

The Effect of State Marriage Rates on Happiness

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Introduction

The marital status is known to have a significant effect on life satisfaction. The 17-nation study conducted in 1998 found that marriage is associated with increased happiness and that married individuals tend to be happier than individuals who are not married (Stack et al. 1998). The estimated contribution of marital happiness is far greater than the estimated contribution of any kind of satisfaction, including the work satisfaction, in the United States (Glenn et al. 1981) and more recent data continues to advocate a strong correlation between marital status and personal well-being in the United States (Dush et al. 2005).

However, according to the U.S. Census Bureau, the rate of marriage has been constantly decreasing in the United States since 1970. Considering the countless survey results that prove marriage leads to increased happiness, decline in marriage rate may be the cause of decline in the US happiness score and its ranking in The World Happiness Report published by the United Nations. According to this publication, the happiness ranking of the United States has fallen from 13th place in 2012 to 19th place in 2019 (Halliwell et al. 2019). For this study, we expect a positive relationship between marriage rates and happiness.

The decline in marriage rate is a prevailing problem across the United States. The marriage rate has dropped across all 50 states without an exception since 1970 (Lee et al. 2010). According to the **National Academy of Sciences (1963)**, the decline in marriage rate is not only associated with happiness but also directly associated with decrease in population growth rate. The United Nations' World Population Prospects report that United States population growth

rate has decreased from 0.89% in 1970 to 0.60% in 2019. And the US population growth rate is projected to decrease to 0.31% by the year 2050. The slower growth in America's working-age population is a serious concern and a main reason why economic forecasters are expecting a decreased economic expansion in the United States, from constant 3 percent that the nation has kept for the most of 20th century to a new average of 2 percent (Irwin, 2019). Therefore, increasing marriage rates is a critical task for individuals and policy makers alike.

Literature Review

The link between marital status and happiness in the United States is well-known as that marital status is one of accurate predictors of happiness (General Social Survey (1984); Kaufman et al. 2010). However, there are rather few comparative studies on marital status and happiness (Stack et al. 1998). In the recent years, fewer and fewer Americans are marrying according to the U.S. Census Bureau, and norms supporting marriage have diminished (Thornton et al. 2001). In contrast, levels of divorce constantly remain high which shows that marriage is starting to be regarded as a less central adult role in the United States (Amato et al. 2003).

Also in the recent years, happiness index of the United states have been on a constant decline. So, could this mean that there is a correlation between marriage rate and happiness and an evidence that marital status is a significant predictor of happiness in the 21st century as it was in the previous century? Kaufman et al. 2010 shows in both the United States and Japan, the two countries the author compared the effect of marriage, married persons are happier than divorced, separated, widowed persons, or never married persons. However, never having married does not affect the level of happiness for those men who are already happy and being never married has absolutely no effect on American women's happiness.

This study investigates further into the results shown in the reviewed literatures above by analyzing the effect of state-specific female marriage rates on happiness index. State is the unit of analysis to be used in this study and all collected data will be at the state level.

Empirical Model

Linear regression is used to evaluate the relationship between state well-being and marriage rates. In this paper, we estimate the following regression model:

$$Happiness = \alpha + \beta_1 Marriage + \beta_2 Obesity + \beta_3 Income + \beta_4 Unemployment + \beta_5 Region + u$$

In our regression model shown, *Happiness* variable measures the state-specific happiness score. Our independent variable of interest is *Marriage* which indicates the marriage rate of women per 1000 women over the age of 15 for each state across the United States.

The obesity variable measures the proportion of population that is considered obese. The income variable includes the median income factor as well as the population proportion of those who live below poverty line. The unemployment rate measures the percentage of total state population that are in the job market but without jobs. The region variable indicates the geographic region. (Northeast is excluded in this study.)

Data

Happiness index data is based on WalletHub rankings that examined the 50 states across 32 key metrics including emotional and physical well-being (e.g. depression and suicide rates), income growth, work environment, environmental factors, and community engagement. This data was collected in 2020 and includes state data on Coronavirus restrictions and mortality. More

information about the weights of various factors is available here: [Happiest States in America \(wallethub.com\)](https://happieststatesinamerica.wallethub.com)

The independent variable of interest is marriage. Marriage variable is based on 2019 state-level Census data that defines marriage as marriage rate per 1000 women aged 15 years or older in each US state and the District of Columbia (within the year 2019). Data used in this study can be found here: <https://www.census.gov/acs/www/data/data-tables-and-tools/ranking-tables/>

Obesity variable is based on 2019 publicly available state-level data. Data sources for state obesity rates are based on the Behavioral Risk Factor Surveillance System (BRFSS), an ongoing, state-based, random-digit-dialed telephone survey of non-institutionalized civilian adults aged 18 years and older. Information on BRFSS is available at <http://www.cdc.gov/brfss/index.html>

State characteristics include poverty rate (percent of the population at or below poverty), annual median income, and unemployment rate. Median household income data for 2020 is based on the estimates by the U.S. Census Bureau, [Median Household Income by State 2020 \(worldpopulationreview.com\)](https://www.worldpopulationreview.com/median-household-income-by-state-2020). All other state characteristics were obtained for 2019-2020 from the Kaiser Family Foundation. State-level data can be found at: <https://www.kff.org/statedata/>

Table 1 below presents descriptive statistics.

Table 1. Descriptive Statistics

```
. summarize happiness marriage2019 adultobesity2019 unemployed2020 poverty2019kff medianannualinco
> me2019 west south midwest northeast
```

Variable	Obs	Mean	Std. Dev.	Min	Max
happiness	50	51.361	8.618074	30.58	69.58
marriage2019	51	16.60196	2.401624	11.7	22.3
adultob~2019	51	31.90392	4.054822	23.8	40.8
unemplo~2020	51	6.070588	1.761964	3.1	10.2
poverty201~f	51	12.20196	2.626518	7.5	19.6
mediana~2019	51	65511.31	11171.34	45792	92266
west	51	.254902	.4401426	0	1
south	51	.3333333	.4760952	0	1
midwest	51	.2352941	.4284033	0	1
northeast	51	.1764706	.3850134	0	1

Table 1 above shows a wide range of happiness index across 50 states from 30.58 in West Virginia to 69.58 in Hawaii with the national average of 51.36. The marriage rate (of women) in the United States varies from the rate of 11.7% in Delaware to 22.3% in Wyoming with the national average of 16.6%.

Empirical Results

In contrast to our expected outcome, regression results in Table 2 does not show that marriage is a major determinant of state happiness index. According to the actual results, higher marriage rates of women lead to lower state happiness index. When marriage rate increases by 1%, happiness index decreases by approximately 0.19 units. But since the p-value is greater than 0.5, the results shown is considered not statistically significant.

Table 2. Regression Results

```
. regress happiness marriage2019 adultobesity2019 unemployed2020 poverty2019kff medianannualincome
> 2019 west south midwest
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Source	SS	df	MS	Number of obs	=	50
Model	2405.77831	8	300.722289	F(8, 41)	=	10.00
Residual	1233.5104	41	30.0856196	Prob > F	=	0.0000
				R-squared	=	0.6611
				Adj R-squared	=	0.5949
Total	3639.28872	49	74.2711983	Root MSE	=	5.485

happiness	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
marriage2019	-.1878208	.4248846	-0.44	0.661	-1.045893	.6702511
adultobesity2019	-.7747875	.4044302	-1.92	0.062	-1.591551	.0419758
unemployed2020	-.6108683	.7315505	-0.84	0.409	-2.088265	.866528
poverty2019kff	-.2538598	.8922729	-0.28	0.777	-2.055841	1.548122
medianannualincome2019	.000405	.000209	1.94	0.060	-.0000171	.000827
west	1.605908	2.941829	0.55	0.588	-4.335237	7.547052
south	1.652	3.172539	0.52	0.605	-4.755072	8.059072
midwest	6.636638	3.033997	2.19	0.034	.5093581	12.76392
_cons	57.23005	25.78768	2.22	0.032	5.150766	109.3093

Regardless of the unexpected outcomes from the marriage variable, some major factors that contribute to life satisfaction can be seen from the results. When obesity rate rises by 1%, happiness index falls by 0.77 units ($p\text{-value} \leq 0.1$). Also, while state poverty rates are considered not statistically significant, increase in median income results in higher happiness index ($p < 0.1$). In addition, we can see that midwestern states show higher happiness index compared to southern states ($p < 0.05$).

Alternative Specifications

The data used to create the results presented in Table 2 comes with several limitations. One major shortcoming is that this data only reflects women's marriage rates and lacks reflection of men's marriage rates. Thus, we re-ran the model using men's marriage rates as our new independent variable of interest. Men's marriage rates data was also from US Census Bureau. We found that effect of being married was again negative, but p-value this time was less than 0.5

(approximately 0.2). For men, when marriage rate increases by 1%, happiness index decreases by 0.4 units. This shows that empirical results are not sensitive to difference in gender.

Conclusions and Policy Implications

The empirical results of this study reveal that marriage rate is not a significant factor of the happiness index. This result is inconsistent with results from Kaufman et al. 2010 that showed that married persons are happier than divorced, separated, widowed persons, or never married persons in the United States. One possible explanation for this inconsistency is that study by Kaufman et al (2010) was conducted more than a decade prior to this study and American marriages may have become rather unhappy compared to marriages that happened a decade ago.

Following the numerical results of this study, policies to aid the decrease in marriage rates should be implemented to increase American happiness index rather than those that will increase the marriage rates. However, as stated in the introduction, decrease in marriage rates is associated with decrease in population growth rate which can have a detrimental effect on national economic expansion. Also, another possible interpretation of disagreement between our study and the study by Kaufman et al (2010) is that current marriages in the United States no longer meet the higher level of life satisfaction and happiness marriages in early 2000's were able to fulfill. Thus, finding a middle ground to resolve both decreasing happiness in marriage and decreasing population growth rate should be considered an important goal for policy makers to accomplish a potential ways to improve the overall life satisfaction and happiness level in the United States.

A few policy interventions that may be suggested according to our results include implementation of marriage education in public school curriculums and establishment of infrastructure that would assure married couples safe environment to raise children. Our

empirical results also support the idea of government stimulus checks to families with more than 2 children. Since the median family income is one of the factors that play a critical role in high happiness index, promise of stimulus checks may seem as an incentive to have more children.

Aside from the lack of representation of both genders addressed in the previous section, results of this study are still not without limitations. One, the marriage statistics included those who were married within the last year, that is, those who were married for one day could have completed the Census and have the same representation power as those who were married for decades. This would not be an accurate representation of general marriage experience thus may have caused error in our results. Also, note that our data also did not take into consideration the state-level divorce rates in the United States. If our study took into consideration both marriage rates and divorce rates, then we may have been able to see new aspects behind rather unclear relationship between current marriage rates and happiness.

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