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Everybody Wants to Belong: Comparing the Relative Impact of Social Capital on Happiness at an International Level

Elana Lambert
elana.b.lambert@lawrence.edu

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By Elana Lambert

Advisor: Jonathan Lhost

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Abstract: Subjective well-being has become increasingly more important as a guide for policy and welfare. This paper uses data from the World Bank Indicators and the World Values Survey to look at the intricate relationship between subjective well-being data, social capital, and the relative nature of human happiness. Subjective well-being data has recently become widely accepted in economics research and analyzed using econometric methods. In this study, I look at specific aspects of social capital across countries to easily compare individuals within countries with a standardized scale. I look at economic determinants and social capital determinants and their impact happiness. I conclude that when social capital is accounted for, the impact of the social capital determinants on happiness persist to be significant even when the objective and subjective economic determinants of happiness are included as well.

1. Introduction

There are two sides to happiness: the internal and the external. Economists have mostly studied external measures of happiness and well-being sourced from more objective data. For example, income and, healthy life expectancy can be represented by objective data. Frey and Stutzer (2002) note that these variables are objective because their definition comes from an external source (6). However, economists have recently been turning towards more of the internal measures of happiness that are subjective towards an individual's feelings. Frey and Stutzer explore how individuals feel about their own life in comparison to other people, their past experiences, or their future expectations (7). There are actions that people take to maximize the amount of happiness in their life. For example, people might work for money so that they can travel, they might take a prestigious job for a higher status among their peers, or they might volunteer because it makes them feel better about themselves. People try to be strategic with time and money to maximize their happiness.

Economists are concerned with maximizing human welfare, and are adapting some of the theories that psychologists have been using to further examine the dynamic relationship between preferences and actions. A new-found interest in subjective well-being data in economics and the inclusion of happiness in the definition of human welfare has motivated research in happiness economics. Frey and Stutzer explain that subjective well-being data is collected through surveys and allow an individual to quantify their life in ordinal or cardinal terms (26).

This paper explores levels of happiness at the individual level using individual survey responses from the World Values Survey and national indicators from the World Bank Indicators. Through the individual level analysis, I look at variables of social capital on the effects of happiness and life satisfaction. I find consistent results to those I discuss in the

literature review. Various types of social capital do impact happiness and life satisfaction significantly when economic determinants are included as well.

2. Literature Review

In this literature review, I will cover a brief history of happiness economics. The "pursuit of happiness" has been recognized in the economic and political literature for a long time, but the methods to discuss happiness in the field have changed drastically. I will show how the field of happiness economics has emerged as an important way to evaluate the combined subjective and objective qualities of people. There was a pushback in economics against the use of subjective well-being data in theory and practice, but the data is becoming more well-liked and widely-used. Since the Gross Domestic Product (GDP) was created, there have been many more indices that aim to measure more holistic aspects of life. Indices can be biased as well, but economists have use econometric tactics to work with subjective well-being data and measure happiness in other ways. The most prominent theme in this literature review is the transition to economists relying on subjective well-being data. Another theme in this section is the importance of an individual's surroundings to the way they quantify their happiness. There are many objective and subjective determinants that can influence the subjective well-being of individuals. This adds a level of complexity to research on happiness through econometric analysis.

A. History

Jeremy Bentham (1748-1832), philosopher and social reformer, founded Utilitarianism. He suggested that the greatest happiness for the greatest number is the best way to measure right and wrong. Bentham's goal was to show that "utility is meant that property in any object, whereby it tends to produce benefit, advantage, pleasure, good, or happiness … [and] to prevent the happening of mischief, pain, evil, or unhappiness to the party whose interest is considered"

(Bentham, 1789, Ch. 1.13). The "party" that Bentham is discussing can either be an individual or a community. Therefore, according to his theory, when an individual maximizes happiness for themselves, the group's happiness is also maximized. When people make individual decisions to maximize their own happiness, consequently, as a collective of actions, societies try to produce the greatest amount of satisfaction for their citizens with the resources that they have available to them. This definition of happiness is simple and qualitative, but it is one of the first attempts to define happiness in economic terms.

John Stuart Mill (1806-1873) added nuances to Bentham's ideas of Utilitarianism. Mill challenged the notion that all actions can be called "good" or "bad." He (1843) pointed out that "we can never either understand in theory or command in practice the condition of a society in any one respect, without taking into consideration its condition in all other respects" (482). Certain economic activities and decisions have more than an impact of immediate gratification. They can also have longer term effects that might affect more life factors (e.g. social or psychological) that are outside the realm of economics. Mill's ideas expand on Bentham's because Mill specified differences between activities that could bring more pleasure than others through quantitative analysis instead of only focusing on qualitative aspects like Bentham.

Bentham founded utilitarianism and Mill added classical economic theories to utilitarianism by realizing that everyone wants to maximize benefits for themselves. Weimann, Knabe, and Schöb (2015) discuss how these are both important methods to analyze human welfare, but point out that in the transition between the 19th and the 20th centuries, classical economists emerged as important thinkers to make the analysis less arbitrary (156). For example, Weimann et al. introduce Francis Ysidro Edgeworth (1845-1926) as an early proponent of utility equations and the indifference curves. Edgeworth realized that people act in their own

self-interest while recognizing what people want "consists of the pursuit of pleasure and the avoidance of pain, and thus, in the end, consists of the pursuit of happiness" (158). People make decisions to get what they want to maximize their future and current happiness. To measure these decisions, economists infer preferences from behavior.

Weimann et al. continue with a discussion of another economist, Paul Samuelson (1915-2009), whom laid the groundwork for the revealed preference theory, which is an important aspect of classical economics theory (163). Revealed Preference Theory says that the preferences of consumers can be revealed by their purchasing patterns. This is an instrument for measuring preferences from behavior. For example, indifference curves are a tool for using Revealed Preference Theory in practice. Indifference curves assume that the goal of the consumer is to maximize utility based on the tangency point between the indifference curve and their budget constraint. The tangency point represents the highest utility of goods based on the consumer's financial constraints. One of the assumptions associated with indifference curves is that as consumers obtain more goods, they will have more utility. However, this growth in utility is at a declining rate; therefore, there is a diminishing marginal utility from said goods. For example, one apple is good, but the thirtieth apple is not as useful for one individual. The revealed preference theory is the basis of classical economics, where preferences are inferred from behavior.

In conclusion, by the early 20th century, utility had come to define the benefits from the optimal choice a consumer makes based on their indifference curve and budget constraint. Classical economics focuses on external and objective measures to calculate human welfare.

B. Happiness Economics

Happiness economics, on the other hand, examines how people think their lives should be or how they feel about their current situation. Bruno Frey and Alois Stutzer (2002) explain how happiness economics allows economists to explore the subjective factors that impact happiness instead of only the objective factors (4). The basis of happiness economics is the reevaluation of the definition of utility created by classical economists. Life is a constant battle between the objective reality and the subjective feelings of individuals; therefore, it is important to incorporate both parts of this equation when evaluating human welfare. Happiness economics is a way to combine the "external manifestations" of society like nutrition, income, or life expectancy with "internal states of mind" (Easterlin, 1974, 117).

Frey and Stutzer research happiness and note challenges to the classical definition of utility. First, some actions like free labor or donating money cannot be explained by only self-concerned preferences (21). Frey and Stutzer claim that it is "no longer possible to establish a direct relationship between observed behavior and individual preferences, as postulated by traditional revealed preference theory" (21). Nonpecuniary (not existing of money) factors are not explicitly represented in indifference curves, but they are important to account for when evaluating utility. Second, people are always comparing themselves to others, and those comparisons can impact their purchasing patterns. This constant comparison may impact their decisions and cause them to behave in ways that do not represent their true preferences. Third is the interdisciplinary use of psychology to analyze behavior in economics. Happiness research in psychology adds to the economics research because it exposes some preferences that might not be apparent in an individual's behavior. The combination of psychology and economics allows utility to take on a larger definition than the one commonly used by classical economists. These

three challenges to the definition of utility show how an economic decision can be influenced by nonpecuniary factors, which can be more difficult to measure objectively. Weimann et al. discuss a reevaluation to the classical definition of utility, which led to a movement to incorporate happiness and well-being as a key metric for measuring human welfare (72). Happiness economics focuses on subjective well-being, life satisfaction, and quality of life as dependent variables.[1] Frey and Stutzer do point out that sometimes each of these words will trigger different responses. For example, happiness seems to trigger a response for an answer for the immediate moment, more subjective answers whereas life satisfaction motivates a response for life in general, more objective answers (25-28).

Frey and Stutzer note that collecting subjective well-being data through surveys and polls is a large part of measuring subjective variables in the study of happiness and an efficient way to accumulate this type of data (26). An individual is the best judge of their welfare, so the individual is the best source of subjective well-being data.

When analyzing data from an individual or a group of individuals, it is important to remember that everyone is different, what makes one happy might not make their neighbor happy. Through the lens of development, Amartya Sen (1999) studied how increased freedoms (including GDP, but also other social and institutions) can impact happiness. His work relates to happiness economics, as he looked at how some circumstances in an individual's life impact how they evaluate their happiness. He showed that everyone has different circumstances and perspectives that impact their subjective analysis of their life. He specifically called attention to the ideas of "capability" (what an individual can do) and their "faculty" (what they think they can do) (75). Individual perspectives are also limited by an individual's place in society. Sen

[1] Many have posited this idea as seen in Frey and Stutzer, *Happiness Quantified* by Praag and Bernard, and in "The Social Context of Well-Being" by Helliwell and Putnam.

discusses how social institutions can be limiting to people. For example, political freedom becomes more of an "economic need" when voices are silenced (153). Free speech rights are essential for people to achieve their economic needs. This means that each individual has a different perspective on the world around them and how they can impact that world, but also about how the world can impact their welfare.

There are individual preferences and perspectives, cultural determinations, and historical place in time that impact an individual's view of their relative place in society. People compare themselves relative to others around them, which may be impacted by cultural, geographic, or religious differences. For example, in Japan, being rich is not as highly valued as it is in the United States because cultural and religious norms affect the way they present wealth compared to the United States where there great emphasis placed on accumulated material wealth (Brasor and Tsubuku, 2015). Another complication with the analysis of subjective data is that it is also hard to compare changes in happiness over time because different eras have different levels of economic prosperity. For example, Stanley Lebergott (1993) looked at consumption trends and noticed that before the 1920's, there was no expectation of having a washing machine, but after the 1920's, it was expected that every household have a washing machine (113).[2] The differences in what an individual is surrounded by influences the way an individual looks at their happiness and their relationship with culture, geography, religion, historical place in time, and many other realms of life. Therefore, it is important to assess human welfare through subjective happiness evaluations to be able to capture and evaluate some of these differences.

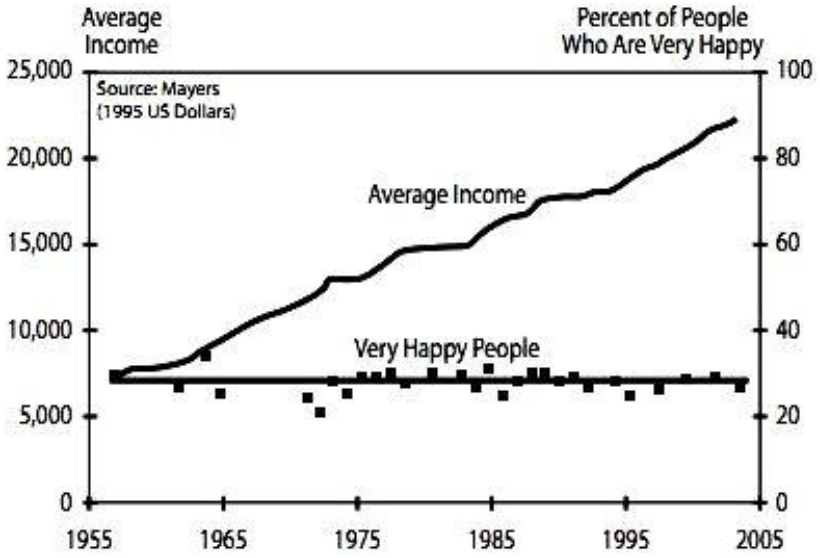
[2] The number of households that had washing machines changed from no data available (1910) to 75% in 1989 (Lebergott, 113).

C. Determinants of Happiness Literature Review

Happiness economics measures human welfare where the inputs are opinions on various aspects of life through subjective well-being data. Economic growth in the late 1900's also brought other concerns to light like globalization, industrialization, and natural resource depletion, which led to a reevaluation of profit maximization and happiness (Sarracino and Bartolini, 2014). This led more economists to look into the relationship between the effects of economic determinants (such as inflation and employment) on happiness. Economists found a third variable in the relationship between income and happiness: social connections as seen through friends, co-workers, and community building. Specifically, those examples are all parts of social capital. The literature has pointed to these four variables: income, employment, inflation, and social capital has having significant impacts on happiness. Happiness economics is the study of how these variables impact human well-being and happiness.

In the 1970's, Richard Easterlin noticed that even though successive generations are usually more affluent than their parents or grandparents, people still did not seem to be happier. Easterlin compared happiness and income across countries and within countries through bivariate regressions. He is most well-known for the Easterlin Paradox, which holds that people with higher incomes are happier, but if everyone's income rose, no one would be happier (1995). This paradox is shown below, where it is obvious that income is increasing, but happiness is not.

Figure 1: Easterlin Paradox



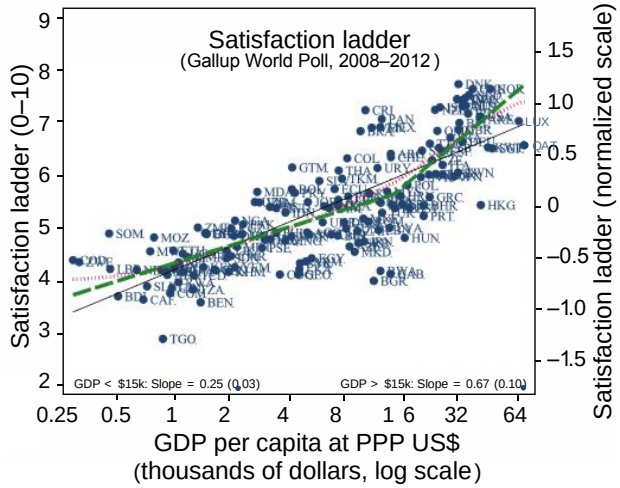
Source: World Watch Institute

This research showed that happiness is not necessarily determined by income. Easterlin (2004) realized the power of money in society, but recognized that people are manipulated by this "'money illusion', the belief that more money will make us happier … [so] we allocate an excessive amount of time to monetary goals, and shortchange nonpecuniary ends such as family life and health" (32). Therefore, Easterlin (1974), concluded that there needs to be more "research on the nature and causes of human welfare" (119). This conclusion went against the founding theories of classical economics because it had been assumed that income and money increases happiness.

Since Easterlin's publications on income and happiness (Easterlin 1974, 1995, 2000), there has been an increasing amount of research on the impact of economic determinants (income, employment, and inflation) on happiness. Some psychologists, specifically, Diener, Diener, and Diener (1995) support a different theory than Easterlin because they show a positive

correlation between rising income and happiness. Economists, Stevenson and Wolfers (2013), also find a strong positive correlation between income and happiness through ordinary least squares regressions when comparing "rich" (income greater than $15,000) and "poor" countries across thirty one years (1981-2012). This relationship and the results from their 2013 study are below.

Figure 2: Stevenson and Wolfers (Life Satisfaction and Income around the World)



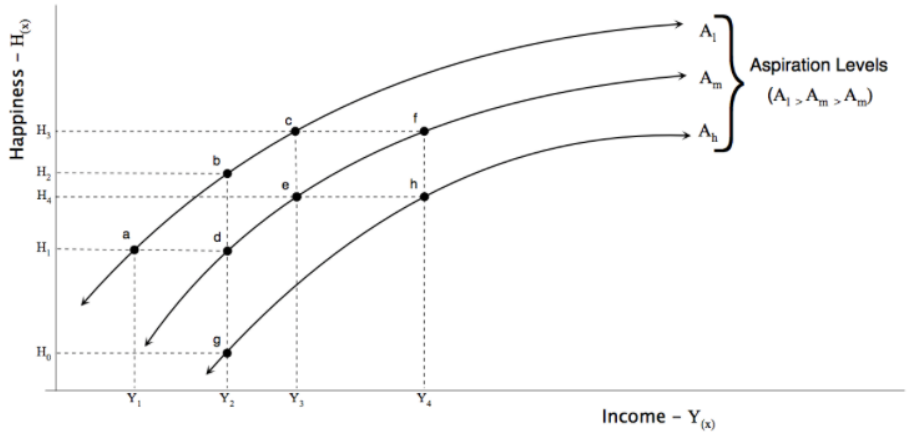
Source: Stevenson and Wolfers (Figure 1, page 600)

This positive correlation of happiness and income seems to stand in contrast to the negative relationship between a rising income and happiness that Easterlin concluded in 1974. This finding can be explained through the differences in expectations of people based on their place relative to those around them.

Frey and Stutzer (2002) hypothesize that the difference in expectations comes from changing aspiration levels and comparisons of relative income (91). As an explanation for the contradicting results between Easterlin and Stevenson and Robinson, Frey and Stutzer suggest looking into aspiration theory to explain some of the relationship between happiness and income.

Aspiration level theory suggests that an "increase in income is accompanied by a downward shift in the aspiration curve" (80).

Figure 3: Aspiration Level Theory



Source: Happiness & Economics by Bruno Frey and Alois Stutzer

The curve increases at a decreasing rate, showing how happiness increases as a decreasing rate, but it never stops increasing. For example, every time an individual reaches a new income level, they want to get to the next one even if all their needs are satisfied. Additionally, there is significant evidence to show that people are not happier when everyone experiences an income shift.[3] Due to this debate about whether income increases or decreases happiness and the incorporation of the aspiration level theory, economists have also looked into other pecuniary factors.

The second determinant of happiness shown by the literature is employment. Employment and work have a positive impact on happiness (Di tella et al 2001, Krause 2014, Clark and Oswald 1994, Winkelmann and Winkelmann 1998). As work makes people happier,

[3] This concept is discussed in Frey and Stutzer, 86 & "Will the Rising Incomes of All Increase the Happiness of all?" Easterlin, 1995 & "Is Happiness Relative?" Veenhoven, 1989.

unemployment also makes people less happy (Clark and Oswald 1994, Winkelmann and Winkelmann 1998). Di tella et al. find through a panel analysis that unemployment and inflation impact subjective well-being, which is especially obvious through the negative coefficient on unemployment. Similar to the effects of income on happiness, the effects of unemployment on people is also relative. For example, if an individual is surrounded by many people who have very high paying jobs, then they might feel not sufficient in their life and job even though they are happy and have food, water, and shelter. This shows another application of the aspiration theory.

The third economic determinant that has been examined in relationship to happiness is inflation (Frey and Stutzer, 111). Di tella et al. also found negative coefficients on inflation in their regressions. Shiller (1997) concluded after data collection and analysis from interviews that people worry about inflation because of the fear of what it can do to their lives in the future.

There is a significant amount of research showing that income, employment, and inflation do affect happiness, but there is evidence that it is not only those factors that explicitly influence happiness. As Frey and Stutzer point out, the social indicators that also decrease with the loss of those economic determinants. Those social externalities can be categorized in a term: social capital. Elinor Ostrom and T.K. Ahn (2003) define social capital as "an attribute of individuals and of their relationships that enhances their ability to solve collective action problems" (4). This variable can be instrumental in happiness economics. For example, when an individual loses a job, it is more than income that they lose; they lose self-esteem and social connections from a community. Another example could be the positive correlation between income and happiness could come from other factors like more democratically developed institutions, public policy, or organizations (Frey and Stutzer, 75). People have relationships with others in many areas of life

and those relationships impact their happiness. Easterlin noticed that there must be something else impacting happiness because he saw that income did not have a significant impact on people's happiness in his studies, but economists may have found that missing variable in social capital.

Overall, the critique of the rapid economic development in late 1900's led to more research in happiness economics. It started with common economic determinants, including income, employment, and inflation, but let to the importance of the social externalities defined by social capital. This shift was very important because of the focus on social factors and ones that may not be as easily quantifiable. In the next section, I will talk about social capital and the qualitative determinants of happiness.

D. Social Capital as a Determinant of Happiness

Social capital, based on the definition by Ostrom and Ahn (2003) is made up of three parts: trust, networks, and institutions. First, trust in social capital refers to the amount of reliance an individual can put into the people around them. At an individual level, trust is part of reciprocity. Reciprocity is an exchange of similar actions between two people, which is why it is more intimate than the trust relationship of an individual and society.[4] Reciprocity is an efficient equilibrium in relationships because two people trust each other and their interactions will establish an expectation for cooperation in the future. For example, when an individual gives a gift to someone, it is expected that they will return the favor in the future. In reciprocity between individuals, trust will build in a community and the result can be seen on the societal level through interactions in society.

[4] For a longer definition of reciprocity, see www.behavioraleconomics.com & Ostrom and Ahn (8-9).

Being trustworthy can be compared to game theory principles of the one-shot prisoner's dilemma game. In Poulsen and Svendsen's (2003) discussion of social capital and trust, they mention that one half of the first moves in a double-blind experiment choose to trust their partners, and three quarters of the second move participants reciprocate that trust (2). The trust is natural in an individual's choice even though making a different choice could have led to more profits for that individual. For example, in the prisoner's dilemma game, a person can decide to talk or not talk. Talking would reveal that you are innocent and give the other person more time in jail. Not talking would be the more altruistic option, but talking might save them if their opponent also talks. Poulsen and Svendsen found that after cooperation building activities, people will naturally pick the option to stay quiet. This is important for social capital because people can build up more trust in a society. Building a history of trust creates stability for the future in the expectations of those around you.

Helliwell and Putnam (2004) found that when there are more positive interactions and repeated actions between people, there are more people willing to trust others, which leads to higher dependence on the community and, therefore, higher life satisfaction (1441).[5] Sarracino and Bartolini (2013) also find evidence of this relationship through their econometric analysis of social trust and happiness in the long and short run. Through their ordinary least squares regressions with standardized coefficients, they conclude that an increase in social trust will lead to increases in happiness on average (249). Di Cagno and Sciubba (2008) support this claim through their studies because they find that positive interactions between individuals in communities increase when individuals are involved in more organizations or having good relationships with people around them. They test this through experiments where people build a

[5] Helliwell and Putnam found positive and statistically significant coefficients on trust in general and trust in neighbors across years 1980-2003 using ordinary least squares regressions.

network through trust and then solve a problem. These results are compared to a control group that does not build a network before problem solving. Di Cagno and Sciubba conclude that having that common past or history is helpful when creating networks. When these people do keep working together, reputation increases and reciprocity is enforced. When people interact more, it urges more cooperation because of repeated interaction, and this cooperation leads to stronger networks which can lead to higher life satisfaction.

In Helliwell and Putnam's analysis, the significance of social capital can be seen through their statistically significant coefficients on many variables (e.g. trust, marriage, importance of religion). When these variables increase, life satisfaction will increase as well. They conclude that "people who have close friends and confidants, friendly neighbors and supportive coworkers are less likely to experience sadness, loneliness, low self-esteem and problems with eating and sleeping" (1437). After their analysis, they are able to conclude that the "breadth and depth of one's social connections" correlate positively with a higher life satisfaction (1437).

The second part of Ostrom and Ahn's definition of social capital are social networks. Networks are created through repeated experiences of reciprocity and trust. They can be a social space for reciprocity for individual relationships but they can also expand to the cultural and community levels as well. Trustworthy people build networks together. Mota and Pereira (2008) compare happiness at a micro level (individuals) with subjective data and at a macro level (internationally) and find consistent results supporting that as social capital variables increase, life satisfaction also increases. For example, as their social capital variable (number of organizations an individual is involved in), increases by one, life satisfaction will also increase by 0.25 satisfaction points on average.

The importance of networks is supported by psychological research as well. For example, Anik, Aknin, Norton, and Dunn (2014) show how charitable behavior and engagement with others in a network leads to higher life satisfaction. They found that pro-social behavior increases happiness. It feels good to give time and energy to others. Giving to others helps create quality relationships, which leads to more trust and networks. Between the significance of participation in organizations and the importance of charitable behavior, this shows how building sustainable networks can lead to higher life satisfaction.

The third part of Anh and Ostrom's definition is the importance placed on institutions. Institutions are "prescriptions that specify what actions (or outcomes) are required, prohibited, or permitted, and the sanctions authorized if the rules are not followed" through formal and informal regulations (Anh and Ostrom, 2003, 9). Frey and Stutzer define an institution as a way "to fundamentally shape how a society is organized" because they structure society by influencing the way decisions are made (34). For example, schools, the government, and medical facilities are institutions. There are prescribed rules for acting in each of those places, which influences the way people act in general. Specifically, in the government, the constitution governs what people can and cannot do in their society. Frey and Stutzer find evidence of "direct democracy" and its positive impacts on happiness (149). Through their ordered probit regressions, the positive coefficient on "direct democracy" illustrates that institutions of direct democracy rights will shift people up a happiness level. This is important because it shows how when people feel like they are being governed in more democratic and inclusive manner, they are happier.

The literature on social capital shows that it is an important determinant of happiness. Aspects of trust, network creation, and institutions can positively impact happiness. However,

happiness is hard to measure, and economists have measured their version of happiness or human welfare in many ways.

E. Methodological Literature Review

One way to measure human welfare is through indices. In this section, I will address the problems with indices, subjective well-being data, and the methods that economists have used to mitigate and explore the issues with subjective well-being data.

First I will discuss indices based on pecuniary factors like the Gross Domestic Product (GDP), the Gini Coefficient, and the Human Development Index. Next, I will examine other indices that take into consideration nonpecuniary factors like environmental degradation or life satisfaction. Many of the variables in these indices are accumulated through individual surveys and measure subjective well-being. These indices are the Gross National Happiness Index, the Genuine Progress Indicator, the Happy Planet Index, and the World Happiness Index in the World Happiness Report. I will also look at the use of subjective well-being data and how it can be problematic for many reasons. Last, I will talk about some of the econometric strategies for analyzing the subjective well-being data.

The GDP is the "market value of all final goods and services produced within a country during a specific time period" (Charles Jones, 2011). GDP is calculated by examining a country's total expenditure, income or production. It was created as a way to compare economic activity before and after the Great Depression by Simon Kuznets and others at the United States Department of Commerce (19). While it has been in use for decades, the GDP is still used to compare economic welfare between countries at specific points of time.

The GDP has had an impact on society as an indicator for government decisions and policy recommendations. However, Weimann, Knabe, and Schöb note the impact that this

measure has had on modern society and economics. They comment on the possible negative ramifications of the GDP, saying that "economic prosperity is, of course, not an end in itself, but it serves as an indicator of people's happiness. At the same time, we are assuming tacitly that people are better off when they are better provided for and when they are able to consume more" (4). These authors see the GDP as a tool to examine some economic measures, but not as an accurate measure of human welfare.

Gini Corrado (1912) created the Gini Coefficient to look at human welfare by examining income inequality across countries. He was doing his research around World War Two right after the Great Depression. A lot of his work was aimed at challenging the work of classical economists and trying to show a different and more realistic view of human welfare through development and inequality.[6] The Gini Coefficient was very influential for human welfare comparisons; however, it is still based on income.

In 1990, Mahbub ul Haq of the United Nations (UN) created the Human Development Index (HDI) to measure development (Weimann et al., 5). The HDI expands upon the data already measured in the GDP and Gini coefficient. There are a set of indicators representing life expectancy, income per capita, and education to rank countries through an unweighted average into four categories of development (Human Development Reports). Haq's focus was different than that of most economists. It is important to look at development from not only an objective economic viewpoint, but also the ways that people live through their opportunities (education, resources, possibility for progress), freedom, and choice (creating an environment where people have the chance to grow to their full potential).[7] Looking at the nonpecuniary variables provided

[6] For more specific information on Corrado, visit this link https://www.umass.edu/wsp/resources/tales/gini.html.
[7] For a more specific breakdown of the HDI, look here http://hdr.undp.org/en/humandev/. Sen also discusses Huq and the HDI, 73.

a more complete index to measure well-being across and within countries. The HDI is noteworthy because it measures welfare using other variables besides income like the GDP and the Gini Coefficient.

The fourth king of Bhutan, Jigme Singye Wangchuck, created The Gross National Happiness (GNH) Index in the early 1970's. It consists of four pillars: good governance, sustainable socio-economic development, cultural preservation, and environmental conservation (Gross National Happiness). The government accumulates this data through survey collection to evaluate the impacts of policy on their citizens.[8] The goal of the GNH is to show the government, non-governmental organizations, and policy makers the ways that they can help increase happiness (Gross National Happiness). Bhutan is in the process of completely overriding the government's use of GDP and replaced it with the GNH. It is an attempt to view human welfare in a different light. Bhutan's government website claims that "[peace, security, and happiness] is the essence of the philosophy of Gross National Happiness. Our most important goal is the peace and happiness of our people and the security and sovereignty of the nation."[9] This is important because of the changing emphasis in economics from using solely objective data to more subjective data.

Other economists have found value in the GNH Index and have expanded on its methods. For example, in 2005, Med Jones proposed the Gross National Well-Being Index, which is based on answers to survey questions in seven different realms of life (e.g. social, mental, or living environment). Jones wanted "to bridge the development gap between the objective western, yet incomplete socioeconomic policy framework and holistic yet subjective eastern political

[8] For details of the data accumulation for the Gross National Happiness Index, look here http://www.grossnationalhappiness.com/gnh-policy-and-project-screening-tools/.

[9] This quote is from a governmental presentation: http://www.oecd.org/site/ssfc2011/48920513.pdf and the quote is by HM Jigme Khesar Namgyel Wangchuck, 5th King of Bhutan.

philosophy" that was the foundation for the Gross National Happiness Index in Bhutan (Gross National Happiness Index). He noticed the view human welfare in the West was narrow in comparison to that in the East, which focused on people's dynamic nature. He saw the significance of trying to capture more subjective qualities in an index.

The Happy Planet Index is another holistic measure of human welfare created by the New Economics Foundation (NEF) to encourage sustainable living by promoting "social, economic, and environmental justice" (Happy Planet Index). It measures life expectancy, life satisfaction, and ecological footprint (measured by the extent a country exploits its natural resources). This index and other indices to measure subjective well-being data were initiated by various individuals to learn more about their citizens and what can be done to improve well-being.

In 2011, the United Nations General Assembly passed a resolution for countries to measure the well-being of their citizens as a guide for their public policies. This led to the World Happiness Report, which measures happiness on an international level as a guide for policy through their new measure, the World Happiness Index. It was first published in 2012, and the most recent report was published in March 2017 (Helliwell, Layard, and Sachs, 3). Helliwell et al. note that the GDP only measures national quantity growth, when the UN wanted to focus on individual quality growth through subjective well-being data to achieve both human and sustainable development public policy influenced by the World Happiness Report results (3). The methodology used to create their Happiness Index comes from international objective and subjective data sources such as healthy life expectancy and social support.[10] The happiness index is based on aggregated scores for a country to answer the Cantril Life Ladder. The Cantril Life Ladder asks participants to:

[10] To read more about their data sources, look at the statistical appendix from Chapter Two of the WHR, which can be found here: http://worldhappiness.report/wp-content/uploads/sites/2/2017/03/StatisticalAppendixWHR2017.pdf.

"Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at top. The top of the ladder represents the best possible life for you and the bottom represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?"

The Happiness Index is based on six key variables: GDP per capita, healthy years of life expectancy, social support in times of need, trust (measured by a perceived absence of corruption in government and business), perceived freedom to make life decisions, and generosity (measured by recent donations) (World Happiness Report, Chapter 2, 18). The authors also account for a hypothetical worst off country and each country's prediction error. The prediction error is the difference between the happiness ranking and the predicted happiness level from the pooled ordinary least squares regression (OLS).[11] The average country between 2014 and 2016 has a score that is 3.5 points above the hypothetical worst off country, and most of that difference can be explained by the social and institutional variables discussed above. This shows how important the social and institutional variables are to happiness. The fact that an international organization as powerful as the UN uses more subjective well-being data illustrates that the measure is viewed as a valid measure of human welfare. The UN hopes to inspire more research in individual countries to investigate the happiness of their citizens using subjective well-being data, illustrating a major turning point in the shift towards the validation of subjective well-being data. The progression from the GDP to the HDI and all the way to the Happiness Index show an increasing prevalence and reliance on subjective well-being data as a source for policy decisions.

[11] Chapter 2 of the WHR, table 2.1 is where the coefficients are located to calculate the prediction error.

These indices try to represent a measurement of human welfare in one number, but happiness is hard to quantify because of the subjective nature of human welfare. Weimann, Knabe, and Schöb (2015) critique all uses of indices because they only consolidate information into very few numbers (7). Using one number to represent human welfare can be risky because only the creator of the index gets to pick what factors are the most important. For example, the Happy Planet Index puts the ecological footprint in the denominator, making this variable have a large influence on their measure of happiness. This index rates the US as the 108th happiest country in the world, while Costa Rica ranked as the happiest country in the world. This is because the ecological footprint of the US is about three times larger than Costa Rica's.[12] Weimann et al. see this index as biased towards the ecological footprint. This is one example how one number may not capture all the determinants of happiness.

Because of these biases inherent in indices, econometrics can be useful. Economists can look at many factors at the same time and are able to control for which ones are impacting the outcome. This is not as limiting as the results of one index. One index is made of many factors but yields one number to represent the whole population. Econometric methods allow subjective and objective data to be explored through trusted econometric methods. Even though they are useful, there are still risks that need to be accounted for when relying on subjective well-being data in econometrics.

[12] This information comes from the Happy Planet Index data set and can be accessed from the website: happyplanetindex.org. The ecological footprint is measured in global hectares per capita. A global hectare is a standardized unit to measure productivity in a year. The total ecological footprint is calculated through the land used that provides renewable resources, area with infrastructure, and the area required to absorb carbon dioxide emissions.
https://static1.squarespace.com/static/5735c421e321402778ee0ce9/t/578dec7837c58157b929b3d6/1468918904805/Methods+paper_2016.pdf

There are some risks that economists take when using the subjective well-being data. The reasons to study subjective well-being data that are listed above,[13] but they also have risks. It is important to look at how even though there are risks, it is what makes this research necessary and interesting.

Based off the previous discussion of social capital and the importance of trust and networks in peoples' lives, it makes sense that an individual's place in society impacts their answers to these subjective well-being surveys.[14] One risk is that every person uses a different reference group when evaluating their life on the surveys. A reference group is what an individual compares themselves to when making decisions in a survey. First, Praag and Ferrer-i-Carbonell (2004) point out that "individual norms are shaped by the individual's own experiences and expectations and by the social reference group" (11). Sometimes, people make decisions on surveys that make themselves feel better about themselves. They may also have no idea how to respond because they do not think about their happiness in the way the question is phrased. This can be explained by what Frey and Stutzer call "distorted reporting" (32). This is when individuals exaggerate their happiness in either direction to fit stereotypes they feel they are supposed to fulfill. For example, a successful person, someone making an above average salary may mark "happy" even though they are not; they may have been taught by society that their high income should lead to happiness, but they might be missing some of the fulfilling parts of life like social connections.

Another potential issue with subjective well-being data is what Falk and Knell (2004) call "self-enhancement," which is when an individual compares themselves to a low-income reference group, but "self-improvement" is when one compares themselves to someone with

[13] See section B of this literature review.
[14] See Sections C and D of this literature review.

higher standards than them. From their study, Falk and Knell find that the choice for a reference group is endogenous instead of exogenous. This endogenous idea of self relates to the answers that people may mark on a survey due to their obsession with status and how others view them. For example, conspicuous consumption, a term coined by Thorstein Veblen (1899), explains that people want to impress others. People tend to look to others who have "more" in compared to themselves. This could affect the way people view themselves and what they have in comparison to those around them.

There are also some decision theories that impact the collection of subjective well-being data. The loss aversion hypothesis (Tversky and Kahnemann, 1991) suggest that the loss of a dollar from an original reference point has a greater impact on an individual's perceived well-being than the gain of one dollar. This hypothesis can impact the ways that people make decisions when evaluating their happiness. For example, someone might not notice how full their life is socially when they are caught up on their lack of financial resources. This is a valid concern though and shows the complexities of looking at the interactions between determinants of happiness. Another hypothesis is the superiority illusion and this is where everyone thinks that they are above average (Yamada, Udin et al., 2012).

Weimann et al. illustrate the importance of the framing effect and how it impacts how people make decisions. They find the importance in the effect because it shows how "institutions (including the choices available to subjects and the rules for accepting and organizing messages) play a central role in economics" (171). An institution shapes how people act and make decisions. An individual decision does not only rely on the individual; it also is also influenced by the individual's surroundings.

A last risk involves people's individual interpretations of survey questions. Praag and Ferrer-I-Carbonell note that people can translate their feelings into a cardinal response on paper, but the fact that most responses only have discrete options adds risk to the analysis of the results (4). We know people can translate their feelings into cardinal and numerical responses through verbal evidence, for example, many people say that they are "feeling one hundred percent today" meaning that they are very satisfied with their life at that moment. However, different people may can report the same level of happiness in a survey, but in fact feel very different internally about their own happiness.

There are also risks in the ways that researchers interpret answers on a subjective survey. On an individual level, there could be some causality issues because people who are happier might be giving more of their time to others or someone who gives their time to others might be happier. Also, another interpretation difference could be that people who have the exact same internal levels of happiness may record different numerical levels of happiness due to individual interpretation of the survey. This could cause issues comparing results among different population groups. These risks, having individual or group references points, decision theories in practice, and human interpretation can be problematic when working with subjective well-being data. However, economists have been able to use advanced econometric methods on the subjective well-being data.

First, economists have tried to incorporate the happiness into utility equations.[15] Frey and Stutzer outline this concept very clearly in the equation below (31).

[15] This concept is explored in many works including Clark, Frijters, Shields (2007) "Relative Income, happiness and Utility: An Explanation for the Easterlin Paradox and Other Puzzles"; Blanchflower and Oswald (2000) "Well-being over time in Britain and the USA"; and in Happiness Quantified: A Satisfaction Calculus Approach.

$$W = H[U(Y, t)] + \epsilon$$

where

$W = self - reported\ measure\ of\ well\ being$

$H = relates\ the\ reported\ well\ being\ to\ actual\ well\ being$

$U = well - being\ or\ utility\ from\ the\ perspective\ of\ the\ individual$

$Y = determinants\ of\ happiness$

$t = variation\ over\ time$

$\epsilon = error\ term\ to\ capture\ anything\ not\ represented\ in\ this\ equation$

This equation represents the determinants that impact happiness, the time constraints, the utility of those determinants, and the ending level of happiness based on the utility of the determinants of happiness. The welfare can change based on an individual's perception and analysis of their own happiness.

Beyond adding happiness to utility, the most common econometric method in happiness economics are ordinary least squares regressions.[16] Many economists control for country fixed effects to look at the differences across countries (Calvo, Zheng, Kumar, Olgiati, Berkman 2012 & Mota and Pereira 2008).[17] OLS is an ideal method for looking at determinants of happiness and an individual evaluation of their happiness because it can easily be observed what determinants are impacting the outcome variable, happiness, the most. We are able to compare many determinants at the same time, while picking ones that we would like to be held constant.

Further, many economists use ordered probit or logit regressions. This is a way to make the coefficients less impacted by the different scales. Putnam and Helliwell recommend using an

[16] Most of the economics paper mentioned in the literature review this far has used this technique.
[17] Calvo, Zheng, Kumar, Olgiati, Berkman also standardize their variables so that they can easily be compared to other coefficients. I will implement this on one of my variables so that it is more easily comparable as well.

ordered probit or logit regression to account for the different scales in happiness surveys (1438). For example, they compare results from happiness and life satisfaction which are both quantified in different scales. Happiness is one through four, while life satisfaction is one through ten. The probit and logit models seem to fit the idea represented in the utility equations exactly. The individual happiness is represented by a latent variable, a variable unknown until the other determinants are accounted for in the equation. They yield consistent results to the OLS results, so therefore, Helliwell and Putnam use them as a check for their regressions.

The study of happiness is complex due to the nature of the subject. People make decisions based on those around them and preconceived notions on what their life should be like to them based on reference points in society and in their own head. The relative nature of subjective well-being data is hard to measure. In this study, I am going to look at specific variables to represent the most important parts of social capital (trust, networks, and institutions) as seen in the literature review. This will expose what variables have the most impact on subjective well-being. Since the literature has already identified the importance of certain social capital variables, I am going to compare their effects across countries based on the individual countries' own mean. The standardizing will help validate the use of subjective well-being data and expose comprehensible comparisons across countries.

3. Data

Data for this study comes from the World Bank Indicators and World Values Survey. I am looking at indicators from the World Bank to capture determinants of happiness indicated by the literature review, income, GDP per capita, inflation, and unemployment (The World Bank). The World Values Survey provides subjective well-being data through their survey collection

process (World Values Survey). I am only looking at one wave because I am not concerned with the change over time as I am so much with the differences between countries.

There is a network of researchers behind the World Values Survey that work to analyze data to gain insight on changing values in social and political life across the globe. To collect their survey answers, there is a "Principal Investigator" who ensures that there is a minimum of 1200 survey responses from different residents in their country. Everyone who is interviewed is at least eighteen years old.[18] The survey is conducted either face-to-face, on paper, or over a computer depending on the individual's circumstance. I use both data sources to compare the effects of social capital on happiness and life satisfaction. The World Bank data is national, so one number represents the average for a nation. The World Values Survey is individual, so one number represents one person in a given state. The questions asked on the World Values Survey allow for the individual to reveal their own preferences on determinants of happiness.

The questions listed in the Table 1 below come from the World Values Survey Codebook to represent economic determinants and each factor of social capital: trust, networks, and institutions. Table 2 lists the summary statistics for the variables chosen. I am looking at two dependent variables because the literature suggested that there may be a difference in the answers (Frey and Stutzer, 24, 51-52). Happiness tends to motivate answers about affect in the moment, whereas when people read life satisfaction, they think about ten to fifteen years in the future. I want to explore the relative impact of social capital across countries while controlling for the other variables found in the literature review that impact happiness and life satisfaction. (Those other variables are the country-specific variables from the World Bank Indicators).

[18] It is important to note that while that a few countries have fewer than 1200 observations after accounting for missing responses, and approximately 0.15% of the observations report an age of 16 or 17.

Table 1: Variable Definitions

	Source: World Values Survey Wave 6 (2010-2014)	
Outcomes	Happiness	Taking all things together, would you say you are (1) very happy (2) rather happy (3) not very happy (4) not at all happy
	Life Satisfaction	All things considered, how satisfied are you with you life as a whole these days? Where (1) completely dissatisfied to (10) completely satisfied
Economic	Income	On this card is an income scale on which 1 indicates the lowest income group and 10 the highest income group in your country. We would like to know in what group your household is. where (1) lowest income scale to (10) the highest
	Subjective social class	People sometimes describe themselves as belonging to the working class, the middle class, or the upper or lower class. Would you describe yourself as belonging to the: (1) upper class (2) upper middle class (3) lower middle class (4) working class (5) lower class
Trust	I trust most people	Generally speaking, would you say that most people can be trusted, or do you need to be careful in dealing with people? Where 1=most people can be trusted and 0=need to be very careful
	I feel secure in my neighborhood	Could you tell me how secure do you feel these days in your neighborhood? Where1= very secure and 0=not very secure at all
	I trust my neighbors	Could you tell me for your neighborhood whether you trust people from this group completely, somewhat, not very much or not at all? Where 1=trust and 0=do not trust
Networks	I see myself as part of a local community	People have different views about themselves and how they relate to the world. Would you tell me how strongly you agree or disagree with the following statement: I see myself as part of the local community Where 1=agree and 0=disagree
	Friends are important	Indicate how important friends are in your life: Where 1= important and 0=not important
	I participate in at least one organization	Where (1) is if an individual marked that they were an active participant in any of the following organizations: Charitable, Environmental, Art/Music/Education, Religious, Sports/Recreation, Professional, Consumer, Self-Help Group, Labor Union, or Political Party , 0 otherwise
Institutions	I feel my country is Democratically governed	How important is it for you to live in a country that is governed democratically? Where 1=important and 0=not important
	Politics is important in my life	For politics, indicate how important it is in your life. Where 1=important and 0=not important
	I vote in local elections	When local elections take place, do you usually vote? Where 1=always/usually and 0=never
	Source: World Bank's World Development Indicators (2010)	
Country Controls	Unemployment	Unemployment, total (% of total labor force)
	ln(GDP per capita)	Natural Log of GDP per capita (constant 2010 US$)
	GDP p.c. % growth	GDP per capita growth (annual %)
	Inflation	Inflation, GDP deflator (annual %)
	Life Expectancy	Life expectancy at birth, total for males and females (years)
	ln(Population)	Natural Log of Population, total
	ln(Land Area)	Natural Log of Land area (sq. km)

Table 2: Summary Statistics

Variable	N	Mean	Std. Dev.	Min	Max
Happiness	85,540	3.13	0.86	1	4
Life satisfaction	85,717	6.83	2.59	1	10
Income (scale 1-10)	83,134	4.86	2.34	1	10
Upper class	83,863	0.02	0.16	0	1
Upper middle class	83,863	0.20	0.45	0	1
Lower middle class	83,863	0.36	0.53	0	1
Working class	83,863	0.29	0.50	0	1
Lower class	83,863	0.13	0.38	0	1
Most people can be trusted	84,027	0.25	0.48	0	1
I feel secure in my neighborhood	84,459	0.80	0.45	0	1
I trust most people	84,213	0.72	0.49	0	1
I trust my neighbors	82,924	0.85	0.39	0	1
Friends are important	85,748	0.88	0.36	0	1
I participate in at least one org.	86,175	0.36	0.54	0	1
Charitable org participation	86,175	0.06	0.28	0	1
Environment org. participation	86,175	0.03	0.20	0	1
Art/music org. participation	86,175	0.07	0.29	0	1
Religious org. participation	86,175	0.18	0.43	0	1
Sports/Rec. org. participation	86,175	0.11	0.36	0	1
Professional org. participation	86,175	0.05	0.25	0	1
Consumer org. participation	86,175	0.03	0.17	0	1
Self-help group participation	86,175	0.05	0.26	0	1
Labor union participation	86,175	0.04	0.24	0	1
Political party participation	86,175	0.04	0.23	0	1
I feel my country is dem. governed	78,127	0.60	0.55	0	1
Politics is important in my life	84,766	0.45	0.55	0	1
I vote in local elections	79,955	0.81	0.44	0	1
Unemployment	84,943	8.51	6.60	0.45	24.69
GDP per capita	84,943	15681.78	19249.63	553.60	70870.23
GDP per capita % growth	84,943	3.96	3.81	-8.05	13.22
Inflation rate	84,943	9.07	17.71	-1.90	103.82
Life expectancy (years)	84,943	72.37	9.18	49.57	82.98
Population	84,943	107,288,969	332,896,717	1,103,685	1,337,705,000
Land area (sq km)	84,943	1,798,835	3,809,092	702	16,376,870

4. Empirical Analysis and Results

First, I began by looking into the economic determinants from the World Values Survey (Table 3). Then I look into specific parts of social capital that were highlighted in the literature review: trust (Table 4), networks (Tables 5 and 6), and institutions (Table 7). The last table combines all the determinants to look at the total impact on happiness and life satisfactions (Table 8). Table 8 allows for comparison between all the determinants of happiness.

All tables below (3-8) have two sets of equations. The first set (equations 1-3) have a dependent variable of happiness. The second set (equations 4-6) have a dependent variable of life satisfaction. Both happiness and life satisfaction are standardized to have mean zero and standard deviation one within each country. For example, the data includes 1200 observations on people from Jordan. For each of these 1200 observations, happiness measures have been standardized using Jordan's average of 3.02 and standard deviation of 0.696 and the life satisfaction measures have been standardized using Jordan's average of 6.61 and standard deviation of 2.237. This standardizing makes it easy to compare how different determinants affect happiness and life satisfaction because they are now on a common scale.

For each dependent variable, I estimate three models. The first model (columns 1 and 4) is OLS without any country specific effects or controls; that is, each variable is measured at the individual level. The second model (columns 2 and 5) includes country fixed effects. The third model (columns 3 and 6) includes country-specific variables from the World Bank's World Development Indicators from 2010, including unemployment, log of GDP per capita, GDP per capita percent growth, inflation, life expectancy, log of population, and log of land area.[19]

[19] All models include controls for sex, marital status, age, and age squared.

Table 3: Economic Determinants

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent Var.: Happiness			**Dependent Var.: Life Satisfaction**		
Income	0.134***	0.126***	0.132***	0.214***	0.207***	0.211***
	(0.0110)	(0.0105)	(0.0107)	(0.0156)	(0.0153)	(0.0155)
Subjective social class:						
Upper class	0.0248	0.0414	0.0224	0.0664**	0.0761**	0.0614*
	(0.0393)	(0.0337)	(0.0370)	(0.0313)	(0.0307)	(0.0311)
Upper middle class	0.0743***	0.0903***	0.0753***	0.0650***	0.0788***	0.0654***
	(0.0160)	(0.0156)	(0.0164)	(0.0140)	(0.0145)	(0.0150)
Lower middle class	0.0571***	0.0652***	0.0597***	0.0632***	0.0705***	0.0656***
	(0.0143)	(0.0145)	(0.0141)	(0.0166)	(0.0170)	(0.0166)
Working class	0.162***	0.183***	0.170***	0.146***	0.170***	0.159***
	(0.0225)	(0.0268)	(0.0264)	(0.0179)	(0.0212)	(0.0208)
Unemployment			0.00682			0.00462
			(0.00553)			(0.00424)
ln(GDP per capita)			0.0215***			0.0135**
			(0.00702)			(0.00613)
GDP per capita % growth			0.000906			-0.000452
			(0.00502)			(0.00452)
Inflation			-0.00728*			-0.00358
			(0.00429)			(0.00309)
Life expectancy			-0.0236***			-0.0226***
			(0.00717)			(0.00619)
ln(Population)			0.00706			0.00847
			(0.0119)			(0.00963)
ln(Land area)			-0.00221			-0.00216
			(0.00876)			(0.00712)
Country fixed effects	No	Yes	No	No	Yes	No
Number of observations	80991	80991	79854	81192	81192	80054
Number of countries	60	59	60	60	59	60
R squared	0.061	0.063	0.061	0.083	0.085	0.083

Note: Both dependent variables, as well as Income, are standardized to have mean 0 and standard deviation 1 at the country level. Models 2 and 5 include country dummy variables. Models 3 and 6 include country-specific controls from the World Bank's World Development Indicators, 2010, that are standardized to have mean 0 and standard deviation 1 using the mean and standard deviation calculated from all observations. The remainder of the data comes from the World Values Survey, wave 6 conducted 2010-2014. All models are estimated via OLS with weights provided by the World Value Survey. Standard errors clustered at the country level are reported in parentheses. Statistical significance denoted: * p<0.1, ** p<0.05, *** p<0.01

The fixed-effects model controls for all country-specific factors that impact happiness or life satisfaction. Because factors like GDP are common to everyone in the country, these variables cannot be included in a model that includes country fixed effects. The measures included in the third model were determined through the literature review as those that might have an impact on happiness or life satisfaction. After controlling for these factors, the last model will allow us to see if social capital factors have an impact on happiness or life satisfaction.

A. Economic Determinants

First, I will consider objective and subjective economic determinants of happiness and life satisfaction. These results are shown in Table 3. The first variable, Income, reports the individual's income in one of ten country-specific ranges. Specifically, each participant was shown a card with an income scale ranging from one to ten where the range of incomes was specific to the participant's country.

The next set of four variables illustrate how participants view their social class in their country. Specifically, each participant was asked which social class they feel that they belong to: either upper class, upper middle class, lower middle class, working class, or lower class. The regression is specified so that the coefficient on each dummy variable is the change in happiness or life satisfaction compared to being at the next lowest class.[20] For example, the coefficient on upper middle class is the increase in happiness or life satisfaction from being upper middle class instead of lower middle class.

[20] The most common specification would be to define the dummy variables such that each coefficient is interpreted relative to a common omitted "base group" (lower class). Each coefficient in my specification is equivalent to the difference between consecutive coefficients in this common "base group" specification.

Table 4: Trust Determinants

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent Var.: Happiness			**Dependent Var.: Life Satisfaction**		
I trust most people	0.128***	0.143***	0.124***	0.141***	0.159***	0.138***
	(0.0167)	(0.0183)	(0.0171)	(0.0283)	(0.0320)	(0.0292)
I feel secure in my	0.200***	0.225***	0.198***	0.198***	0.226***	0.197***
neighborhood	(0.0217)	(0.0236)	(0.0228)	(0.0209)	(0.0222)	(0.0214)
I trust my neighbors	0.100***	0.118***	0.102***	0.0828***	0.0969***	0.0829***
	(0.0136)	(0.0153)	(0.0142)	(0.0132)	(0.0143)	(0.0131)
Unemployment			-0.00213			-0.00323
			(0.00692)			(0.00563)
ln(GDP per capita)			0.0126			0.00287
			(0.00965)			(0.00874)
GDP per capita % growth			-0.0000811			-0.00239
			(0.00688)			(0.00547)
Inflation			-0.00626			-0.00289
			(0.00454)			(0.00388)
Life expectancy			-0.00136			0.000162
			(0.00970)			(0.00865)
ln(Population)			-0.0112			-0.00873
			(0.0124)			(0.0107)
ln(Land area)			0.0147			0.0145
			(0.0118)			(0.0104)
Country fixed effects	No	Yes	No	No	Yes	No
Number of observations	80120	80120	78949	80305	80305	79135
Number of countries	60	59	60	60	59	60
R squared	0.038	0.041	0.038	0.028	0.031	0.028

Note: Both dependent variables are standardized to have mean 0 and standard deviation 1 at the country level. Models 2 and 5 include country dummy variables. Models 3 and 6 include country-specific controls from the World Bank's World Development Indicators, 2010, that are standardized to have mean 0 and standard deviation 1 using the mean and standard deviation calculated from all observations. The remainder of the data comes from the World Values Survey, wave 6 conducted 2010-2014. All models are estimated via OLS with weights provided by the World Value Survey. Standard errors clustered at the country level are reported in parentheses. Statistical significance denoted: * p<0.1, ** p<0.05, *** p<0.01

Looking at the first row of Table 3, a one standard deviation increase in a participant's income is predicted to increase happiness by approximately 0.13 standard deviations in all three models (columns 1-3). The effect of income on life satisfaction is about 1.6 times larger, increasing income by approximately 0.21 standard deviations in all three models (columns 4-6). These effects are all statistically significant at the 1% level.

The coefficients on all the subjective class dummy variables are positive and significant at the 1% level for the dummy variables representing movement from lower to working class, working to lower middle class, and lower middle to upper middle class. The effect of moving from upper middle to upper class is significant at either the 5% or 10% level when life satisfaction is the dependent variable, but is insignificant in its effect on happiness. This is interesting because in the pre-existing literature, happiness seems to invoke more affective and emotional responses, while life satisfaction is more focused on the future. It seems that when people are thinking more about their future, they are more focused on objective factors like income, but in the immediate moment, emotion may take over and the impact of income disappears for the participant's survey response.

Overall, these results show that higher income scales relative to everyone else in an individual's country and a higher subjective view of one's social class lead to an increased average score of happiness and life satisfaction. These results are consistent when controlling for country specific effects, whether this is done by country fixed effects or via country-specific measures. These results are also consistent with the previous literature as the effect of income on happiness can never be ignored.

B. Social Capital: Trust

The first aspect of social capital I examine is trust. The models shown in Table 4 estimate the effects of aspects of trust that were identified in the literature review as being important to life satisfaction. The questions from the World Values survey related to trust are questions asking people if they feel most people can be trusted (Table 4 variable "I trust most people"), if they feel secure in their neighborhood (Table 4 variable "I feel secure in my neighborhood"), and if they feel they can trust their neighbors (Table 4 variable "I trust my neighbors"). Each measure

was converted to a binary indicator, with 1 reflecting trust and security and 0 reflecting their absence.

Each of these measures of trust has a positive and significant effect on happiness and life satisfactions. This fits what the literature review predicted about trust. In the literature review, I discussed how people are more willing to trust in the future based on a history of trust interactions. The variable with the largest impact on happiness and life satisfaction is a feeling of security in one's neighborhood. If an individual feels secure, they are more likely to trust others and that building of trust throughout a neighborhood can lead to more trust. Coefficients on all three measures of trust are statistically significant at the 1% level and are almost consistent across all three models for both happiness and life satisfaction.

C. Social Capital: Networks

The second aspect of social capital I examine is networks. Table 5 shows results for three measures of social networks. The first is a question asking participants if they see themselves as part of a local community (Table 5 variable "I see myself as part of a local community"). The second question asks participants if they feel friends are important in their life (Table 5 variable "Friends are important"). The third variable included in Table 5 is an indicator of whether the participant is an active member in at least one organization. The organizations asked about include charitable organizations, environmental organizations, art and music education organizations, churches and other religious organizations, sports and recreation organizations, professional organizations, consumer organizations, self-help groups, labor unions, and political parties. These specific organizations were chosen based on the research from the literature review. In Table 5, the variable labeled "I participate in at least one organization" has a value of 1 if the participant is an active member of at least one of these types of organizations, and a value

Table 5: Network Determinants

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent Var.: Happiness			**Dependent Var.: Life Satisfaction**		
I see myself as part of	0.0860***	0.144***	0.0873***	0.118***	0.183***	0.120***
a local community	(0.0281)	(0.0226)	(0.0263)	(0.0292)	(0.0249)	(0.0263)
Friends are important	0.228***	0.236***	0.225***	0.145***	0.149***	0.142***
	(0.0183)	(0.0192)	(0.0186)	(0.0171)	(0.0187)	(0.0173)
I participate in at least	0.108***	0.146***	0.114***	0.114***	0.158***	0.122***
one organization	(0.0164)	(0.0177)	(0.0166)	(0.0126)	(0.0155)	(0.0143)
Unemployment			-0.00160			-0.00271
			(0.00708)			(0.00725)
ln(GDP per capita)			0.00805			-0.00102
			(0.0102)			(0.00899)
GDP per capita % growth			-0.000837			0.000610
			(0.00553)			(0.00519)
Inflation			-0.00968*			-0.00582
			(0.00503)			(0.00588)
Life expectancy			0.0133			0.0196*
			(0.00920)			(0.00985)
ln(Population)			-0.0214			-0.0217*
			(0.0129)			(0.0124)
ln(Land area)			0.0206			0.0251*
			(0.0137)			(0.0136)
Country fixed effects	No	Yes	No	No	Yes	No
Number of observations	81783	81783	80607	81970	81970	80792
Number of countries	60	59	60	60	59	60
R squared	0.034	0.038	0.035	0.021	0.026	0.022

Note: Both dependent variables are standardized to have mean 0 and standard deviation 1 at the country level. Models 2 and 5 include country dummy variables. Models 3 and 6 include country-specific controls from the World Bank's World Development Indicators, 2010, that are standardized to have mean 0 and standard deviation 1 using the mean and standard deviation calculated from all observations. The remainder of the data comes from the World Values Survey, wave 6 conducted 2010-2014. All models are estimated via OLS with weights provided by the World Value Survey. Standard errors clustered at the country level are reported in parentheses. Statistical significance denoted: * p<0.1, ** p<0.05, *** p<0.01

Table 6: Specific Organization Determinants

	(7)	(8)	(9)	(10)	(11)	(12)
	Dependent Var.: Happiness			**Dependent Var.: Life Satisfaction**		
I see myself as part of	0.0854***	0.143***	0.0859***	0.119***	0.182***	0.121***
a local community	(0.0273)	(0.0222)	(0.0256)	(0.0285)	(0.0245)	(0.0256)
Friends are important	0.227***	0.236***	0.225***	0.142***	0.149***	0.141***
	(0.0183)	(0.0193)	(0.0187)	(0.0168)	(0.0186)	(0.0171)
Participation in specific organizations:						
Charitable	0.00297	0.00849	-0.00956	0.0523**	0.0586**	0.0418*
	(0.0282)	(0.0252)	(0.0267)	(0.0212)	(0.0222)	(0.0221)
Environmental	-0.00347	-0.00181	0.00101	-0.0132	-0.00984	-0.00459
	(0.0358)	(0.0364)	(0.0367)	(0.0309)	(0.0304)	(0.0312)
Art/music education	0.0263	0.0240	0.0229	0.0338	0.0337	0.0303
	(0.0178)	(0.0177)	(0.0183)	(0.0226)	(0.0230)	(0.0234)
Religious	0.0791***	0.124***	0.101***	0.0593***	0.105***	0.0782***
	(0.0202)	(0.0166)	(0.0167)	(0.0162)	(0.0150)	(0.0157)
Sports/recreation	0.142***	0.141***	0.132***	0.140***	0.144***	0.133***
	(0.0118)	(0.0127)	(0.0120)	(0.0142)	(0.0144)	(0.0144)
Professional	0.0577**	0.0615**	0.0578**	0.0635**	0.0697**	0.0627**
	(0.0270)	(0.0260)	(0.0279)	(0.0274)	(0.0267)	(0.0286)
Consumer	-0.00821	-0.00368	-0.00222	-0.0162	-0.0126	-0.00488
	(0.0276)	(0.0300)	(0.0293)	(0.0304)	(0.0321)	(0.0309)
Self-help group	-0.0271	-0.0122	-0.0206	-0.0629*	-0.0504	-0.0587*
	(0.0353)	(0.0349)	(0.0362)	(0.0315)	(0.0322)	(0.0329)
Labor union	0.0412*	0.0429*	0.0405	0.0532*	0.0546*	0.0496*
	(0.0238)	(0.0234)	(0.0246)	(0.0283)	(0.0295)	(0.0294)
Political party	-0.0114	0.0136	0.000193	0.0277	0.0492*	0.0389
	(0.0254)	(0.0258)	(0.0261)	(0.0248)	(0.0272)	(0.0268)
Country fixed effects	No	Yes	No	No	Yes	No
Country specific controls	No	No	Yes	No	No	Yes
Number of observations	81783	81783	80607	81970	81970	80792
Number of countries	60	59	60	60	59	60
R squared	0.035	0.039	0.036	0.023	0.027	0.023

Note: Both dependent variables are standardized to have mean 0 and standard deviation 1 at the country level. Models 2 and 5 include country dummy variables. Models 3 and 6 include country-specific controls from the World Bank's World Development Indicators, 2010, that are standardized to have mean 0 and standard deviation 1 using the mean and standard deviation calculated from all observations. The remainder of the data comes from the World Values Survey, wave 6 conducted 2010-2014. All models are estimated via OLS with weights provided by the World Value Survey. Standard errors clustered at the country level are reported in parentheses. Statistical significance denoted: * p<0.1, ** p<0.05, *** p<0.01

of 0 otherwise. In Table 6, participation in each of these types of organization is included separately.

In Table 5, all three measures of social capital related to networks have a positive and significant relationship on happiness and life satisfaction, with all coefficients statistically significant at the 1% level. A feeling that friends are important has about twice the impact on happiness than do the other measures. All three measures have approximately the same effect on life satisfaction. This shows how people do value others in their life.

In Table 5 we can see that participation in at least one organization is a significant predictor of happiness and life satisfaction. Table 6 allows us to see which organizations have a larger impact. Religious, sports and recreation, and professional organizations all have a positive and significant effect on both happiness and life satisfaction, with participation in sports and recreation organizations leading to the largest increases across all models. Sports build a sense of comradery and family through the shared goal of people on a team. This matches the literature's findings because people are shown to be happier when they feel like they have more people to depend on in their communities. Participation in charitable organizations has a positive and significant effect on life satisfaction, at a lower level of significance than the three types of organizations just discussed, but does not have a statistically significant effect on happiness. This is interesting that in the long run (life satisfaction), there is more evidence for significance of being in a charitable organization, but in the short run (happiness), it is not as significant. It was shown in the literature review that it does feel good to give to others, but this is a privilege that only some can use in their lives. Participation in self-help groups, labor unions, and political parties also have a positive effect that is statistically significant at the 10% level in a few models.

Participation in the other types of organizations do not have a statistically significant effect on happiness or life satisfaction.

D. Social Capital: Institutions

The last component of social capital I examine involves institutions. As part of the World Values Survey, participants were asked if they feel their country is democratically governed, how important politics is in their life, and whether they usually vote in local elections. All three measures are included in Table 7 as dummy variables.

All three measures have a positive and significant effect on happiness and life satisfaction. Voting in local elections and a view that politics is important both are predicted to increase happiness and life satisfaction by approximately 0.05 standard deviations in all models. Being in a democratically governed country has about double the effect of the other measures on happiness (approximately 0.12 standard deviations) and about a 5 times larger effect on life satisfactions (approximately 0.22 standard deviations). This also seems to match the literature because Frey and Stutzer showed how important it was for an individual to be in a democratically governed country for their happiness.

E. Social Capital and Economic Determinants Combined

In the previous pages, I have presented results examining different determinants of happiness and life satisfaction separately. In Table 8, I present results from models with all the factors together. This table is interesting because all coefficients that were significant before the combination of all equations are still significant. I wanted to combine all the variables to see if there is one aspect of social capital that might stand out against the others. I also wanted to see if the economic determinants are still just as important as the social capital determinants. When all

Table 7: Institution Determinants

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent Var.: Happiness			**Dependent Var.: Life Satisfaction**		
I feel my country is democratically governed	0.119***	0.139***	0.118***	0.213***	0.246***	0.217***
	(0.0134)	(0.0142)	(0.0137)	(0.0135)	(0.0158)	(0.0145)
Politics is important in my life	0.0564***	0.0724***	0.0607***	0.0322**	0.0460***	0.0348**
	(0.0134)	(0.0126)	(0.0134)	(0.0160)	(0.0167)	(0.0164)
I vote in local elections	0.0492***	0.0635***	0.0512***	0.0308	0.0449**	0.0328*
	(0.0175)	(0.0197)	(0.0182)	(0.0195)	(0.0196)	(0.0193)
Unemployment			0.00896			0.0155**
			(0.00654)			(0.00723)
ln(GDP per capita)			0.0126			-0.00884
			(0.00940)			(0.00998)
GDP per capita % growth			0.00673			0.00996
			(0.00735)			(0.00813)
Inflation			-0.00367			0.00260
			(0.00315)			(0.00380)
Life expectancy			0.0119			0.0239**
			(0.00774)			(0.00954)
ln(Population)			-0.0143			-0.0157*
			(0.00915)			(0.00864)
ln(Land area)			0.00526			0.0122
			(0.0113)			(0.0116)
Country fixed effects	No	Yes	No	No	Yes	No
Number of observations	71788	71788	70749	72030	72030	70991
Number of countries	60	59	60	60	59	60
R squared	0.030	0.033	0.031	0.027	0.030	0.027

Note: Both dependent variables are standardized to have mean 0 and standard deviation 1 at the country level. Models 2 and 5 include country dummy variables. Models 3 and 6 include country-specific controls from the World Bank's World Development Indicators, 2010, that are standardized to have mean 0 and standard deviation 1 using the mean and standard deviation calculated from all observations. The remainder of the data comes from the World Values Survey, wave 6 conducted 2010-2014. All models are estimated via OLS with weights provided by the World Value Survey. Standard errors clustered at the country level are reported in parentheses. Statistical significance denoted: * p<0.1, ** p<0.05, *** p<0.01

Table 8: Combined Determinants

		(1)	(2)	(3)	(4)	(5)	(6)
		Dependent Var.: Happiness			Dependent Var.: Life Satisfaction		
Economic	Income	0.125***	0.114***	0.124***	0.204***	0.194***	0.202***
		(0.0111)	(0.0108)	(0.0111)	(0.0159)	(0.0157)	(0.0161)
	Subjective social class:						
	Upper class	0.0250	0.0394	0.0217	0.0791*	0.0857**	0.0683*
		(0.0413)	(0.0329)	(0.0373)	(0.0402)	(0.0371)	(0.0378)
	Upper middle class	0.0707***	0.0880***	0.0723***	0.0504***	0.0671***	0.0529***
		(0.0153)	(0.0146)	(0.0156)	(0.0168)	(0.0167)	(0.0175)
	Lower middle class	0.0373***	0.0471***	0.0389***	0.0500***	0.0582***	0.0512***
		(0.0137)	(0.0135)	(0.0135)	(0.0152)	(0.0157)	(0.0155)
	Working class	0.151***	0.157***	0.151***	0.140***	0.148***	0.147***
		(0.0225)	(0.0279)	(0.0282)	(0.0185)	(0.0209)	(0.0217)
Trust	I trust most people	0.0786***	0.0958***	0.0813***	0.0920***	0.110***	0.0979***
		(0.0154)	(0.0156)	(0.0157)	(0.0266)	(0.0290)	(0.0271)
	I feel secure in my neighborhood	0.149***	0.172***	0.151***	0.142***	0.165***	0.147***
		(0.0200)	(0.0222)	(0.0213)	(0.0183)	(0.0187)	(0.0185)
	I trust my neighbors	0.0743***	0.0829***	0.0705***	0.0578***	0.0575***	0.0500***
		(0.0152)	(0.0163)	(0.0158)	(0.0127)	(0.0131)	(0.0128)
Networks	I see myself as part of a local community	0.0754***	0.106***	0.0761***	0.0894***	0.126***	0.0885***
		(0.0279)	(0.0243)	(0.0261)	(0.0270)	(0.0247)	(0.0243)
	Friends are important	0.134***	0.156***	0.136***	0.0486***	0.0673***	0.0530***
		(0.0191)	(0.0186)	(0.0188)	(0.0169)	(0.0175)	(0.0170)
	I participate in at least one organization	0.0827***	0.108***	0.0845***	0.0790***	0.114***	0.0861***
		(0.0178)	(0.0180)	(0.0188)	(0.0134)	(0.0140)	(0.0146)
Institutions	I feel my country is democratically governed	0.0591***	0.0789***	0.0632***	0.133***	0.163***	0.140***
		(0.0140)	(0.0142)	(0.0145)	(0.0148)	(0.0140)	(0.0153)
	Politics is important in my life	0.0245*	0.0368***	0.0255*	0.00366	0.0122	0.00225
		(0.0126)	(0.0120)	(0.0131)	(0.0131)	(0.0143)	(0.0135)
	I vote in local elections	0.0202	0.0253	0.0222	-0.00145	0.00325	-0.000707
		(0.0172)	(0.0192)	(0.0170)	(0.0152)	(0.0163)	(0.0152)
	Country fixed effects	No	Yes	No	No	Yes	No
	Country specific controls	No	No	Yes	No	No	Yes
	Number of observations	64730	64730	63757	64899	64899	63923
	Number of countries	60	59	60	60	59	60
	R squared	0.081	0.087	0.081	0.106	0.112	0.106

Note: Both dependent variables are standardized to have mean 0 and standard deviation 1 at the country level. Models 2 and 5 include country dummy variables. Models 3 and 6 include country-specific controls from the World Bank's World Development Indicators, 2010, that are standardized to have mean 0 and standard deviation 1 using the mean and standard deviation calculated from all observations. The remainder of the data comes from the World Values Survey, wave 6 conducted 2010-2014. All models are estimated via OLS with weights provided by the World Value Survey. Standard errors clustered at the country level are reported in parentheses. Statistical significance denoted: * p<0.1, ** p<0.05, *** p<0.01

the equations are combined, the scale of incomes with a dependent variable of life satisfaction and the dummy variables representing working class both loose significance. In the combined model, political importance becomes less significant, voting at the local level becomes less significant, and being in the upper class compared to upper middle class becomes less important. The social capital determinants persist to be significant across all three models, even in the third model, when controlling for variables known to impact happiness as seen in the literature review.

5. Conclusion

This paper sheds some light into the complex changing definitions of human welfare and how economists can look at it in our studies. Happiness economics adds measures of subjective well-being to the objective measures that economists have been measuring for a long time. Measuring the objective or external factors only measures one side of happiness. The subjective and internal side should be accounted for as well, even if it is harder to quantify. Subjective well-being data is a good tool for doing so in productive ways. It comes directly from an individual and exposes exactly how they feel. This study aims to support the work of previous economists and the existing literature on social capital. I look more specifically at the impact of social capital, and account for objective and subjective economic determinants to look at the relative nature of people's views on their situation and self-reported happiness.

A large issue that the literature noted are the biases and reference points that impact people when they evaluate their own happiness. To control for that variability, I standardized both dependent variables as well as the non-binary independent variables. My results are consistent across countries, and across different models controlling for country effects in different ways. What I found from these results is that social capital makes people happier regardless of their country.

Although money is a convenient and often reliable measure of happiness, it is important to look at the impacts of other variables on happiness. This is also shown in my research. In the factor specific models, social capital measures consistently had positive and significant effects on happiness and life satisfaction, even while controlling for monetary measures. These effects persisted in the final model that combined all factors. Even while controlling for income and social class, social capital measures, including trust, networks, and institutions, positively and significantly contribute to happiness and life satisfaction

We live in a materialistic society that we get caught up in the pursuit of always having more. The Easterlin Paradox and the aspiration level theory discussed in the literature review show how people always want more money to buy more. However, when we get more money, we can buy more goods, and recently goods that we are buying (e.g. cell phones and electronics) can prevent us from pursuing more fulfilling relationships with each other. From this study, it can be seen that trust, networks, and institutions have a positive impact on happiness and life satisfaction separately. When combined, the impact on happiness is still important and significant. Maybe it is even more now than ever that policymakers, business owners, and other leaders in local communities need to focus on the importance of social capital. This study reveals that it is important to put energy into sustaining the social capital variables because they do matter, on the individual level and across countries because everyone wants to belong.

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