

Savings and Happiness

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Subjective wellbeing, comprised of both emotional wellbeing (daily happiness) and overall life satisfaction (or life evaluation), has been both positively and negatively correlated with money. Daily happiness, or emotional wellbeing, is a self-appraisal based on one's current mood, whereas life satisfaction, or evaluation of one's life, is a more cognitively derived evaluation. Everyday happiness can be seen as the "feeling" aspect of subjective wellbeing while life satisfaction involves how one thinks of one's life overall. Research has supported that increasing income will raise daily emotional wellbeing, fully satiating at an annual income level of \$75,000, after which the ability to buy positive experiences will be balanced by negative effects, such as loss of leisure time (Kahneman & Deaton, 2010). Unlike daily happiness, overall life satisfaction is not subject to diminishing marginal returns as income increases. Instead, people continued reporting an increase in life evaluation, even as their annual income levels rose above \$200,000 (Lucas & Schimmack, 2008). In addition to income levels, another monetary factor tied to wealth could be savings. Savings, or stored wealth, is defined as assets minus debt. Though stored wealth and income can both influence subjective wellbeing, this analysis focuses on the positive relationship between the savings aspect of wealth and daily happiness.

Wealth can provide a sense of financial security, or personal freedom, enabling life choices that are more congruent with personal beliefs and goals. Two of the main predictors of happiness are life control and leisure (Minkov, 2009). Savings, or liquid assets, can buy a level of freedom in areas such as career preferences, choice of neighborhood, or discretion in health care, such as whether to hire a live-in nurse rather than living in a nursing home. Life goals, or priorities, can more easily be pursued without the day-to-day financial worries associated with low economic status. People, who are forced to prioritize financial stability through longer

workdays, are not as happy as those who have the option to pursue more altruistic goals (Headey, Muffels, & Wagner, 2010). The tradeoff between leisure and work can increase happiness.

However, during times of underemployment or unemployment, working fewer hours than one desires has the same negative impact on life satisfaction as not being married. During involuntary leisure time, financial reserves can provide a buffer, until a new, possibly more suitable, job can be found.

Combinations of life stressors can dampen coping abilities. For instance, not having enough money could increase financial and personal vulnerability during negative events, such as divorce, or a decline in health. Stored wealth, or savings, can provide peace of mind prior to adverse circumstances, such as the development of a physical hardship. Financial resources can buffer against negative subjective wellbeing after the onset of a disability (Smith, Langa, Kabeto, & Ubel, 2005). Wealthier individuals experience fewer declines in quality of life because they have more resources to deal with stressful events when they occur.

Socioeconomic status (SES) defined as occupational status, educational attainment, or income level, has been correlated with health. The level of wealth, either as a stored asset or as occupational earnings, affects not only access and quality of healthcare, but overall physical fitness. The *reserve capacity model*, developed by Gallo, Monteros, and Shivpuri (2009), outlines how low SES correlates to increased vulnerability to disease and premature mortality. This model's framework indicates that individuals with lower SES report greater depression, anxiety, and hostility, increasing their susceptibility to emotional or physiological stress, widening the health gap between the rich and the poor. SES and health have been correlated to resilient personal and social factors, which include interpersonal resources, such as social support and social integration, and intrapersonal resources, such as perceived control, optimism, and self-

esteem.

The effects of income on the prediction of daily emotional wellbeing have been found in research. Kahneman and Deaton (2010) created a regression model to predict wellbeing, using variables involving life circumstances and income. The results support that low income exacerbates the pain associated with divorce, ill health, and being alone. In this research, lower income also predicted lower life evaluation. The benefits associated with the income aspect of wealth surpass its purchasing power of material goods.

As the rank-income hypothesis states, increasing income will increase utility only if ranked income, relative to the population, moves upward (Boyce, Brown, & Moore, 2009). There is only room for one individual to be the highest-ranking income earner, which creates a fixed amount of ranking. However, low-income households can increase their social ranking by building financial stability through savings. Many families who are below the poverty line based solely on current income may be living quite comfortably on assets acquired during more prosperous years (Keister & Moller, 2000). Also, ownership of wealth, handed down from generation to generation, could allow those who never needed employment to enjoy the social status associated with high income status.

Paradoxically, as Americans' wealth increased substantially over the last few decades, their happiness did not. This may suggest that wealth has been measured incorrectly. Using GDP as an indicator of national wealth is misleading for two reasons (Fischer, 2008). First, debt is not taken into consideration, meaning that though standards of living have increased, these materialistic improvements are being financed by debt. Second, the distribution of wealth is becoming more skewed every year, distorting the average effort to income ratio. In other words, while the overall wealth of Americans is increasing, the number of wealthy is shrinking,

indicating that the few wealthy share an increasing percentage of the overall national wealth. In 2005, 50% of America's wealth went to the top 20% of income earners, ending up skewing wealth distribution.

As more wealth is distributed to the upper portion of society, a larger portion of workers must increase the number of hours they work to compensate for a smaller wage per hour so that the big salaries and bonuses of the top tier, or financially elite can be financed (Fischer). In some households, women have entered the workforce to increase household income. By measuring an increase of male incomes, we can see that, while there is little fluctuation in median male earnings, happiness shows a smaller trend downward. As moms have to go back to work to keep up with the cost of living, men might not look as good as marriage partners unless they work more hours to be more attractive as a bread winner. This may be why happiness is not affected by an overall higher GDP.

Another, possibly more realistic way to measure wealth, is to look at household incomes and debt. The relationship between borrowing and saving has been studied through three different disciplines, including economic, sociological, and psychological (Livingstone and Lunt, 1993). Economists look at saving and borrowing as a function of income, or wealth. One economist's hypothesis, called the *permanent-income theory*, posits that spending patterns will be smoothed out as consumers save while in times of prosperity, while drawing their savings down during periods of financial hardship (Friedman, 1957). Additionally, this theory measures permanent, or constant income as expected income and assets. Sociologists studying income and savings concentrate on demographics, such as age, gender, family circumstances, and social class. Psychologists may overestimate factors concerning available choices, or examine attitudes and values, and may neglect other important factors such as sociodemographic, economic, and

institutional circumstances. Using a regression model developed by Lunt and Livingstone (1991), economic variables were able to predict both recurrent and total savings, while psychological variables could only predict recurrent savings, and demographic variables predicted only total savings. Instead of using one discipline to analyze this relationship, an interdisciplinary approach can provide a more complete picture.

Some consumption patterns are reliable in predicting whether savings will occur. For example, the more people spend on clothes and the less they spend on food, the more they save. People who spend more on insurance have higher savings, as do those with bigger investments. These bigger investment holders also tend to save more. Not surprisingly, in Livingstone and Lunt's study, disposable income was a reliable predictor of whether savings occurred.

Also, the more value is given to enjoyment, the less people save. Maximizers (those who shop around for the best deals) tend to save less (Lunt and Livingstone). Satisficers (those who are satisfied with acceptable choices), however, follow a shopping routine. Having a routine enables them to establish a savings routine. They shop at the same stores, rather than trying to be a maximizer. Satisficing and less impulsive spending habits correlate to higher levels of savings.

Stereotypically savers and borrowers are thought of as opposites, though feeling in control of one's life on a daily basis can lead to overall happiness. However, there are six saving or borrowing strategies, which include: combining saving or not saving, borrowing or not borrowing, having or not having a savings account (Livingstone and Lunt). Ordinary people who are savers as well as borrowers have different psychological motivations; debt is seen as a failure or as a normal part of everyday life. Debtors who didn't regularly save, but still had a savings, felt like they had more control and were more optimistic about their financial position than debtors who had no savings (Lunt and Livingstone). Having a greater internal locus of control

(that which controls one's life is the self, rather than outside forces), leads to daily optimism and the belief one will be protected from unpredictable changes in economic conditions.

A standard of living, dictated by consumption patterns, is based on an individual's historical earning power coupled with income ranking within her population. Income level is a reliable predictor in determining how much money is needed to sustain personal consumption. Based on two hypotheses, the relative-income theory states that consumer choice is a function of income, and community consumption standards (Sanders, 2010). The first hypothesis posits that patterns of consumption and savings are not dependent on absolute income, but rather on income level relative to the community norm. The second hypothesis proposes that once accustomed to a certain standard of living, individuals become unwilling to cut back daily expenses during times of financial hardship. For instance, an unemployed worker will buoy her deflated income by either relying on personal savings, or borrowing from a bank, in order to perpetuate her current standard of living.

When an individual with no savings holds debt, the stress of looming loans can create anxiety. Two hundred and twenty-seven college students were surveyed regarding their credit card debt. Students with high levels of debt, likely realizing the severity and chronicity of their situations, reported both daily financial stress and decreased psychological wellbeing (Norvilitis, Szablicki, & Wilson, 2003). The findings found a correlation between perceived financial wellbeing and emotional wellbeing, including an increased sense of internal locus of control and less dysfunctional impulsivity.

Rather than ride the hedonic treadmill by trying to continuously attain the highest utility possible, it is possible for the impulsively behaved person to view the outcome of savings as a beneficial practice, instead of a feeling of deprivation. Within the scope of psychology, it is

possible to rearrange information to create more happiness, or utility, for the individual (Hsee, Hastie, & Chen, 2008). Therefore, changing one's interpretation, or rearranging the perception of the outcome, can increase utility. For example, if an individual perceives that saving \$50 per month has decreased instant gratification, one must reconfigure the perception of the outcome. Instead of buying a new shirt for \$50, the individual can, instead, create a trade of clothing with friends. This provides the instant gratification associated with the benefit of a new clothing item, and the benefits of saving for the long term. By cognitively understanding the outcome, eventually, one can create the discipline of delayed gratification. Finances must be presented in a manner, which is comprehensible to an immediate gratification-seeking individual.

Therefore, it is useful to understand how wealth, in the form of savings and income, can add utility on both an economic and psychological level. By encouraging savings, people may better support their current and future happiness. To shed some light on how income, savings, and control over one's life (through wealth) affects subjective wellbeing, the present study used a regression model to examine the relationship between independent factors of financial statistics and self-reported savings behavior, and the dependent variable of self-reported positive experience index. The sample of 46 countries included data taken from Gallup Worldview, World Values Survey (WVS), The World Bank, and The Human Development Report Office (HDRO).

Gallup Worldview compiles global data from location specific Gallup polls, to provide insight into the struggles and strengths across national borders. One of the areas of interest is daily subjective wellbeing, which includes surveys related to specific emotions and moods, as well as indexes. The Positive Experience Index is a measure of experienced wellbeing on the day before the survey was taken. Questions provide a real-time snapshot measure of respondents'



positive experiences. This study uses the results of this survey as the dependent variable in the regression model.

An independent variable in this regression model is the savings statistic extracted from a poll taken by the World Values Survey (WVS), which asked participants to choose the following behaviors that described them: During the past year, did your family 1) save money, 2) just get by, 3) spent some savings, 4) spent savings and borrowed money. This statistic was part of a compilation survey of 97 countries through a network of worldwide social scientists to examine how the changing values around the world influence social and political lives on a national level. The standardized survey questions, which are translated into each country's respective language, are administered by social scientists in each country.

A second independent savings variable, based on adjusted net savings, was created from financial statistics taken from The World Bank. Adjusted net savings is equal to a nation's private and public net savings, plus education expenditures, minus natural resource depletion. Using adjusted net savings, also referred to as true, or genuine, savings within a country, takes into consideration the investment in human capital as well as the management of natural resources, which are both national assets. In the present model, positive savings is predicted to increase subjective wellbeing.

Additional economic independent variables were compiled from The World Bank database, which included the Gini index, gross national income (GNI), and out of pocket health care expenditures. The Gini index calculates wealth inequality by measuring the area between the Lorenz curve and a hypothetical line, which represents absolute equality. The Lorenz curve is a graphical representation of income distribution; the cumulative percentages of income lie on the y axis, while the cumulative percentages of population are plotted on the x axis. A

hypothetical line of equality is represented as a 45-degree line. The area between these two lines is the percentage of inequality. A Gini index of 0 indicates perfect equality, whereas an index of 100 suggests perfect inequality. The expected sign for the Gini index coefficient was positive.

Another independent variable used was from The World Bank, which calculated purchase power parity (PPP) GNI per capita as the total value of final goods and services produced by the resident economy of a country for a given year. PPP is a way to equalize the cost of a given basket of goods, by adjusting the market exchange rates. By using PPP, more accurate comparisons of average income across countries can be made. As income increases, happiness levels were expected to gain strength.

However, the dynamics of wealth, measured as income or stored assets, and how it relates to subjective wellbeing is complex. Having too little wealth can foster stress through the inability to sustain a healthy life, such as being able to purchase food or healthcare, while striving for too much affluence has the negative effect by restricting the ability to savor the pleasures money can buy. To represent this theory in the regression model, the independent variable  $GNI^2$  will also be added, with an expected negative coefficient sign.

Health care expenditures are another statistic taken from The World Bank database. Per capita health expenditures (using PPP) provided individual healthcare costs on an annual basis. The percentage of out of pocket expenses, or direct healthcare cost outlays per household, included any costs relating to goods or services intended to rebuild or improve health. These two variables, health expenditure and percentage of out of pocket expenses per household, were multiplied to represent the expected healthcare cost per individual. As healthcare costs rise, the level of subjective wellbeing was predicted to drop.

As a division of the United Nations Development Programme, the Human Development Report Office (HDRO) compiles data from several international statistics agencies to create a Human Development Index (HDI), based on cross-country comparisons. One of the variables used to measure empowerment and sustainability is the mean years of schooling, provided by Barro and Lee's 2010 report, which is based on household surveys and population census data compiled mainly by UNESCO and Eurostat. The expected sign for the mean years of education was positive.

To create a robust model for this analysis, the following independent or proxy variables, based on theoretical relevance, were included.

$$Pos_i = \beta + \beta Gini_i - \beta GNI_i - \beta GNI_i^2 + \beta Saver_i + \beta Savings/Pop_i + \beta Ed_i + \beta Hlthcare*OutOfPocket_i$$

POS =	Positive Experience Index from 0 to 100
Gini =	Gini Index from 0 – 100
GNI =	Gross national income measured in \$1,000 increments
GNI <sup>2</sup> =	Gross National Income measured in \$1,000 increments, squared
Saver =	Percentage of respondents who contribute to their personal savings
Savings/Pop =	Net national savings per capita, measured in \$1,000 increments
Education =	Average number of years of education
Hlthcare*OutOfPocket =	Annual healthcare expenses per person multiplied by annual percentage of out of pocket expenses

In the first regression analysis, all of the variables were represented with the correct signs, except education,  $t(37) = -.58, p < .05$ , which was represented as being negatively correlated to happiness. Possibly the benefits of education were being represented in GNI. Having a higher education generally equates to more employment options, including whether to pursue higher paying jobs. As result, education was removed from the model, circumventing possible multicollinearity.

The subsequent model is fairly robust (shown below), explaining 57 percent of subjective wellbeing.

$$\text{Posi-hat}_i = \beta + .581\text{Gini}_i + .977\text{GNI}_i - .012\text{GNI}^2_i + .299\text{Saver}_i + .881\text{Savings/Pop}_i - .044\text{OutOfPocket*Hlthcare}_i$$

(5.57)      (+3.98)      (-2.27)      (+3.41)      (+1.79)      (-1.57)

$$R^2 = .57$$

As predicted, the gini index was significant,  $t(38) = 5.57, p < .05$ , showing a positive relationship to happiness levels; as inequality increases by one point on the gini index, the positive experience index score increases .58 of a point. Intuitively, inequality within society would decrease feelings of subjective wellbeing. However, findings show that social ranking, regardless of absolute wealth, elevates emotional wellbeing. According to the rank-income hypothesis, happiness doesn't come directly from the benefits of having more money, but rather the ranking in society that money brings (Boyce, Brown, & Moore, 2009). When a country has more inequity, there is more opportunity to increase happiness because there are more possibilities for upward mobility from which to increase social ranking.

GNI,  $t(38) = 3.98, p < .05$ , and  $\text{GNI}^2$ ,  $t(38) = -2.27, p < .05$ , can also be used to reliably predict relationships between income and happiness. Increasing GNI (using PPP) by \$ 1,000, will increase positivity index scores by .97 of a point. However, after a certain point, GNI has diminishing returns on subjective wellbeing. To find the slope from which GNI is at its peak ability to increase happiness, a derivative of GNI, as a function of happiness, was calculated (See Figure 1).

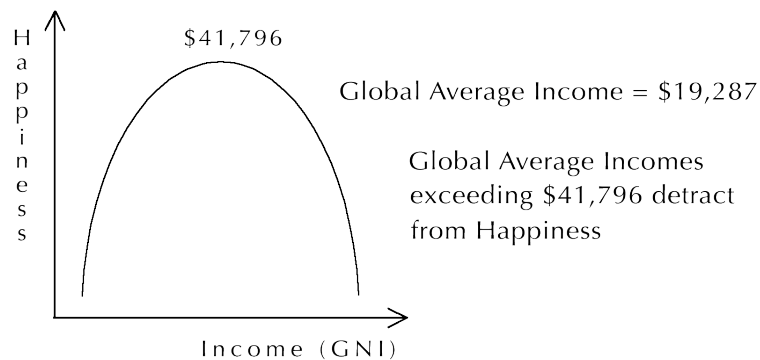
Figure 1

$$\begin{aligned} \text{Max}_{\text{GNI}} &= .977702\text{GNI} - .011696\text{GNI}^2 \\ \frac{d\text{Happiness}}{d\text{GNI}} &= .977702 - .023392\text{GNI} \\ \text{GNI} &= 4.1796^* = \$41,796.00 \end{aligned}$$

\* GNI scale is 1 = \$1,000

Happiness ratings will be maximized when GNI reaches \$41,796. However, after GNI (based on worldwide, average income) exceeds \$41,796, which is twice the global mean income of \$19,287, higher income levels begin to have negative effects on happiness (See Figure 2). This model concludes that for every \$1,000 of income over \$41,796, ratings for the positive index will decrease by .01 of a point.

Figure 2



This phenomenon could be explained by looking at how discrepancies in income levels can adversely affect social interactions and interpersonal relationships. As shown in Figure 2, people who are on both the high and low ends of the wealth spectrum appear to have the lowest levels of happiness. Poverty can impede feelings of wellbeing due to deprivation of monetary capital, whereas extreme wealth can negatively affect happiness, resulting from a deficiency of social capital. As material affluence exceeds a critical level, deprivation of an adequate level of sincere social communication (which is necessary to fulfill needs for inclusion and affection) becomes paramount and happiness is diminished (Levy, 2009).

An alternative explanation could be due to wealthy individuals' diminished ability to savor positive emotions and experiences. A study conducted by Quoidbach, Dunn, and Milkoljczak (2010) provide evidence that the positive effects of money on happiness are mitigated by impairment to enjoy life's small pleasures because of the abundance of pleasurable

experiences that wealth promises. Having easy access to luxury experiences may dampen the joyful effects derived from everyday life; as costly experiences are abundantly consumed, they ~~too?~~ may become less enjoyable. Alternatively, the scarcity of these experiences, due to limited wealth, may increase savoring.

As expected, self-reported saving behavior has a relationship with happiness,  $t(38) = 3.41, p < .05$ . As respondents reported themselves as being savers, their positive experience ratings increased by .29 of a point. The second savings variable, per capita adjusted net savings, was also shown to have correlational strength with wellbeing,  $t(38) = 1.79, p < .05$ . For each \$1,000 saved, we can infer that people will gain .88 of a happiness index point. Interestingly, even though there are two savings variables, they are both statistically significant, indicating that each of these variables must be measuring savings from a different vantage point. Perhaps the adjusted net savings measures the wealth equalized over the population of a country, while self-reported saving captures a behavior. In other words, the overall savings level for a country may be due government enforced savings (through policy and taxes), rather than individual saving behavior.

Even though the healthcare variable did quite meet the 95% confidence level,  $t(38) = -1.57, p = .062$ , it was not omitted. Based on supporting studies, stress-induced depression or ill health has a positive relationship with rising health costs. According to a study conducted by Neill, Xiao, Sorhaindo, and Garman (2005), a positive relationship was found between finances and health. Forty-two respondents in the study reported impaired health, attributable to the stresses stemming from financial problems. Limited financial resources can further exacerbate ill health as the inability to pay medical bills can lead to delayed or inadequate healthcare, creating a vicious cycle. While a correlation between health expenditures and subjective wellbeing is

supported by studies, the cause for the relationship still has not been determined. Per our model, for every \$1,000 spent on healthcare, positive wellbeing will decrease by .04 of a point.

One of the limitations of this model is the exclusion of a variable for individual debt. International organizations do not provide consistent data across nations on the short or long-term domestic indebtedness of individuals. Debt, along with savings and income, is an important function of overall wealth.

To circumvent data collection issues related to unavailable country statistics, future analysis could focus on just the United States, comparing major cities. Not only would statistics be more available across American cities, but also wide differences, such as hope, between countries could be diminished. Hope may be a hard belief for citizens to embrace if their country is rife with corruption, unhealed scars serving as constant reminders of recent war, or an unstable government. Additionally, even though cost of living differences would still affect the comparison between cities, currency valuation would not be an issue.

In conclusion, wealth, in the form of income and savings, does have an effect on wellbeing. Having a secure financial situation, represented as a healthy savings, appears to elevate happiness levels. Perhaps creating and maintaining a savings provides more options, including whether to work, where to live, or how to help others. As people become more financially self-sufficient, they are able to have a greater sense of locus of control. The relationship between income and wellbeing is positive until earnings become excessive. When people earn over double the income of their peers, they report a decrease in overall happiness ratings. While it's important to strive for financial security as a way toward greater subjective wellbeing, it's equally crucial to develop and maintain social connections and interpersonal relationships. In other words, a balance must be kept between financial and social capital so that

one may have enough money to fund choices in life, but not at the detriment of personal relationships and leisure time to savor life's pleasures.

Considering the current direction of the economy, government programs would do well to educate the public on the psychological benefits of savings, and how exerting a small amount of self-control today, through savings, can provide a much greater level of utility through optimism and more control over life choices. However, while education can empower citizens to understand the benefits financial savings can have on later years in life, not all levels of society will see a brighter future as incentive. The behavior of savings is not only affected by personality type (e.g. satisficers exhibiting more discipline), but also by circumstances. For example, people of lower SES may have lost hope and may see no reason to plan for their futures, instead seeing their best option as living as well as they can in the moment. In addition to financial education, another solution could be the implementation of government policy, which makes saving compulsory, through automatic enrollment in 401k plans, IRAs, and Keoghs. By achieving more savings, individuals can enjoy a greater sense of control over their lives, creating a happier society.



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