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Does money buy happiness? A cross-country look at the relationship between income and happiness.

Katharina Geppert, Smith College

I. Introduction

The phrase "money can't buy happiness" is often used to describe the idea that money cannot make people happy. While this concept might seem obvious or trivial, the phrase actually captures an important economic relationship that has been subject to great debate among development economists: the relationship between income and happiness. Economists who have examined this relationship have found that, on average, richer people report greater levels of happiness than poorer people (Easterlin 1994; Graham 2005; Frey 2008, Sacks, Stevenson, Wolfers 2012). This seems intuitive for several reasons: richer individuals can cover their basic human needs more easily and tend to have more disposable income for leisure activities and luxury goods that increase their utility. Studies have further revealed that people who live in poverty experience greater levels of stress and anxiety due to their greater vulnerability to unemployment and labor market volatility (Bruenig 2015). So maybe money does buy happiness after all?

While the relationship between household income and happiness is certainly an interesting one, it might be more imperative to explore the relationship between income and happiness on a global scale. In the field of development economics, a nation's well-being has been traditionally measured first and foremost in economic terms – based on national income. With good reason: economists have found that high-income countries are, on average, happier than low-income countries (Saghieri, Desantis, and Tanturri 2006; Kenny 2005; Schyns 1998). While it seems as though there is a clear positive relationship between income and life satisfaction across countries, the income-happiness relationship is not as straightforward as one might think. A number of high-income countries that have seen staggering economic growth over decades, such as the United States, are not as happy as one would expect based on the expected trend (Helliwell, Layard, and Sachs 2018). Similarly, various low-income countries, such as Bhutan, seem to defy the odds and report unusually high level of happiness despite economic hardship (Helliwell, Layard, and Sachs 2018). These exceptions to the rule have led some development economists and world leaders alike to argue that purely economic indicators like Gross Domestic Product (GDP) or Gross National Income (GNI) cannot truly capture the well-being of a nation. Schyns (1998) found that cultural factors significantly reduce the collinearity between a country's income and reported happiness levels. Similarly, Kenny (2005) highlights the importance of including social factors, such as poverty in the study of the income-happiness relationship. During the United Nations Millennium Summit in 2000, 149 world leaders agreed that the development of the world cannot be achieved through economic growth alone, and that a more inclusive measure of development is needed – one that is centered around improving quality of life (UN 2000).

This paper asks: what is the relationship between income and happiness across countries? And more importantly, what factors, other than economic factors like income, contribute to the happiness and well-being of a nation? The primary objective of this paper is to shed light on the cross-country relationship between income and happiness by analyzing which social, political and economic factors impact national happiness levels the most, and which seem to contribute the least. Based on my findings, I will comment on the effectiveness of using purely economic measures, such as Gross Domestic Product (GDP) as indicators of

development and the need for a more holistic, all-encompassing measure of a country's well-being.

II. Literature Review

The research on the relationship between income and happiness is extensive, yet results are diverse and in many ways contradictory. Scholars are overwhelmingly in agreement that richer people are, on average happier, than poorer people (Easterlin 1994, Graham 2005, Frey 2008, Sacks, Stevenson, Wolfers 2012). On a global level, however, studies that examine the income-happiness relationship across countries seem to produce much less unanimous results, although one would expect a similarly positive relationship between income and happiness across countries. This is in part due to the ambiguous use and nature of the term "happiness".

A. What Is Happiness?

Before diving into the existing literature on the subject, it is important to define what it meant by the term "happiness", or "subjective well-being". Studies who have found that income does not actually play a large role in self-report happiness are primarily concerned with "happiness" as it describes the current emotional and psychological state of an individual (Kaplan 2017, Markman 2016, Quiñones 2015). The scholars that have found that there is a positive relationship between income and happiness, however, do not measure the current emotional state of an individual, but instead the long-term life satisfaction of individuals. To get to the bottom of the happiness-income relationship, it is vital to make a clear distinction between the current emotional state of an individual and the long-term life satisfaction of an individual, both of which are referred to as "happiness" in the literature. While both the current emotional state and long-term life satisfaction of an individual contribute to overall self-reported happiness, the synonymous use of happiness and life satisfaction in the literature can cause confusion and lead to contradictory understandings of what are actually two entirely different research questions. It is thus imperative to make a clear distinction between the two definitions of happiness.

Economists seem to be primarily concerned with the role of income in shaping quality of life over time, or in other words, long-term life satisfaction rather than current emotional state. Kahneman and Deaton (2010) make this distinction in their analysis. In their paper, "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 satisfaction" on the other hand, is described as "the thoughts that people have about their life when they think about it" by the authors (Kahneman and Deaton 2010). The definition used by Kahneman and Deaton (2010) is a concise version of the definition for what is generally referred to as subjective well-being (SWB) in the literature. Carol Graham (2016) defines SWB as "an approach to assessing welfare that combines the techniques typically used by economists with those more commonly used by psychologist […] to understand the determinants of human well-being, including income but extending well beyond it to a range of nonincome dimensions." Similarly, Diener (2000) defines subjective well-being as "people's cognitive and affective evaluations of their lives." Although SWB is often colloquially referred to as "happiness", these definitions highlight that there is a difference between one's current emotional state and the evaluations of one's life. What seems to be of relevance in solving the happiness-income conundrum is thus not the question "how have the last few days been for you?" but instead the question "how satisfied are you with your life so far?" This research paper will thus

concentrate on reflective life satisfaction but will use "happiness" synonymously with life satisfaction in order to stay attuned with the existing economic literature on the subject.

B. The Income-Happiness Relationship

Now that "happiness" has been defined, I will summarize the existing literature on the relationship between income and happiness, which has been subject to extensive discussion among economists. Development economists, in particular, have taken great interest in analyzing the effects of income growth and economic development on national happiness levels to determine whether economic development should be measured by a greater range of indicators beyond GDP per capita, such as access healthcare, education level, and equality (Banerjee & Duflo 2012). Based on the findings of individual happiness, one would expect that richer countries are, on average, happier than poorer countries. In fact, using data collected by the World Bank, the Gallup International World Poll, Euro-Barometer, and Latinobarómetro, many economists have shown that countries who are among the richest are also among the happiest in the world. Likewise, Sacks, Stevenson, and Wolfers (2012) have confirmed that "richer individuals are more satisfied with their lives" across a sample of 140 countries, finding that different countries in an income category bring forth extremely similar relationships between income and life satisfaction.

Given the use of income as a primary indicator of economic development, scholars have observed a tangible relationship between a country's level of economic development, as well as other economic indicators, and reported life-satisfaction. Graham and Pettinato (2001) utilized data from 17 Latin American countries collected by the Latinobarametro using region-wide opinion surveys between 1997 and 2000 to determine whether the "standard determinants of happiness in advanced industrial economies also hold for Latin America. Using this pooled sample and a linear regression model, the authors found that macroeconomic trends, such as inflation, have significant negative effects on reported happiness in Latin American countries (Graham and Pettinato 2001). Economic Sciences Nobel Prize winner Daniel Kahneman and Angus Deaton used survey data collected from 450,000 US residents by the Gallup Organization between 2008 and 2009 (Kahneman and Deaton 2010). The authors use "life evaluations" as their happiness indicator, which they define as "the thoughts that people have about their life when they think about it." In their analysis, Kahneman and Deaton (2010) utilized the Cantril Ladder Scale (used in this paper), which asks "how satisfied are you with your life as a whole these days?" These authors found that there is a positive correlation between income and reported life satisfaction and that poverty is directly correlated with low life evaluations (Kahneman and Deaton 2010). A similar statistically significant positive relationship has been observed by Helliwell, Layard and Sachs (2018) who used panel data from 156 countries collected by the Gallup Organization. Their findings are presented in the 2018 World Happiness Report, and show the happiest countries today are also among the richest. Finland was crowned as the happiest country in the world and was closely followed by some of its Nordic neighbors, including Norway, Iceland and Sweden (Sorensen 2018). Other countries in the top quintile of the happiness ranking were other countries with similarly high incomes, such Germany, the UK, the U.S, Qatar, the United Arab Emirates, Australia and Canada (Helliwell, Layard, and Sachs 2018). Similar trends were observed on a regional level across the globe. More economically developed regions like Western Europe, and Latin America and the Caribbean are reporting much higher average levels of happiness than less economically developed regions such as Sub-Saharan Africa, the Middle East, and East Asia (Helliwell, Layard, Sachs 2018), which seems to confirm Graham's and Pettinato's hypothesis that economic development is generally associated with greater life satisfaction (Graham and Pettinato 2001).

C. The Easterlin Paradox: Filling the Gaps

It seems as though economists are generally in agreement that, on average, richer, more economically developed countries seem to be happier at given points in time, but what does this relationship look like over time? Can we assume that economic growth will always lead to improvements in the national happiness levels of countries? If so, can we then assume that economic growth in poorer countries will increase national happiness levels across LECDs?

Kahneman and colleagues (2006) attempted to answer this question by focusing specifically on the relationship between national income growth over time. When looking at economic growth, several "gaps" – countries that do not seem to follow the expected pattern outlined above – have been observed at various income levels. One frequently cited high-income country that does not seem to exhibit a positive correlation between income growth and happiness is the United States. Although the U.S. has seen significant increases in real GDP per capita for over 40 decades, with a period of particularly steep economic growth post World War II, no improvements in happiness have been reported in the U.S. (Maddison 1991, Easterlin 1994). A similar lack of correlation has been observed in nine European countries between 1973 and 1989 (OECD 1992). Richard Easterlin was the first to observe and argue that economic growth (over time) does not necessarily always translate into a proportional increase in reported life satisfaction, despite the fact that richer countries are happier when examined at a given point in time (Easterlin 1994, 2010). This phenomenon is commonly referred to as the "Easterlin Paradox" (Stevenson & Wolfers 2008, Kesebir 2016). The Easterlin Paradox is not unique to the Western world. Japan has seen significant increases in real per capita GDP since World War II and has become increasingly economically developed between 1958 and 1987. The use of consumer durable goods and electric goods in increased by roughly 60% in homes across Japan, significantly raising living standards to about two-thirds of the living standard in the modern United States. Despite these economic advances and income growth, reported life satisfaction has not significantly changed despite clear gains in quality of life (Easterlin 1994, Kahneman et al, 2006).

While one could argue that these gaps in the happiness-income relationship might be unique to high-income countries, there are examples of low-income countries that similarly break the expected pattern of the income-happiness relationship. Let's look at Bhutan for example. The 2018 Happiness Report has revealed that Bhutan, which is classified as a lower-middle income country by the World Bank, ranked as the 97th happiest country (Helliwell et al 2018). To put Bhutan's happiness rank in perspective, it helps to look at other countries that ranked similarly on the happiness scale, such as Bosnia and Herzegovina, China and Azerbaijan – upper-middle economies with GDPs per capita that are almost double that of Bhutan (Helliwell, Layard and Sachs 2018, CIA 2018). These examples certainly put holes in the hypothesis that richer countries are reporting greater levels of happiness due to their income alone. Given that the frequently observed, positive relationship between GDP per capita and life satisfaction does not always hold true, it seems as though life satisfaction does not always grow proportionality to the economy. This raises several questions that are certainly worth examining further. Why does economic growth lead to greater life satisfaction in some countries but not in others? What factors might lead to a stagnation in happiness despite income growth? And similarly, are there other factors that have a stronger positive effect on happiness than income? Lastly, the gaps that have been observed in the income-happiness relationship give rise to an even more important, overarching question about the role of economic development in the global economy: will economic growth alone truly improve life satisfaction in poor, underdeveloped countries?

III. Theory

Life satisfaction data has not been collected for long and to this day, remains difficult to collect in some countries, particularly low-income countries in which citizens are more concerned with survival than with life satisfaction. Due to the lack of sufficient data, time series analyses, which could significantly improve our understanding of the income-happiness relationship, have not been used frequently to evaluate the income-happiness relationship in specific countries over time. I will outline some of the economic theories that bridge the lack of statistical analysis by providing a variety of explanations of the relationship between happiness and income growth.

A. Absolute vs. Relative Income

Returning to the "Easterlin Paradox", Easterlin has attempted to shed light on the above-described gaps by deriving several economic theories that aim to explain why raising the income of all will not increase happiness of all (Easterlin 1994, Easterlin et. al 2010). One of these theories is rooted in the differentiation of absolute income – one's total objective income – and relative income – one's income relative to the income of others. Easterlin argues that "judgments of personal well-being are made by comparing one's objective status with a subjective living level norm, which is significantly influenced by the average level of living of the society as a whole" (Easterlin 1994). In other words, life satisfaction depends on the individual's economic position in society compared to everyone else, which causes an inverse relationship between an individual's income and the incomes of comparable others. According to Easterlin, if income increases across an entire population, one would not report increases in happiness despite the fact that living standards would improve overall. This theory could certainly explain the case of Japan, where living standards have consistently improved but life satisfaction has remained stagnant. According to Easterlin, if everybody gets richer, nobody gets happier, because "the positive effect of higher income on subjective well-being is offset by the negative effect of higher living level norms bright about by the growth in incomes generally" (Easterlin 1994). Other scholars like Blanchflower and Oswald have similarly argued that relative income differences have a greater impact on perceived subjective well-being than absolute income (Blanchflower & Oswald 2004, Graham 2005). This theoretical approach to the income-happiness relationship is significant, because it highlights the need for a closer examination of not only how much income a country has, but how this income is distributed amongst a population.

B. Adjustment of Expectations

Another possible explanation for the fact that some countries with high economic growth are not seeing an increase in happiness is that people adapt to changing economic circumstances (Di Tella & MacCulloch 2010). The underlying idea behind this argument is that income growth does not actually increase life satisfaction in the long run, because people adjust their standards, aspiration, goals and expectations proportionately to income growth (Sacks et al, 2012). Economist Carol Graham refers to as the "ever-rising bar of perceived needs": as income grows perceived needs grow alongside it (Graham 2005), causing life satisfaction to remain unchanged despite economic growth due to the mitigating effects of upward sloping expectations (Veenhoven 1991). In the same vein, expectations about the future can significantly affect individuals' perceptions of opportunities for upward mobility, which, in turn, can shape life evaluations (Frantz 2017). As a result, scholars have argued that one must look at past as well as present income to determine a country's happiness, given the effect

future expectations may have on reported life satisfaction (Hirschman 1973, Graham 2006). Although, this theory is closely related to the economic principle of diminishing marginal returns, Graham (2006) notes that the role of future expectations in shaping life satisfaction is not entirely economic. Graham (2006) writes that "future expectations, even more than subjective assessments, are determined by noneconomic factors such as hope and determination" (Graham 2006). This theory, if applied reversely to poverty through absolute and relative deprivation, could certainly explain why some lower income countries report surprisingly high levels of life satisfaction.

C. Diminishing Marginal Happiness

Lastly, a few scholars have built on the "Easterlin Paradox" and have found that there is a stronger relationship between income and happiness on the lower end of the income spectrum and a weaker relationship on the higher end (Diener et al, 1993, Graham 2005). This phenomenon has given rise to the theory of "diminishing marginal happiness" which suggests that the positive, curvilinear relationship between GDP per capita and life satisfaction. Happiness is thus subject to the economic law of diminishing marginal utility, or to "diminishing happiness returns" (Veenhoven 1991, 1993, Diener et al, 1993, Frey & Stutzer 2002). More concretely, Easterlin has found that "the effect on subjective well-being of a $1000 increase in real income becomes progressively smaller the higher the initial level of income" (Easterlin 2004). What this seems to suggest it that raising the income in low-income countries will significantly increase life satisfaction in those countries but will not significantly improve life satisfaction in high-income countries who are experiencing diminishing marginal happiness alongside income growth (Easterlin 2004). Similarly, Kahneman and others have suggested that "although average life satisfaction in countries tends to rise with GDP per capita at low levels of income, there is little or no further increase in life satisfaction once GDP per capita exceeds $12,000" (Kahneman et al, 2006). If the theory of "diminishing happiness returns" holds true throughout this analysis, it raises questions regarding the usefulness of measuring the well-being of a country in purely economic terms, particularly as countries become richer over time.

IV. Methodology & Explanation of Variables

This paper asks two questions. First, what is the relationship between income and happiness across countries? Secondly, and more importantly, how does the effect of income on happiness change in light of other socio-economic, political and cultural factors that may shape life evaluations?

A. Data

This paper utilizes panel data collected from 156 countries between the years of 2006 and 2017 collected by the Gallup World Poll in 2018. Based on the 1,535 observations in the dataset, I used OLS pooled regression analysis, controlling for year-to-year variation to evaluate which social, political and economic factors play the most significant role in shaping life satisfaction evaluations across nations. The following sections will outline the variables that will be used in the OLS pooled regression analysis to determine the relationship between happiness, income, and noneconomic measures of happiness.

B. The Income-Happiness Relationship

To better understand the relationship between income and happiness, this paper introduces a "Life Satisfaction" variable and an "Income" variable. The dependent variable throughout this

regression analysis is the "Life Satisfaction" variable, which captures happiness levels across countries. Though life satisfaction seems like a highly abstract, subjective and personal experience, several measures have been developed to quantify and standardize life satisfaction. The most frequently used measure and the measure that is used in this paper is the "Cantril Ladder" or "Cantril Ladder of Life Scale" – an index developed by psychologist Hadley Cantril in 1965, which he initially referred to as "the self-anchoring striving scale" (Cantril 1965). Cantril originally developed the scale to discover "the spectrum of values a person is preoccupied or concerned with and by means of which he evaluates his own life" (Cantril 1965). The Cantril Ladder poses the question "all things considered, how satisfied are you with your life as a whole these days?" and asks respondents to imagine a ladder with from zero to ten where zero represents "completely dissatisfied" and ten means "completely satisfied" (OECD 2013, Helliwell et al. 2018). Based on the national averages of the numerical responses to this question, the Gallup World Poll (GWP) constructed the dataset for happiness used for this analysis.

The first independent variable used throughout this paper is the "income" variable which is measured by the logarithmic form of Gross Domestic Product (GDP) per capita terms of Purchasing Power Parity (PPP) adjusted 2011 international dollars. Using the logarithmic form of GDP per capita allows the data to "fit" significantly better as it reduces the breadth of data points in the data set – the distance between the highest earning and the lowest earning country in the sample – without changing the data itself. By regressing "income" on "life satisfaction", I will determine the role of income in shaping life satisfaction evaluations and attempt to explain why some countries do not report the level of life satisfaction that would be expected based on their income level, using economic theory. Ultimately this variable will allow me to theorize whether income-based development strategies in low-income countries will suffice to increases the happiness levels of their populations.

C. How Important Is Income Really?

Once the relationship between income growth and happiness has been established, this paper utilizes six additional independent variables to determine which social, political and economic factors, aside from income, impact happiness. More importantly, introducing alternate indicators of quality of life will shed light on what truly impacts happiness levels the most. Does income make us happiest? Or do other social and political factors shape happiness more than income can? Based on the relationship between life satisfaction and the following variables, I will be able to draw conclusions about the effectiveness of the GDP driven development agenda for low-income countries.

Income is undeniably important for those who partake in the capitalist world economy in any way. But what about our social relationships with people? Does money influence our happiness more our than family and friends? To account for the role of social ties in shaping happiness, this paper introduces a "Social Support" variable – a measure of how supported individuals feel by their friends, family and community. "Social Support" captures the national averages of binary responses to the Gallup World Poll (GWP) question "If you were in trouble, do you have relatives or friends you can count on to help you whenever you need them, or not?"

Furthermore, it is important to include a measure of health and physical well-being in this model to capture the impact of health on reported life satisfaction. Undoubtedly, health has a significant effect on quality of life, but how does this effect translate to happiness? How important is health compared to income? In my analysis, the "Healthy Life Expectancy"

combines mortality and health status data to measures the number of years one can, on average, expect to live in good health. This variable draws from data collected by the World Health Organization (WHO) and the World Development Indicators (WDI). Many scholars have recognized the importance of economic, political and personal freedoms in the life evaluations of individuals (Ovaska and Takashima 2005, Gehring 2013). To account for the importance of freedom of choice, the development economist Amartya Sen created a concept known as "Sen's Capability Approach" which measures quality of life based on the "capability of achieving the kind of lives they have reason to value" rather than on purely economic measures (Alkire 2005, IEP 2018, Muffels and Headey 2011). Sen's internationally recognized contribution to the field emphasized the need for a variable that captures the effect of having the freedom to make life choices freely. The "Freedom of Choice" variable used in this paper captures the national averages of binary answers to the question "are you satisfied or dissatisfied with your freedom to choose what you do with your life?" and will shed light on the role of one's perceived freedom of choice in shaping life satisfaction evaluations (Helliwell et al, 2018).

The political landscape looks vastly different across countries and national governments undoubtedly play a vital part in shaping the quality of life in a country. This paper utilizes two political variables to account for the role of political qualities in shaping national happiness levels. For one, this paper looks at national corruption levels to determine how corruption impacts life satisfaction. The "Perceptions of Corruption" variable comprises national averages of the binary responses to the GWR questions: "Is corruption widespread throughout the government or not?" and "Is corruption widespread within businesses or not?" (Helliwell et al. 2018). Secondly, I will analyze the effect of confidence in national governments on happiness by introducing a variable that compiles national averages for the binary responses to GWP question: "do you have confidence in the national government?" (Helliwell et al 2018). This "Confidence in Government" variable is used to shed light on the effect of political factors, such as confidence in one's national government, on the happiness and well-being of a nation.

Lastly, this paper includes a measure of income inequality to understand the effect of economic equality on self-reported, long-term happiness. The previous discussion of the "absolute vs. relative" income theory revealed that life satisfaction might not just depend on the amount of income, or the income growth a country reports, but instead on the way that income is distributed within a country. Though the most apparent hypothesis is that the equal distribution of income leads to higher average levels of reported life satisfaction, Easterlin's theory of absolute and relative income suggests that equally distributed economic growth mitigates the positive effects of a growing economy. Conversely, one could argue that a highly unequal income distribution might lead individuals to report lower levels of life satisfaction, because it magnifies the effects of perceived relative deprivation. To determine the exact impact of income distribution on life satisfaction, this paper introduces an income inequality variable. The "Income Inequality" variable indicates how income is distributed across a population and is measured by the Gini Index or Gini coefficient. The Gini coefficient measures income inequality on a scale from zero to one, where one represents the perfectly equal and zero represents perfect unequal distribution of income.

V. Empirical Model

To determine the effect of income on average life satisfaction levels across countries I used a pooled OLS fixed-effects model to account for year-to-year variation between 2005-2017. First, this paper explores the relationship between income and happiness across countries. Secondly, additional social, political and cultural variables will be added to determine if and how the relationship between income and happiness changes in light of other factors that typically influence quality of life. The following model will be used:

$$\begin{aligned}\text{Life Satisfaction}_i &= \alpha + \beta\text{logGDPpc} + \beta\text{SocialSupport}_i + \beta\text{HealthyLife}_i \\ &+ \beta\text{FreedomOfChoice}_i + \beta\text{Corruption}_i + \beta\text{Government}_i + \beta\text{Gini}_i\end{aligned}$$

Based on previous studies, we can expect that beta for the logarithmic form of GDP per capita will be positive, meaning that income typically leads to increases in life satisfaction. Similar results are expected for the "Social Support", "Healthy Life", "Freedom of Choice", "Confidence in Government" variables, which are typically seen as factors that contribute positively to our lives. The "Corruption" variable, in turn, is expected to have negative impacts on life satisfaction as corruption is usually a signal of malfunctioning political institutions that do not act in the best interest of its citizens.

Table 1:

Total Summary Statistics

Variable	Mean	Std. Dev.	Min.	Max.
Life Satisfaction	5.434	1.124	2.662	8.019
Log GDP Per Capita	9.221	1.184	6.377	11.770
Social Support	0.811	0.120	0.290	0.987
Healthy Life	62.25	7.96	37.77	76.54
Freedom of Choice	0.729	0.146	0.258	0.985
Corruption	0.755	0.185	0.035	0.983
Confidence in Government	0.480	0.191	0.069	0.994
Gini	0.445	0.106	0.223	0.961

Although the impact of the "Income Inequality" may be a bit more ambiguous, Easterlin's theory of absolute and relative income suggest that we can expect a negative beta for the Gini coefficient, since the average individual would likely report a lower level of life satisfaction if income inequality is high.

VI. Results

The results of the above described regression analysis are stated in Table 3. The regression considers the year fixed effects for the time frame between 2005 and 2017. Note that all results presented below are statistically significant at a five percent confidence interval.

A. Income

Studies by economists such as Charles Kenny (2005), Saghieri, Desantis, and Tanturri (2006), Carol Graham (2010) and others, suggest that countries with higher incomes are, on average, happier than poorer countries. Andrew Oswald (1997) concisely sums up the relationship between income and SWB in the following way: "in a developed nation, economic progress buys only a small amount of extra happiness." Similarly, Saghieri and colleagues (2006) find that low-income countries become happier when their economies grow, but up to a certain point. Given these previous findings, it is reasonable to assume that this study should yield similar results regarding the relationship between SWB and income. The above stated regression results ineed confirm what other economist have found in previous studies: there is a positive relationship between log GDP per capita and life satisfaction across countries, controlling for other variables, which is indicated by the positive Log GDP per capita coefficient. The coefficient of Log GDP per capita indicates that a 100% increase of GDP per capita leads to an increase of 0.736 units on the Cantril Ladder. Since the P-value is significant at five percent, I find that log GDP per capita has a statistically significant, positive impact on life satisfaction. The R-squared value reveals that 61 percent of the variation in life satisfaction as measured by the Cantril Ladder is explained by the income variable alone. These results are in line with the regression analysis of the 2018 World Happiness Report which ca statistically significant relationship with a nearly identical positive coefficient (Helliwell et al 2018). My analysis confirms that countries typically become happier when they become richer. However, as I continued to introduce additional variables, such as "Social Support" and "Healthy Life", the magnitude of the income-effect started to decrease. Once all other factors are introduced, the coefficient of the income variable falls from 0.736 to 0.192 – a significant reduction in beta of Log GDP per capita. This finding suggests that other social and political factors have a greater effect on happiness than income when considered alongside one another.

Table 2:

The Relationship Between Life Satisfaction, Income, and Other Factors

	Dependent Variable:						
	Life Satisfaction (Cantril Ladder)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Constant	-0.943*	-1.683*	-1.983*	-2.541*	-1.578*	-0.295*	0.139*
	(0.204)	(0.193)	(0.191)	(0.185)	(0.238)	(0.269)	(0.337)
Log GDP Per Capita	0.736*	0.526*	0.346*	0.327*	0.279*	0.244*	0.192*
	(0.015)	(0.019)	(0.027)	(0.026)	(0.028)	(0.028)	(0.033)
Social Support		3.171*	3.039*	2.302*	2.468*	2.179*	2.166*
		(0.187)	(0.183)	(0.179)	(0.183)	(0.187)	(0.216)
Healthy Life			0.033*	0.032*	0.034*	0.029*	0.035*
			(0.004)	(0.004)	(0.004)	(0.004)	(0.005)
Freedom of Choice				1.792*	1.451*	1.947*	2.196*
				(0.118)	(0.134)	(0.152)	(0.185)
Corruption					-0.658*	-1.202*	-1.307*
					(0.099)	(0.111)	(0.127)
Confidence in Government						-0.894*	-1.077*
						(0.110)	(0.127)
Gini							-0.529*
							(0.206)
Sample Size	1,535	1,178	1,169	1,100	1,352	1,352	1,028
R^2	0.613	0.674	0.690	0.738	0.759	0.759	0.763

Note: all results marked with (*) are statistically significant at p-value <0.05.

B. Social Support

Another indicator I took into consideration in my statistical analysis is social support, which one would expect to affect happiness positively. Social scientists have long found that the access to social support systems increases well-being for individuals. Keyes (1998) writes, for example, that there is a strong statistical relationship between "prosocial community involvement" and well-being. In regard to the income-happiness relationship, found that trust and social capital are more abundant in richer countries, implying a relationship between social support, income and SWB (Graham and Pettinato 2006). The regression analysis in this paper conforms that there is, indeed, a statistically significant, positive relationship between social support and happiness. The coefficient of my results suggests that the presence of social support, which is a binary variable, leads to a 2.45 unit increase in self-reported happiness, which coincides with the results of other scholars who have also found that there is a positive correlation between social support and life satisfaction (Ali et al, 2010). Though the "Social Support" variable, like the "Income" variable, decreases as other variables are introduced, the magnitude of the "Social Support" coefficient remains larger than the beta of log GDP per capita throughout the statistical analysis. This leads me to conclude that having social support has a greater impact on life satisfaction than income, which can explain why most Nordic countries, which tend to provide more social services and social safety nets, such as maternity leave, unemployment benefits, and public schooling, tend to rank among the happiest countries in the world despite not being the richest terms of GDP per capita.

When plotting social support and happiness on a graph, as shown in Figure 1 in the Appendix, it becomes clear that countries who rank highest on the Cantril Ladder are also those with greater social support. Interestingly, the countries that are in the upper right quadrant of the graph – those who report high levels of both happiness and social support – are also among the richer countries. For example, Finland, which is one of the richest and most developed countries also ranks among the highest for social support and happiness (Helliwell et al. 2018). Although this is outside of the scope of this research paper, it is important to note that there might be an underlying relationship between GDP per capita and social support that, despite not being explicitly expressed in this regression, could capture an important aspect of the income-happiness relationship.

C. Healthy Life Expectancy

According to Blanchflower and Oswald's (2004) study of the income-happiness relationship in the U.S. and the UK, poor health has a negative effect on life satisfaction. Based on such previous findings, it is to be expected that the health measure involved in this study would have a positive effect on happiness. This is reasonable to assume, given that health does not only shape our daily experience but also our outlook on the future as well as our reflection on the past. It seems only logical that one's prospects of living a healthy life would influence life satisfaction. My analysis reveals that there is a statistically significant, positive relationship between healthy life expectancy and happiness, which means that the prospects of a healthier life increase life satisfaction. This relationship is to be expected. Though the coefficient of the "Healthy Life" variable is not particularly large compared to income and social support, is important to note that it does not change significantly as additional variables are introduced. In that sense, the relationship between healthy life expectancy and life satisfaction seems to be the most consistent throughout this regression analysis.

D. Freedom to Make Life Choices

The effect of the freedom to make life choices on life satisfaction is less predictable, given that the value for freedom of opportunity can vary by country based on each country's culture and values (Esping-Andersen 1990). However, Helliwell and colleagues (2018) found that there is a positive relationship between the freedom to make life choices, although the effect of this variable may be more significant for temporary emotion well-being rather than long-term SWB. Based on my regression analysis, life satisfaction is positively related to the freedom to make life choices. This finding seems to provide evidence for Sen's Capability Approach as it confirms that life evaluations are in part based on one's capabilities and ability to make decisions freely. In interpreting the results for the "Freedom of Choice" variable, it is worth noting that the coefficient seems to increase as more variables are introduced. Given that the variables that follow after the "Freedom of Choice" variable, it seems as though there is an underlying correlation between the freedom to make life choices, corruption, and confidence in the government. Although it might be apparent that freedom of choice is dependent on the political climate of a country, this is certainly a relationship that would be worth exploring further in future research.

E. Perceptions of Corruption

My regression analysis reveals that perceptions of corruption lead to a decrease of 1.307 units on the Cantril Ladder once all variables are included in the model. These results reveal that wide-spread corruption leads people to feel less satisfied with their lives. Like the coefficient of the "Freedom of Choices" variable, the coefficient of "Corruption" variable seems to increase in magnitude than as other political variables are added to the model, suggesting that there is a correlation between corruption and the variables that follow in the analysis, namely confidence in government and income inequality.

Despite the popular belief that corruption is more prevalent in low-income countries due to the frequent lack of structured institutions, public elections and democratic processes (Banerjee & Duflo 2012, World Bank 2018), the 2018 World Happiness Report has revealed surprisingly high levels of corruption in a number of high-income countries. To return to the example of the U.S. and Japan – countries that do not seem to exhibit correlations between income growth and life satisfaction – the 2018 World Happiness Report revealed that U.S. and Japan have exceptionally high levels of perceived corruption along with high levels of income (Helliwell et al. 2018). High levels of corruption in certain high-income countries could certainly explain why highly economically developed countries like the U.S. and Japan are not as happy as many of their high-income counterparts in Europe (Helliwell et al. 2018).

E. Confidence in National Government

The results for the "Confidence in National Government" variable seem surprising and highly unusual given that one would expect confidence in the national government to have a positive effect on life satisfaction. However, my regression reveals that the relationship between the citizen's confidence level in the national government has a negative effect on happiness. These results could partly be influenced by other correlating variables in the model. What exactly this correlation is and how exactly it impacts life satisfaction, though outside of the scope of this paper, would be an interesting topic of future research. The more important conclusion to draw from these results, that this variable has a statistically significant effect if life satisfaction, emphasizing the need for measurements of national well-being that include a greater variety of factors than income alone.

G. Income Inequality

Although income inequality is generally assumed to reduce well-being (Graham 2005; Kenny 2005, Helliwell et al. 2018), Graham and Pettinato (2006) found that "some societies – such as the United States – are willing to tolerate higher levels of inequality in exchange for real or perceived benefits." This suggests that, despite the studies that have previously been conducted, there is still some ambiguity in terms of what the relationship between income inequality, happiness and income may be. Adding income inequality to my model revealed that there is a statistically significant negative relationship between happiness and income inequality with a coefficient of -0.529. This finding can be interpreted in the following way: the more unevenly distributed GDP per capita is across the population, the less likely it is that individuals report high levels of happiness, though it should be worth noting that this relationship may be affected by other variables in the analysis that indirectly impact income inequality, such as income itself. According to economist Piketty, income that is not shared equally across a population has a negative effect on happiness (Oishi & Kesebir 2015). Greater income equality, on average, thus leads to greater happiness in a country. These findings seem to be in line with the statistical findings of other scholars who have observed that "the more income is concentrated in the hands of a few, the more likely individuals are to report lower levels of life satisfaction" (De Neve & Powdthavee 2016). This indicator of happiness seems to explain a pattern in the income-happiness relationship in the United States: based on data collected in a U.S. General Social Survey between 1972 and 2008, Americans were, on average, happier in years during which income inequality was lower than in times when income inequality was greater (Oishi & Kesebir 2015).

Comparing the Gini coefficients of various high-income countries illustrates that income distribution is a significant factor in shaping life satisfaction. Returning to the example of the United States – a very high-income country that has not seen increases in life satisfaction in decades despite economic growth – highlights that income inequality could indeed lead to the stagnation of life satisfaction. Compared to other countries in the same income range, the U.S. has a significantly higher level of income inequality with a Gini coefficient of 0.415 than a most other countries in the same income category, such as Sweden which has a Gini coefficient of 0.292 (World Bank 2016). Interestingly, income inequality levels in the U.S. seem to be on par, and possibly even higher, than inequality levels in South Africa, a developing country that is frequently scolded in Western newspapers for the unequal distribution of income (Beaubien 2018, Greenwood 2018, Bradlow 2018). The unequal distribution of income could certainly explain why people in the United States have not become more satisfied with their lives despite economic growth, as increasing inequality might offset the positive effects of increases in GDP perc capita.

These findings tie into Easterlin's theory of absolute versus. relative incomes as it suggests that people do indeed base their own life evaluations off of their economic position in society compared to others. Sociologist and political scientist Vicente Navarro has commented on this phenomenon and claims: "it is more difficult to be a poor person in the United States than a middle-class person in Ghana. For the poor person in the United States, the worst component of his or her existence is not primarily the absence of material resources, but rather his or her social distance from the rest of society" (Navarro 2004). This argument is rooted in the rise of income inequality which has increased drastically since 1965 in the U.S and has effectively widened the gap between the bottom 99 percent and the top one percent which are receiving CEO pay and are experiencing income growth of over 200 times that of a typical worker (Reinicke 2018). Given that the U.S. is the 39th most unequal country in the world, not far above some of the poorest countries in the world, such as Cameroon and Guyana (CIA 2018),

it may not be surprising that the U.S. is not as happy as other economically developed high-income countries, like Finland, Norway and its neighbor Canada which are among the most equal countries in the world (CIA 2018, Helliwell et al, 2018).

F. Considerations for Future Research

Although this analysis has revealed that there is a statistically significant relationship between a variety of economic, political and social factors and happiness, it is important to note it is almost impossible to make a clear distinction between economic, political and social variables. Due to their interconnected, reinforcing and collaborative nature, future research could benefit from a more extensive analysis of the underlying correlations among the independent variables. While some variable seems purely social, cultural or political in nature, such as the "Social Support" variable, it is vital to note that these variables may still be deeply rooted in the economy. Though it is outside of the scope of this research paper, it would be worth further examining the implicit ties between income and a number of the alternative independent variables used throughout this analysis.

Furthermore, it is worth noting certain social and political factors, such as healthy life expectancy, may be highly dependent on national income and could thus falsely minimize the magnitude of the effects of income on life satisfaction. For example, it is widely established that the life expectancy in high-income countries, such as Norway which reports an average life expectancy of 82 years, is significantly higher than life expectancy in low-income countries such as Sierra Leone, which has a life expectancy of 59 years (CIA 2018). In order to compensate for the implicit effects of income on these indicators, further research would be required to clearly differentiate between social and political effects on life satisfaction and indirect economic impacts.

VII. Conclusion

This research paper has provided an overview of the relationship between income and life satisfaction across countries. My statistical analysis reiterates that higher income countries tend to report greater life satisfaction than lower income countries at given points in time, which confirms the findings of economists like Kahneman, Graham and Sachs (Kahneman, Deaton 2010, Graham, Pettinato 2001, Helliwell et al. 2018). Additionally, my analysis of alternate indicators of happiness, aside from income, has revealed that income growth alone may not be enough to improve life satisfaction across particularly LEDCs in the long-run. Factors like income inequality and corruption, which proved to have significant negative effects on life satisfaction, seem to explain why countries with high growth may not see improvements in happiness. Similarly, my research has revealed that social and political factors, like social support and freedom of choice, have positive effects on life satisfaction, which implies that developing countries may need to develop more holistic approaches to development if they wish to improve the quality of life of their citizens. Overall, my research seems to confirm what has long been on the political agenda of the Bhutanese government, which is that economic measures, like GDP per capita or GNP, may not capture the true development level of and quality of life in a country. As we have seen by the example of the U.S., high income alone does not necessarily mean that citizens are satisfied with their lives if income growth is not accompanied by the development of other important social, political and cultural factors that influence quality of life. Based on these findings, it is imperative that development economists extend their research beyond purely economic factors and focus their attention on creating more inclusive, and hence more accurate, measures of development and national well-being.

VIII. References

Ali, Arif, Sk Deuri, Amoolr Singh, Sp Deuri, Masroor Jahan, and An Verma. "Perceived Social Support and Life Satisfaction in Persons with Somatization Disorder." *Industrial Psychiatry Journal*19, no. 2 (2010): 115. doi:10.4103/0972-6748.90342.

Alkire, Sabina. "Using the Capability Approach: Prospective and Evaluative Analyses." *The Capability Approach*: 26-50. doi:10.1017/cbo9780511492587.002.

Banerjee, Abhijit V., and Esther Duflo. *Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty*. New York: PublicAffairs, 2012.

Beaubien, Jason. "The Country With The World's Worst Inequality Is ..." NPR. April 02, 2018. Accessed May 14, 2019. https://www.npr.org/sections/goatsandsoda/2018/04/02/598864666/the-country-with-the-worlds-worst-inequality-is.

Blanchflower, David, and Andrew Oswald. "Well-Being Over Time in Britain and the USA." 2000. doi:10.3386/w7487.

Bradlow, Danny, and Danny Bradlow. "South Africa Is on Course to Grow Its Economy Again-but Also Reinforce Inequality." Quartz Africa. November 12, 2018. Accessed May 14, 2019. https://qz.com/africa/1460485/south-africa-economy-to-grow-but-reinforces-inequality/.

Cantril, Hadley. The Pattern of Human Concerns, New Brunswick, NJ: Rutgers University Press, 1965.

Center for Disease Control (CDC). “State-Specific Healthy Life Expectancy at Age 65 Years - United States, 2007–2009.” (2013, July 19). Retrieved from https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6228a1.htm

Confino, Jo. "Bhutan's Prime Minister: Business Must Take Happiness Seriously." The Guardian. April 22, 2014. Accessed May 14, 2019. https://www.theguardian.com/sustainable-business/bhutan-prime-minister-business-gross-national-happiness.

Diener, Ed, Ed Sandvik, Larry Seidlitz, and Marissa Diener. 1993. "The Relationship between Income and Subjective Well-Being: Relative or Absolute?" Social Indicators Research 28:195-2

Diener, Ed. "Subjective Well-being: The Science of Happiness and a Proposal for a National Index." *American Psychologist*55, no. 1 (2000): 34-43. doi:10.1037//0003-066x.55.1.34.

Di Tella, Rafael, and Robert MacCulloch. "Happiness Adaptation to Income beyond 'Basic Needs'." Chap. 8 in International Differences in Well-Being, edited by Ed Diener, John Helliwell, and Daniel Kahneman, 217–247. New York: Oxford University Press, 2010.

Diener, J. Helliwell and D. Kahneman (eds), International Differences in Well-being, New York: Oxford University Press.

Easterlin, Richard A. "Diminishing Marginal Utility of Income? Caveat Emptor." *Social Indicators Research* 70, no. 3 (2005): 243-55.

Easterlin, Richard A., Laura Angelescu McVey, Malgorzata Switek, Onnicha Sawangfa, and Jacqueline Smith Zweig. "The Happiness—income Paradox Revisited." *Proceedings of the National Academy of Sciences of the United States of America*107, no. 52 (2010): 22463-2468.

Esping-Andersen, Gøsta. *The Three Worlds of Welfare Capitalism*. Cambridge: Polity Press, 2009.

Frantz, Roger. "Book Review." *The Journal of Socio-Economics*38, no. 4 (2009): 706-07. doi:10.1016/j.socec.2008.11.008.

Frey, Bruno S. and Alois Stutzer: 2002b, 'What can economists learn from happiness research?', Journal of Economic Literature XL (2, June), pp. 402–435.

Graham, Carol, and Stefano Pettinato. "Happiness, Markets, and Democracy: Latin America in Comparative Perspective." Journal of Happiness Studies 2(3):237 (2002)

Graham, Carol. "Insights on Development from the Economics of Happiness." *The World Bank Research Observer* 20, no. 2 (2005): 201-31. http://www.jstor.org/stable/41261416.

Greenwood, Xavier. "South Africa Is the Most Unequal Country in the World, Says World Bank." The Independent. April 04, 2018. Accessed May 14, 2019. https://www.independent.co.uk/news/world/africa/south-africa-unequal-country-poverty-legacy-apartheid-world-bank-a8288986.html.

Hagerty, Michael, and Ruut Veenhoven. "Wealth and happiness revisited: Growing national income does go with greater happiness." (2003). Social Indicators Research, 64, 1–27.

Helliwell, John, Richard Layard, and Jeffrey Sachs. "World Happiness Report 2018." 2018 | The. Accessed May 14, 2019. http://worldhappiness.report/ed/2018/.

Johnson, Cynthia. "Tshering Tobgay's Gross National Happiness: Can Happiness Be Engineered?" Forbes. April 07, 2017. Accessed May 14, 2019. https://www.forbes.com/sites/forbesagencycouncil/2017/04/07/tshering-tobgays-gross-national-happiness-can-happiness-be-engineered/#3b52b76a69db.

Kahneman, Daniel, Alan B. Krueger, David Schkade, Norbert Schwarz, and Arthur A. Stone. "Would You Be Happier If You Were Richer? A Focusing Illusion." *Science* 312, no. 5782 (2006): 1908-910. http://www.jstor.org/stable/3846429.

Kahneman, Daniel, and Angus Deaton. "High Income Improves Evaluation of Life but Not Emotional Well-being." *Proceedings of the National Academy of Sciences*107, no. 38 (2010): 16489-6493. doi:10.1073/pnas.1011492107.

Kesebir, Selin. "When Economic Growth Doesn't Make Countries Happier." Harvard Business Review. April 25, 2016. Accessed February 01, 2019. https://hbr.org/2016/04/when-economic-growth-doesnt-make-countries-happier.

Keyes, Corey Lee M. "Social Well-Being." *Social Psychology Quarterly* 61, no. 2 (1998): 121-40.

Mafini, C. "Economic Factors and Life Satisfaction: Trends from South African Communities," Acta Universitatis Danubius. OEconomica, Danubius University of Galati, issue 13(3), pages 155-168, 2017.

McCarthy, Julie. "The Birthplace Of 'Gross National Happiness' Is Growing A Bit Cynical." NPR. February 12, 2018. Accessed May 14, 2019. https://www.npr.org/sections/parallels/2018/02/12/584481047/the-Birthplace-of-gross-national-happiness-is-growing-a-bit-cynical.

Muffels, Ruud, and Bruce Headey. "Capabilities and Choices: Do They Make SenSe for Understanding Objective and Subjective Well-Being?: An Empirical Test of Sens Capability Framework on German and British Panel Data." *SSRN Electronic Journal*, 2011. doi:10.2139/ssrn.1988173.

Nattavudh, Neve, Jan-Emmanuel De, and Nick Powdthavee. "Income Inequality Makes Whole Countries Less Happy." Harvard Business Review. October 25, 2017. Accessed May 14, 2019. https://hbr.org/2016/01/income-inequality-makes-whole-countries-less-happy.

Navarro, Vicente. "Inequalities Are Unhealthy." Monthly Review. June 30, 2014. Accessed May 14, 2019. https://monthlyreview.org/2004/06/01/inequalities-are-unhealthy/. https://monthlyreview.org/2004/06/01/inequalities-are-unhealthy/

Ng, Weiting, Ed Diener, Raksha Aurora, and James Harter. "Affluence, Feelings of Stress, and Well-being." *Social Indicators Research*94, no. 2 (2008): 257-71. doi:10.1007/s11205-008-9422-5.

OECD. "OECD Guidelines on Measuring Subjective Well-being." 2013. OECD Publishing, Paris, https://doi.org/10.1787/9789264191655-en.

Oishi, Shigehiro, and Selin Kesebir. "Income Inequality Explains Why Economic Growth Does Not Always Translate to an Increase in Happiness." *Psychological Science*26, no. 10 (2015): 1630-638. doi:10.1177/0956797615596713.

Oswald, Andrew J. "Happiness and Economic Performance." *The Economic Journal* 107, no. 445 (1997): 1815-831.

Ovaska, Tomi, and Ryo Takashima. "Economic Policy and the Level of Self-perceived Well-being: An International Comparison." *The Journal of Socio-Economics*35, no. 2 (2006): 308-25. doi: 10.1016/j.socec.2005.11.054.

Reinicke, Carmen. In the US, the rich are getting richer and the poor are getting poorer, study concludes. (2018, July 19). Retrieved from https://www.cnbc.com/2018/07/19/income-inequality-continues-to-grow-in-the-united-states.html

Sacks, D. W., B. Stevenson, and J. Wolfers. *"Subjective Well-Being, Income, Economic Development, and Growth." In …and the Pursuit of Happiness: Well-Being and the Role of Government* (PDF). London: Institute of Economic Affairs. p. 59-97, 2012.

Seghieri, Chiara, Gustavo Desantis, and Maria Letizia Tanturri. "The Richer, the Happier? An Empirical Investigation in Selected European Countries." *Social Indicators Research* 79, no. 3 (2006): 455-76.

Schyns, Peggy. "Crossnational Differences in Happiness: Economic and Cultural Factors Explored." *Social Indicators Research* 43, no. 1/2 (1998): 3-26.

Betsey Stevenson & Justin Wolfers. "Economic Growth and Subjective Well-Being: Reassessing the Easterlin Paradox," Brookings Papers on Economic Activity, Economic Studies Program, The Brookings Institution, vol. 39(1 (Spring), pages 1-102, 2008.

The World Factbook: BHUTAN. (2018, November 06). Retrieved from https://www.cia.gov/library/publications/the-world-factbook/geos/bt.html

UN. "Conference, Meeting, Event, Observance, Celebration, International Day, World Day, Session." United Nations. Accessed May 14, 2019. https://www.un.org/en/events/pastevents/millennium_summit.shtml.

Veenhoven, Ruut. "Is Happiness Relative?" Social Indicators Research 24:1-34, 1991.

Veenhoven, Ruut: 1993, Happiness in Nations, Subjective Appreciation of Life in 56 Nations 1946–1992 (Erasmus University, Rotterdam).

World Bank. "Combating Corruption." World Bank. October 4, 2018. Accessed May 14, 2019. http://www.worldbank.org/en/topic/governance/brief/anti-corruption.

IX. Appendix

Figure 1: **The relationship between social support and life satisfaction based on income group averages.**