

Understanding the Landscape of Childlessness in the U.S.*

An analysis of General Social Survey data (1972-2022)

Mehrnoush Mohammadi

Quang Mai

March 20, 2024

We investigate U.S. childlessness trends between 1972 and 2022 using data from the General Social Survey. The research focuses on the relationship between childlessness and factors such as age, gender, education, social class, health conditions, marital status, and number of children. We find rising childlessness across demographics, potentially linked to economic factors, education, and social norms. We explore the social and economic implications of this trend and emphasize the need for further research on childlessness.

Table of contents

1	Introduction	2
2	Data	3
2.1	Measurement	3
2.2	Source Data	4
2.3	Exploring Age and Generational Differences	4
2.4	Exploring Gender Differences	5
2.5	Exploring Socioeconomic Class and Educational Attainment	5
2.5.1	Overview of Socioeconomic Class's Impact on Childlessness	6
2.5.2	Overview of Educational Attainment's Impact on Childlessness	7
2.6	Exploring Health Conditions and Marital Status	7
2.6.1	Overview of Health Status's Impact on Childlessness	8
2.6.2	Overview of Marital Status's Impact on Childlessness	8
2.7	Data Limitations	9
2.7.1	Incomplete Data for Certain Years	9

*Code and data are available at: <https://github.com/mehrnoush68/childlessness-in-america.git>

2.7.2	Generalizability of the GSS	9
2.7.3	Potential Measurement Errors	9
2.7.4	Limited Consideration of Gender Disparities	10
2.7.5	Decontextualized variables	10
3	Result	10
3.1	Health Conditions and Marital Status Impact on Childlessness	10
3.2	Between Socioeconomic Class, Educational Attainment and Childlessness . . .	11
3.3	Overall Rate of Childlessness Over Time	13
4	Discussion	14
4.1	Rising Childlessness: Patterns and Trends	14
4.2	Potential Explanations for Rising Childlessness	14
4.3	Social and Ethical Implications of Rising Childlessness	14
4.4	Weaknesses and next steps	14
5	Conclusion	15
A	Appendix	16
A.1	Our Survey for Childlessness Study	16
A.1.1	Survey Preamble	16
A.1.2	Survey Questions	16
A.1.3	Survey Completion Message	18
A.2	Survey Questions from GSS	19
	References	21

1 Introduction

The American family landscape is undergoing a significant transformation, marked by a growing trend of childlessness. Traditionally viewed as a social norm, having children now becomes a choice (Shapiro 2014). We examine factors such as age, gender, education, socioeconomic class, health conditions and marital status, and how they affect childbearing rates from 1972 to 2022. Existing research suggests a complex interplay of factors that contribute to childlessness, including economic considerations, rising educational attainment, shifting social norms related to career and family life, and individual preferences (Shapiro 2014).

By analyzing the data, we seek to answer crucial questions: What are some important factors contributing to this trend? How does childlessness manifest differently across demographic groups? Finally, what are the potential social, economic, and individual consequences of this new family structure in the United States? Understanding these dynamics is crucial in having an informed policy discussion and navigating the implications of childlessness in a rapidly changing world.

Thus, our estimand is the relationship between age, gender, socioeconomic class, educational attainment, health status, marital status, and the rate of childlessness in the United States from 1972 to 2022. Through our analysis, we found that the childless rate is consistently on the rise from 1972 to 2022, with a correlation coefficient of 0.73 between the childless percentage and time (or a 6.99% increase over the last 50 years). Factors that directly contribute to this rise are higher educational attainment, higher socioeconomic class, lower gender disparity, better health status and dissolution of marriages through divorces, separation and being widowed. In addition, global events like pandemics and recessions also heighten the rate of childlessness from 1972-2022, including the AIDs pandemic, 9/11, 2008 Recession and the COVID-19 pandemic. During the 2008 Recession, from 2008 to 2014, the rate of childlessness increases the most, at 3%.

To further understand why these causes explain rising childlessness, in [Introduction](#), our paper briefly discusses the nature of childlessness in America and its contributing factors. Subsequently, in [Data](#) and [Result](#), we talk about the nature of the data obtained and analyze the results garnered from the data with suitable tables and charts. Next, [Discussion](#) provides further insights and future areas of study. Finally, [Conclusion](#) summarizes our main findings. To complete the paper, [Appendix](#) clarifies how each variable within each dataset is measured and the survey that we’ve generated based off the dataset.

The graphs and tables in this paper were created in R Studio using R (R Core Team 2023) and the analysis in a Quarto document. The analysis was conducted with the use of the `ggplot` (Wickham 2016), `tidyyverse` (Wickham et al. 2019), `knitr` (Xie 2021), `readr` (Wickham, Hester, and Bryan 2024), `kableExtra` (Zhu, Travisson, and Tsai 2024), `janitor` (Firke 2023) and `dplyr` (Wickham et al. 2023) packages.

2 Data

This paper uses a multifaceted approach, drawing on various datasets to understand the complexities of childlessness in the United States. Our primary source is the General Social Survey (GSS), a long-running and highly respected survey conducted by the National Opinion Research Center (NORC) at the University of Chicago (NORC 2022b), from 1972 to 2022.

2.1 Measurement

Each variable used—age, class, educational attainment, health, marital status, and gender—is quantified through direct questioning to accurately capture respondents’ backgrounds. For instance, the General Social Survey (GSS) obtains information on marital status through questions such as, “Are you currently married, widowed, divorced, separated, or have you never been married?”, with responses categorized into predefined groups for further analysis (NORC 2022a). On the other hand, instead of relying on income sources, socioeconomic class is subjectively assessed based on the respondents’ answers to this question, “If you were asked to

use one of four names for your social class, which would you say you belong in: the lower class, the working class, the middle class, or the upper class?”. Some are continuous variables, like age. With respondents’ various age groups documented, we can understand the generational disparities in childbearing patterns. Systematic and data-driven, these measurement methods ensure that all data faithfully reflects the American population’s childbearing tendencies.

2.2 Source Data

The 2022 iteration of the GSS, for the first time in its history, incorporated a combination of in-person, web self-administered, and phone interview methods in response to COVID-19. This expansion in data collection methods offers a potentially richer and more diverse sample. As a result, after implementing these changes, the GSS randomly assigned respondents to various survey modes to examine response patterns and data accuracy. Unsurprisingly, compared to last year’s 17%, 94.2% of participants opted for a new survey mode, which is a significant increase of 50.5% in the overall response rate. This emphasizes the effectiveness of employing multimodal survey strategies to boost survey participation.

However, this multimodal survey approach also presents several challenges in collecting respondents’ opinions on topics such as childbirth and childbearing tendencies, given the private nature of these subjects. With the easy formatting and non-required nature of these surveys, biases like acquiescence bias (only positive responses) might occur because respondents aren’t confronted in a face-to-face setting, where many will just opt for a neutral response (Marusenko 2003). Therefore, we carefully select various variables to ensure the authenticity of the public’s background on the topic of childlessness, avoiding having the data being too influenced by the changes in surveying methods.

2.3 Exploring Age and Generational Differences

From the GSS, we utilize several key variables relevant to our analysis:

- **Children:** This variable captures the number of children ever born alive to the respondent, providing a direct measure of childlessness (having no children).
- **Year:** This variable allows us to analyze trends in childlessness over time, encompassing the chosen time frame for the survey.
- **Age:** This variable, categorized into relevant age groups (e.g., 18-34, 35-49, etc.), enables us to understand how childlessness manifests across different age demographics.

Table 1 demonstrates a clear trend of increasing childlessness across age groups over the selected years. As evident from the data, the percentage of individuals without children has steadily risen in all age groups, with the most significant increase observed in the younger age groups (18-34 and 35-49). This trend suggests a shift in childbearing patterns, with individuals potentially delaying or forgoing parenthood altogether.

Thus, there is a consistent rise in childlessness across all age groups in the United States from 1972 to 2022. The most significant rise is observed among younger adults (18-34 and 35-49). However, it is important to acknowledge that the data series has gaps for several years within this timeframe (1979, 1981, 1992, 1995, 1997, 1999, 2001, 2003, 2005, 2007, 2009, 2011, 2013, 2015, 2017, and 2019). These missing data points can potentially limit the generalization of the observed trends and hinder a comprehensive understanding of childlessness over time.

Table 1: Childless Percentage of Population by Age Group and Selected Years

Age	1972	1980	1990	2000	2010	2022
18-34	46.07	49.54	56.80	54.59	56.74	65.76
35-49	8.00	7.79	13.46	19.25	23.08	19.22
50-64	12.74	13.30	8.21	11.68	14.11	15.32
65+	19.07	16.16	17.08	12.81	5.48	15.52

2.4 Exploring Gender Differences

A separate analysis examining childlessness by gender (presented in Table 2) aims to provide a comprehensive understanding by considering the unique experiences of men and women regarding childlessness. Data on gender is included from NORC (NORC 2022b) to allow for this investigation.

The data reveals a gradual increase in childlessness for both genders over the past five decades. However, females consistently exhibit a lower percentage of childlessness compared to males throughout the entire period. While the gap appears to be slightly narrowing over time, females still have a lower percentage by around eight percentage points in 2022 (approximately 28.32% for females and 36.09% for males).

Table 2: Childless Percentage of Population by Gender and Selected Years

Gender	1972	1980	1990	2000	2010	2022
Female	21.22	23.91	27.85	23.52	23.54	28.32
Male	27.10	29.36	31.33	32.38	33.14	34.50

2.5 Exploring Socioeconomic Class and Educational Attainment

We also look into additional data sets from NORC (NORC 2022b) examining the relationship between childlessness and socioeconomic class (Table 3) and educational attainment (Table 4).

From the GSS, we utilize several key variables to enrich our analysis and explore the potential influence of various factors on childbearing decisions:

- **Socioeconomic Class:** Data on socioeconomic class, often measured by income or occupation, will be utilized to understand the impact of economic factors on childbearing choices.
- **Educational Attainment:** Data on educational attainment, such as the highest degree obtained, will be incorporated to explore the relationship between educational level and childbearing.

2.5.1 Overview of Socioeconomic Class's Impact on Childlessness

Table 3 reveals a potential link between socioeconomic class and childlessness. To visualize the data, Figure 1 depicts the gradual increase in the percentage of childless individuals across four social classes (lower class, working class, middle class, and upper class) in the United States from 1972 to 2022. The graph reveals an upward trend in childlessness for all classes over the five decades.

Table 3: Childless Percentage of Population by Class Identification and Selected Years

Class Identification	1972	1980	1990	2000	2010	2022
Lower class	17.16	13.08	25.27	25.82	27.06	34.46
Working class	21.83	24.35	28.15	26.31	27.90	31.44
Middle class	28.24	28.92	32.55	29.04	29.15	30.54
Upper class	20.24	36.02	12.64	28.92	24.73	27.87

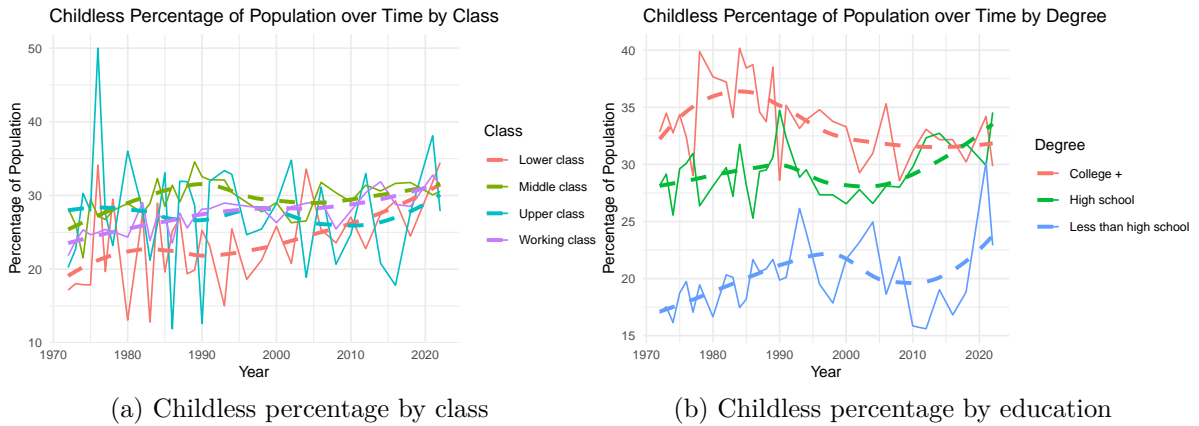


Figure 1: Childless Percentage in the US by Class and Educational Attainment (1972-2020)

People and households are divided into groups based on their socioeconomic status. The lower class experiences economic hardship, while the working class earns limited wages and faces job insecurity. The middle class has white-collar or professional occupations and enjoys a comfortable lifestyle. The upper class has substantial wealth and enjoys a privileged lifestyle with exclusive amenities (Pew Research Center 2022).

2.5.2 Overview of Educational Attainment’s Impact on Childlessness

Further, Table 4 explores the association between educational attainment and childlessness. Figure 1 illustrates this data, presenting a comparative analysis of childlessness across individuals with different levels of educational attainment (less than high school, high school and college degree or higher) in the United States from 1972 to 2022. The graph utilizes trend lines to depict the percentage of childless individuals within each degree category over the five decades.

Table 4: Childless Percentage of Population by Degree and Selected Years

Degree	1972	1980	1990	2000	2010	2022
College +	32.85	37.67	28.61	33.29	31.16	29.84
High school	28.15	28.10	34.74	26.55	29.78	34.56
Less than high school	16.97	16.65	19.87	21.70	15.85	22.90

2.6 Exploring Health Conditions and Marital Status

We also use additional data sets from NORC (NORC 2022b) to understand the context of childlessness in America from 1972-2022. Table 5 and Table 6 present an interesting connection between childlessness, health conditions and marital status.

From the GSS, we utilize several important variables relevant to our analysis:

- **Health Conditions:** This variable, measured by medical check-ups of individuals who have been surveyed, will be used to clarify the context behind the childlessness of those with varying health statuses.
- **Marital Status:** This variable enables us to see if marriage is a determining factor in childbearing decisions.

2.6.1 Overview of Health Status's Impact on Childlessness

Table 5 uncovers the relationship between health conditions and childlessness. Accordingly, the first graph of Figure 2 explores the health differences in people who are childless within the United States over a 50-year period (1972-2022). The graph utilizes trend lines to depict the percentage of childless individuals categorized by health conditions (excellent, good, fair, and poor).

Table 5: Childless Percentage of Population by Health Conditions and Selected Years

Condition of health	1972	1980	1990	2000	2010	2022
Excellent	28.26	33.55	33.93	31.71	34.03	38.75
Good	25.01	27.50	27.78	27.80	29.04	30.11
Fair	19.61	16.36	31.86	24.43	21.91	30.07
Poor	12.27	10.93	18.45	14.37	31.02	20.40

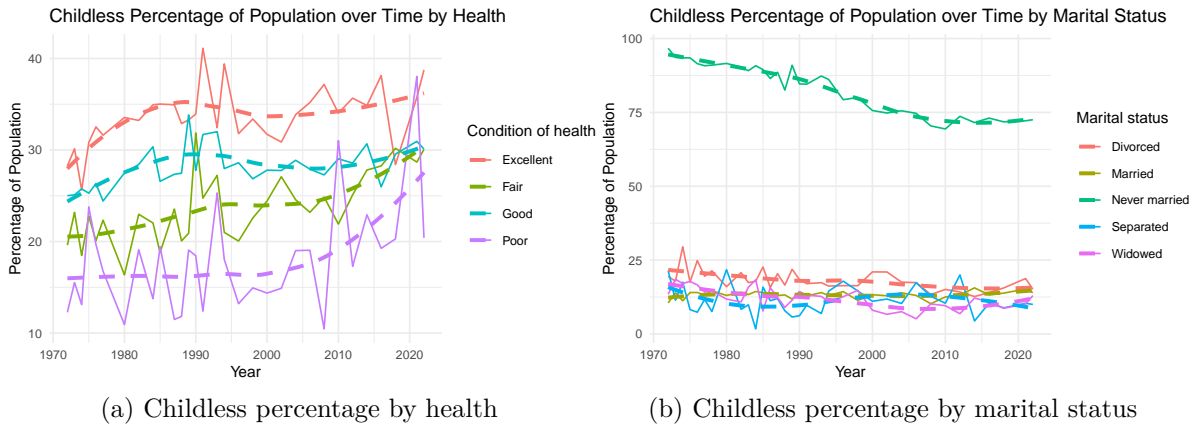


Figure 2: Childless Percentage in the US over Time by Marital and Health Status (1972-2020)

2.6.2 Overview of Marital Status's Impact on Childlessness

Table 6 explores people's marital status and childlessness. Figure 2 then illustrates this data, exploring the marital status of people who are childless over a span of 50 years in the United States (1972-2022). The graph contains trend lines of varying marital statuses-divorced, married, never married, separated and widowed-and how each has changed over the years in terms of childbearing status.

Table 6: Childless Percentage of Population by Marital Status and Selected Years

Marital status	1972	1980	1990	2000	2010	2022
Never married	96.73	91.58	84.65	75.64	69.40	72.53
Married	10.51	13.03	14.21	13.27	12.51	13.97
Separated	21.43	21.74	6.17	11.05	10.40	10.00
Divorced	19.47	16.00	18.43	21.00	15.07	15.14
Widowed	13.43	11.79	14.32	8.05	9.57	12.98

2.7 Data Limitations

While the data utilized in this paper provides valuable insights into childlessness in the United States, it is important to acknowledge some limitations:

2.7.1 Incomplete Data for Certain Years

While the General Social Survey provides valuable data on childlessness trends, there are gaps in data availability for certain years. In summary, out of 68596 survey entrees, there are 250 missing cases. This creates a limitation in our ability to present a completely continuous picture of trends across the entire 50-year time frame.

2.7.2 Generalizability of the GSS

The General Social Survey (GSS) is a valuable resource but may not be entirely representative of the entire U.S. population. Sampling bias and potential non-response bias inherent in any survey can limit the generalization of findings to the broader population.

2.7.3 Potential Measurement Errors

Survey data may be susceptible to measurement errors due to various factors, such as social desirability bias, memory lapses, or misinterpretations of questions. While the GSS implements measures to minimize these errors, they cannot be entirely eliminated.

2.7.4 Limited Consideration of Gender Disparities

While acknowledging the importance of gender disparities, the analysis presented here only provides a preliminary exploration through a single table (Table 2). Further research dedicated to understanding nuanced gender differences in childbearing experiences and the complex interplay of individual and societal factors is needed.

2.7.5 Decontextualized variables

While these datasets aim to illuminate on the general time trends of childlessness with each variable measured, they are often de-contextualized for the same purpose. For instance, in Table 6, there is no clarifying note on whether people who declared themselves as ‘divorced’ are divorced once or more. This can be extremely narrowing, and exclude nuances when analyzing the contexts behind childlessness.

3 Result

Upon assessing the available data, we further extrapolate on them here by calculating the average rate of childlessness in each year for each of these four critical factors: health conditions, marital status, educational attainment and socioeconomic class. At the end, Figure 5 compounds on these factors as a graph that shows the overall rate of childlessness in each year from 1972 to 2022.

3.1 Health Conditions and Marital Status Impact on Childlessness

Overall, the data shows an increase in childlessness across all health levels and conditions approaching 2020. As mentioned, Figure 2 shows that people with excellent health have the highest percentage of childlessness, having a 10.49% increase throughout the 50-year period (28.26% in 1972 to 38.75% in 2022). People with good and fair health exhibit a similar rate of childlessness in 2022, at about 30%. However, people with poor health, once having the lowest rate of childlessness (at 12.27% in 1972), now increases to 20.40% in 2022, which translates to a substantial 8.13% increase. Overall, on average, across all health levels from 1972-2022, Figure 3 shows that the percentage of childlessness increases at about 6.836%. Observable from the graph, health as a factor is positively correlated to childlessness.

Unintuitively, those with ‘excellent’ and ‘good’ health are substantially more likely to be childless than those with ‘fair’ and ‘poor’ health. Several factors are attributable to this fact, but foremost, career, lifestyle differences and financial considerations might come into play. However, more data is needed to clarify the context of this trend, especially coupling it with variables like educational attainment or socioeconomic class. In addition, sampling bias might

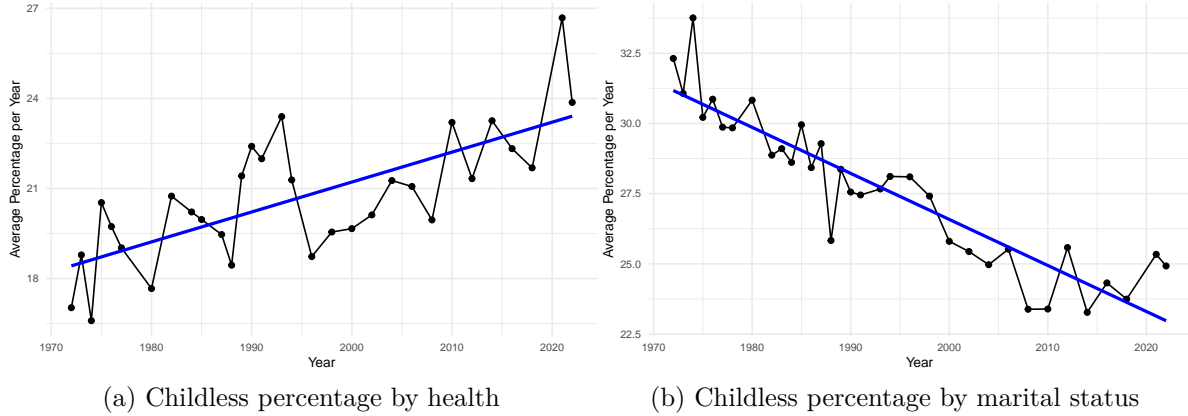


Figure 3: Average Childless Percentage per Year in the US (1972-2022)

factor into this trend, where it's assumable that people with excellent health are often the younger population and those with less desirable health are older.

As for marital status, Figure 2 demonstrates that a significant portion of people who have never married are childless. However, more and more people are reluctant to get married but still have children. This is observable in the childlessness percentage decrease of people who never marry, decreasing from 96.73% in 1972 to 72.53% in 2022. For people who are divorced, separated and widowed, this percentage is on the rise fluctuates, displaying the complex dynamics between these relationship statuses and childbearing. For married people though, this childlessness percentage also decreases, from 10.51% in 1972 to 13.97% in 2022. Overall, on average, across all marital statuses from 1972-2022, Figure 3 shows that the percentage of childlessness decreases to about 7.39%. Observable from the graph, marital status as a factor is negatively correlated to childlessness.

Trends of childlessness vary with this dataset. Unsurprisingly, people who are never married have the highest percentage of childlessness. However, those who are divorced, widowed and separated have fluctuating but similarly increasing percentages of childlessness, which is understandable due to the complex emotional nature of these marital statuses. The overall trend of people who are in a relationship or are married having more children (7.39% decrease of childlessness) are attributed to the higher quality of life, and other factors.

3.2 Between Socioeconomic Class, Educational Attainment and Childlessness

While all classes show an increase in childlessness in Figure 1, the data suggests the most significant rise occurred among the lower class, with their percentage of childless individuals nearly doubling from approximately 17.16% in 1972 to around 34.46% in 2022, marking a substantial increase of approximately 101.04% over the specified period. The working class also experienced a significant increase, from around 21.83% in 1972 to approximately 31.44%

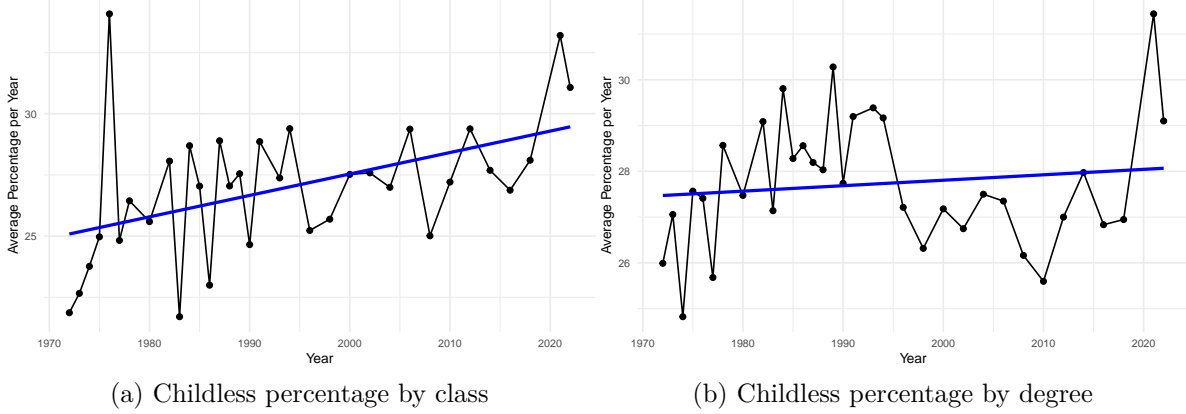


Figure 4: Average Childless Percentage per Year in the US (1972-2022)

in 2022, indicating a rise of roughly 43.98%. Additionally, the middle class saw a slight increase, from approximately 28.24% in 1972 to about 30.09% in 2022, representing a rise of approximately 6.55%. Similarly, the upper class saw an increase, with their percentage of childless individuals climbing from approximately 20.24% in 1972 to about 27.87% in 2022, indicating an increase of roughly 37.71%. Overall, on average, across all socio-economic classes from 1972-2022, Figure 4 shows that the percentage of childlessness increases at about 9.21%. Observable from the graph, class as a factor is positively correlated to childlessness.

The data suggests that individuals in the lower and working classes exhibit higher percentages of childlessness compared to those in the middle and upper classes. This pattern might be attributed to various factors, such as financial constraints, job insecurity, or limited access to childcare resources experienced by individuals in lower socioeconomic classes.

Similarly, Figure 1 reveals a distinct pattern across educational groups. Individuals with a high school diploma consistently exhibit the highest percentage of childlessness throughout the entire period, ranging from around 28.15% in 1972 to 34.56% in 2022. Conversely, the percentage of childless individuals with a college and higher degree has decreased from 32.85% in 1972 to 29.84% in 2022. The trend for individuals with less than a high school education increased from 16.97% in 1972 to 22.90% in 2022. Overall, on average, across all educational levels from 1972-2022, Figure 4 shows that the percentage of childlessness increases at about 3.11%. Observable from the graph, educational attainment as a factor is slightly positively correlated to childlessness.

Thus, the data indicates a nuanced relationship. While individuals with higher educational degrees (college+) display a slightly higher percentage of childlessness compared to those with lower degrees, the difference is not as substantial as observed with socioeconomic class. This suggests that educational attainment might play a complex role in childbearing decisions, potentially influenced by factors like career aspirations, financial considerations, and personal preferences.

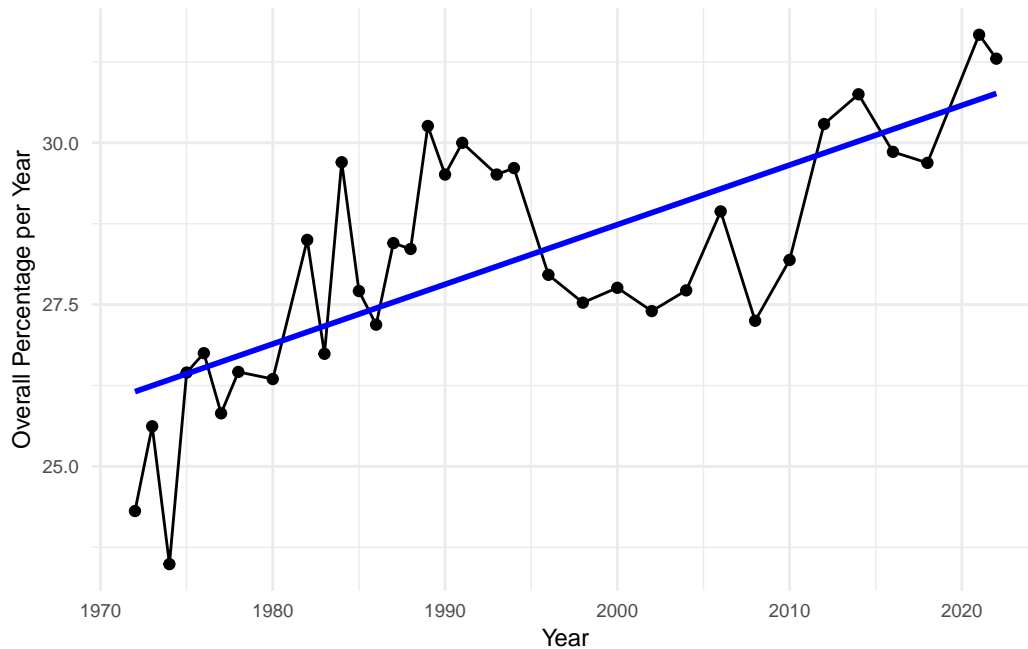


Figure 5: Overall Childless Percentage per Year in the US (1972-2022)

3.3 Overall Rate of Childlessness Over Time

Figure 5 graphs a trend line of the overall childlessness rate throughout the years. With a correlation coefficient between “Year” and “Percentage” of 0.73, it’s highly likely that as time progresses, childlessness is on the rise. This is evident in the 6.99% increase in childlessness from 1972 to 2022.

To account for the general increase in childlessness from 1972 to 2022, there are several crucial events. First, in Figure 5, the first surge of childlessness occurs from 1986 onwards till 1990 (27.71% to 30.26%, a 2.55% increase). This was when the AIDs pandemic occurred, when there was much fear and health concerns about HIV transmission in having sexual intercourse. The second surge of childlessness is observable from 2000 onwards till 2006 (27.76% to 28.94%, a 1.18% increase). This was the time period marked by fear of terrorism when 9/11 happened, where heightened feelings of vulnerability may have influenced people’s decisions of expanding their family. The third surge of childlessness from 2008 till 2014 is drastic due to the occurrence of the Great Recession (27.25% to 30.75%, a 3% increase). Financial instability then is a contributing factor in determining childlessness. The last surge occurred from 2018 to 2021 when COVID-19 was in place (29.69% to 31.67%, a 1.98% increase).

4 Discussion

4.1 Rising Childlessness: Patterns and Trends

The findings presented in this paper reveal a consistent and concerning trend of rising childlessness across various demographics in the United States. As Figure 5 illustrates, the percentage of individuals without children has steadily increased across all age groups over the past 50 years, with the most significant rise observed among younger individuals (18-34 and 35-49).

4.2 Potential Explanations for Rising Childlessness

This paper cannot definitively establish causal relationships, but the data suggests several potential factors contributing to rising childlessness, all supported by existing research. These include economic concerns like two global pandemics, rising childcare costs, student loan debt, and economic uncertainty (Shapiro 2014). Additionally, individuals with higher educational attainment, particularly women, might delay or forgo childbearing to pursue career opportunities (Neda Ahmadzadeh Tori and Pourreza 2023). Furthermore, shifting social norms related to childbearing, family structures, and career aspirations, especially for women, may be contributing factors. Finally, the decision to remain childless can also be influenced by individual values, lifestyle choices, and personal circumstances.

4.3 Social and Ethical Implications of Rising Childlessness

The rising trend of childlessness carries potential consequences across various societal spheres. A shrinking pool of younger workers could pose challenges to economic growth and strain social security systems. Additionally, the rise of childless families could have implications for social support networks and intergenerational relationships (Shapiro 2014). While childlessness can be a personal choice for some individuals and may even lead to a fulfilling life, it could also be associated with feelings of isolation and a lack of social support for others (Neda Ahmadzadeh Tori and Pourreza 2023). These potential consequences highlight the need for further research and discussion on how to navigate the social, economic, and individual complexities associated with rising childlessness.

4.4 Weaknesses and next steps

This study has some limitations that need to be acknowledged. Firstly, the study relies only on data from the GSS, which may not be entirely representative of the US population. Secondly, the cross-sectional design of the GSS data limits the ability to establish causal relationships between variables. Lastly, surveys are prone to biases such as social desirability bias or memory lapses, which may impact the accuracy of the findings.

To gain a deeper understanding of childlessness, some crucial next steps need to be taken. Firstly, employing longitudinal studies will allow the exploration of causal relationships between factors and childbearing decisions over time. Secondly, incorporating diverse data sources, such as qualitative interviews and other surveys with broader representation, can provide richer insights and explore the nuances of individual experiences. Lastly, utilizing a mixed methods approach, combining quantitative and qualitative data analysis, will offer a more comprehensive understanding of both the broader trends and the lived experiences of individuals facing childlessness.

By addressing these limitations and pursuing the proposed next steps, future research can contribute significantly to a more nuanced and in-depth understanding of childlessness and its various aspects.

5 Conclusion

This paper investigates the rising trend of childlessness in the United States, highlighting its prevalence across various demographics. By analyzing data from the GSS, it reveals consistent and concerning increases in the percentage of individuals without children. While definitive causal explanations remain elusive due to limitations in the analysis, the discussion explores potential contributing factors, including economic considerations, educational aspirations, shifting social norms, and individual preferences.

Moving forward, further research with longitudinal studies and diverse data sources including qualitative interviews, alongside a mixed methods approach, is crucial to gain a comprehensive understanding of childlessness, its nuances, and its multifaceted implications. This knowledge can inform future policies aimed at fostering a supportive environment for individuals and families as they navigate the complex decisions around childbearing in the 21st century.

A Appendix

A.1 Our Survey for Childlessness Study

The supplementary survey is accessible through this [Google Form Link](#)

A.1.1 Survey Preamble

The General Social Survey (GSS) collects data on social trends to help track changes in Canadians' living conditions and well-being over time. Also, it provides information on specific social policy issues that are currently or potentially important.

We are conducting a study to investigate the reasons behind childlessness in different groups of people. To do so, we will expand upon the GSS's existing questions and various data sets, including information on age, gender, education, socioeconomic status, health conditions, and marital status. By adding additional questions on these factors, we hope to gain more insight into how they impact childbearing rates.

Participation in this survey is voluntary, and all responses will be kept anonymous. If you choose to participate, you will have the freedom to skip any questions and can withdraw from the survey at any time. Your individual responses will be recorded in our data set with a unique identification number for analysis purposes only.

Thank you for taking the time to complete this survey. If you have any questions or require further information, please feel free to contact mm.mohammadi@mail.utoronto.ca.

A.1.2 Survey Questions

Demographics

(1) Age: (short answer text)

(2) Gender:

- Female
- Male
- Non-binary
- Prefer not to say

(3) Marital Status:

- Married
- Widowed
- Divorced

- Separated
- Never married
- Living in a committed partnership

(4) Highest Level of Education:

- No formal education
- Less than high school diploma
- High school diploma
- Some college degree
- Associate's degree
- Bachelor's degree
- Master's degree
- Doctorate or professional degree

Family and Childbearing

(5) Do you currently have any children?

- Yes
- No

(6) If yes, how many children have you ever had? Please count all that were born alive at any time (including any you had from a previous marriage). (short answer text)

(7) At what age did you have your first child (if any)? (Short answer text)

(8) Do you currently desire to have children?

- Yes, I desire to have children.
- No, I do not desire to have children.
- I already have children and would like more.
- I have not decided about having children.

(9) If you do not have children, what are the main reasons for your decision?

- Financial concerns
- Career aspirations
- Not interested in parenthood
- Health concerns
- Other (short answer text)

Socioeconomic

(10) What is your current employment status?

- Employed full-time

- Employed part-time
- Self-employed
- Unemployed
- Retired
- Student
- Other (short answer text)

(11) Do you feel your current financial situation allows you to comfortably raise children?

- Yes
- No
- I do not know

(12) If you were asked to use one of four names for your social class, which would you say you belong in?

- The lower class
- The working class
- The middle class
- The upper class

(13) Would you say your own health, in general:

- Excellent
- Good
- Fair
- Poor

(14) Do you or your partner have any significant health conditions that may impact your decision to have children?

- Yes
- No
- Maybe

A.1.3 Survey Completion Message

Thank you for your participation

We sincerely appreciate your time and thoughtful responses to our survey about childbearing decisions. If you have any additional comments or suggestions, please feel free to contact us.

A.2 Survey Questions from GSS

1. RESPONDENT'S AGE: (short answer text)
2. RESPONDENT'S SEX
 - Female
 - Male
3. Are you currently-married, widowed, divorced, separated, or have you never been married?
 - Married
 - Widowed
 - Divorced
 - Separated
 - Never been married
4. RESPONDENT'S DEGREE
 - Graduate
 - Bachelor's
 - Associate/junior college
 - High school
 - Less than high school
5. How many children have you ever had? Please count all that were born alive at any time (including any you had from a previous marriage).
 - 0
 - 1
 - 2
 - 3
 - 4
 - 5
 - 6
 - 7
 - 8 or more
6. If you were asked to use one of four names for your social class, which would you say you belong in: the lower class, the working class, the middle class, or the upper class?
 - Lower class
 - Working class
 - Middle class
 - Upper class

7. Would you say your own health, in general, is excellent, good, fair, or poor?

- Excellent
- Good
- Fair
- Poor

References

- Firke, Sam. 2023. *Janitor: Simple Tools for Examining and Cleaning Dirty Data*. <https://github.com/sfirke/janitor>.
- Marusenko, Ursula Grandcolas; Ruth Rettie; Kira. 2003. “Web Survey Bias: Sample or Mode Effect?” *Journal of Marketing Management* 19 (5-6): 541–61. <https://doi.org/https://doi.org/10.1080/0267257X.2003.9728225>.
- Neda Ahmadzadeh Tori, Fatemeh Ghaffari, Hamid Sharif-Nia, and Abolghasem Pourreza. 2023. “Effective Factors on Voluntary Childlessness and One-Child Tendency from Couples’ Perspective: Compulsory Childlessness or Child-Avoidance?” *Caspian J Intern Med* 14 (4): 656–67. <https://doi.org/10.22088/cjim.14.4.656>.
- NORC. 2022a. *2022 GSS Codebook - Cross-Section Study*. <https://gss.norc.org/Documents/codebook/GSS%202022%20Codebook.pdf>.
- . 2022b. *The General Social Survey*. <https://gss.norc.org/>.
- Pew Research Center. 2022. “How the American Middle Class Has Changed in the Past Five Decades.” Pew Research Center. April 2022. <https://www.pewresearch.org/short-reads/2022/04/20/how-the-american-middle-class-has-changed-in-the-past-five-decades/>.
- R Core Team. 2023. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. <https://www.R-project.org/>.
- Shapiro, Gilla. 2014. “Voluntary Childlessness: A Critical Review of the Literature.” *Studies in the Maternal* 6 (1): 1–15. <https://doi.org/https://doi.org/10.16995/sim.9>.
- Wickham, Hadley. 2016. *Ggplot2: Elegant Graphics for Data Analysis*. Springer-Verlag New York. <https://ggplot2.tidyverse.org>.
- Wickham, Hadley, Mara Averick, Jennifer Bryan, Winston Chang, Lucy D’Agostino McGowan, Romain François, Garrett Grolemund, et al. 2019. “Welcome to the tidyverse.” *Journal of Open Source Software* 4 (43): 1686. <https://doi.org/10.21105/joss.01686>.
- Wickham, Hadley, Romain François, Lionel Henry, Kirill Müller, and Davis Vaughan. 2023. *Dplyr: A Grammar of Data Manipulation*. <https://dplyr.tidyverse.org>.
- Wickham, Hadley, Jim Hester, and Jennifer Bryan. 2024. *Readr: Read Rectangular Text Data*. <https://readr.tidyverse.org>.
- Xie, Yihui. 2021. “Knitr: A General-Purpose Package for Dynamic Report Generation in R.” <https://yihui.org/knitr/>.
- Zhu, Hao, Thomas Trivison, and Timothy Tsai. 2024. *kableExtra: Construct Complex Table with ‘Kable’ and Pipe Syntax*. <https://cran.r-project.org/package=kableExtra>.