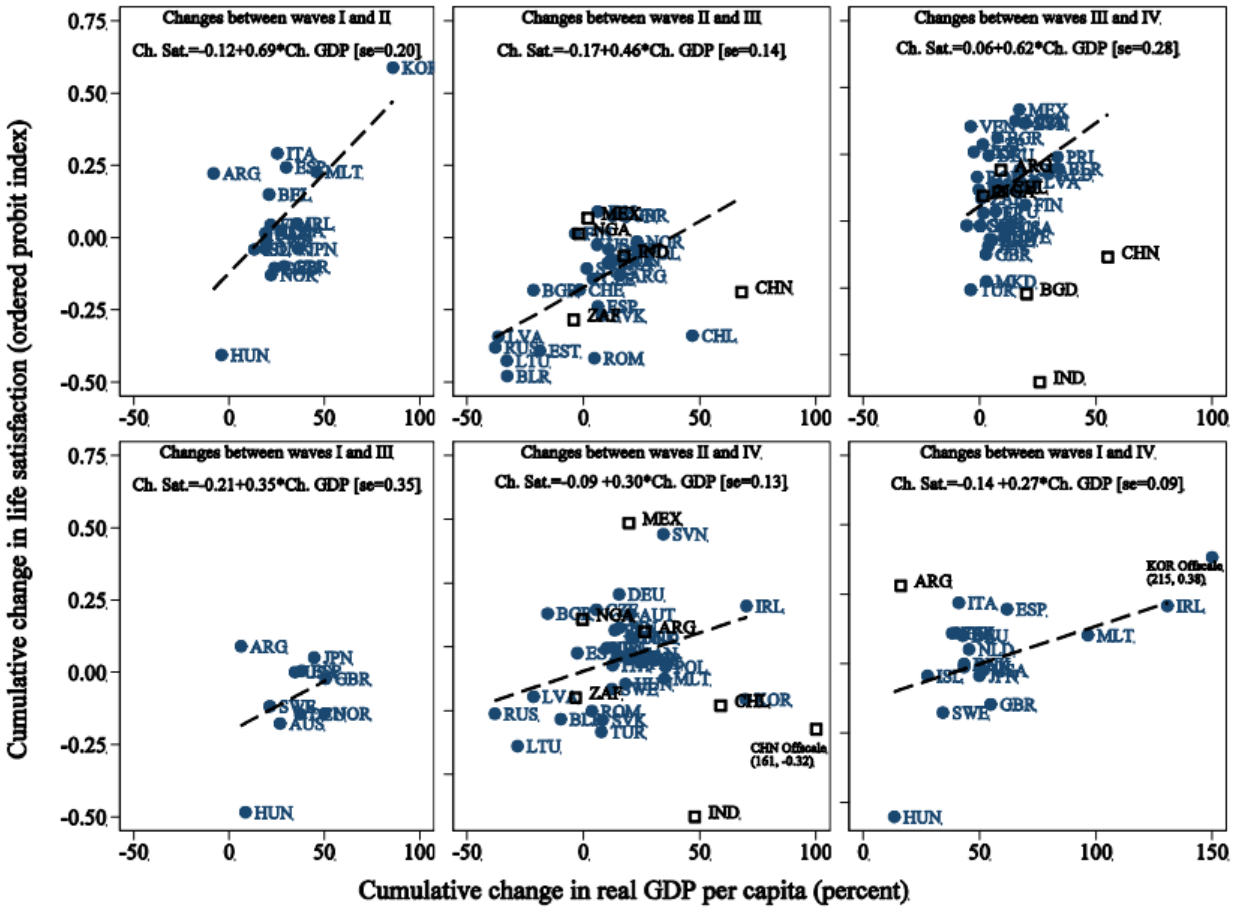
4.4.2.1 An argument based on cross-sectional evidence.

As previously discussed, there is a clear positive relationship between income and happiness at a point-in-time. The work of Deaton (2008) and his graphical representation of the relationship between life satisfaction and the logarithm of income (Figure 4.5), which is entitled "Each Doubling of GDP is associated with a Constant Increase in Life Satisfaction", is most often cited as disproof of the happiness-income paradox. However, as Easterlin et al. (2010) clearly explain, the essential meaning of the "paradox" is the contradiction between the cross-sectional and time series results. As such, Easterlin et al. (2010: 22464) state the following: "That scholars would cite Deaton's cross-section results as disproving the time series is to ignore the meaning of paradox. If there was no positive relation in the cross-section, there would be no paradox!"

4.4.2.2 An argument based on time-series evidence

Stevenson & Wolfers (2008) analyse data for Europe from four waves of the World Values Survey which has been running since 1981. Stevenson & Wolfers (2008) analyse changes in life satisfaction and log GDP between each wave of the panel. The researchers reported the results of three "short first differences" and three "long first differences" regressions. The "three short first differences" regressions analyse differences between adjacent waves of the World Values Survey. Specifically, changes between waves I and II, changes between waves II and III, and changes between waves III and IV. The three "long first differences" regressions show longer differences, that is changes between waves I and III, changes between waves II and IV, and changes between I and IV.

Figure 4.9: "Changes in life satisfaction and economic growth: World Values Survey"



(Image Source: Stevenson & Wolfers, 2008: 66)

According to Stevenson & Wolfers (2008): "In each comparison of pairs of waves, we find that larger rises in GDP per capita are associated with larger rises in life satisfaction, and the magnitude of these gradients tends to be centred around 0.4."

However, Easterlin et al. (2010: 22465) have criticised this analysis saying that the "first short differences" cover only five - to six - year spans which are too brief to identify the long-term

relation between life satisfaction and GDP. As Easterlin et al. (2010) explain, the brief time span may capture only a part of the picture. For example, if a country is observed during a period of economic expansion then life satisfaction will appear to be increasing along with GDP. However, if a country is observed over both periods of contraction and expansion, then the true long-term relationship is observed. According to Easterlin et al. (2011) analysts often study happiness data collected over a short period of time. If the short period happens to be while the economy is expanding, the results will show a positve happiness-income relationship. However, if the analyst were to collect data over a longer period of time, including both economic expansions and contractions, they may find the results to be quite different. In summary, Easterlin (2011) argues that many analysts make claims based on data collected over a short period of time and during economic expansion and thus fail to accurately capture the long-term happiness-income relationship. In particular, they fail to incorporate data from any contractionary phases and thus formulate inaccurate conclusions. Therefore, Easterlin et al. (2010) find the "first short differences" presented by Stevenson & Wolfers (2008) to be irrelevant to this argument.

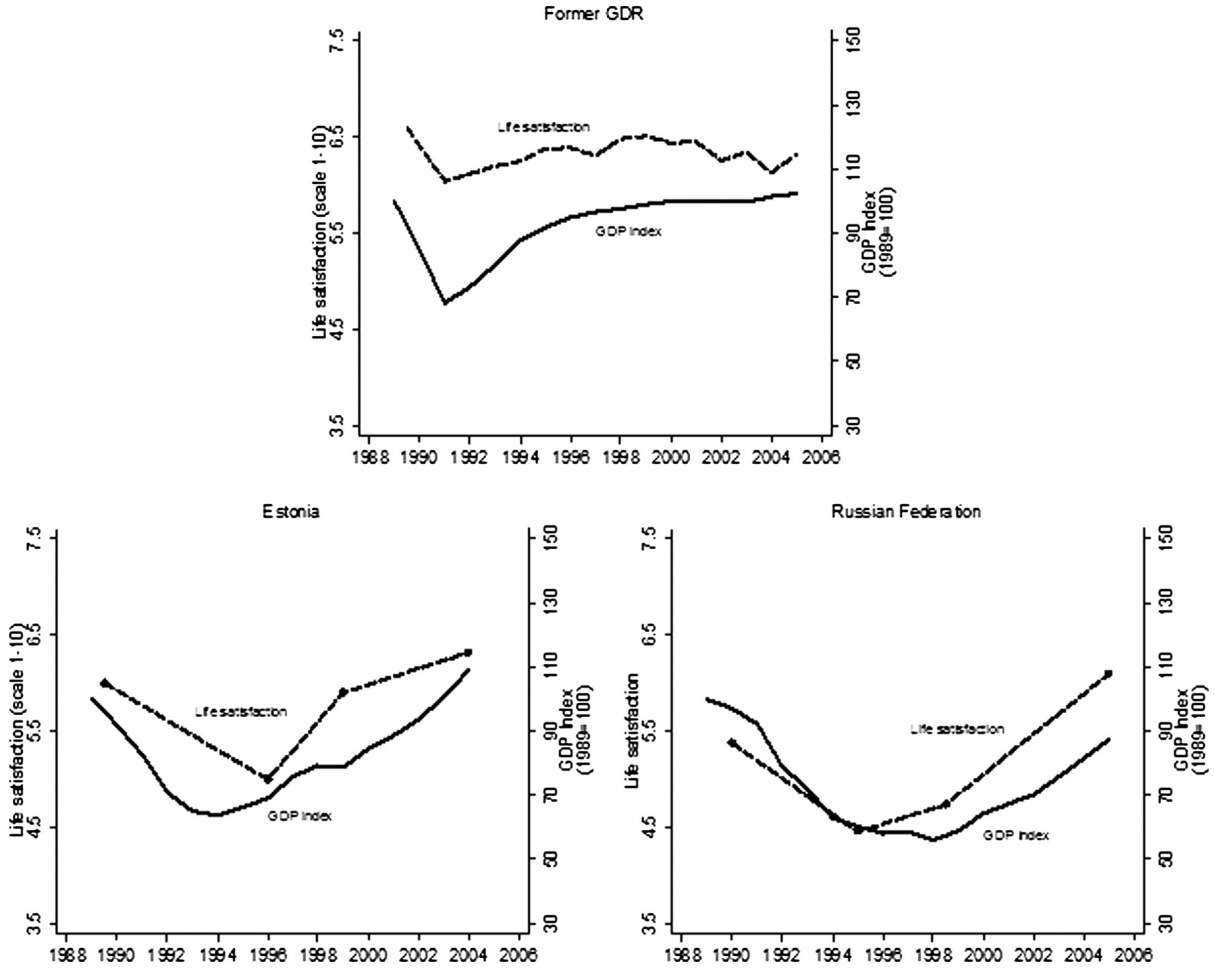
Of the three "first long differences" presented by Stevenson & Wolfers (2008) only two have a statistically significant positive coefficient. The first of these regressions analyses changes between waves II and IV of the World Values Survey, covering a time span of 11 years and based on observations from 32 countries. In their critique of this study, Easterlin et al. (2013: 11) find that the results are "due to the inclusion chiefly of the recovery phase in 11 transition countries, rather than the complete collapse and recovery of life satisfaction and GDP in these countries." Figure 4.10 shows the typical "V-shaped" movement of both life satisfaction and GDP indicative of transition countries. According to Easterlin et al. (2010), "If the transition countries are omitted from the regression, the coefficient is no longer significant."

In addition, according to Easterlin et al. (2010), the other significantly positive coefficient, based on 17 countries, is due entirely to two outliers: Hungary and South Korea. Hungary has low growth in GDP and a negative change in life satisfaction. On the other hand, South Korea has very high growth in GDP (in fact, it is off the scale in figure 4.9) and high growth in life satisfaction. According to Easterlin et al. (2010: 22466): "If these two countries are excluded from the regression analysis, there is no significant relation in the remaining countries (all of which are developed) between the change in life satisfaction and that of GDP."

Thus, while Stevenson & Wolfers (2008) acknowledge that the data is clearly noisy, they find it suggestive of a positive correlation between economic growth and changes in SWB over time.

However, Easterlin et al. (2011: 12) argue that "the findings of a positive relationship by Stevenson and Wolfers rest almost entirely on the short-term positive association between life satisfaction and GDP in the transition countries." Moreover, Easterlin et al. (2010: 22466) find that "regression lines encompassing both the contraction and expansion periods in these countries reveal a nil relation between life satisfaction and GDP."

Figure 4.10: "Life satisfaction and annual index of real GDP, three transition countries, 1989–2005"



(Image Source: Easterlin et al., 2010: 22466)

4.5 Concluding Thoughts

The happiness-income paradox has sparked a lively and controversial debate surrounding the role of economic growth in promoting a happier society. The criticism of economic growth has two prongs. One looks literally at the measure used as the target for policy and challenges the use of GDP. Some have argued that if GDP fails to reflect the well-being of a society then

alternative measures of progress should be formulated that better capture how a society is fairing.

"The fact that GDP may be a poor measure of well-being, or even of market activity, has, of course, long been recognised. But changes in society and the economy may have heightened the problems, at the same time that advances in economics and statistical techniques may have provided opportunities to improve our metrics" – Joseph Stiglitz (2009).

The second criticism challenges the merits of economic growth as a policy target. Specifically, if economic growth fails to improve the happiness of a nation then alternative policy targets must be sought. Moreover, these policy targets should seek to improve the aspects of life that matter most to society and have the greatest contribution to well-being.

"GDP is an abstraction that has little personal meaning for individuals" – Richard Easterlin (Cited in Chainey, 2016).

5 Income Comparisons and Subjective Well-Being

The previous section explored the relationship between income and SWB. In numerous studies, economists and others find that, at a point in time, both within and across nations, happiness varies directly with income. However, as Easterlin (1974: 2010) famously observed, over time, happiness does not increase when a country's income increases. Specifically, in a country and over time, the evidence indicates no clear trend in happiness or life satisfaction despite economic growth and greater individual wealth. These two seemingly contradictory findings became known as the happiness-income, or Easterlin, paradox.

One explanation for the happiness-income paradox is based on the idea that people make income comparisons. This section will explore the role of internal and external income comparisons in shaping material aspirations and satisfaction judgements, thereby highlighting the importance of relative income for SWB. Overall, this section aims to explore the complex relationships between income, adaption, aspirations and SWB, thereby highlighting the importance of relative income for SWB. In addition, this section aims to establish if there is a correlation between relative income and SWB.

5.1 Explaining the Happiness-Income Paradox: The Role of Income Comparisons

From an economics perspective, the standard textbook theory suggests that individuals derive utility from their own consumption, which is subject to a budget constraint. According to the mainstream model, an increase in income shifts the budget constraint outwards thereby allowing an individual to increase his consumption and achieve greater utility. The idea here is that more income and more consumption is better for the individual (Easterlin, 2003). So, how would this look over the life cycle? If an individual's utility is only a function of his own consumption, one would expect his utility to follow a time path similar to his income path (McBride, 2001). Now consider the empirical findings regarding the income-SWB relationship. The standard intuition is supported by the point-in-time cross-sectional findings where persons with higher incomes within a country are happier than those with lower incomes (McBride, 2011). However, the assumptions of the mainstream model break down when considering the time-series findings where over-time there is no clear relationship, positive or negative, between income and SWB (Easterlin, 2003; McBride, 2010). Therefore, these life cycle patterns contradict what one might expect based on economic theory. Specifically, that more income is better for one's happiness (Easterlin, 2003). Clearly there are some powerful

influences that mitigate the effects that an increase in income should have (according to economic theory and based on the point-in-time correlation) on individual SWB.

Psychologists argue in favour of a "setpoint theory" according to which each individual is believed to have a "setpoint of happiness" determined by their genetic makeup and their personality traits (Easterlin, 2003: 11176). According to this theory, levels of happiness may fluctuate due to life events, however over time they will return to their initial, 'setpoint', level of happiness (Lucas et al., 2003). As Kahneman & Krueger (2006: 14) explain the transitory effect of changes in life circumstances on reported satisfaction has been called the *hedonic treadmill*, meaning that the effect of substantial life changes on subjective well-being are temporary."

The setpoint theory has received considerable empirical support (e.g., Brickman et al., 1978). However, Lucas et al. (2003) look at marital transitions and changes in satisfaction, noting that there are substantial individual differences in the extent to which people adapt. In addition, the extent to which people adapt is strongly related to the degree to which they react to the initial event – those individuals who reacted strongly were still far from baseline levels years after the event (Lucas et al., 2003). Together these two findings lead Lucas et al. (2013: 538) to conclude that "all happiness is not due to temperament." Thus, while people do adapt to changes in life circumstances, it is not a given that they will *completely* adapt or revert to some 'setpoint' of happiness (Easterlin, 2003).

On the other hand, several scholars have highlighted the importance of income comparisons for SWB (Easterlin, 1974, 2003, 2005, Diener, 1984; McBride, 2001, Senik, 2009, Luttmer, 2005). The general idea is that individuals compare themselves to a series of standards or norms (McBride, 2001; Senik, 2009) which in turn affect an individual's material aspirations (Easterlin, 2003) and satisfaction judgements (Senik, 2009).

In the literature, there are two types of comparisons believed to be important (McBride, 2001). First, there are 'external' or social comparisons (Easterlin, 2003; Frey & Stutzer, 2002; McBride, 2001) which involve comparisons with "relevant others", such as former schoolmates, colleagues, neighbours or parents (Senik, 2009: 408). In this case, individuals compare themselves to a "external benchmarks" (Senik, 2008:408). Second, there are 'internal comparisons' which involve comparisons with one's own past experiences (Easterlin, 2003; Layard, 2011; McBride, 2001; Senik, 2009). In this case, individuals compare themselves to 'internal norms' or 'internal benchmarks', which involve aspirations and dynamic comparisons

with one's own income in different points of time (Senik, 2008: 408). Hedonic treadmill, habituation, and adaption are the consequences of internal comparisons (Senik, 2008).

Comparisons have been noted to affect an individual's material or income aspirations (Easterlin, 2003). Internal comparisons affect aspirations through the mechanism of hedonic adaption or habit formation (Easterlin, 2003; Senik, 2009). As Easterlin (2003) explains, adaption may be complete or incomplete. Complete adaption is when "material aspirations increase commensurately with income, and, as a result, one gets no nearer to or farther away from the attainment of one's material goals, and well-being is unchanged. Less than complete adaptation means that aspirations change less than the actual change in one's circumstances" (Easterlin, 2003: 11180). On the other hand, external comparisons affect aspirations through social comparisons and interdependent preferences (Easterlin, 2005; Ferrer-i-Carbonell, 2005). In other words, material aspirations are influenced by the economic situation and consumption behaviour of relevant others (Easterlin, 2003; Ferrer-i-Carbonell, 2005). As Easterlin (2003) explains, economic theory typically assumes that well-being depends only on attainments. However, the concepts of habit formation and interdependent preferences explicitly acknowledge the effect of aspirations on subjective well-being.

Comparisons also affect perceptions of one's own income (Diener, 1984; McBride, 2001; Senik, 2008; 2009). According to Senik (2009), satisfaction judgements depend on the gap between one's actual situation and their comparison benchmark. In other words, how satisfied one is with their income depends on how it compares to one's internal and external norms or standards. With regards to internal comparisons, the idea is that, because of adaption effects and rising aspirations, past levels of income or consumption exert a negative influence on current satisfaction (Senik, 2009). Several scholars have illustrated the existence of a "*preference drift*" in income satisfaction, whereby the satisfaction associated with a rise in a person's income dissipates due to changes in his or her aspirations (Van Praag, 1971; Van Praag & Ferrer-i-Carbonell, 2004).

According to Senik (2009), the difference between one's own income and that of a reference group may have one of two welfare effects: relative deprivation or welfare-enhancing anticipatory feelings. In the first case, when those in the reference group are better-off, people suffer from feelings of reduced status and envy and feel less satisfied with their lot (Clark & Senik, 2009; Posel & Casale, 2011).

"A house may be large or small; as long as the neighbouring houses are likewise small, it satisfied all social requirements for a residence. But let there arise next to the little house a palace, and the little house shrinks to a hut." – Karl Marx (1847)

In the second case, the good fortune of others acts as a 'signal' by providing individuals with information about what they too might achieve in the future (Clark & Senik, 2009). In this way, the progression and betterment of others has a "good news element" that ignites feelings of ambition and optimism (Clark & Senik, 2009: 574).

According to Clark & Senik (2009: 573), "Both social comparisons and adaptation imply that utility is relative with respect to income, in the sense that individual well-being depends on the gap between the individual's actual income and some reference benchmark." In this way, an individual's perception of their economic situation and how it compares to the prevailing norms or standards becomes important for understanding why income affects SWB in the way that it does (Easterlin, 2003; Ferrer-i-Carbonell, 2005; McBride, 2001). At a given point in time, an increase in income, relative to the current income standard or consumption norm, results in higher levels of SWB (Easterlin, 1974). However, over time, as everyone's income rises, so too does the income standard or consumption norm (though the two are not necessarily on a one-to-one basis) thereby resulting in little or no improvements in self-appraised well-being (Easterlin, 1974).

5.2 Internal Income Comparison and Subjective Well-Being

5.2.1 Theoretical Considerations

As discussed above, people make internal income comparisons (Easterlin, 2003; Layard, 2011; McBride, 2001; Senik, 2009). These comparisons are made against "an internal norm which captures an individual's personal or 'inwardly-oriented' income experience" (Posel & Casale, 2011: 198). For example, individuals may make comparisons with some past income level of their own or of their family Posel & Casale (2011). Intuitively, one might expect higher current income to induce feelings of satisfaction and a sense of achievement. However, according to the aspiration level theory, an increases in income results in an increase in aspiration levels (Frey & Stutzer, 2002). In addition, happiness is determined by the gap between income aspirations and income achievement. In other words, the larger the gap between one's income aspirations and their actual income, the less satisfied one feels with their current situation (Frey & Stutzer, 2002). Unfortunately, according to the aspiration level theory, it is very difficult to narrow the gap between income aspirations and actual income, because a rise in

income is accompanied by a rise in aspirations. In the short term, one may experience temporary improvements in happiness. However, as one adapts to their current income level they will adjust their expectations and income aspirations upwards furthering the gap between aspirations and achievement (Frey & Stutzer, 2002). As Easterlin (2003) explains, if hedonic adaption is complete and aspirations change in the same way as income then there will be no improvement in SWB.

5.2.2 Empirical Evidence: Internal Income Comparisons amongst South African Households

Posel & Casale (2011) explored the effect of 'internal comparisons' and 'internal norms' on SWB using data from the National Income Dynamics Study (NIDS), conducted in 2008 amongst 7,300 South African households or 28, 000 individuals. Posel & Casale (2011: 206) "test how inwardly oriented comparisons affect subjective well-being by using information on how the individual's perceived current economic status compares to that in the past, and to what they anticipate in the future." This was done by asking individuals to assess their economic position today compared to when they were 15 years old and compared to what they anticipate their economic position to be 2 years after the survey. Thus, Posel & Casale (2011: 1999) were "able to test how an individual's perceived mobility in the past affects subjective well-being compared to their expectations of the future." This study has been chosen as it is one of the few studies looking at the role of internal income comparisons using both subjective and objective measures. Other studies primarily focus on objective measures making this study novel in its approach and particuarly useful for understanding the true effects of internal income comparisons on SWB. Moreover, this study is based on South African data making it particuarly interesting and relevant.

5.2.2.1 Descriptive Statistics

Posel & Casale (2011) looked at the data as a whole and for Whites and Africans separately, thereby allowing for a comparison of the two race groups. Looking at the descriptive statistics, a significantly larger proportion Africans (56% of Africans compared to 46% of Whites) perceived their economic position to have improved since they were 15 years old. In addition, Africans were more likely to anticipate their economic status to improve in the future (77% of Africans compared to 39% of Whites). As Posel & Casale (2011: 206) explain "these results are not surprising given that we would expect Africans to be the main beneficiaries of political and economic changes in the post-apartheid period after 1994."

5.2.2.2 Income Mobility

Looking at the effects of past mobility for the national sample, those who perceived their economic position as having improved reported significantly higher levels of life satisfaction as compared to those who perceived their economic position to be the same as when they were 15 years old. In addition, those who perceived their economic position to have worsened reported significantly lower levels of life satisfaction[1]. Turning now to future mobility, the results from Posel & Casale (2011) show the expected signs, although the coefficients are far smaller than those for past mobility and only variables identifying individuals who expected to be better off in 2 years were significant.

Interestingly, there is an unusual asymmetry in the findings. Several international studies, such as that by Senik (2009), finds that individuals tend to exhibit loss aversion (Kahneman & Tversky, 1979). Whereby, being worse-off today as compared to in the past has a significantly larger effect on SWB than being better-off (Senik, 2009). However, in this study, "both in past and future comparisons, perceptions of being better off have a larger effect on subjective well-being than perceptions of being worse off" (Posel & Casale, 2011: 211). According to Posel & Casale (2011: 211), "One possible explanation for this asymmetry is that in a country with a long history of discrimination against the majority of the population, being better off than one's parents, or anticipating one's position to improve in the future, may be viewed as more of an achievement than being worse off is viewed as a 'failure'."

5.2.2.3 Racial Differences in the Effects of Income Mobility

Furthermore, there are significant racial differences with regards to the effects of economic mobility on SWB. For Africans, perceptions of past mobility and expectations about future mobility are consistent with the national sample. In addition, "among Africans, satisfaction is influenced more by what has been achieved than by expected achievements; and the asymmetry between the relative income effects is particularly pronounced (the negative effects of being worse off than at age 15 and anticipating being worse off in the future, are not significant)" (Posel & Casale, 2011: 215). In contrast, "being worse off at age 15 does have a negative effect on subjective well-being among Whites, but being better off has no significant

[1] Similarly, using data from the Cape Area Panel Study, Tibesigwa et al. (2016: 378) find that "internal comparisons indicate that the effect of being wealthier than one's earlier (or past) self, holding current

effect; and subjective well-being is lower among those who perceive that their economic status would change, regardless of whether these changes were positive or negative" (Posel & Casale, 2011: 215).

So why are the findings so different for the two race groups? Under Apartheid, Black South Africans faced terrible discrimination and lived under highly repressive conditions with little freedom and few economic opportunities. Emerging from such conditions into a free and fair society with equal opportunities to thrive and flourish undoubtedly improved the lives and psychological well-being of all Black South Africans. Thus, it is understandable why improvements in economic status would have such a positive influence on Black South Africans SWB.

On the other hand, White South Africans did not suffer under the same repressive conditions and as such might value past and future mobility differently. To fully understand the findings requires further investigation into the role of income aspirations.

5.2.2.4 Income Mobility and the Role of Income Aspirations

Looking at Figure 5.1, let us assume that there is an initial aspiration level at A_1. Given this initial aspiration level, an income level of Y_1 results in happiness H_1. Furthermore, an increase in income from Y_1 to Y_2 results in an increase in happiness from H_1 to H_2 and so on. "The points *a*, *b*, and *c* trace a curve with decreasing marginal utility of income, as normally assumed in economic theory. This curve holds for a particular point in time and it "suggests that higher income indeed makes people happier" (Frey & Stutzer, 2002:415).

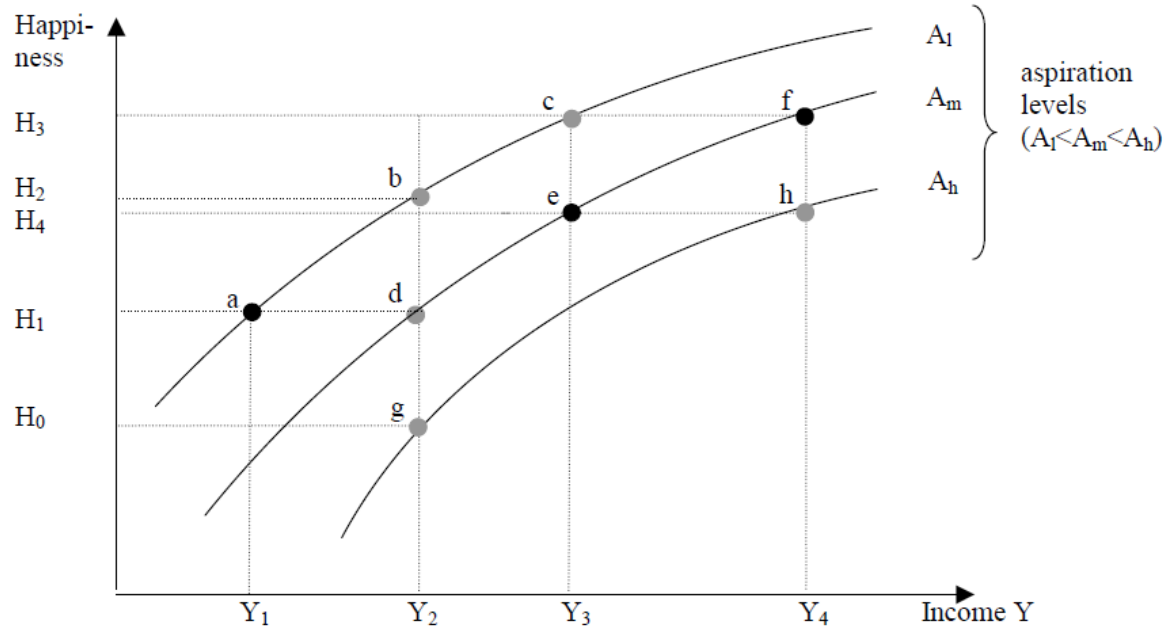


Figure 5.1: "Happiness, Income, and the Role of the Aspiration Level"

(Image source: Frey & Stutzer, 2002: 415)

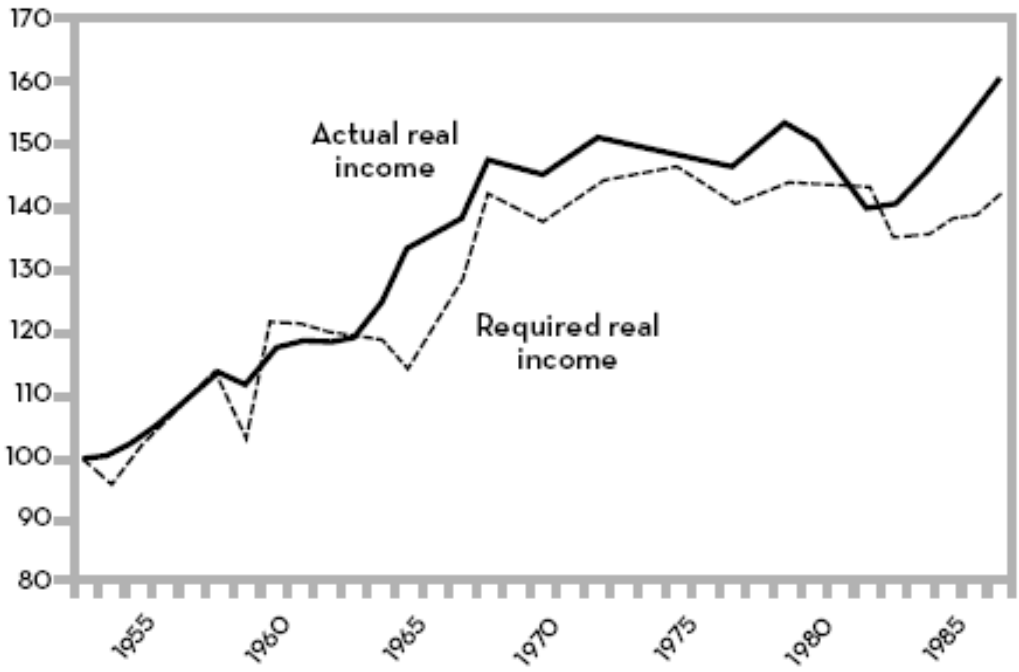
However, over time, "aspirations adjust to the higher income level" (Frey & Stutzer, 2002:415). Thus, if income rises from Y_1 to Y_2 and there is complete adaption i.e., the aspiration curve shifts from A_1 to A_m, then there is no increase in happiness and the individual remains at happiness level H_1.

Moreover, according to the aspiration level theory, the increase in happiness that one might expect on the basis of a given aspiration curve – for example along the points *a*, *b*, and *c* on aspiration curve A_1 - does not materialise. In equilibrium, one might observe, for example, the series of points – *a*, *e*, and *f* materialize. In this case, there is incomplete adaption and happiness has risen but by a smaller amount than if one's aspiration level has remained constant.

According to Layard (2011: 37), people adjust to a higher level of income over time and raise their income expectations upwards. As a result, Layard (2011) finds that richer people will always report needing more income than poorer people, because they have adjusted their expectations upwards. For as actual incomes rise, the norm by which income is judged rises in step (Layard, 2011). One can see this from data collected by the Gallup Poll in the United States over many years where people were asked: "What is the smallest amount of money a family of four needs to get along in this community?" Figure 5.2 shows their "required real

income" (adjusted for changes in the cost of living), and it also shows average "actual real income per head."

Figure 5.2: Required Real Income and Actual Average Real Income in the United States (as a percentage of their 1952 levels)



(Image source: Layard, 2011: 38)

From the figure it is clear that people's norms have adjusted rapidly to their actual living standards (Layard, 2011). As Layard (2011: 37) writes: "No wonder people have got no happier."

As mentioned previously, Posel & Casale (2011) found that for White South Africans being better off had no significant effects on SWB. According to the aspiration level theory, an increase in income causes an upward adjustment in income aspirations. This, in effect, results in little or no improvements in happiness, depending on the degree of adaption and the extent to which aspiration adjust (Frey & Stutzer, 2002).

In addition, SWB was found to be lower among those who perceive that their economic status would change in two years' time. As Posel & Casale (2011: 215) explain, "the lower levels of reported subjective well-being among Whites who anticipate being upwardly mobile, may signal dissatisfaction with the individual's current position compared to where the individual inspires to be." As earlier mentioned, subjective well-being depends on the gap between income aspirations and actual income and not on the income level as such. Thus, the larger the gap between aspired income and actual income, the less satisfied people are with their

lives, *ceteris paribus.* Overall, the aspiration level theory offers a plausible explanation for both findings.

5.2.3 Subjectively Defined and Objectively Defined Internal Income Comparisons

Tibesigwa et al. (2016) used data from Wave 3 of the Cape Area Panel Study (CAPS) to investigate how income comparisons, both internal and external, affect the SWB of young adults and parents. Tibesigwa et al. (2016:3 69) used both objective and subjective measures, "because how individuals perceive themselves, i.e., subjectively, may affect their happiness in a way that an objective measure would not." The authors asked respondents to compare their current financial situation with their financial situation in the past. Specifically, "individuals were asked if they perceived themselves as being worse-off, the same or better-off than 1 year ago and 3 years ago" (Tibesigwa et al., 2016: 370). In addition, the authors made use of wave 3 and wave 1 of CAPS to objectively compare the changes in household income over 3 years.

Looking at the subjective, self-assessed judgements the results suggest that over periods up to 3 years, individuals who perceived themselves as wealthier relative to their earlier selves are likely to be happier. In contrast, when the authors objectively compared how household income had changed, "it was found that households that had actually experienced a real or objective increase in income did not show significant increases in subjective well-being" (Tibesigwa et al., 2016: 376). According to Tibesigwa et al. (2016: 376), "The discrepancy in the significance of subjectively defined and objectively defined internal income comparisons might suggest that individuals' perception of how their financial situation has changed is more important to their happiness than how it has actually changed."

5.3 Social Income Comparisons and Subjective Well-Being

5.3.1 Theoretical Considerations

As previously mentioned, "mainstream microeconomic theory generally treats utility as a function of own absolute income." In other words, an individual's level of utility varies positively with the level of income (Caporale et al., 2009). Moreover, it is assumed that people's satisfaction depends on what they have in absolute terms (Stutzer, 2004). However, the time-series evidence has found patterns in reported SWB that are "at odds with this view" (Stutzer, 2004: 89). Specifically, there is evidence that people are not becoming happier over time, despite economic growth and greater wealth (Easterlin, 1974: 2010).

As previously mentioned, several scholars have noted the importance of income comparisons for individual SWB (Easterlin, 1974, 2003, 2005, Diener, 1984; McBride, 2001, Senik, 2009, Luttmer, 2005). Both 'internal' and 'external' comparisons are believed to influence material aspirations and satisfaction judgements. As such, the attention has shifted "to how income aspirations form and adapt" (McBride, 2010: 263) and how 'internal' and 'external' norms, comparisons, and reference values influence individual's subjective evaluation of their economic situation (Caporale et al., 2009).

With regards to 'external' comparisons, an individual's aspiration level depend on the income of others in their comparison group as people tend to aspire to what their comparitors have achieved (McBride, 2010). As such, an improvement in others' income raises one's aspirations, thereby widening the gap between aspirations and actual income and lowering one's happiness (McBride, 2010). As Stutzer (2004) explains people make social comparisons that drive their positional concerns for income. Thus, social comparisons make people strive for ever higher aspirations widening the gap between aspirations and achievement (Stutzer, 2004).

In addition, "social norms, social comparisons, and reference values influence individuals' subjective evaluation of their economic situation" (Caporale et al., 2009: 44). Specifically, how satisfied an individual is with their current income depends on how it compares to that of "relevant others" (Stutzer, 2004: 90). As Stutzer (2004) explains, it is not the absolute level of income that matters most, but rather one's position relative to other individuals.

In this way, the effects of social comparisons on material aspirations and satisfaction judgements works to weaken the relationship between absolute income and happiness over time (Caporale et al., 2009). According to McBride (2001), an increase in one's income relative

to the income standard results in an increase in SWB. However, as the economy grows, so too do income standards, and this rise in standards acts to weaken the effect of the increase in one's income

Acknowledging the importance of relativity, it has been proposed that utility is positively affected by one's own income but negatively affected by the income of relevant others (Layard, 2006). The relative income hypothesis "suggests that individuals care about how their income compared with the norm, or reference income, of a socially constructed comparison group" (Boyce, 2010:471). Thus, according to this hypothesis, relative income, instead of, or in addition to absolute income, is what determines utility (Caporale et al., 2009). As Boyce et al. (2010) explain individuals gain utility when their income exceeds that of their reference group and lose utility when their income falls below that of their reference group.

5.3.2 Exploring an Empirical Analysis of the Comparison Income Effect

Ferrer-i-Carbonell (2005) presented an empirical test of four hypotheses pertaining to the importance of social comparisons and relative income for individual SWB. This empirical analysis was based on data from the German Socio-Economic Panel (GSOEP) from 1992 to 1997. The sample included 16, 000 German citizens who were divided into two sub-samples: (former) East and West Germans. The empirical analysis was based on individual's answers to a life satisfaction question and SWB was estimated by means of an Ordered Probit model. The author included a large set of control variables and made use of panel data techniques to account for fixed time effects (i.e., inflation) and individual random effects (personality traits)[2]. This study has been chosen as it is one of the most frequently cited studies in happiness research. Moreover, it is one of the few studies that seeks to test multiple hypotheses and thus contributes several interesting and relevant findings relating to various aspects of the complex relationship between income and SWB.

5.3.2.1 Income, Comparator Income and Subjective Well-Being

In the first and most simple regression analysis, SWB was assumed to be a function of a "vector of variables (X)" which "includes individual and household socio-economic and

[2] See Ferrer-i-Carbonell (2005: 1006) for a detailed description of the estimation procedure.

demographic characteristics", and own family income[3] (y) (Ferrer-i-Carbonell, 2005: 1003). Thus, the following relation was assumed:

$$W = SWB\ (y, X)^4$$

One would expect, based on economic theory and the cross-section evidence, that "family income (y) is positively related to well-being" (Ferrer-i-Carbonell, 2005: 1003). And indeed, the regression results show this to be the case. Specifically, the own family income coefficient is positive and significant in all three sub-samples (Germans, Westerners and Easterners). While the coefficient of own family income is small, the effect is significant when compared to other objective variables. Thus, the results from this specification show that, for both Westerners and Easterners, the level of own family income is important for individual SWB. According to Ferrer-i-Carbonell (2005:) this result supports the literature suggesting that richer individuals are, *ceteris paribus*, happier than their poorer co-citizens.

In addition, the regression results show that the coefficient for own family income is significantly larger for East Germans. East and West Germans experienced very different economic and political circumstances for many years and as a result Easterners have a lower average income compare to Westerners. Thus, this finding supports the literature suggesting that absolute income is relative more important to poorer individuals compared to richer ones (Ferrer-i-Carbonell, 2005).

In a second specification, SWB was assumed to be a function of the vector of variables (X), own family income (y), and the average income of the reference group (y_r). In this case, "the reference group contains all the individuals with a similar education level, inside the same age bracket, and living in the same region" (Ferrer-i-Carbonell, 2005: 1005).

$$W = SWB\ (y, y_r, X)$$

If social comparisons are important for SWB and if reference group income influences material aspirations and satisfaction judgements then one would expect the reference group's income (y_r) to be negatively correlated with individual SWB (Ferrer-i-Carbonell, 2005). As expected, the results show that the average income of the reference group has a negative coefficient, indicating that the income of the reference group negatively impacts on SWB

[3] All income variables are included in logarithm form.
[4] As per Ferrer-i-Carbonell (2005: 1003) "W is the economic concept of welfare or well-being."

(Ferrer-i-Carbonell, 2005). In addition, the regression results show that the coefficient for own family income and the coefficient for the average income of the reference group are very similar in magnitude (Ferrer-i-Carbonell, 2005). According to Ferrer-i-Carbonell, 2005), the results show that if the income of all individuals in a reference group rose by the same amount, their expected SWB would remain fairly constant. In other words, the relative positions of individuals in the reference group would remain the same and no one would feel better off than before.

Luttmer (2005) reported similar findings for the United States using panel data from the National Survey of Families and Households (NSFH). According to Luttmer (2005: 990), "An increase in neighbours' earnings and a similarly sized decrease in own income each have roughly about the same negative effect on well-being." This finding suggests that an increase in own income leads to a decrease in neighbours' well-being by roughly the same magnitude as the positve effects on own well-being resulting from the increase. In other words, an increase in one's income creates a negative externality impacting the well-being of one's neighbours. Luttmer (2005) suggests that such a finding indicate that people have a utility function dependant on relative consumption in addition to absolute consumption.

In contrast, one South African study found that "higher income of other households in a small community raises subjective well-being" (Kingdon & Knight, 2007: 86). In other words, within rural villages or urban suburbs, households derive happiness from others' income success (Kingdon & Knight, 2007). Moreover, the authors found that it is only when the comparator group is widened to include more distant others i.e., the district, does other people's income appear to create "negative spill-overs" (Kingdon & Knight, 2007: 79). Given that the cluster is a geographically small unit within which households are likely to know each other, a "possible explanation is that people are altruistic towards others in their own cluster, that is, clusters are treated like extended families" (Kingdon & Knight, 2007: 80). Conversely, "people feel relatively deprived when the spatial orbit is widened to the district" (Kingdon & Knight, 2007: 80). The difference in findings between this study and that by Luttmer (2005) is likely due to "the size of the locality" (Kingdon & Knight, 2007).

Continuing with the discussion on the work of Ferrer-i-Carbonell (2005), in a third specification SWB was assumed to be a function of the vector of variables (X), own family income (y) and the difference between the individual's own income and the reference group income, i.e., $ln(y) - ln(y_r)$.

According to the relative income hypothesis, individuals gain utility when their own income exceeds the average income of their comparitor group and lose utility when their own income falls below that of the reference income (Boyce, 2010). If this is true, then the difference between incomes variable is expected to have a positive effect on SWB, indicating that the richer one is in comparison to others, the happier they feels (Ferrer-i-Carbonell, 2005).

Ferrer-i-Carbonell (2005) finds that the coefficent of the difference is positive indicating that the larger an individual's own income in comparison to the reference group income, the happier the individual. However, the coefficient is only statistically significant when all Germans, both Westerners and Easterners, are analysed together. In this regression, the income coefficient now becomes non-significant.

5.3.2.2 Asymmetric and 'Upward' Income Comparisons

In a fourth specification, Ferrer-i-Carbonell (2005) tested for asymmetry in income comparisons. According to Ferrer-i-Carbonell (2005: 1004): "In this context, asymmetry means that, while the happiness of individuals is negatively affected by an income below that of their reference group, individuals with an income above that of their reference group do not experience a positive impact on happiness or well-being." This asymmetry is due to rising income aspirations and upward income comparisons.

In this fourth regression, the coefficient for own family income now becomes non-significant for all three sub-samples. The regression results show that for the Easterners the comparison income effect is symmetric. However, for Westerners and for the whole sample, the comparisons are asymmetric. According to Ferrer-i-Carbonell (2005), this means that poorer individuals' well-being is negatively impacted when their income is lower than that of the average income of the reference group. However, richer individuals do not seem to gain greater happiness from having an income above the average. This finding can be explained by the idea that income comparisons are mostly upwards. Richer people will likely aspire to an income above that of the average income, therefore there are no gains in happiness resulting from an income greater than the average.

Similarly, Clark & Senik (2009) also found that 'external comparisons' are mostly upwards. Clark & Senik (2009) analysed data from Wave 3 of the European Social Survey (ESS) collected in 2006/7. This wave of the ESS contained several questions pertaining to SWB and a key income-comparisons question:

"How important is it for you to compare your income with other people's incomes?"

Here, the respondents are asked to rate the importance of income comparisons on a scale from 0, corresponding to "not at all important" to 6 corresponding to "very important".

Using this data, the authors evaluated the intensity and direction of income comparisons across several European countries. At a country level, Clark & Senik (2009) found that countries with lower levels of average GDP per capita assign greater importance to income comparisons. Conversely, those with higher average GDP per capita assign less importance to income comparisons. At the individual level, a similar pattern was observed where individuals with lower incomes seem to attach more weight to income comparisons[5]. Overall Clark & Senik (2009) concluded that comparison intensity decreases with income, both across countries and within countries.

Following this, Clark & Senik (2009) examined whether there is a correlation between income comparison intensity and SWB. The relationship between comparison intensity and SWB depends on two things: the direction of the income comparison and the dominant "welfare effects" (Senik, 2009: 498). As previously mentioned, social comparisons may evoke feelings of envy and "relative deprivation" or "welfare-enhancing anticipatory feelings" (Senik, 2009: 498). According to Clark & Senik (2009), envy and upward comparisons will result in a negative correlation between comparison intensity and SWB, whereas both envy with downward comparisons and information effects will yield a positive correlation.

In this study, Clark & Senik (2009) find a negative and significant correlation between comparison intensity and subjective happiness, suggesting that income comparisons are mostly upward and that status effects outweigh any positive signal effects from others' income.

In addition, Senik (2009) reported findings of asymmetric comparisons when analysing data from the LITS. In the LITS, respondents were asked to compare their current living standard with that of their former schoolmates, of their former colleagues, and of their parents. Senik (2009) found that comparing favourably to other groups has a positive impact on individual life-satisfaction. Conversely, unfavourable comparisons have a significantly negative impact on

[5] In contrast, Kingdon & Knight (2007: 87) found that "the effect of relative income on happiness is strengthened as income rises. Whereas absolute income is an important determinant of the happiness of people whether they are below or above the poverty line, relative income is not relevant to the poor." Similarly, McBride (2001: 276) found that "at low income levels, the relative-income effects appear to be smaller and income becomes more important." Both studies contradict the finding that comparisons are mostly 'upwards'.

life satisfaction (Senik, 2009). Interestingly, Senik (2009) found that unfavourable comparisons i.e., assessing that one is worse-off, have stronger effects on life satisfaction than favourable comparisons, i.e., assessing that one is better-off. In other words, social comparisons are asymmetric. Senik (2009) attributes this asymmetry to the loss aversion phenomenon suggested by Kahneman and Tversky (1979).

5.3.3 Objectively Defined and Subjectively Defined External Income Comparisons

There are two key challenges when exploring the impacts of relative standing on SWB. The first challenge relates to choosing the appropriate reference group and the second challenge relates to measurement (Posel & Casale, 2011). In order to measure an individual's relative standing in a reference group one could make use of objective measures based on reported income. However, this method assumes that individuals are able to rank themselves accurately in the income distribution of their reference group. On the other hand, one may employ subjective measures based on how individuals perceive their rank relative to others (Posel & Casale, 2011). As Posel & Casale (2011) note individual perceptions of relative standing may differ from their objective relative standing based on reported income. Posel & Casale (2011) give the example of a case in which an individual perceives themselves as being worse off than their reference group, and hence feels relatively deprived, even if they are objectively better off.

Using data from the National Income Dynamics Study (NIDS), Posel & Casale (2011) explored the impacts of objective and subjective measures of relative standing on SWB. Using reported income, Posel & Casale (2011) constructed an objective measure of individual's relative standing in the national income. In addition, the authors derived a subjective measure from information on individual's perceptions of where they rank in the income distribution. This allowed Posel & Casale (2011: 198) to compare how people perceive their rank in the income distribution and how they actually rank according to reported income, as well as the differential impact that these measure have on SWB.

Upon analysis, the results indicate that an individuals perceived relative standing has a significantly larger effect on SWB than the objective measure based on reported income (Posel & Casale, 2011). Those who ranked themselves in the richest and middle third of households had significantly higher levels of SWB than those who ranked themselves in the poorest third. According to Posel & Casale (2011: 220): "These average effects are also very large; ranking oneself in the middle of the income distribution has a similar effect to reporting being in good

or excellent health or living in a household with a flush toilet (two of the other largest contributors to subjective well-being), while ranking oneself in the richest third has more than double this effect."

In addition, Posel & Casale (2011) noticed that there was a divergence between actual and perceived ranking in the national income distribution as individuals typically underestimate their relative economic status. For example, "only 6% of all individuals ranking in the richest third of South Africans, in terms of actual per capita household income, perceive that they are among the richest third. The majority (63%) perceive that they are ranked in the middle of the distribution and 32% think that they are among the poorest third of South Africans" (Posel & Casale, 2011: 205)[6]. Given that perceived ranking in the national income distribution has a larger effect on SWB than actual ranking, this underestimation of relative economic status has important consequences for SWB. Overall, it would appear that measures of perceived relative standing capture feelings of relative deprivation or relative advantage better than measures based on objective reports of income in surveys (Posel & Casale, 2011).

5.4 Which Comparisons Matter More?

5.4.1 Local Income Comparisons Outweigh General Ranking

Posel & Casale (2011) collected information on individuals' perceptions of how they rank in the national income distribution and beliefs about how individuals' income compares to other households in their village or suburb. Using this information, the authors compared the impacts of perceived relative standing in the national income distribution with perceived relative standing in one's village or suburb. Thereby, giving the authors an opportunity to comment on the importance of the geographical proximity of the reference group. Posel & Casale (2011: 220) found that "the individual's perceived ranking in the village or suburb had an even larger impact on subjective well-being than the individual's ranking in the national distribution." According to Posel & Casale (2011: 220) this suggests that "individuals may care more about their status among people who are in a geographically proximate area."

Similarly, Senik (2009) found that local comparisons to parents, colleagues, and former schoolmates are significantly more important than general social ranking. Moreover, outperforming one's former colleagues or one's former living standard seems to be a more

[6] To clarify, these percentages have been rounded up. To be more accurate the percentages are 5.9%, 62.5% and 31.6% respectively (Posel & Casale, 2011: 205).

importance element of satisfaction than ranking in the lower or in the upper part of the economic scale (Senik, 2009). In other words, how one compares to "precise groups of people prove to be more influential than self-ranking on an economic ladder" (Senik, 2009: 418).

Comparable results are found when looking at the "subjective evolution" of one's position on the economic ladder i.e., perceptions of economic rank now compared to the past (Senik, 2009: 414). Specifically, the negative effects of being outperformed by local competitors, i.e., schoolmates, colleagues and parents, is more important than the impact of moving up on the social ladder (Senik, 2009). Conversely, the adverse effects of downward mobility on the social ladder seem to be offset by a favourable comparison with local reference groups (Senik, 2009). As Senik (2009: 418) explains: "What is painful is to have done worse than people who were like you at some point. This is much more important than moving along the general economic ladder. People suffer less from going down in the social hierarchy if all their former peers share the same fate. But they hate under-performing their former companions. This may be because reference groups represent some virtual, potential achievement. In summary, the idea would be that comparisons hurt not so much because of relative deprivation but rather because people care about having seized their opportunities."

5.4.2 The Predominant Influence of Internal Benchmarks

Senik (2009) asked respondents to comment on whether their household lives better nowadays compared to in the past. Senik (2009) found that the evolution in one's standard of living, as compared to 15 years ago, has a more important welfare effect than any other comparisons. Moreover, it dominates the change in one's relative ranking as well as comparisons to local external benchmarks such as one's former colleagues, classmates or parents (Senik, 2009:). The positive effects associated with reporting one's living standards as having improved, outweighs any other unfavourable comparison. Conversely, the negative effects associated with reporting one's living standard as having deteriorated always significantly dominates any other favourable local comparison (Senik, 2009). Overall, Senik (2009: 416) found that "one's own income trajectory matters more than any other comparison benchmark."

5.5 Concluding Thoughts

This section has focused on the role of income comparisons in shaping material aspirations and satisfaction judgements. As discussed, an individual's utility depends not only on one's

own income but also the income of relevant others. Specifically, people gain utility from an income above that of the reference group and lose utility from an income below that of the reference group. This can be thought of as a case of negative externalities (Layard, 2006). "An externality exists whenever the welfare of some agent, either a firm or household, depends not only on his or her activities but also on activities under the control of some other agent" (Tietenberg, 2003:67). Externalities impose 'external costs' that one would not normally consider when making decisions and trade-offs. Broadly speaking, externalities are a kind of market failure that lead to socially inefficient trade-offs and suboptimal societal outcomes. In this case, the implications of such externalities might be an inefficient allocation of one's time. For instance, an increase in the income of one's reference group might lead a person to increase their work hours at the expense of leisure and time with friends and family. As such, people become trapped in a never ending and futile "rat race" (Layard, 2006: C27) for greater status and improved relative income. Overall, these negative externalities lead people to strive for greater income and consumption often at the expense of other aspects of life important for individual happiness.

Another potentially interestingly implication of this work relates to whether people can accurately predict their own future utility. As the evidence shows, an increase in income raises happiness more initially than it does over time, due to adaption and rising material aspirations. "Standard economics assumes people can successfully predict utility" (Stutzer & Frey, 2010: 699). However, as Stutzer & Frey (2010: 699) argue, people underestimate the process of adaption and have "false intuitive theories about the sources of future utility." Thus, people may overestimate the expected utility from additional income and consumption. In so doing, people may work too hard and consume too much in a futile effort to achieve greater utility or happiness. Stutzer & Frey (2010: 699) call this "the misprediction of utility."

6 A Brief note on a Possible Causal Relationship: Evidence From an Unconditional Cash Transfer in Kenya

It seems somewhat intuitive that income would influence individual SWB. Those living in poverty face a situation of scarcity where there is often a large gap between their needs and the resources required to fulfil them. In situations of scarcity, economic concerns are undoubtedly at the forefront of peoples' minds along with a great deal of worry and stress. According to Lund et al. (2010) people living in poverty are at increased risk of developing common mental disorders due to social exclusion, high stressors, reduced social capital, malnutrition, obstetric risks and increased risk of violence and trauma. In addition, income and socioeconomic status also correlate with levels of the stress hormone cortisol (Cohen et al., 2006). Taken altogether, poverty and low levels of income are correlated with unhappiness, low life satisfaction, common mental disorders like depression and anxiety, and increased levels of the stress hormone cortisol. Thus, additional income will undoubtedly result in a substantial improvement in their overall quality of life through tangible material improvements and beneficial effects on peoples' physical and mental health.

But is this relationship causal? In other words, does poverty and low levels of income cause unhappiness and other negative affective states? One way to answer questions about causality is to look at evidence from randomised trials.

Haushofer & Shapiro (2013) studied the response of poor households to income changes using a randomized controlled trial of a large, one-time, unanticipated unconditional cash transfer in Kenya. The experiment was designed to assess the impact of the unconditional cash transfer on economic outcomes and the psychological well-being of the recipients. Haushofter & Shapiro (2013: 26) "hypothesized that cash transfers would lead to an increase in psychological well-being, and specifically to a reduction in stress and cortisol levels." This is one of the first studies to rigorously identify the effects of a decrease in poverty on psychological well-being and cortisol levels.

In a second study, conducted by Haushofer et al. (2015), the researchers assessed the impact of the unconditional cash transfer on the economic outcomes and psychological well-being of the "spill over" households. That is, households who did not receive a transfer but lived in the same village as households that did. The experimental design allowed the researchers "to

obtain a rigorous answer to the question whether relative income affects wellbeing and economic outcomes" (Haushofer et al., 2015: 3).

6.1 Details of the Intervention

In this case, the focus is on unconditional cash transfers (UCT) in the Rarieda district of Western Kenya. Within the Rarieda district there are 120 villages, from which 60 were randomly selected as treatment villages and the remaining 60 served as control villages. In these villages, household eligibility was assessed based on whether the household lived in a house with a thatched roof. According to Haushofer et al. (2015: 5), living in a house with a thatched roof is an "objective and highly predicative indicator of poverty." Using this criterion, 503 households were selected from the treatment villages to receive a cash transfer and 432 households were selected from the control villages to form the comparator group. In a second stage of randomisation, 50% of the eligible households from the treatment villages were randomly assigned to the treatment condition. While the remaining 50% of eligible households were assigned to the control condition. These households are referred to as "spill-over" households.

Haushofer & Shapiro (2013) aimed to assess the relative impacts of three design features on the economic outcomes and psychological well-being of transfer recipients. The three treatment arms were structured as follows:

1. Recipient's gender: The UCT was randomly assigned to the woman or the man in the household.
2. Timing of the transfer: The researchers "randomly assigned the transfer to be delivered either as a lump-sum amount or as a series of nine monthly instalments. Specifically, 258 of the 503 treatment households were assigned to the monthly condition, and 245 to the lump-sum condition" (Haushofer & Shapiro, 2013: 6). The total of each type of transfer was USD 404.
3. Magnitude of the transfer amount: The "large" transfer group consisted of 137 households who were randomly chosen to receive an additional USD 1,211 paid in seven monthly instalments of USD 160 each. The remaining 366 treatment households were assigned to the "small" transfer group and received a total of USD 404 per household.

Researchers surveyed all households before the program began and approximately 4 months after the program ended. In addition to collecting information on the treatment households,

researchers collected data on the "spill-over" households as a way of assessing the "effects of exogenous changes in wealth of neighbours on psychological well-being" (Haushofer et al., 2015). The researchers measured several aspects of psychological well-being, including:

- Self-reported happiness and life satisfaction: measured with the happiness and life satisfaction questions from the World Values Survey.
- Depression: measured using the Centre for Epidemiologic Studies Depression Scale.
- Self-reported stress: measured using Cohen's Perceived Stress Scale.
- The stress hormone cortisol: measured using the villagers' saliva.

6.2 Psychological Well-Being of the Treatment Households

The results showed that "transfer recipients experience large increases in psychological wellbeing" (Haushofter & Shapiro, 2013: 1). The UCT increased happiness and life satisfaction scores, measured using the World Values Survey questions on happiness and life satisfaction. In addition, the UCT resulted in a reduction in self-reported stress, depression and worries, and a marginally significant increase in optimism. According to Haushofer & Shapiro (2013: 26): "That an exogenous reduction in poverty causes significant reductions in stress and depression, and increases in happiness and life satisfaction, lends support to the hypothesis that poverty alleviation has psychological benefits."

6.3 Differences in Psychological Wellbeing Across Treatment Arms

6.3.1 Female versus Male Recipient Households

Haushofer & Shapiro (2013) found that there are significant differences in the psychological well-being of male and female recipient households. Specifically, overall psychological well-being is higher in female compared to male recipient households (Haushofer & Shapiro, 2013). This difference is driven primarily by higher self-esteem and low levels of cortisol amongst female recipients. Haushofter & Shapiro (2013: 28) believe that the "differential cortisol levels and other indicators of psychological wellbeing between male and female recipient households may reflect the reduced stress from increases in female empowerment."

6.3.2 Lump Sum versus Monthly Transfers

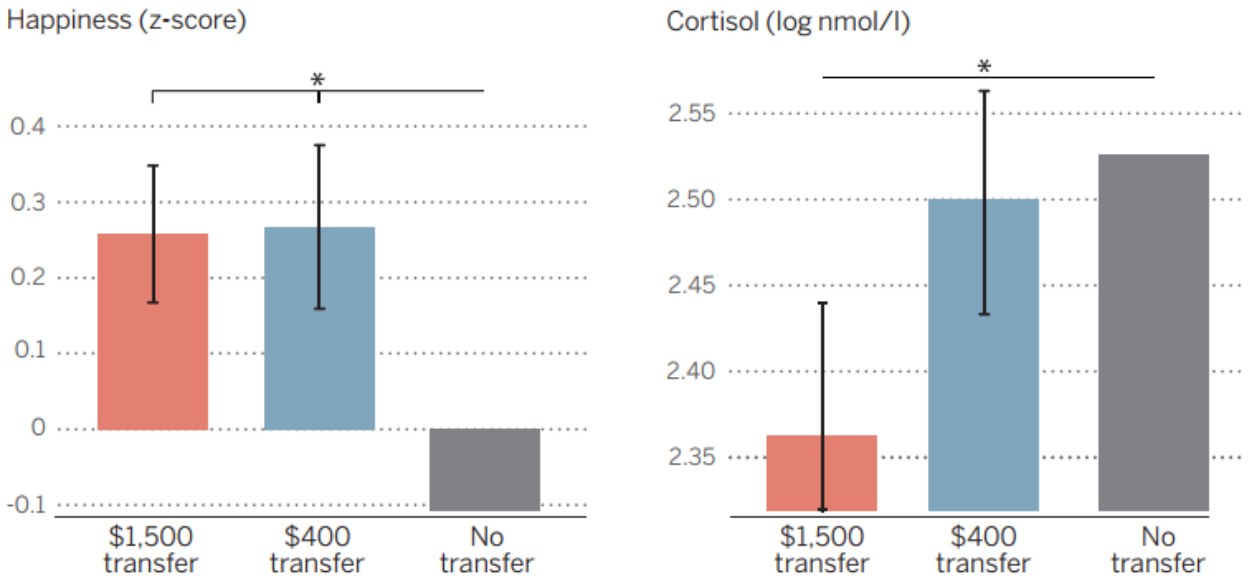
Haushofer & Shapiro (2013) find no overall difference in psychological wellbeing for monthly compared to lump-sum transfers, although depression is marginally lower in monthly

recipient households, and cortisol higher. According to Haushofer & Shapiro (2013: 28), this finding is surprising for two reasons: "First, the cortisol effect is not accompanied by other differences in psychological wellbeing, suggesting that cortisol may reflect outcomes that are not well captured in self-report measures. Second, stress is strongly related to controllability, homeostasis, and stability, and given that monthly transfers increased food security to a greater extent than lump-sum transfers, and food security correlates well with psychological wellbeing in the cross-section, we might have expected cortisol to be lower in monthly recipient households." One explanation for this finding may be that households in the monthly transfer condition find it more difficult to save or invest the transfer, possibly in spite of better intentions; thus, it is possible that the increased cortisol levels in this condition reflect the stress arising from this failure (Haushofer & Shapiro, 2013).

6.3.3 Large versus Small Transfers

Haushofer & Shapiro (2013) found differences in the overall psychological well-being of these two treatment groups. As Haushofer & Shapiro (2013) note, we observe large additional gains in psychological wellbeing for large transfers. Specifically, households who received the large transfer had lower stress and depression scores and higher levels of life satisfaction. In addition, there are considerable differences in cortisol levels between the two treatment groups. As Figure 6.1 shows, cortisol levels are significantly lower in households who received the large, US$ 1, 500 transfers. The figure also shows the effects of the transfer on happiness scores. While there is no significant difference between the large and small transfer groups, the transfer had negative spill over effects on psychological well-being among non-beneficiaries.

Figure 6.1: Self-Reported Happiness and Cortisol Level Post Transfer



(Image source: Haushofer and Fehr, 2014: 863)

6.4 Negative Psychological Spill Over Effects

This study mimics the distributional results of economic growth, which tends to allot gains unevenly. Specifically, not all the villages received a transfer and those who did either received the 'large' or the 'small' transfer. As expected, those who received the cash transfers reported greater satisfaction with their lot after the money arrived. Moreover, the transfers resulted in lower levels of self-reported stress and depression and for households that received large transfers, cortisol levels fell too.

But what about the psychological wellbeing of the "spill-over" households? Specifically, what were the effects of exogenous changes in the wealth of neighbours on the psychological well-being of nonrecipient households? The results from Haushofer et al. (2015) showed that the satisfaction of those who did not receive a transfer fell sharply as their neighbours' fortunes improved. In fact, the decline in satisfaction prompted by seeing one's peers get $100 richer was bigger than the increase of satisfaction from getting a handout of the same size (Haushofer et al., 2015). According to Haushofer et al. (2015: 3), "a USD 100 increase in village mean wealth causes a 0.11 standard deviation decrease in life satisfaction among individuals in households that did not receive transfers, significant at 10 percent level and better depending on the specification. The magnitude of this effect is noteworthy, as this is more than four times the magnitude of the effect of a change in own wealth by the same amount." In addition,

the larger the handout to others in their village, the greater the dissatisfaction of the nonrecipients[7].

Interestingly, the findings showed that it was not inequality in general that bothered the nonrecipients, so much as a decline in their own wealth relative to the mean.

Specifically, Haushofer et al. (2015) "find no effect of changes in village-level inequality on psychological wellbeing or economic outcomes, suggesting that the degree to which inequality affects wellbeing above and beyond own *income* and *relative income* may be limited."

6.5 Hedonic Adaption

Finally, the experimental design allowed the researchers "to study the temporal evolution of the effect of changes in relative income on wellbeing" (Haushofer et al., 2015: 4). The results showed that both the bitterness and the joy that the windfalls produced by the transfers were temporary. In other words, the effects of changes in people's circumstances wear off as they get used to them – a phenomenon called "hedonic adaption" (Haushofer et al., 2015: 4). As Haushofer et al. (2015: 1) explain "we find evidence of hedonic adaptation, in that the negative spill over effect of transfers to neighbours decreases over time, at a rate similar to that of direct transfers."[8]

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[7] There are four caveats that should be noted at this point. First, as Haushofer et al. (2015: 22) point out "similar negative externalities might be expected from any program that confers benefits to a group of recipients while not treating others; there is little reason to think that cash is unique in generating externalities." Second, Haushofer et al (2015) note that the negative effects on non-recipients' psychological well-being may be caused by feelings of disappointment from not having been selected to receive the cash transfer. As Haushofer et al. (2015: 22) explain "it is possible that losing a lottery is uniquely disappointing for households." Thus, "we might expect weaker negative externalities for changes in relative income that are not windfalls" (Haushofer et al., 2015: 22). Third, the authors "find negative externalities only for a small number of psychological outcome variables, while others show little movement." Specifically, the researchers find that increases in neighbours' wealth has negative effects on the reported life satisfaction of nonrecipient households. Lastly, it should be noted that the cash transfers did had some significant positive externalities. For instance, Haushofer et al. (2015: 22) find "large positive spill overs on female empowerment, driven mainly by reductions in physical and sexual domestic violence."

[8] To clarify, this study was scheduled to run for 15 months, thus allowing the researchers to "exploit variation in the timing of transfers over the course of the study to determine the effects of transfers received closer to the endline survey" (Haushofer et al., 2015: 20). Haushofer et al. (2015) find that "The values of change in household wealth and village mean wealth due to the most recent transfers show a much stronger effect on each measure of psychological well-being, with the effects diminishing as we begin to include transfers closer to the beginning of the period." With regards to changes in the village mean wealth, the researchers noticed that in the first month, an increase in the village mean income had significant negative effects on the psychological well-being of nonrecipients. However, over time

6.6 Concluding Thoughts

By exploiting fully exogenous changes in absolute wealth, relative wealth, and inequality, this study is able to establish a causal link between changes in wealth and psychological well-being. This study makes a valuable and novel contribution as most prior studies focused on merely the correlation between changes in wealth and psychological well-being (Haushofer et al., 2015).

In addition, this study has valuable implications for social policy and the design of cash transfer programs. One implication relates to social policies designed to remedy income inequality. The findings presented here indicate that inequality beyond the impact of changes in own wealth and the average wealth of peers has little negative effect on psychological well-being (Haushofer et al., 2015). Thus, Haushofer et al. (2015) note that policies aimed at rectify increasing inequality should consider focusing on shifting the mean wealth rather than concentrating on the tail end of the distribution which potentially has a limited impact on the mean[9].

In addition, "the finding that the negative effects of increased average wealth can outweigh the direct benefits of increasing the wealth of a given individual has implications for the design of social protection and transfer policies" (Haushofer et al., 2015: 23). According to Haushofer et al. (2015), transfer programs aimed at increasing welfare generally, should consider targeting the spill over effects in their design. A silver lining perhaps is the finding that individuals adapt to changes in their own and others' wealth (Haushofer et al., 2015). Thus, it may be possible to increase the wealth of many through transfers, without reducing life satisfaction of non-recipients in the long term (Haushofer et al., 2015).

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these "negative psychological externalities" diminished such that at the end of the 15 months period, the effects of an increase in the village mean were "indistinguishable from 0" (Haushofer et al., 2015: 20). In addition, an increase in a household's wealth had an immediate positive effect on the psychological well-being of recipients. However, "this effect decreases (though it remains positive and significant) when including the full 15 months" (Haushofer et al., 2015: 20). In other words, there is evidence of income adaption amongst recipients and non-recipients.

[9] However, Haushofer et al. (2015: 23) hasten to add "that this argument might not hold for dimensions of welfare other than psychological wellbeing."

7 CONCLUSION

This research aimed to contribute to a better understanding of the complex relationship between income and individual SWB. This paper began by exploring the relationship between own income and SWB. The aim of which was to establish if there is a correlation between income and SWB, both within and across countries.

When looking at the empirical evidence regarding the relationship at a point-in-time, the evidence is unclear and there are two contradictory findings. On the one hand, studies investigating the point-in-time relationship between the absolute level of income and SWB within a country, found that income and SWB are correlated (Easterlin, 1974; Frey & Stutzer, 2002; Helliwell, 2001). However, the correlation is found to be strongest at lower income levels (Frey & Stutzer, 2002; Helliwell, 2001). Specifically, these studies observed "diminishing marginal utility with absolute income" (Frey & Stutzer, 2002: 409). Similarly, studies investigating the point-in-time relationship between the level of GDP per capita and average SWB across countries, found "that high-income countries are happier than low-income countries, but among the high-income countries, there is no relationship between income and national happiness" (Deaton, 2008: 55). The lack of evidence of a clear linear relationship between income and SWB has led to theories of a satiation point, beyond which income no longer matters for SWB (Veenhoven; 1991; Clark et al., 2008; Frey & Stutzer, 2002).

On the other hand, however, studies investigating the point-in-time relationship between the *logarithm* of income and SWB, have found that SWB varies linearly with income, both within and across countries (Deaton, 2008; Haushofer & Fehr, 2014; Stevenson & Wolfers, 2008). Moreover, there is no evidence of diminishing marginal utility of income or satiation (Deaton, 2008; Haushofer & Fehr, 2014; Stevenson & Wolfers, 2008).

The latter results appear to be more credible and as such this paper concludes that income and SWB are positively correlated at a point-in-time, both within and across countries. In other words, poverty is associated with lower levels of reported happiness and life satisfaction.

This focus then shifted to the empirical evidence regarding the relationship between income and SWB over time. As discussed, several researchers have identified a striking and curious relationship between income and happiness over time, known as the happiness-income paradox.

According to Easterlin et al. (2010: 22463), "Simply stated, the happiness-income paradox is this: at a point in time both among and within nations, happiness varies directly with income,

but over time, happiness does not increase when a country's income increases." In other words, in a country and over time, the evidence indicates no clear trend in happiness or life satisfaction despite economic growth and greater individual wealth. While there have been several attempts to disprove the happiness-income paradox, Easterlin and collaborators (2010; 2013) have continued to accumulate substantial evidence in support of this paradoxical relationship for developed, developing and transition countries. This evidence has sparked a great deal of debate over the role of economic growth in promoting a happier society. Moreover, this evidence has nudged several economists and policy makers to criticise GDP as a policy goal, arguing that the focus should shift to aspects of life that matter most to people and have the greatest impact on well-being.

The key question now becomes, why does economic growth and greater individual wealth fail to influence SWB in the long-run? One explanation presented in this paper is based on the notion that people make income comparisons (Easterlin, 1974, 2003, 2005, Diener, 1984; McBride, 2001, Senik, 2009, Luttmer, 2005). As this research has shown, internal and external income comparisons influence material aspirations and satisfaction judgements. First, it was noted that people get used to their consumption and income levels due to the process of hedonic adaption. As such, the utility or happiness derived from additional income or consumption is usually only transitory. In addition, an individual's material aspirations depend on his or her past outcomes. As such, higher past incomes trigger higher income aspiration levels. In other words, individuals adapt to their income and consumption levels and shift their material aspirations upwards, seeking 'bigger and better things'.

Second, individuals compare their income and consumption to that of relevant others. As such, it is not only a person's absolute income that matters but also how it compares to the income of one's reference group. People feel unsatisfied when their income is below that of their reference group and strive to improve their relative standing. On the other hand, people feel satisfied when their income is above that of their reference group. However, the satisfaction one gets from having an income above that of their reference group may diminish over time as one adapts and shifts their material aspirations upwards. This upwards shift in aspirations is accompanied by an upward shift in one's reference group. In other words, social income comparisons are mostly "upward."

According to the aspiration level theory, happiness is determined by the gap between aspirations and achievement. Thus, income comparisons and shifting material aspirations work to widen the gap between an individual's actual income and the income they aspire to

achieve. “Both social comparisons and adaptation imply that utility is relative with respect to income, in the sense that individual well-being depends on the gap between the individual’s actual income and some reference benchmark” (Clark & Senik, 2009: 573). As such, this paper has demonstrated the importance of relative income, in addition to own income, for individual subjective well-being.

Lastly, this paper offered a brief note on a possible causal relationship by referring to an unconditional cash transfer program in Kenya. This is important as the literature tends to focus primarily on establishing a correlation between income and subjective well-being, with little thought given to the direction of causality. Thus, the aim was to establish if there is a causal relationship between income, relative income and SWB.

The overall results showed that “transfers have a sizeable effect on psychological wellbeing” (Haushofer & Shapiro, 2013: 3). Specifically, the cash transfers resulted in an increase in self-reported happiness and life satisfaction, and a reduction in stress, worries, and depression. (Haushofer et al., 2015: 22). On the other hand, “increases in neighbour’s wealth strongly decreases life satisfaction” amongst the households who did not receive a transfer but lived in the same village as households that did (Haushofer et al., 2015: 1). Specifically, an increase in the mean village income caused a deterioration in the psychological well-being of nonrecipients. In fact, Haushofer et al. (2015) find that “the negative effects of increased average wealth can outweigh the direct benefits of increasing the wealth of a given individual” (Haushofer et al., 2015). Thus, relative income has important effects on individual subjective well-being. The wider the gap between one’s own income and the average income of relevant others, the less satisfied one feels with their lot. Lastly, there is evidence of hedonic adaption whereby “individuals adapt to changes in their own and others’ wealth” (Haushofer et al., 2015: 23). These findings provide support for the theoretical arguments and correlational evidence presented in this paper and provide solid evidence of a causal relationship between income, relative income and SWB.

The study by Ferrer-i-Carbonell (2005) might help explain evidence from the unconditional cash transfer program in Kenya. Ferrer-i-Carbonell (2005) concludes that there is an asymmetry in the way people compare themselves with others. People tend to look exclusively at those better off than themselves, rather than contemplating their position within the full range of outcomes. When the lot of others improves, one reacts negatively, but when one’s own lot improves, one shifts his or her reference group to those who are still better off. In other words, people are never satisfied, since they quickly become accustomed to their own

achievements. Perhaps that is what spurs people to earn more, and economies to grow. Easterlin (1974: 120) speaks to this point, noting that: "Economists' models of economic growth tend uniformly to exclude tastes as a variable. But it is possible that not only are tastes affected by economic growth, but that taste changes serve as a spur to growth." Easterlin (1974: 120) goes on to say, "Thus one might convince of a mutually reinforcing interaction between changes in tastes and changes in per capita income, which, *ceteris paribus*, drives the economy ever onward and per capita income ever upwards."

This paper has contributed to a better understanding of the complex relationships between income, adaption, aspirations and SWB. However, this paper is by no means exhaustive and there are many potential avenues for future research. Below are two interesting directions that one could take going forward, the first is primarily theoretical and the second focuses on a more practical contribution to an area of this literature that remains largely uncharted.

1. It would be interesting to investigate the implications of the findings for standard microeconomic theory. For instance, by highlighting how the findings might challenge standard microeconomic theory and suggesting how one might, theoretically, incorporate the findings (i.e., adaption or social comparisons) into economic models to offer a better understanding of human behaviour.

2. While there is substantial literature documenting the correlation between income and subjective well-being, there are only a few studies that offer evidence of a *causal* relationship. Thus, there is a need for more research on the causal relationship between income, relative income and subjective well-being. While it might be unrealistic to consider replicating the large scale unconditional cash transfer program discussed in this paper, it might be feasible to conduct a laboratory experiment. One idea is to replicate the work of McBride (2010) who used a variation of the "matching pennies" game to investigate how past payments, social comparisons, and expectations influence aspiration formation and reported satisfaction. In this way, the experimental research would contribute to a better understanding of the causal relationship between internal and external income comparisons and subjective well-being. Replicating this study in the South African context could offer a valuable contribution to the limited research in this area.

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