The University of North Carolina at Pembroke

Can Money Determine Happiness?

A Regression Analysis on the Impact of Factors that Contribute to Happiness on Wealth

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Graduate Research Symposium Submission

April 5, 2021

Abstract

Studies have been conducted to test the existence and strength of the relationship between wealth and measures of happiness. These studies have had varying results, though most conclude that a weak or parabolic association occurs between these variables. Specifically, this parabolic association indicates that in lower socioeconomic households, non-wealth leads to emotional pain and burden - therefore hardship and a report of unhappiness. Upon reaching a certain threshold of wealth, it no longer has a positive effect on one's happiness or quality of life. This almost logarithmic association is the primary focus of this paper, whereby a tiered regression analysis tests the positivity of relationship between wealth and subjective happiness using the 2018 General Social Survey (GSS).

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Introduction

It is commonly thought that money cannot determine one's happiness, yet there exists no clear consensus on whether or not that is the case. The study of these two variables, wealth and happiness, is complicated by the fact that each are intersectional. The measure of the definition of happiness can be split into two distinct branches: *subjective happiness* and *objective happiness* (Kahneman, Diener, & Schwartz, 1999). Subjective happiness refers to an individual's rating of their happiness whilst objective happiness represents a measurement of an individual's instant utility-worth over the period of time being examined. Wealth—otherwise defined as the summation of a household's assets—is also complicated because of its multifaceted nature, which is based on numerous factors that contribute to one's subjective and objective happiness (Killewald, Pfeffer, & Schachner, 2017). Happiness is also identified as being driven by an individual or household's ability to access resources in an equitable manner (Natali, Handa, Peterman, Seidenfeld, & Tembo, 2018). Therefore, understanding the quantitative relationship between happiness and wealth could tip the scales in terms of identifying and implementing policy initiatives to ensure a more equitable share of resources, and thus an increase in happiness across a broad spectrum.

The idea of wealth as a deciding factor in one's happiness, as identified by Natali, Handa, Peterman, Seidenfeld, and Tembo (2018), has been at the forefront of vigorous debate. The idea is provocative, and as such correlates with intrinsic and extrinsic motivators (Natali et al., 2018). Moreover, it suggests a causal relationship in one's mental state associated with monetary gains or losses, which stands in contradiction to the typified social norms tied to drivers of happiness

(Natali, et al., 2018). In terms of wealth and its effects on well-being, there exists a direct correlation between income and happiness, which is prevalent in the literature, that is identified by social trends such as prosocial spending, level of materialism, degree of seeking intrinsic versus extrinsic value activities, and overall quality of life. However, these are all inconsequential in terms of validity, according to Diener (2009), as correlation does not indicate causation.

Diener and Biswas-Diener (2002) asserted that there is a specific form of research design that must be incorporated in order that results reflect the true answer to whether or not money can determine happiness. There are three criteria, as identified by Diener and Biswas-Diener (2002), that must be met: 1) ensure that the individual's being studied represent longitudinal as opposed to cross-sectional data; 2) data on psychological well-being is a crucial requirement; and 3) the study must incorporate the role of money, in varied amounts, across a breadth of demographics. While the use of General Social Survey data is not representative of longitudinal data, if it is limited to a single year, it can be applied as such if multiple years of data are used in the analysis. Therefore, this study represents a cross-sectional analysis of wealth as a determinant of happiness, and can be used to ascertain whether or not further study, in the form of a longitudinal study, would be worth pursuing. Another factor in deciding upon how to ensure relevance of the analysis is tied to four factors that are identified as a reflection of well-being. These are as follows: 1) Circumstances; 2) Aspirations; 3) Comparisons with those around them; and 4) An individual's baseline level of happiness (Chen and Spector, 1991).

Based on these outlined criteria and factors the relationship between wealth and happiness can be uncovered. Interestingly, previous studies have tended towards more subjective happiness factors, thus proving a slight correlation between wealth and happiness (Diener &

Biswas-Diener, 2002). However, this modest positivity indication is confounding. Why is it that

wealth, if it is a contributor to increased happiness, does not do so on a linear scale with wealth

acting as a driver of increasing happiness continuously across the spectrum? This may be due to

the subjective nature of happiness. Therefore it is essential that objective drivers, tied to one's

utility worth, are incorporated alongside subjective measures. In this way a clear picture of

wealth and its correlation with happiness can be defined.

Review of Literature

The purpose of this review is to define and understand the various measures of happiness

as well as to examine the drivers, complexities, and implications in the determined

relationship(s) between wealth and measures of happiness.

Drivers of the Wealth-Happiness Relationship

Despite the common assumption that wealth is a fixed driver of happiness in that the

more one has accumulated, the happier one will be, it has been found to be the opposite effect

after a certain threshold of wealth (Sengupta, Osborne, Houkamau, Hoverd, Wilson, Halliday, &

Sibley, 2012; Fischer, 2008). Wang & Yu (2017) describe the wealth-happiness relationship as

an inverted U-shaped curve. Yes, it is true that at the lower echelons of socioeconomic status

(SES), wealth will somewhat make one happier. However, after enough wealth is accumulated

and one may afford a multitude of pleasurable experiences, the ability to be happy decreases.

This phenomenon can simply be explained as a systematic desensitization of the ability to be

happy by constantly being exposed to the activities that one enjoys. In short - the more one *can*

enjoy, the less one will be *able* to enjoy.

Dunn, Quoiback, Petrides, and Mikoljczak (2010) experimented with the veracity of this

relationship. They tested two primary possibilities: first, that wealth was directly and positively

associated with happiness; and secondly, that the more wealth one had the less they would allow themselves to enjoy something. In addition to a traditional "happiness" measure based on one's self-report, the authors measured other factors linked to the idea of happiness that they labeled as "savoring." Here, savoring has little to do with food. Rather, it is the ability to relish and experience happiness or similar positivity (Dunn et. al., 2010).

The first study Dunn et. al. (2010) conducted was based on self-reporting on scales such as the Emotion Regulation Profile, the Savoring Positive Emotions Scale, and the Subjective Happiness Scale. The variables they determined to be used in their regression model were savoring, happiness, current wealth, and desire for wealth. From this study, they discussed a few key findings:

- Wealth predicted a lower ability to savor positive emotions, which suggested that wealth caused an impaired ability to savor.

- While savoring ability did not predict a desire for wealth, it positively predicted happiness. This finding is consistent with previous research on the topic.

- After replacing savoring in their regression model, a modest, direct relationship between wealth and happiness was found.

The second study Dunn et. al. (2010) orchestrated was a simple taste-test. Participants were shown money before being given a piece of chocolate to eat and were blindly observed by two other participants. The findings from this study correlate to the previous, as they found that being shown money decreased the ability to literally savor candy.

The results here are corroborated by a number of other studies, though not as strong as an association has been found. Kahneman and Deaton (2010) posited that rather than using language such as "more wealth makes one happier," to shift the conversation to that of emotional

pain. Beyond some threshold, money will have little to no positive impact on one's ability to be happy or to enjoy activities any more than someone of a lower socioeconomic status (SES) would. However, with less money there is more of an emotional burden; to pay the rent, for instance, one might not be able to enjoy a night out with friends and family. To pay the water bill, one might have to give up buying new cosmetics. The burdens go on - if budgets are necessary to keep a household afloat, then there have been sacrifices made that deter one from engaging in joyful experiences that cost money (Kahneman & Deaton, 2010). Merely surviving in a capitalistic economy where even entrance to some parks costs money, then financial burdens will continue to emotionally harm individuals simply existing. Gilovich, Kumar, and Jampol (2014) describe the intimate details of this relationship. The existence of experiential purchases implies a human need to adapt to societal gains. Material purchases result in an almost instantaneous fade of excitement after a brief period of time, whereas experiential purchases continue to have a lasting impact even years after the fact that contribute to one's happiness. Mogilner and Norton (2016) discuss the same impacts - that spending time and money is a prosocial experience that is an ultimate mediator of the wealth-happiness relationship.

Headey, Muffles, and Wooden (2008) discovered that across international borders, the same effects can be seen in European countries. This study compared households in Britain, Australia, Germany, Hungary, and the Netherlands using a series of self-reported surveys regarding wealth, income, and happiness, among other variables. While income did not account for much variance in happiness, the authors found that it was rather linked to quality of life which had a positive relationship with happiness. However, it should be noted that another finding in this study is that this satisfaction was socially-driven. One's own material well-being relative to others in society generated different feelings: upward changes in one's position

generates increased satisfaction, while downward changes were dissatisfying. Conversely, people are well aware of the effects of money on emotional pain and their wellbeing. This is not only a driver of the wealth-happiness relationship, but a mediating variable (Gilovich & Cone, 2010).

Additionally, research on the topic of wealth and the moderating effects it has on happiness has been consistent in its quality of life measures. Sengupta et. al. (2012) conducted a telephone Quality of Life Survey in New Zealand in 2008. This study revealed that, after controlling household income by a logarithmic association rather than ratio-level, there was a significant bivariate association between income and quality of life. Additionally, there was also a significant association between income and happiness, as quality of life was a mediator in this relationship. After ruling out error variance, this association was more strongly present. The authors conclude that, to a certain extent, while money cannot "buy" emotions, it can buy good health and experiences that culminate in happiness.

One's love of money (LOM), or desire to have, is an extraneous factor in determining how true the association between wealth and happiness is as well. Chitchai, Senasu, and Sakworawich (2018) investigated the moderating effect of love of money on the relationship between socioeconomic status and happiness through an experimental and control group, and projected several hypothesis:

- Hypothesis 1 - there is a positive relationship between SES and happiness
- Hypothesis 2 - Satisfaction in life domains mediates the relationship between SES and happiness.
  - Hypothesis 2.1 - Job satisfaction mediates the relationship between SES and happiness.

- ○ Hypothesis 2.2 - Family satisfaction mediates the relationship between SES and happiness.

  - ○ Hypothesis 2.3 - Income satisfaction mediates the relationship between SES and happiness

- Hypothesis 3 - LOM moderates the relationship between SES and satisfaction in life domains.

  - ○ Hypothesis 3.1 - The influence of SES on job satisfaction is higher for high LOM people than for low LOM people.

  - ○ Hypothesis 3.2 - The influence of SES status on income satisfaction is higher for high LOM people than for low LOM people.

- Hypothesis 4 - LOM moderates relationships between satisfaction in life domains (i.e., job and income satisfaction) and happiness.

  - ○ Hypothesis 4.1 - The influence of job satisfaction on happiness is lower for high LOM people than for low LOM people

  - ○ Hypothesis 4.2 - The influence of income satisfaction on happiness is higher for high LOM people than for low LOM people

The findings of this study are indicative of the threshold-effect that Kahneman et. al. (2010) stumbled upon. After a certain threshold, love of money contributed negatively to one's happiness and life satisfaction. However, it also became a strengthening moderator between socioeconomic status and happiness. Individuals that loved money were less satisfied with their income, but individuals who did not love money as much were predisposed with a much more positive attitude toward their income and were less sensitive toward the perception of their income or lack thereof. These findings are also present in Diener and Biswas-Diener's (2002)

analysis of the same topic - material wealth and want thereof have inverse reactions to one another.

Complexities of the Wealth-Happiness Relationship

The wealth-happiness relationship, as seen in the previous section, has been demonstrated to have different drivers and therefore different effects on individuals as well as mediating variables. The complexities therein vary widely, though most research on the subject points in one direction: that the wealth-happiness relationship is not linear; rather it is parabolic. This was already introduced in the discussion of Wang and Yu's (2017) critical analysis shaped the viewpoint of this literature review.

Broyce, Brown, and Moore (2010) established a similar trend in a study that combined well over 80,000 observations into a regression analysis. After thorough background research, the authors categorized individuals by comparison references in their hypotheses. First, that individuals compare themselves to smaller reference groups where relative rank of income directly influences the explanation of life satisfaction, or happiness. Broyce et. al. (2010) discovered that for each "better than," satisfaction was gained. Conversely, for each "worse than," satisfaction was lost. Here, social rank is a key mediating variable and predicted a concave utility function in a positive skew of this relationship, implying that the effects of ranking income have little to no impact on income-derived utility. However, the authors do note that dissatisfaction could still exist from inequality, especially of lower socioeconomic statuses (SES).

Fischer (2008) explains in great detail the economic psychology behind the perception that over the last few decades, Americans' wealth increased substantially despite happiness having the opposite effect. Much of Fischer's (2008) postulates here parallel aforementioned

studies whereby answers to this paradox include explanations for why income, beyond a certain threshold, fails to make people happier. Other answers redirect the discourse to saddening social changes such as a steep increase in divorce rates. However, Fischer (2008) draws attention to a hidden trend that is not often discussed in this field. Economic growth, measured by GDP, has been steady but becoming more and more unevenly distributed while the standard of living has done nothing but rise, causing emotional distress to lower socioeconomic classes. Additionally, stressful national events, such as the attacks on 09/11, depress most Americans in self-reported studies. Perhaps, then, wealth and happiness are also dependent on the economy and national mindset in terms of living costs. The burden of expressing emotional pain, in Kahneman and Deaton's (2010) terms, is on those who accumulate less wealth and have lower income. In this sense, it is also not best to simply raise living wages, according to Easterlin (1995). The norms of materialism that inform these trends are proportionate to living standards across the board. This was depicted in Broyce et. al.'s (2010) use of rank theory to gain insight.

Ahuvia (2008) approaches this issue far differently and more critically. This author posits that though there is an association between wealth and happiness, it is consistently weak on its own. Furthermore, the validity of self-reports is questioned here, where the assumption that individuals will answer honestly and accuracy is called into question. Advocates of a connection between wealth and happiness highlight that a statistically significant connection has been found in almost every study. In contrast, authors who argue that wealth is not closely related to happiness and wellbeing once basic needs have been met, focus on the weakness of this connection among wealthier individuals.

Implications for Public Policy and Associated Research

What can be gathered from these social trends is that wealth does in fact affect one's happiness. The study of the relationship between happiness and wealth is one that comes with practical implications. The well-being and happiness of individuals flows into the unity and wellbeing of the community. While the construct of happiness does not at first glance appear to be a necessary aspect of human existence, it is an indicator for one's quality of life. This can be used to determine and target arenas of inequality through public policy. Public policy, as a field, aims to address and alleviate unintended negative consequences since the community of human life is what is primarily valued. To study the relationship between wealth and happiness is a critical stepping stone to moving forward to equitable living. Truly, social science should be at the forefront of policy making and changing in order to best address community and national needs.

Diener et. al. (2002) explain this in the framework of income meeting human needs - close social relationships and interesting activities – within their cultural and community contexts. The pleasures that can be purchased with a high income can be offset if materialist consumption leads to changes in financial situations in the lives of people.

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Hypotheses

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The hypotheses tested in this regression analysis replicate some of the previous tests in the established literature. Plainly, the objective in this regression is to examine the impact of wealth on various factors that contribute to a measure of happiness. The null hypothesis (H_0), then, would be that there is no statistically significant relationship between wealth and any of the other variables. The alternative hypothesis (H_A) predicts that between any of the independent

variables and wealth, there will be a statistically significant positive relationship. The scientific

notation of each hypothesis can be found below:

$$H_0: \beta = 0$$

$$H_A: \beta > 0$$

In the summation of the regression analysis presented in this paper, there are three

individual regression models utilized here that are critical in identifying trends and non-spurious

relationships. This trifecta of regression models was created so that each builds upon the

previous, elucidating more accurate results to be used for analysis. The table below highlights the

variables that comprised each level of model:

Basic Regression	Intermediate Regression	Advanced Regression
DV: wealth		
quallife	absingle born wrkgovt happy finalter satjob quallife	absingle born wrkgovt happy finalter satjob age degree sex race wrkstat lifenow quallife

The basic regression model was created to test the most fundamental relationship

between variables - *wealth* and *quallife*. The quality of life variable was considered to be,

individually, the most accurate measure of happiness of the independent variables. The

possibilities in this measure - excellent, very good, good, fair, and poor - suggest a relativity in

the collection of this data that ensures reliability and validity. Additionally, quality of life mirrors

what one can afford through their wealth. This model was informed by the literature that stated

wealth works hand-in-hand with ensuring one's health, safety, and luxury through life - three major aspects that contribute to one's happiness (Kahneman & Deaton, 2012; Gilovich et. al, 2014; Fischer, 2008).

The intermediate regression model builds upon the basic; in addition to the fundamental relationship there is an addition of several dummy variables - marriage status, immigrant status, employee sector status, job satisfaction, financial situation stability, and a three-category happiness measure that is questionably reliable and valid. These dummy variables are derived from the wide breadth of variables also measured in the established literature on this topic. The diversity of these variables guarantees that there is little room for unaddressed, spurious relationships to occur in the regression.

Finally, the advanced regression model is comprised of the intermediate model's work as well as four controlling variables (age, sex, highest degree earned, and race) and two additional independent variables relating to one's happiness (rating of life, and workforce status). All of these variables were indicated in the literature as contribution to the concept of happiness (Ahuvia, 2008; Chitchai, 2018; Diener et. al, 2002; Dunn et. al, 2010; Headey et. al, 2008; Fischer, 2008; Sengupta et. al, 2012). Together, these models piece together a modern narrative of the age-old assumptions about wealth and happiness.

Data Collection, Measurement, and Variables

The data used in this study was the result of the General Social Survey (GSS) conducted by the National Opinion Research Center (NORC) at The University of Chicago. The GSS is one of the largest independent social research organizations that is funded by the National Science Foundation. Its primary mission is to gather data on modern American society to track a myriad of trends and has archives dating to 1972. The GSS comprises many standard demographic and

behavioral questions as well as any additional topics considered relevant to present social

movements. Further, it seeks to make the data they have collected easily accessible to the public.

For this regression analysis, the data used was from the 2018 GSS dataset. The

information was collected at respondents' homes. These respondents were randomly selected

according to address to represent a proportionate sample of the United States. The field

interviews occurred between April 12, 2018 and November 10, 2018 but took several months of

validation before it was released to the public. Over 1,000 variables were coded and cleaned

during this time. The table below represents the variables used in this analysis and what they

were used for. Each will be thoroughly discussed in the following sections.

Table 1 - Variables in Regression	
Dependent Variable	**wealth** Respondent's total wealth
Binary Dummy Variables	**richwork**- R's preference to work despite wealth **born** - If R was born in USA or not **wkrgovt** - Private or public employee status
Three-Category Dummy Variables	**happy** - R's general happiness **finalter** - R's financial situation change over past few years **satjob** - R's satisfaction with job
Control Variables	**age** - R's age **sex** - R's sex (male or female, no *other* code) **degree** - R's highest degree earned **race** - R's race
Independent Variables	**lifenow** - R's rating of life overall **quallife** - R's rating of quality of life **wrkstat** - R's labor force status

Dependent Variable

The dependent variable in this regression analysis is obvious but paramount to accurately

represent. In the 2018 GSS dataset, *wealth* was utilized here. It is a numerical estimation of how

much wealth the respondent, individually, has accumulated based on income, homeownership,

car ownership, and various other factors. Originally the values for this variable were word-coded

categorical levels of income - for example, $5,000 to $20,000; $20,000 to $40,000; and so on.

For the purpose of the statistical computer program recognizing that these coded values actually

had meaningful single-level intervals, the input was recoded to represent the median values for

each category. In the example provided, "$5,000 to $20,000" was recoded "12,500," "$20,000 to

$40,000" was recoded "30,000." Key summary statistics are included below regarding the

variable *wealth*:

Table 2 - Summary Statistics of *wealth*				
N (obs)	**Mean**	**Standard Deviation**	**Min**	**Max**
1,310	365,322.5	949,660.1	2500	1.00e+07

Binary Dummy Variables

        In order to explicate the true relationship between wealth and another variable, this

regression analysis employs the use of several dummy variables to draw the reliability of these

tests. There are three binary dummy variables used here - ***richwork***, ***born***, and ***wrkgovt***. Each of

these answers a simple "yes" or "no" question, coded with using 1 and 2, respectively. *Richwork*

is derived from the question "If you were to get enough money to live as comfortably as you

would like for the rest of your life, would you continue to work or would you stop working?"

Born measures whether or not the respondent was born in the United States. Lastly, *wrkgovt*

measures if the respondent works in the public or private sector. These variables did not require

recoding. Summary statistics for each of these variables can be found in the table below:

Table 3 - Binary Dummy Variables Summary Statistics					
Variable	**N (obs)**	**Mean**	**Standard Deviation**	**Min**	**Max**
richwork	1,003	1.279163	.4488114	1	2
born	2,347	1.128675	.3349111	1	2
wrkgovt	2,214	1.7972	.4021759	1	2

Three-Category Dummy Variables

Due to the nature of this regression analysis and how wealth has been measured, these three-category dummy variables were chosen to mimic the foundation of discourse on this topic discussed in the review. The three three-category dummy variables presented in this regression are *happy*, *finalter*, and *satjob*. Each of these are based on questions that utilize variable ratings. *Happy* is from the question "Taken all together, how would you say things are these days--would you say that you are very happy, pretty happy, or not too happy?" The vague wording of this question and three answers make it difficult to rely on the true validity of this variable. While this study is predominantly focused on wealth and happiness, *happy* is best used as a dummy variable to capture a more holistic picture. *Finalter*, however, establishes a history of financial stability for the respondent. The answers here are ordered by "better," "worse," and "stayed the same." *Sajob* is also based on job satisfaction - is the respondent "very satisfied," "moderately satisfied," "a little dissatisfied," or "very dissatisfied," with the work they do. Critical summary statistics of these variables can be found in the table below:

Table 4 - Three-Category Dummy Variables Summary Statistics

Variable	N (obs)	Mean	Standard Deviation	Min	Max
happy	2,334	1.844283	.6467897	1	3
finalter	2,339	2.007696	.9146328	1	3
satjob	1,739	1.689477	.7992795	1	4

Control Variables

The control variables in this regression cover general demographic data to draw out the possible spurious effects that *age*, *race*, *sex*, and *degree* (highest degree earned) have in the final advanced regression. These are standard control variables and should be treated as such. Key summary statistics can be found below:

Table 5 - Control Variables Summary Statistics					
Variable	N (obs)	Mean	Standard Deviation	Min	Max
age	2,341	48.97138	18.06088	18	89
race	2,348	1.393952	.6847894	1	3
sex	2,348	1.551959	.4973989	1	2
degree	2,348	1.68356	1.211345	0	4

Independent Variables

The final set of variables integral to this regression analysis are the independent variables that are being measured. The original regression included *wkrstat*, *quallife*, and *realinc* -

workforce status, quality of life rating, and constant dollar controlled income, respectively. *Realinc* was dropped due to a bias in the regression since income and wealth are deeply tied to one another. In its place, **lifenow** measures an individual's overall rating of their life on a scale from 0-10, 0 as the worst possible and 10 as the best possible rating. The suggestion of a numbered scale is more likely to incite a truthful response from respondents (Ruane, 2016). *Wrkstat* is a nominal level variable that measures whether the respondent is unemployed, working part-time or full-time, retired, in school or training, is the primary housekeeper in the household, or other status. *Quallife* is similar to *lifenow*, but uses a different measure as the answers are "excellent," "very good," "good," "fair," and "poor." It can be said that the two variables are also interlinked as there exist a causal relationship between the two, although quality of life is an established survey measure that has been established in this field of research. The use of *lifenow* in this analysis is to ensure corroborated results and to test if there is a true relationship. The table below highlights the key summary statistics of these independent variables:

Table 6 - Independent Variables Summary Statistics					
Variable	**N (obs)**	**Mean**	**Standard Deviation**	**Min**	**Max**
quallife	2,330	2.309013	.9553157	1	5
lifenow	1,413	7.42109	1.613604	0	10
wrkstat	2,346	2.956522	2.304678	1	8

Results and Discussion

The regressions were run using the STATA program due to ease-of-access user interface with the data. Additionally, the 2018 GSS data was available to download from their website to directly load into STATA without formatting errors. Each regression was ran with a series of coded statements that controlled for regression tests, variable details, such as categories within each variable present in the regression, alpha level of the regression, and the robustness of the regression equation to maximize accuracy, reliability, and validity of the results. For each of the presented regressions, all standard errors were robust and each t-test was conducted at a 99.99% confidence interval.

Table 7 (page 21) shows the tiered regression analyses, presenting each coefficient and standard error per variable. Additionally, the R^2 value and number of observations are represented in the table. Any values that tested with a p-value of <0.05 are marked with "*," a p-value of <0.01 are marked with "**," and p-values of <0.001 are marked with "***." All standard error values are in parentheses immediately after the corresponding coefficient values. Finally, statistically significant values are also bolded to ensure visibility in the table.

Basic Regression

The basic regression analysis was conducted between one dependent variable (*wealth*) and one independent variable that captures a holistic picture of one's happiness - *quallife*. Discussed in the Hypothesis section, *quallife* measures the respondent's quality of life based on self-report. The R^2 value for this regression is 0.0558 at 1,306 observations. In other words, wealth is about 5.58% explainable by one's quality of life. The value of the constant in this regression is 767,285.4 - At the threshold of *earned* wealth of $767,285.4 and higher, there is an impact on quality of life.

Table 7 - STATA Output of All Three Regressions (Results)

Variable	Basic	Intermediate	Advanced
richwork		104605.7 (59305.47)	-14712.13 (63801.25)
born		**-140898.4** (**49041.53**)	-147297.1 (57856.35)
wrkgovt		60454.46 (48656.28)	**102406.3** (**50458.27**)
happy ➢ pretty happy ➢ not too happy		-144068.3 (84543.75) -172024.5 (103051.7)	-102208.5 (76916.96) -123154.9 (91942.43)
finalter ➢ worse ➢ stayed same		-22270.01 (64766.61) -84498.99 (54640.42)	-110899.7 (68821.89) **-116090.6*** (**53758.32**)
satjob ➢ moderately satisfied ➢ a little dissatisfied ➢ dissatisfied		-50077.01 (49877.76) 18881.93 (134036.4) -63091.41 (106710.5)	42871.34 (56090.65) 135581.7 (149503.3) 43289.62 (106754.4)
age			**13264.53*** (**2573.259**)
sex			**-131658** (**48324.19**)
degree ➢ high school ➢ junior college ➢ bachelor ➢ graduate			56623.8 (52321.41) 42249.99 (68189.65) **265192.8*** (**62572.94**) **551004.2*** (**148454.9**)
race			-4439.148 (33373.13)
quallife 2. very good 3. good 4. fair 5. poor	**2. -415289*** (**103214.1**) **3. -587973.7*** (**103588.3**) **4. -684497.8*** (**99689.46**) **5. -687285.4*** (**105564.9**)	**2. -222725.4*** (**98363.94**) **3. -339792.8*** (**109459.6**) **4. -381672*** (**88690.72**) **5. -322139.9*** (**115508**)	2. -152496 (110977.9) 3. -223250.4 (129516.2) **4. -193406.4*** (**97158.07**) 5. -138817.5 (133141.2)
lifenow 1. worst possible state 2. 3. 4. 5. 6. 7. 8. 9. 10. best possible state			1. 32091.58 (183011) 2. 293097 (189597.6) 3. 154913.1 (154882.7) 4. 155887.3 (156354.4) 5. 224259.8 (152919.3) 6. 237940.1 (150516.4) 7. 239124.7 (140034.9) 8. 265548.6 (149653.6) **9. 386306.4*** (**192217.2**) 10. 318260.4 (213717.5)
wrkstat			-25425.8 (42964.59)
Constant	**767285.4*** (**98580.26**)	**606957.9*** (**162119.5**)	-198521.9 (243770.3)
R^2	0.0558 (5.58%)	0.0580 (5.8%)	0.1678 (16.78%)

N (obs)	1,306	824	822

For respondents who rated their quality of life as "very good," at this threshold and above, their wealth drops $415,289 overall. In terms of respondents who reported their quality of life as "good," their wealth drops $587,973.7 overall. For respondents whose quality of life was rated as "fair," their wealth drops $684,497.8 overall. Finally, for a "poor" quality of life, one's wealth will be $687,285.4 less than their peers, all other variables controlled.

Intermediate Regression

The intermediate regression includes the basic model, in addition to three binary dummy variables and three three-category (or more) dummy variables. The purpose of these dummy variables is to determine if there are any spurious relationships within the regression. The three binary dummy variables measure one's desire to work despite wealth, immigrant status, and whether they work in the private or public sector. The three-category dummy variables measure one's general happiness with life, the stability of their financial situation, and job satisfaction.

The R^2 for the regression is 0.058 for 824 observations, otherwise wealth is 5.80% explainable by each of the variables presented here. The constant is $606,957.9, with a p-value of 0.000. Because it is so low, this indicates that the regression is statistically significant.

The variable *richwork* was found to have a value of $104,605.7. With each additional unit of *richwork* (i.e. respondents that would rather stop working if they were rich), an average addition $104,605.7 wealth value was found. This finding was not statistically significant, however. *Born*, on the other hand, tested for a p-value of 0.004 in this regression. Each additional unit of *born* - respondents who were not born in America - found a decreased wealth value by $140,898.4. *Wrkgovt, happy, finalter,* and *satjob* all produced not statistically significant values. *Wrkgovt* indicates that for each private sector employee in the sample, they

accumulated an average of $60,454.46 than their peers. All respondents for the categories within

happy and *finalter* represented a loss of possible wealth - *pretty happy* respondents had about

$144,068.3 less than their peers; *not too happy* respondents were at a loss of $172,024.5; *worse*

financial situation respondents suffered with about a $22,270.01 loss; and *stayed same* financial

situation respondents were at a loss of $84,498.99 in comparison to their peers. *Satjob* also

declined any statistical significant findings - but showed interesting results. Respondents who

were only moderately satisfied with their jobs or work accumulated $50,077.01 less than their

peers. Dissatisfied employees lost about $63,091.41 in comparative wealth. Finally, respondents

who were only "a little dissatisfied" had a gain of $18,881.93 compared to their peers.

In addition to the values of *born*, each response of *quallife* was found to be statistically

significant and presented losses of wealth at each level. Respondents who reported a "very good"

quality of life lost about $222,725.4 with a p-value of 0.024. A "good" quality of life lost

$339792.8 with a p-value of 0.002. "Fair" qualities of life lost $381,672 in comparison to peers

with a p-value of 0.000. Lastly, a "poor" quality of life was at a loss of $322,139.9 compared to

peers with a p-value of 0.005.

Advanced Regression

The advanced regression model builds upon the previous two - in addition to the six

dummy variables, there are four controlling demographic variables for sex, race, highest degree

earned, and age. The presence of two other independent variables here is noted. *Lifenow* and

wrkstat were included to illuminate the true relationship between *quallife* and *wealth* due to the

continuity of its statistical significance in the previous regressions.

The R^2 value of the final regression is 0.1678 with 822 observations - where wealth can

be 16.78% explained by the summation of the regression's variables. The constant's value in this

model is -198,521.9. At the threshold of *lost* wealth of -$198,521.9 or less, the variables in the

model have an impact.

Though several variables were found to be statistically significant, *richwork* was not

among them. In contrast to the findings in the intermediate model, the response that one would

not work if they were rich results in an average loss of $14,712.13 in accumulated wealth. In

born, for each person who is not born in the United States, there is an average loss of $147,297.1

in comparison to peers. *Wrkgovt* was a statistically significant finding in this model; each private

employee had a gain of $102,406.3 compared to one's peers with a p-value of 0.043.

Happy continued to lack statistical significance; however, the data indicates that

$102,208.5 is the loss of wealth for respondents who were "pretty happy," and "not too happy"

respondents lost $123,154.9. *Finalter* produced interesting results. While those who experienced

worsening financial stability situations were at a loss of $110,899.7, stable financial situations

showed a statistically significant loss of $116,090.6 with a p-value of 0.031. *Satjob* produced no

significant results, though at this regression level all categories reflected an increased wealth

accumulation of $42,871.34 for "moderately satisfied," $135,581.7 for "a little dissatisfied," and

$43,289.62 for respondents who were dissatisfied with their current jobs.

The control variables yielded statistically significant figures. *Age*, with a p-value of

0.000, found that for every additional year after eighteen, one would accumulate $13,264.53 in

wealth more than their peers. As for *sex,* respondents that identified as female were at a loss of

$131,658 at a p-value of 0.007. Though this was not discussed at length in the literature, the

presence of a gender pay gap is present in the United States. This finding can easily be explained

by this phenomena. *Race* did not appear to be influential to the accumulation of one's wealth. In

truth, each additional unit towards identifying as a person of color leads to a $4,439.18 loss in

wealth accumulation. *Degree* corroborates past experiments regarding education and income, therefore wealth. While high school and junior college degrees earned an individual $56,623.80 and $42,249.99, respectively, bachelor-level and graduate-level degrees were the most statistically significant with p-values of 0.000 each. At the bachelor-level, one will accumulate $265,192.80 more than their peers; at the graduate level, that number almost doubles to $551,004.20.

The three final independent variables weave together an intricate story; in working status, none seems to be the wiser as the average loss of $25,425.80 for each unit towards homemaker/unemployed is reported with no statistical significance. *Lifenow* ratings indicated all positive earnings for each additional unit of measurement

- Rating of 1 - worst possible state - earn $32,091.58 more in wealth accumulation.

- Rating of 2 earns individuals $293,097 more in wealth accumulation.

- Rating of 3 earns individuals $154,913.10 more in wealth accumulation.

- Rating of 4 earns respondents $155,887.30 more in wealth accumulation.

- Rating of 5 earns respondents $224,259.80 more in wealth accumulation.

- Rating of 6 earns individuals $237,940.10 more in wealth accumulation.

- Rating of 7 earns individuals $239,124.70 more in wealth accumulation.

- Rating of 8 earns respondents $265,548.6 more in wealth accumulation.

- Rating of 9 earns respondents $386,306.4 more in wealth accumulation. This rating is also the only statistical significant response of this variable.

- Rating of 10 - best possible state - earns respondents $318,260.40 more in wealth accumulation.

Additionally, *quallife* wealth coefficients were all losses: "very good" quality of life lost $152,496; "good" quality of life lost $233,250.40; "fair" quality of life was the only statistically significant variable with a loss of $193,406.4 and a p-value of 0.047; and a "poor" quality of life lost about $138,817.50 in wealth accumulation compared to peers.

Discussion

The results presented in Table 1 indicate that among the multitude of variables included in the analysis, there were only a few that were found to be statistically significant:

- "Fair" quality of life (negative)

- Age

- Sex (negative)

- Bachelor-level degree

- Graduate-level degree

- "9 - almost best possible state of life" rating

- Stable financial situation (negative)

- Private sector employee

The culmination of these variables explains, to some extent, if one accumulates great wealth as all of these tie in deeply to the meaning of happiness. From a bottoms-up life satisfaction theoretical framework, happiness is enabled by the sum of its parts - if you are considered to be "whole," global judgement will be passed on you that decides your happiness. This framework supports the alternative hypothesis (H_A) that there is, indeed, a positive relationship between wealth and "happiness."

Quality of Life - "Fair"

The "fair" quality of life rating was held statistically significant through each regression level. At a 99.99% confidence with robust standard error, this indicates that this relationship exists - a "fair" quality of life rating is associated with a decrease in wealth compared to peers' wealth, all other variables controlled. Here, the null hypothesis is rejected but fails to accept the alternative hypothesis because an inverse relationship is present. The more wealth one accumulates, the more they lose if they have a self-reported "fair" quality of life.

$$H_F: \beta < 0$$

Age

Age, as a controlling variable, is limited in its analysis individually. However, there is a positive association between it and wealth that is indicated in the advanced regression model. For each additional year of age after 18, one is entitled to about $13,000 worth more in wealth accumulation compared to peers. Because the p-value was 0.000, the strong association leads to a rejection of the null hypothesis and accepting the alternative hypothesis on this individual case.

$$H_A: \beta > 0$$

Sex

While *sex* was also a controlling variable, it was indicated in the advanced regression that female-identifying respondents (coded as "2") would accumulate less wealth than males - by $131,000. The p-value for this variable was 0.007. While it was not as strong as *age*, it is still notable. Here, the null hypothesis is rejected, and fails to accept the alternative hypothesis due to an inverse relationship present.

$$H_F: \beta < 0$$

Bachelor or Graduate Degree

The specification in the final regression that both a bachelor and graduate degree had a profound impact on one's wealth accumulation, where the more education was present, the more wealth. This is simply tied to the labor market's value of a college degree. The more expertise and training one has, the more their labor is worth - particularly in the private sector. Because this is a positive association between these variables and wealth, the alternative hypothesis is accepted.

$$H_A: \boldsymbol{\beta} > 0$$

Stable Financial Situation

It is evident in the data in the final regression that, for this dataset, financial stability prolonged for years is indicative of negative wealth correlation. Alternatively, one's financial situation could be stable but struggle with hardships, as this is a characteristic of the barriers to climbing the socioeconomic ladder. Generational poverty, or non-wealth, is most likely to be present due to the inverse relationship of wealth and financial stability. However, a failure to accept the alternative hypothesis is imminent as there is a negative relationship.

$$H_F: \boldsymbol{\beta} < 0$$

Private Sector Employee

Lastly, the shift toward being a private sector employee has a positive association with wealth. The p-value of this variable in the final regression is 0.043 - a somewhat weak correlation, but significant according to the regression and data. The rejection of the null hypothesis in this instance results in an accepting of the alternative.

$$H_A: \boldsymbol{\beta} > 0$$

Conclusion

The need for research investigating the relationship behind wealth and happiness is ever-present; money is a key and valuable asset in American society and the reason behind feelings of inequality, entrapments of generational poverty, as well as a driver of the growing wealth gap that activists call to close. The field of public policy exists in order to ensure that public interest is addressed, and that public needs are met in an equitable manner. Social issues that involve wealth and subjective and objective happiness (Kahneman et. al, 1999) should not be dismissed as unnecessarily requiring intervention. The literature in this analysis indicated the possibility of multiple trends that were crossed upon in the data, expounded upon below.

Parabolic, Not Positive, Association

Rather than a specifically positive association, the presence of a parabolic or an inverted U-shaped curve was found in an overall analysis of the data in the tiered regression model created and reported on in this paper. The "back-and-forth" style of accepting or rejecting hypotheses indicates that this relationship is not purely black and white. The cultural and community contexts are required to fully understand the association between wealth and the several indicative measures of happiness in the regression models.

Modest or Weak Association

The literature was warning of the findings of this regression analysis: that so rarely will a true, directly strong association between wealth and happiness will present itself. Instead, the power of mediating indicators - used as dummy and controlling variables here - were the standard criterion of revealing how wealth plays a role in subjective wellbeing. The R^2 values in this tiered regression ranged from 0.0558 to 0.1678. Though these are not as strong as in the presented literature, the association is still present.

Quality of Life Measures

Though the variable that explicitly measures happiness was utilized in this study, much of

the literature presented favored an approach that measured one's happiness and subjective

wellbeing in terms of quality of life. Quality of life is easier to quantify, since in theory and

practice it is directly related to income, therefore wealth. The consistent statistical significance of

quality of life in this regression analysis parallels this concept, as it remained one of the most

explainable variables by wealth overall.

The Validity of Self-Reporting

Ahuvia (2008) called into question the validity of self-reporting measures that most of the

established literature in this field topic use. Although that was also the primary use of the data for

this analysis, the public availability of a truer measure of subjective happiness and wellbeing is

not widely available. The creation and execution of surveys through interviews conducted over

the phone or in respondents' homes is the most accurate and effective way to measure subjective

happiness despite apparent concerns over the honesty of the answers provided.

The Economy of Emotional Distress - Limitations and Future Research

Kahneman and Deaton (2010) noted that emotional pain was deeply tied to financial

suffering for lower socioeconomic classes. Fischer (2008) corroborated this finding expressed in

nationwide economic traumatic events and GDP growth (or lack thereof) as offering an

explanation for the need of money for the non-wealth population. The expansion of this

theoretical framework to seek to explain and solve public social issues is a product of its cultural

context; the relationship between wealth and happiness was most popular during an American

economic crisis when trends were at an all-time low. The research in this field should extend

beyond the purview of the lens in which it was created. Knowledge is built where it should be

found. Public policy aims to address and alleviate these types of negative consequences since

the community of human life is what is primarily valued. To study and understand the

relationship between wealth and happiness is a critical stepping stone to moving forward to

justice and equity, as it is the responsibility of the policymaker to address these issues and serve

everyone in the community.

Future Research

The findings presented in this study elucidate the need to continue investigating the way

that wealth influences quality of life. The significance of uncovering and applying the knowledge

of the wealth-happiness correlation could be further tested, with the use of the 2020 GSS data

sets collected during the Covid-19 pandemic, to identify how wealth disparities affect health as

an additional condition of happiness. The explicit inclusivity of health as a condition of

happiness further impresses upon the definition of wellness, which includes key variables such as

social connectedness, exercise, nutrition, sleep, and mindfulness. The extent to which an

individual practices these tenets of wellness can be somewhat determined by their wealth, and as

millions of people across the US faced severe changes in their wealth status, it would be

beneficial to uncover where social vulnerabilities lie through a tiered regression analysis that

tests the rate of positivity between wealth and subjective happiness using the 2018 General

Social Survey (GSS) and applying that to current household data from 2020.

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Appendix

Table 1 - Variables in Regression	
Dependent Variable	**wealth** Respondent's total wealth
Binary Dummy Variables	**richwork**- R's preference to work despite wealth **born** - If R was born in USA or not **wkrgovt** - Private or public employee status
Three-Category Dummy Variables	**happy** - R's general happiness **finalter** - R's financial situation change over past few years **satjob** - R's satisfaction with job
Control Variables	**age** - R's age **sex** - R's sex (male or female, no *other* code) **degree** - R's highest degree earned **race** - R's race
Independent Variables	**lifenow** - R's rating of life overall **quallife** - R's rating of quality of life **wrkstat** - R's labor force status

Table 2 - Summary Statistics of *wealth*				
N (obs)	**Mean**	**Standard Deviation**	**Min**	**Max**
1,310	365,322.5	949,660.1	2500	1.00e+07

Table 3 - Binary Dummy Variables Summary Statistics					
Variable	**N (obs)**	**Mean**	**Standard Deviation**	**Min**	**Max**
richwork	1,003	1.279163	.4488114	1	2
born	2,347	1.128675	.3349111	1	2

wrkgovt	2,214	1.7972	.4021759	1	2

Table 4 - Three-Category Dummy Variables Summary Statistics					
Variable	**N (obs)**	**Mean**	**Standard Deviation**	**Min**	**Max**
happy	2,334	1.844283	.6467897	1	3
finalter	2,339	2.007696	.9146328	1	3
satjob	1,739	1.689477	.7992795	1	4

Table 5 - Control Variables Summary Statistics					
Variable	**N (obs)**	**Mean**	**Standard Deviation**	**Min**	**Max**
age	2,341	48.97138	18.06088	18	89
race	2,348	1.393952	.6847894	1	3
sex	2,348	1.551959	.4973989	1	2
degree	2,348	1.68356	1.211345	0	4

Table 6 - Independent Variables Summary Statistics					
Variable	**N (obs)**	**Mean**	**Standard Deviation**	**Min**	**Max**

qallife	2,330	2.309013	.9553157	1	5
lifenow	1,413	7.42109	1.613604	0	10
wrkstat	2,346	2.956522	2.304678	1	8

Table 7 - STATA Output of All Three Regressions (Results)

Variable	Basic	Intermediate	Advanced
richwork		104605.7 (59305.47)	-14712.13 (63801.25)
born		**-140898.4** (49041.53)	-147297.1 (57856.35)
wrkgovt		60454.46 (48656.28)	**102406.3** (50458.27)
happy ➤ pretty happy ➤ not too happy		-144068.3 (84543.75) -172024.5 (103051.7)	-102208.5 (76916.96) -123154.9 (91942.43)
finalter ➤ worse ➤ stayed same		-22270.01 (64766.61) -84498.99 (54640.42)	-110899.7 (68821.89) **-116090.6*** (53758.32)
satjob ➤ moderately satisfied ➤ a little dissatisfied ➤ dissatisfied		-50077.01 (49877.76) 18881.93 (134036.4) -63091.41 (106710.5)	42871.34 (56090.65) 135581.7 (149503.3) 43289.62 (106754.4)
age			**13264.53*** (2573.259)
sex			**-131658** (48324.19)
degree ➤ high school ➤ junior college ➤ bachelor ➤ graduate			56623.8 (52321.41) 42249.99 (68189.65) **265192.8*** (62572.94) **551004.2*** (148454.9)
race			-4439.148 (33373.13)
qualife 6. very good 7. good 8. fair 9. poor	**6. -415289*** (103214.1) **7. -587973.7*** (103588.3) **8. -684497.8*** (99689.46) **9. -687285.4*** (105564.9)**	**6. -222725.4*** (98363.94) **7. -339792.8*** (109459.6) **8. -381672*** (88690.72) **9. -322139.9*** (115508)**	6. -152496 (110977.9) 7. -223250.4 (129516.2) **8. -193406.4*** (97158.07) 9. -138817.5 (133141.2)
lifenow 11. worst possible state 12. 13. 14. 15. 16. 17. 18. 19. 20. best possible state			11. 32091.58 (183011) 12. 293097 (189597.6) 13. 154913.1 (154882.7) 14. 155887.3 (156354.4) 15. 224259.8 (152919.3) 16. 237940.1 (150516.4) 17. 239124.7 (140034.9) 18. 265548.6 (149653.6) **19. 386306.4*** (192217.2) 20. 318260.4 (213717.5)
wrkstat			-25425.8 (42964.59)
Constant	**767285.4*** (98580.26)**	**606957.9*** (162119.5)**	-198521.9 (243770.3)
R^2	0.0558 (5.58%)	0.0580 (5.8%)	0.1678 (16.78%)

| N (obs) | 1,306 | 824 | 822 |