

# Happiness in US: Analysis of the Effects of Demographic Factors during 1972 to 2021\*

Rae Zhang      Faustine Fan      Myra Li

16 March 2023

This essay explores the trends of happiness in the United States from 1972 to 2021 and identifies the significant factors that affect happiness levels. The report is based on the data gathered in US General Social Survey, and it investigates the impact of demographic features like sex, race, marital status, education, and employment types on happiness levels. The report hypothesizes that education, social isolation, and work status have a more significant impact on happiness levels than demographic features like race and gender. The COVID-19 pandemic has had overall negative effects on happiness levels. The report concludes that understanding the roots of different levels of happiness can help policymakers and society develop effective strategies to improve the quality of life for everyone.

## Table of contents

<b>1</b>	<b>Introduction</b>	<b>3</b>
<b>2</b>	<b>Data</b>	<b>3</b>
2.1	Source and Methodology . . . . .	3
2.2	Survey Frame and Weakness . . . . .	4
2.3	Strength and Weakness of Dataset . . . . .	4
2.4	Variables . . . . .	5
<b>3</b>	<b>Results</b>	<b>5</b>
3.1	Overall Happiness . . . . .	5
3.2	Sex . . . . .	7
3.3	Race . . . . .	8

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\*Code and data are available at: <https://github.com/JunweiZhang130/Happiness-in-US-Analysis-of-the-Effects-of-Demographic-Factors-during-1972-to-2021.git>

3.4	Degree . . . . .	10
3.5	Employee Type . . . . .	12
3.6	Marital Status . . . . .	13
<b>4</b>	<b>Discussion</b>	<b>15</b>
4.1	Race and Levels of Happiness . . . . .	15
4.2	Education levels and Happiness . . . . .	15
4.3	Marital Status and level of Happiness . . . . .	16
4.4	Weakness . . . . .	16
4.5	Next Steps . . . . .	17
	<b>Appendix</b>	<b>18</b>
	<b>Reference</b>	<b>25</b>

# 1 Introduction

This analysis aims to gain a deeper understanding of the overall well-being and quality of life of people living in the United States by exploring the factors that contribute to happiness. While happiness is a subjective and personal concept, its impact on society is objective and significant. Identifying the factors that contribute to happiness is crucial for policymakers and individuals alike in making informed decisions that improve the quality of life for everyone.

To achieve this, we focus on three main research questions:

- 1) What are the trends of levels of happiness through the years 1972 to 2021?
- 2) What are the significant factors that affect the level of happiness people feel in society?
- 3) How do these factors contribute to the trend of the levels of happiness through the years 1972 to 2021?

We hypothesize that factors such as education, social isolation, and work status will have an average impact on happiness levels, while demographic features such as race and gender will have a lesser impact.

To provide readers with necessary background information, Section 2 outlines the survey data and collection methodology. In Section 3, the report presents the insights derived from analyzing the data. Section 4 provides a summary of the findings and outlines plans for further exploration of the dataset. Understanding the root causes of different levels of happiness can help policymakers and society develop effective strategies to improve citizens' quality of life. This analysis aims to provide valuable guidance for individuals to improve their satisfaction with life.

## 2 Data

### 2.1 Source and Methodology

Our study is based on data collected from the US General Social Survey (GSS). The GSS is a nationally representative cross-sectional survey conducted since 1972, aimed at collecting data on contemporary American society to monitor and explain trends in opinions, attitudes, and behaviors.

One of the unique features of the GSS is that it adapts questions from earlier surveys, enabling researchers to conduct comparisons for up to 80 years. Moreover, the GSS has taken great care to maintain survey methodology as comparable as possible over time, including keeping the same sampling approach and question wording. This approach helps to minimize potential changes due to variations in methodology and supports the study of trends in public opinion in the United States over time.

The use of the GSS dataset in our research provides a robust and nationally representative sample of Americans, allowing us to examine the relationship between education and life satisfaction. This data source is widely recognized in the academic community for its comprehensive coverage of contemporary American society and its long-term approach to monitoring public opinion trends.

To conduct this analysis, we utilized the R programming language (R Core Team 2022) and various packages for data cleaning, exploration, and visualization. The raw data was obtained as a Stata file and imported into R using the `haven` (Wickham, Miller, and Smith 2022) package. The dataset included responses from 60,092 survey participants to 568 survey questions. To clean and analyze the data, we used the `tidyverse` (Wickham et al. 2019), `data.table` (Dowle, Srinivasan, and Gorecki 2021) package, and `dplyr` (Wickham et al. 2021) packages. To visualize the data, we utilized the `ggplot2` (Wickham 2016) package, `scales` (Wickham and Seidel 2020) package. We used `cowplot` (Wilke 2021) package to group our graphs. And we used `lubridate` (Grolemund and Wickham 2021) package for auto-generated date.

## **2.2 Survey Frame and Weakness**

Our survey has been carefully edited to improve upon existing questions from the original questionnaire and to add new questions that better capture the happiness of people in the US. Specifically, we have addressed potential biases in questions and expanded the options to provide a more detailed exploration of the relationship between race and happiness. Additionally, we have added questions that focus on employment situations, income, COVID-19, mental health, future life aspirations, sense of fulfillment, and attitudes towards happiness.

We believe that our survey will provide a more comprehensive and nuanced understanding of the factors that contribute to happiness in the US. By improving the survey questions, we hope to provide policymakers and individuals with valuable insights into how to improve overall well-being and foster a happier society.

## **2.3 Strength and Weakness of Dataset**

The strength of the GSS data is that the GSS uses a large and representative sample of the US population, which allows the broader population to contribute to the data set to eliminate the regional bias that might be caused in different provinces in the US. Meanwhile the GSS data has been conducted consistently over a long period of time, allowing researchers to track changes especially in social attitudes. The GSS also uses standardized questions and methods, making it easier to compare data across different time periods and populations.

The GSS data also has noticeable weakness. For example, while it covers a wide range of topics, it may not capture all relevant factors for a particular research question. Meanwhile, with any survey, the GSS is subject to response bias, where certain individuals may be more

or less likely to participate or answer certain questions. And the data only counts the US population, certain subgroups may be underrepresented or overrepresented in a sample.

## 2.4 Variables

The 6 variables we selected from GSS for this research listed as follow:

Race: the race respondent considered themselves are

Happy: the happiness levels people felt at that moment

Degree: the highest degree respondents had till that time

Wrkslf: the employment status of the respondents

Marital: the marital status of respondents

Sex: the sex respondents considered themselves are

## 3 Results

### 3.1 Overall Happiness

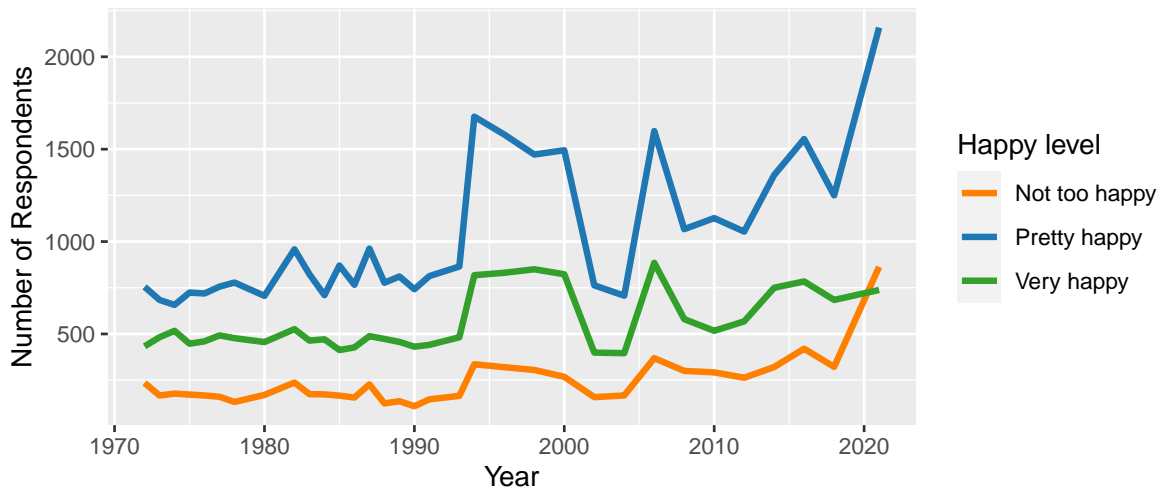


Figure 1: Changes in happiness levels from 1972 to 2021

Over the past five decades, Figure 1 shows there has been an overall increase in happiness levels in the United States, though with significant fluctuations. Further analysis of this trend

reveals that happiness is influenced by various factors, such as macroeconomic conditions, social changes, and personal circumstances.

For instance, in the early 1990s, there was a considerable rise in happiness due to political and economic changes, such as the end of the Cold War, the emergence of neoliberalism, and the rise of a new Democratic Party (Levine 1994). In contrast, the dot-com crash of the early 2000s led to a sharp decline in happiness levels that persisted until the economic recovery brought it back up to pre-crash levels.

However, the global financial crisis and recession of 2007-2009 resulted in another decrease in happiness, as it impacted people's quality of life. More recently, the COVID-19 pandemic has had both positive and negative effects on happiness levels. While social isolation and economic uncertainty have decreased happiness, increased family and leisure time have had positive effects.

We will examine how demographic factors such as sex, race, marital status, degree, and employment status influence happiness and why as follow.

### 3.2 Sex

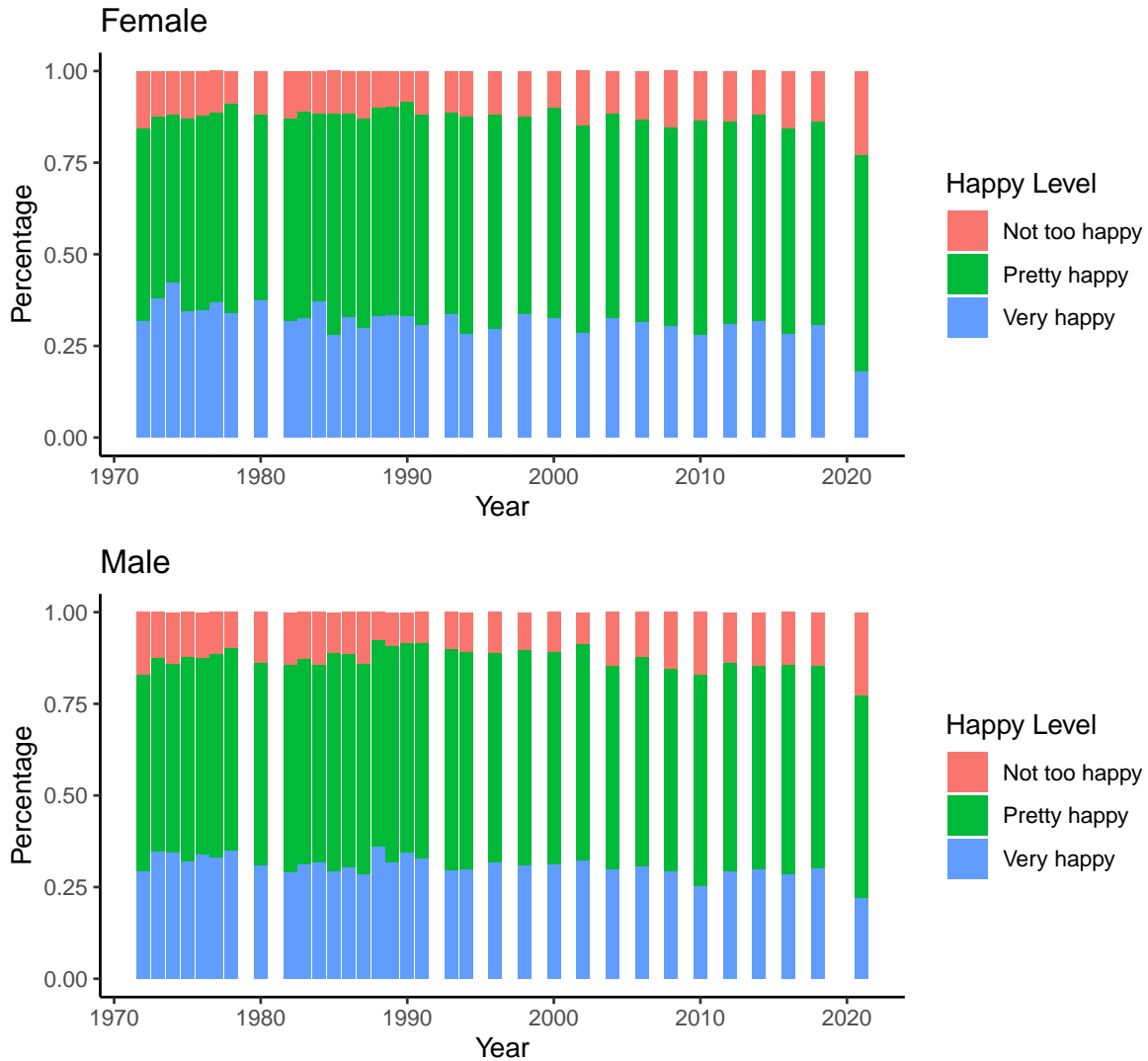


Figure 2: Trends in happiness levels for different genders from 1972 to 2021

In this analysis, we examined Figure 2, which compares the proportion of different education levels for each sex group from 1972 to 2021. We observed that the distribution of overall happiness levels remains consistent over time, with “pretty happy” being the most common response for both male and female groups.

A slight difference was noted in the mid-1970s, where the female group appeared slightly happier than the male group. However, the overall trends in happiness levels for both groups align with the trends shown in Figure 1.

It is worth noting that our analysis is limited to the data presented in the figures, and further investigation may be required to understand any potential underlying factors contributing to these trends.

### 3.3 Race

In Figure 3 (next page), we present the trends in happiness levels among different racial groups in America from 1972 to 2021. The figure shows that white people consistently report higher levels of happiness than other racial groups over the period, although this could be due to survivorship bias as the majority of respondents in the GSS dataset are white. It is important to note that all racial groups have become less happy in 2021, possibly due to the COVID-19 pandemic.

Notably, the figure shows that black people have experienced drops in happiness levels in specific years, including 1980, 2008, and 2021. These drops in happiness levels may reflect the impact of significant events or social phenomena that occurred during those years and that disproportionately affected the happiness of the black race. Further research may be needed to explore the reasons for these trends and to determine the extent to which they are influenced by factors such as racism, economic inequality, and political events.



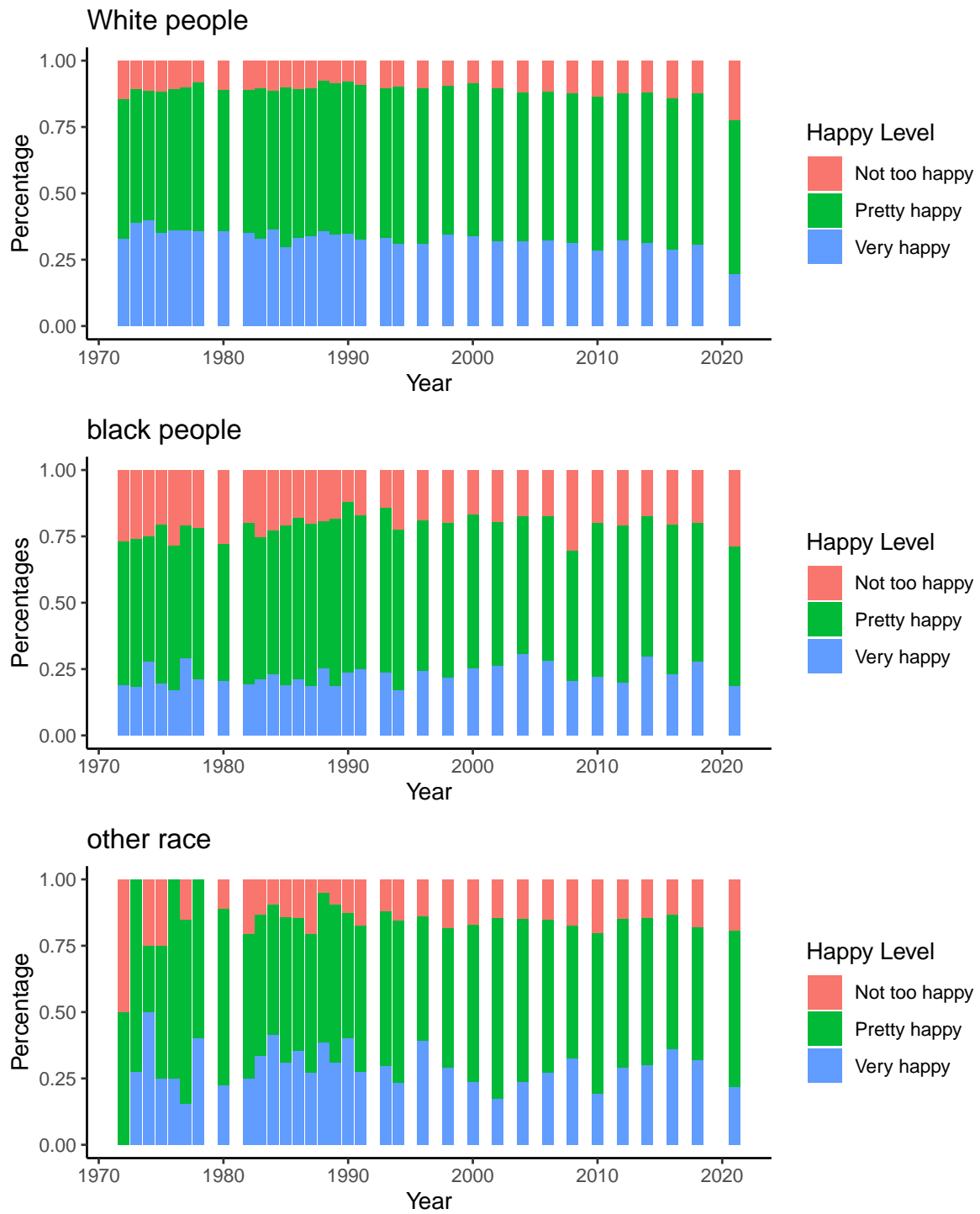


Figure 3: Trends in happiness levels for different races from 1972 to 2021

### 3.4 Degree

The trends in happiness levels across different education groups from 1972 to 2021 are presented in Figure 4 (next page). It can be observed that individuals with a graduate and above education experience report the lowest levels of the “not too happy” response option and have the highest proportion of respondents selecting the “very happy” option across the years. Conversely, individuals with less than a high school education have the highest proportion of respondents selecting the “not too happy” response option among the different education groups over the years.

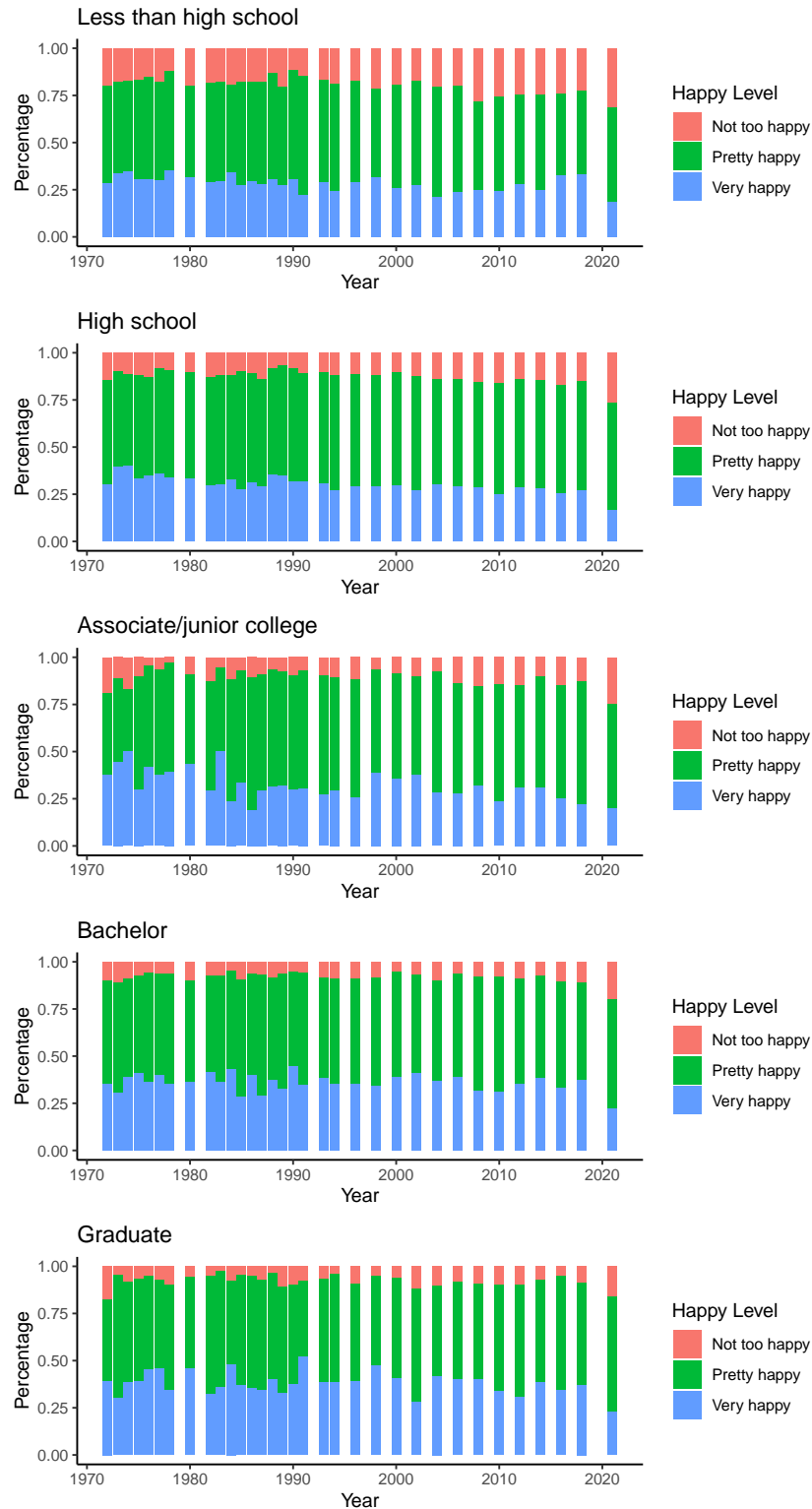


Figure 4: Trends in happiness levels for different degrees from 1972 to 2021

### 3.5 Employee Type

In general, there may not be significant differences between being self-employed or being employed by someone else in terms of overall trends and distribution. However, upon closer examination of Figure 5, it becomes apparent that self-employed individuals tend to report higher levels of happiness than those who are employed by others. This could be attributed to several factors, such as the flexibility of their work schedule, the ability to reduce commute time, and fewer relationship issues. Overall, these benefits may contribute to a greater sense of control over one's work and personal life, which can positively impact overall happiness levels.

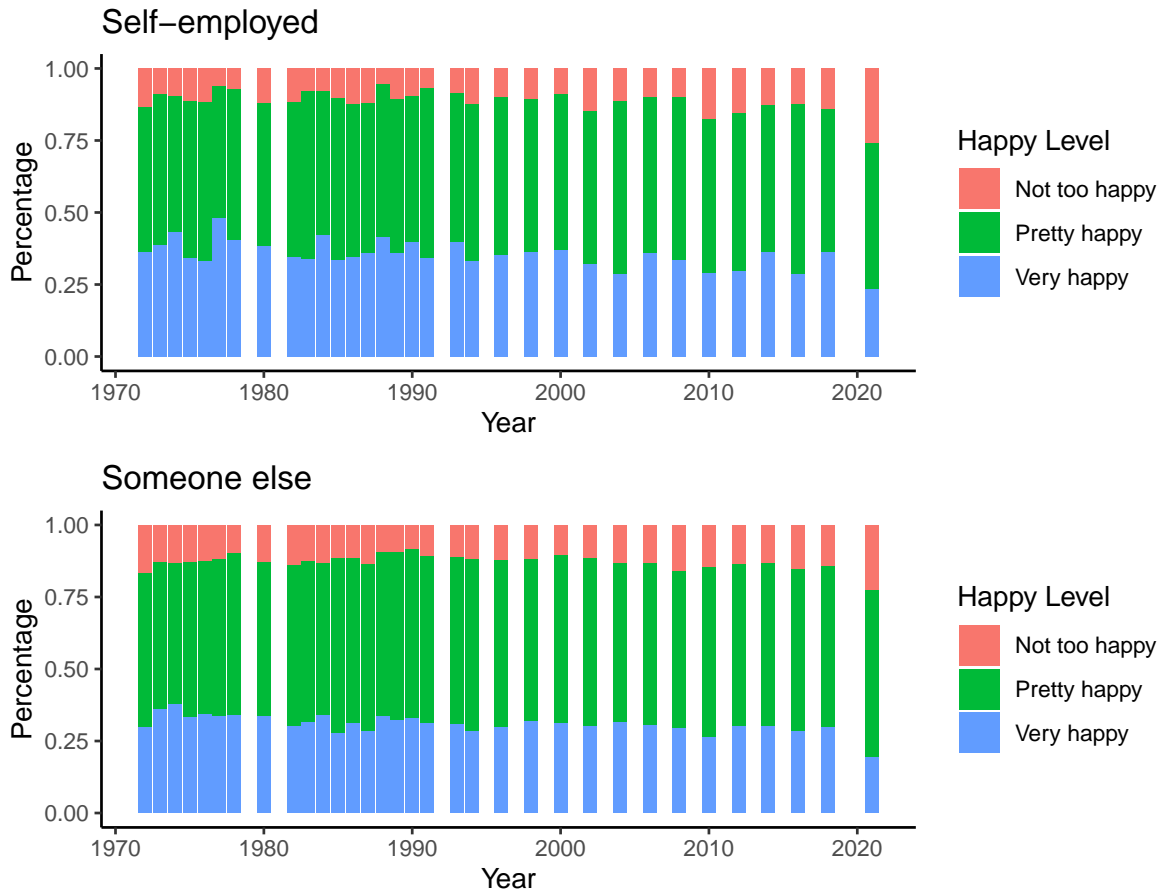


Figure 5: Trends in happiness levels for different employee type from 1972 to 2021

### 3.6 Marital Status

Figure 6 (next page) indicates that married individuals are more likely to report higher levels of happiness, with a greater proportion of respondents selecting “Pretty happy” and “Very happy” compared to those in other marital status categories. Interestingly, the proportion of respondents selecting “Very happy” in other groups is comparatively lower. Additionally, the distribution of happiness levels in the married group appears to be more stable and consistent over time compared to the other groups.

It is worth noting that the COVID-19 pandemic had a significant impact on people’s happiness levels, and married people’s level of happiness was more stable during this time. This may be attributed to the stability and security that marriage can provide during times of uncertainty.

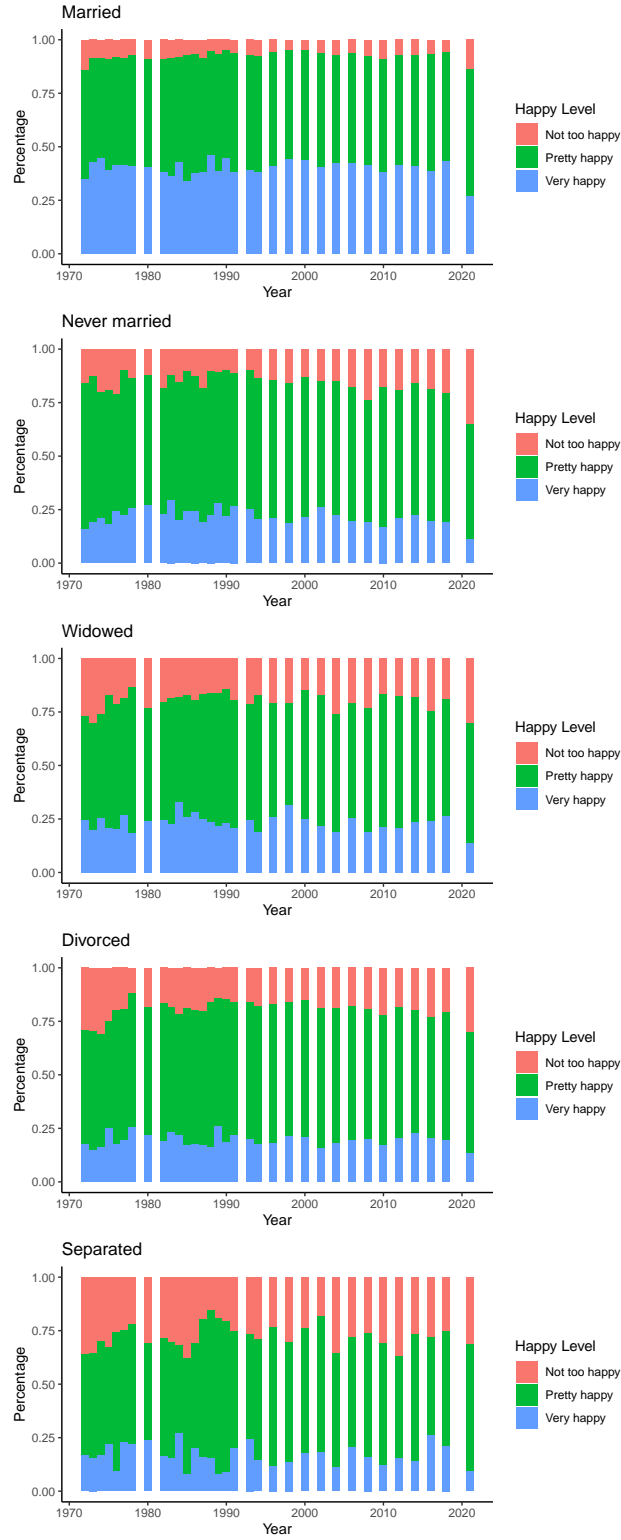


Figure 6: Trends in happiness levels for different marital status from 1972 to 2021

## 4 Discussion

### 4.1 Race and Levels of Happiness

Upon analyzing Figure 2, we observed that the overall distribution of happiness levels appears to be similar across different racial groups. However, there was a significant increase in the proportions of happiness levels reported by individuals identifying as Black or belonging to other racial groups during 1970 to 1990. This suggests that race identity may potentially influence people's happiness levels within a society. Individuals from diverse racial and ethnic groups may experience varying degrees of social and economic disadvantage, discrimination, and prejudice, which can impact their overall sense of well-being and happiness, leading to a major decrease or increase in self-reported happiness levels.

Research (Frederick et al. 2022) has shown that individuals who identify as racial minorities often experience more stress and lower levels of life satisfaction than those who identify as members of the dominant racial group. This can be due to factors such as experiences of racism, lack of representation in positions of power, and limited access to resources and opportunities. However, it is important to note that the impact of race identity on happiness is complex and multifaceted. The relationship between race and happiness can be influenced by factors such as social support, cultural identity, and personal values. Moreover, individual differences in personality, life circumstances, and coping strategies can also play a significant role in shaping the relationship between race identity and happiness. Therefore, while race identity can be a relevant factor in determining people's level of happiness, it is important to consider the context and individual differences in any analysis of this relationship.

### 4.2 Education levels and Happiness

Diener et al. (Diener, Oishi, and Ryan 2013) argues that education may foster a sense of personal growth, autonomy, and purpose, which can contribute to overall life satisfaction. This conclusion matches our observation of Figure 4. The plot shows that higher levels of education can have a significant impact on people's level of happiness in the US. Education can provide individuals with important skills, knowledge, and opportunities that can improve their well-being and quality of life. For example, individuals with higher levels of education may have better job prospects, higher income, and greater access to resources and social support networks. These factors can contribute to higher levels of life satisfaction and happiness. One interesting fact we noticed is, less portion of people were negatively affected by the covid-19 in those who have above university degree. Which shows the skills gathered from higher education have advantages to maintain people's emotions.

Education can provide individuals with important skills, knowledge, and opportunities that can improve their well-being and quality of life (Powdthavee, Lekfuangfu, and Wooden 2015). For example, individuals with higher levels of education tend to have better job prospects,

higher income, and greater access to resources and social support networks. These factors can contribute to higher levels of life satisfaction and happiness.

While our analysis suggests that education may have a positive impact on happiness levels, it is important to note that this relationship is not deterministic, and individual differences play a significant role in shaping one's happiness. As shown in Figure 3, even within the group of individuals with the highest level of education, there are still a significant number of respondents in every group selected "Not very happy" on the happiness scale. While education may contribute to higher levels of happiness, it is important to consider the complexity of this relationship and to recognize that happiness is a multifaceted construct that is influenced by a range of factors. This highlights the fact that education is not a guarantee of shaping one's sense of well-being.

### 4.3 Marital Status and level of Happiness

Figure 6 illustrates the relationship between marital status and happiness levels, showing that being married or in a committed relationship is associated with higher levels of life satisfaction and happiness compared to those who are single or divorced.

There are several factors that may explain the relationship between marital status and happiness. Marital status plays a significant role in increasing happiness levels, as married people have more stable sexual partners (Blanchflower and Oswald 2004). Marriage or a committed relationship can provide individuals with levels that may reflect the impact of significant events or social phenomena that social support, companionship, and a sense of belonging, which can contribute to feelings of happiness and well-being. Additionally, being in a stable and supportive relationship can provide individuals with a sense of security and stability that may contribute to their overall happiness.

### 4.4 Weakness

One potential weakness of this paper is that the data used may not show all the responses to the survey row by row. Additionally, the dataset only represents responses from the United States, which limits its generalizability to countries with vastly different cultural backgrounds, such as those in Asia or South America.

Furthermore, as the number of responses can vary from year to year, it's possible that the results may not be entirely objective, and errors in the dataset could occur. As a result, the conclusions drawn from this paper may not accurately reflect the overall factors that contribute to income inequality in society, and the findings may not be applicable globally. It's important to keep in mind that the conclusions drawn from this paper are based solely on data from the United States and may not be representative of the world as a whole. Therefore, caution should be exercised when applying these findings to other countries or regions.



## 4.5 Next Steps

When analyzing the relationship between marital status and happiness, it is important to consider the context and individual differences. Researchers should take into account factors such as the quality of the relationship, individual values and preferences, and other life circumstances that may impact one's level of happiness. By considering these factors, we can gain a more nuanced understanding of the relationship between marital status and happiness. Moving forward, there are several ways to expand on this study and enhance our understanding of income inequality. First, we encourage other researchers to replicate our study using the GSS data in the Github folder to test the validity and reliability of our findings. Additionally, we included a supplementary survey in appendix 1 that contains additional data we believe would be beneficial to this study. Collecting more data can enable us to conduct more in-depth research on the factors that contribute to income inequality using the GSS data.

In addition, it would be valuable to compare our findings with those from other research papers that use national surveys in different countries to validate our conclusions and identify potential differences across regions. This could help us gain a more comprehensive understanding of the factors that contribute to income inequality on a global scale. By continuing to build on this research, we can work towards creating more equitable societies and improving the quality of life for individuals across the world.

## Appendix

A link to our survey exploring what will affect happiness in US can be found in the footnotes below.<sup>1</sup> And you can access our survey through the QR code below.



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<sup>1</sup><https://forms.gle/ZAoN1uFc9Gc24anh8>

# What will Affect Happiness in the US?

Welcome to this survey on the factors that affect happiness in the United States of America. This survey aims to investigate the factors that affect happiness in the United States. We hope to gain insights into the complex interplay of social, economic, cultural, and personal factors that shape happiness in American society. Your input will help us better understand the factors that influence happiness in the US.

If you have any questions, please do not hesitate to contact us at:

yixin.fan@mail.utoronto.ca

junwei.zhang@mail.utoronto.ca

myra.li@mail.utoronto.ca

Thank you for your participation!

 fffaustinefan@gmail.com (未分享) [切换帐号](#)



What gender do you consider yourself?

- ☐ Male
- ☐ Female
- ☐ Transgender
- ☐ Non-binary
- ☐ Genderqueer
- ☐ Genderfluid
- ☐ Two-spirit
- ☐ Intersex
- ☐ Agender
- ☐ Androgynous

- ☐ Bigender
- ☐ Pangender
- ☐ Demigender
- ☐ Third gender
- ☐ Other/Prefer not to disclose

What is your highest degree?

- ☐ Less than high school
- ☐ High school
- ☐ Associate/junior college
- ☐ Bachelor's
- ☐ Graduate

Are/Were you self-employed or do/did you work for someone else?

- ☐ Self-employed
- ☐ Someone else

What is your current employment situation?

- ☐ Full Time
- ☐ Part Time

☐ Self-employed

☐ Unemployed

Have you ever taken any college-level science courses before?

☐ Yes

☐ No

What race do you consider yourself?

☐ White

☐ American Indian or Alaska Native

☐ Asian

☐ Black or African American

☐ Two or more races

☐ Native Hawaiian or Other Pacific Islander

☐ 其他: \_\_\_\_\_

How do you think the COVID-19 pandemic has affected your overall happiness and well-being?

☐ Significantly decreased my happiness and well-being

☐ Somewhat decreased my happiness and well-being

- ☐ Had no effect on my happiness and well-being
- ☐ Somewhat increased my happiness and well-being
- ☐ Significantly increased my happiness and well-being

How often do you go for psychological counseling?

- ☐ Once a week
- ☐ Bi-weekly
- ☐ Once a month
- ☐ As needed

What is your annual household income before taxes?

- ☐ Under \$49,020
- ☐ \$49,020 - \$98,040
- ☐ \$98,040 - 151,978
- ☐ \$151,978 - \$ 216,511
- ☐ Over \$ 216,511

What do you consider your marital status?

- ☐ Married
- ☐ Widowed

- ☐ Divorced
- ☐ Separated
- ☐ Never married

What factors contribute the most to your happiness? (Select all that apply)

- ☐ Strong personal relationships
- ☐ A fulfilling career
- ☐ Financial stability
- ☐ Pursuing hobbies or interests
- ☐ Good physical health
- ☐ Community involvement and social connectedness
- ☐ Mental and emotional health
- ☐ Other

Are you optimistic or pessimistic about your future on a scale from 1- 10?

	1	2	3	4	5	6	7	8	9	10	
Very optimistic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very pessimistic

On a scale of 1-10, how would you rate your overall sense of purpose or fulfillment in life?

	1	2	3	4	5	6	7	8	9	10	
Very poor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very strong

Thank you for participating in this survey! Your feedback will help us to understand happiness in the US. :)



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