To what extent, if any, does Political Freedom impact Life Expectancy? A Regression Analysis

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1: Abstract

This study investigates the potential relationship between political freedom and life expectancy. The paper uses regression analysis to explore whether there is a statistically significant relationship between these two variables, and if so, how strong that relationship is. Additionally, the study controls for additional variables that may impact life expectancy in an attempt to isolate the precise magnitude of the effect political freedom has on how long people live for The results of the analysis are discussed in the paper, as well as potential implications and avenues for further research.

2: Introduction

Research Question: To what extent, if any, does Political Freedom impact Life Expectancy?

We are hoping to see whether political freedoms have an effect on life expectancy. In our study, we also hope to try and control for other socioeconomic factors by measuring their effects and seeing where, if any, correlation between political freedom and life expectancy lies in terms of the magnitude of impact when compared to these other factors. The other factors are the following:

No.	Factor	Purpose
1	Fertility Rate by country	Should act as a proxy for demographic development
2	GDP Per Capita by country	Acts as a proxy for economic development
3	Gini Coefficient by country	Acts as a proxy for inequity
4	Mean years of schooling by country	Acts as a proxy for educational attainment
5	Peace Index by country	Acts as a proxy for stability
6	Gender Inequality Index by country	Acts as a proxy for Gender Inequality
7	Health Index	Acts a proxy for quality of healthcare

3: Motivation

Throughout the world, there are a myriad of different political systems in use. Some continue on due to inertia, while others are the result of a conscious decision by powerbrokers. We wanted to study these systems' impacts on the well-being of the citizens that live under them. Moreover, being three group members from countries with vastly different political systems made the exercise all the more interesting as we conducted it.

Before conducting the research itself we expect there to be a positive relationship between political rights and life expectancy, used as a proxy for citizen well-being. Intuitively we think this could be for a whole host of mechanistic reasons, however, they can all be condensed into the thought that a democracy is more likely to look after the well being of its citizens as the power of the state flows from the people rather than from other sources.

We think this research has the potential to be fruitfully applicable to a variety of contexts and circumstances. These include benevolent authoritarian regimes which have the genuine best interest of the people at heart but feel that citizen well-being can be accomplished without corresponding political freedoms.

Additionally, we feel that this research may also provide quantifiable evidence to help bolster the narrative that democratization, in addition to other forms of political rights, are crucial in the process of state development and an improved human condition.

Thus, we hope that from this project, the onward march of political emancipation can gain more momentum. Even if imperceptibly small.

4: Literature

One relevant study investigated the correlation between life expectancy and globalization and democracy in low-income countries. It seeks to determine whether the low life expectancy in low-income countries can be attributed to low levels of globalization and weak political institutions (Guzel et al., 2021). Therefore, this study differs from ours because they also consider the effect of globalization on life expectancy, and they use the variable democratization rather than political freedom. However, their findings are still useful because democratization has some similarities to political freedom, and their findings may aid in determining additional control variables to measure against life expectancy. The study defines globalization as the process of international integration which also has political, social, and economic components, and they measure globalization using the KOF index, which runs from 0-100 with 100 being the highest level of globalization (Guzel et al., 2021). The study found that in the long run, the relationship between life expectancy and globalization and democracy is positive, so a higher globalization index and higher levels of democracy lead to higher life expectancy. It therefore

advocates for greater globalization and the improvement of democratic institutions in order to achieve higher life expectancies and a healthier society (Guzel et al., 2021).

A second study also considered the relationship between life expectancy and democratization in Europe (Mackenbach et al., 2013). Again, this study uses the variable democratization rather than political freedom, but its results may still be of use in understanding the theory behind our results. This study also investigates the correlation between democratization and cause-specific mortality rates, which we do not investigate, but we could potentially find this data and incorporate it into our study. They found that democratization had mixed effects in the short and long run. In Southern Europe, democratization had a positive effect on life expectancy (Mackenbach et al., 2013). However, in Central and Eastern Europe, they found that in the short run, democratization had a positive effect on life expectancy, but in the long run it had a negative effect, likely because democratization was part of a complete change in political system which caused societal disruptions (Mackenbach et al., 2013). The difference between short and long run effects of democratization is not considered in our data, but it may be interesting to create panel data rather than cross sectional data to investigate these differences for our data set. In general, though, the study found that democratization is correlated with higher life expectancy (Mackenbach et al., 2013).

A third study considered the relationship between life expectancy in less developed countries (LDCs) and four political and socioeconomic factors, those four factors being economy, measured by GDP per capita, educational environment, measured by literacy rate in the adult

population age 15 and older, nutritional status, measured by the proportion of undernourished people in the population, and political regime, measured by the Polity IV database regime score (Lin et al., 2012). This study measures four different factors as opposed to our one factor, but it is useful because unlike the previous studies it measures the effect of political regime and not democratization, which may help in establishing theory and comparing the results of this study to the others. The study found that all four factors are associated with an increase in life expectancy, but political regime had the least influence in the short term. However, the effect of political regime increased over time while the other factors' influence decreased over time. Therefore, they conclude that the long run effects of democracy should be taken into account (Lin et al., 2012).

A fourth study investigates the relationship between democracy and life expectancy, specifically looking to test the effect of policy making between regime types on life expectancy. The theory that this study looks to test is that democratic regimes should have greater life expectancies because democratic leaders must be re-elected and therefore would implement policies to promote public wellbeing and health in order to remain popular. Autocratic regimes, on the other hand, are not under public pressure for re-election and therefore would not feel the need to implement the same policies (Wigley & Akkoyunlu-Wigley, 2011). This study therefore looks to test if policy making is the reason for higher life expectancies in democratic regimes. This study differs from ours because it looks only to compare democratic and autocratic regimes, but it is extremely useful in that it can aid in establishing the theory behind the correlation between democracy and life expectancy, since we are also examining control variables such as the Health Index with the assumption that democracies will have a higher Health Index. This study found

that while democratic regimes do have a higher life expectancy, this is not attributable to their policies, as they found that even in democratic regimes with a distribution of pro-health resources no better than an autocratic regime's, life expectancy was still higher (Wigley & Akkoyunlu-Wigley, 2011).

A fifth study investigates the relationship between the level of freedom given by political regimes and health, which is measured by life expectancy and maternal and infant mortality, also taking into account a country's wealth, measured by Gross National Product (GNP), level of inequality, measured by the Gini coefficient, and the size of its public sector, measured by total government expenditure (Franco et al., 2004). This study differs from ours because it measures "health" rather than just life expectancy, but its results are still useful because health encompasses life expectancy in this study, and its control variables may help to inform ours. Additionally, unlike many of the other studies investigated in this literature review, it measures the effect of political freedom and not just democracy on health (and life expectancy), which may help in informing the theory behind our results. It found that health indicators had a statistically significant relationship with freedom ratings, with the highest level of health being seen in free countries, followed by partially free countries, and finally the worst health indicators being seen in countries that were not free (Franco et al., 2004).

A sixth study investigates the effect of democracy on physical quality of life, measured using the Physical Quality of Life Index (PQLI), which uses infant mortality rate, literacy rate, and life expectancy during the periods 1970, 1980, and 1990 (Frey and Al-Roumi, 1999). This study differs from ours in that it measures physical quality of life rather than just life expectancy, but

the index they use to measure this does include life expectancy which makes it relevant to our investigation. The study found that there is a link between democracy and the physical quality of life. Additionally, they found that democracy and economic development did improve the physical quality of life, but dependence, state intervention, and population growth had very little effect. It should also be noted that this study used panel data, and thus found differences between different time periods. The effect of democracy on the physical quality of life is significant for 1970 and 1990, but not in 1980 when using OLS estimation (Frey and Al-Roumi, 1999). The differences between time periods does indicate that it may be productive to use panel data in our investigation to make our investigation and interpretations more robust.

A seventh study investigates the effect of democracy on population health, measured by health-adjusted life expectancy at birth, health-adjusted life expectancy at age 60, life expectancy at birth, child mortality rate, and adult mortality rate. The study investigates both direct and indirect effects of democracy on health, meaning that they investigated the effect of democracy on health independent from other socioeconomic factors such as income, income inequality, education, and access to healthcare, and the effect of democracy on socioeconomic factors that may impact health (Safaei, 2006). This study measures more than just life expectancy, but their measure for health does include life expectancy and their investigation is sufficiently similar to ours, which will allow us to use it to inform the theory behind our results. Additionally, this study also investigates the effect of other factors on health, which is similar to our investigation, though we are not investigating the indirect effect of political regime on life expectancy. The study found that the above socioeconomic factors do have a significant, positive effect on health, and that

even after controlling for these factors, democracy has a direct and positive effect on health (Safaei, 2006).

An eighth study investigates the relationship between democracy and health, which is measured by life expectancy, mortality, fertility rate, and prevalence of undernourishment. The study also utilized panel data for 30 countries between 1972-2017, and classifies these countries as full democracies, flawed democracies, hybrids, and authoritarian regimes (Fall and Zidi, 2022). Again, this study measures health and not just life expectancy, but their health variable includes life expectancy as an indicator and therefore this study is similar enough to inform our investigation. Additionally, they classify countries under different political regimes, which is similar to our method of investigation, though our investigation differs in that we are measuring the effect of the level of freedom rather than political regime. The study found that there is a positive correlation between democracy and life expectancy at birth, and a negative correlation between democracy and fertility, mortality, and the prevalence of undernourishment (Fall and Zidi, 2022).

A ninth study investigates the effect of democracy on cause-specific mortality and HIV-free life expectancy. It utilized panel data from 170 countries in the period between 1970 and 2015 (Bollyky et al., 2019). It differs from our investigation in that it examines cause-specific mortality rather than life expectancy, but its results can prove helpful in providing explanations for our findings, and this study is still sufficiently similar to ours. The study found that HIV-free life expectancy at 15 years of age improved during the period of study by an average of 3% after 10 years after a transition to democracy. It also found that democracy is negatively correlated

with mortality from cardiovascular disease. It states from these findings that democracies are more likely than autocracies to lead to health gains for causes of mortality such as cardiovascular diseases and transport injuries that are not already targeted by foreign aid and therefore require healthcare delivery infrastructure (Bollyky et al., 2019).

A tenth study investigates the effect of democracy and regressiveness on quality of life, income distribution, and economic growth rates. Quality of life is measured using both the Human Development Index, which is based on life expectancy at birth, adult literacy rates, and real GDP per capita, and life expectancy itself (Weede, 1993). While this study also investigates the effect of democracy on income distribution and economic growth rates, it investigates these three factors separately. Additionally, it measures the effect of democracy on the Human Development Index and life expectancy separately. So, this study appears to be sufficiently similar to our investigation, so its results may be helpful in explaining the theory behind our results. The study found that democracy has a close to zero effect on economic growth rates, income distribution, and quality of life, or life expectancy (Weede, 1993). In this way, this study differs greatly from the other studies reviewed here, as it is the only one that produced this result. Therefore, its findings may be helpful in explaining our results should we arrive at similar conclusions.

After conducting this literature review, it seems that most studies find a positive correlation between democracy and life expectancy/health (although there is one that does not, which may aid in explaining our results if we find no correlation). However, it is notable that most studies investigate democracy or political regimes rather than the effect of level of freedom, meaning that there seems to be a gap in existing literature regarding the effects of the level of freedom of

a country specifically on life expectancy. Therefore, through our study we hope to fill this gap and find results that pertain to this more specific research question.

5: Data & Methodology

The data collected comes from a series of reputable sources. However, there are a series of limitations to note regarding the nature of the data.

Firstly, the data itself comes from a range of years that stretches from 2015 to 2022. This was due to the spotty nature of available data and the limited access we had. However, this should not significantly affect the results due to the fact that on the scale of political and human development, 7 years is a relatively short while.

Secondly, due to the differing standards and intensity of data collection throughout the world, all countries on the planet could not be included. We removed any country where 1 or more of the examined datasets was not available. This left us with a total of 136 states in the study. We do not think this significantly impacts the study as the included countries still vary wildly in terms of their values for the indexes and factors under consideration.

Factor	Source	Notes

Life Expectancy	*Life expectancy of the World Population*. Worldometer. (n.d.). Retrieved November 21, 2022, from https://www.worldometers.info/demographics/life-expectancy/	Data in the source is taken from the UN Population Division. The UN being a multinational organization with political representation from most(or all) states should be as neutral as reasonably possible.
Fertility Rate by country	Total fertility rate 2022. (n.d.). Retrieved October 24, 2022, from https://worldpopulationreview.com/country-rankings/total-fertility-rate	The data is taken from world population review, which is a credible independent organization with no political affiliations, and uses the following sources for the aggregate data: 1. Total fertility rate - CIA World Factbook 2021 2. Fertility Rate, Total - World Bank 2021 3. Total Fertility Rate - Population Reference Bureau 2021

GDP Per Capita by country	"GDP per Capita, Current Prices." *International Monetary Fund*, https://www.imf.org/external/datamapper/NGDPDPC@WEO/OEMDC/ADVEC/WEOWORLD.	The data is taken from the IMF, which sources its own data and is reputably reliable
Gini Coefficient by country	"Gini Index Coefficient – Distribution of Family Income." *The World Facebook*, Central Intelligence Agency, https://www.cia.gov/the-world-factbook/field/gini-index-coefficient-distribution-of-family-income/country-comparison.	The data is taken from the CIA world factbook, which uses a variety of sources that are verifiable through the website.
Mean years of schooling by country	United Nations. (n.d.). *Undata | Table Presentation | Human Development Index and components*. United Nations. Retrieved October 24, 2022, from	The data is taken from a component used to calculate the Human Development Index, for which the source of data is the United Nations Development Program.

	http://data.un.org/DocumentData.aspx?id=419	
Peace Index by country	Vision of Humanity. (2022, October 19) *Positive Peace Index*. Retrieved October 24, 2022, from https://www.visionofhumanity.org/public-release-data/	The peace index is calculated by the Institute of Economics & Peace and includes data sources from Uppsala Conflict Data Program, Economist Intelligence Unit and the UNHRC
Gender Inequality Index by country	United Nations. (n.d.). *Undata | Table Presentation | Gender inequality index*. United Nations. Retrieved October 24, 2022, from https://data.un.org/DocumentData.aspx?id=415#32	The data is calculated by the United Nations, and is sourced by the United Nations Development Program
Health Index	Published by Statista Research Department, & 20, J. (2022, June 20). *Health index of countries*	The data was published by the Statista Research Department, and the source is the Legatum Institute Foundation, a

	worldwide in 2021. Statista. Retrieved October 24, 2022, from https://www.statista.com/statistics/1290168/health-index-of-countries-worldwide-by-health-index-score	reputable London-based think-tank.
State of Freedom (Numerical + Dummy)	Countries and territories. Freedom House. (n.d.). Retrieved November 21, 2022, from https://freedomhouse.org/countries/freedom-world/scores	Freedom House is a non-profit that works on a variety of issues regarding political, social, and internet freedoms. Moreover, their methodology and donors can be found in the report and on their website respectively. The dummy variables were created by looking at the categorization from the report

When running the regression analysis, the state of freedom was examined in two ways. Firstly, it was looked at as a continuous variable with the exact scores from the index. Secondly, the categories of Not Free, Partly Free, and Free, were used as indicator variables. These labels are associated with score ranges and were provided by Freedom House.

Dummy Variable Key	
1	Not Free
2	Partly Free
3	Free

6***: Results & Robustness***

To find the relationship between life expectancy and political freedom, we ran several regressions. The first two regressions examine the relationship between life expectancy and political freedom without any control variables, and the second two examine the relationship between life expectancy and political freedom with all the remaining control variables.

All models in one table:

	(1)	(2)	(3)	(4)
	first	second	fifth	sixth
VARIABLES	LifeExpectancy	LifeExpectancy	LifeExpectancy	LifeExpectancy
PoliticalRights	0.139***		0.0230*	
	(0.0177)		(0.0136)	
Fertility Rate			-2.614***	-2.613***
			(0.398)	(0.404)
GDP Per Capita			0.0657***	0.0676***
			(0.0222)	(0.0226)
GINI Coefficient			-0.0381	-0.0437
			(0.0423)	(0.0430)
Mean Years of Schooling			-0.124	-0.124
			(0.184)	(0.188)
Peace Index			0.922	0.819

			(0.851)	(0.827)
Gender Inequality			-14.26***	-14.19***
			(3.774)	(3.802)
Healthcare Index			0.00864	0.00835
			(0.0247)	(0.0248)
2.Partly Free		1.519		0.901
		(1.316)		(0.747)
3.Free		9.252***		1.575*
		(1.279)		(0.935)
Constant	65.87***	69.87***	83.31***	84.13***
	(1.136)	(0.958)	(4.030)	(4.038)
Observations	136	136	136	136
Adjusted R-squared	0.312	0.312	0.808	0.807

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Effect of political rights on life expectancy without any control variables

	(1)	(2)
	first	second
VARIABLES	LifeExpectancy	LifeExpectancy
2.System		1.519
		(1.316)
3.System		9.252***
		(1.279)

PoliticalRights	0.139***	
	(0.0177)	
Constant	65.87***	69.87***
	(1.136)	(0.958)
Observations	136	136
Adjusted R-squared	0.312	0.312

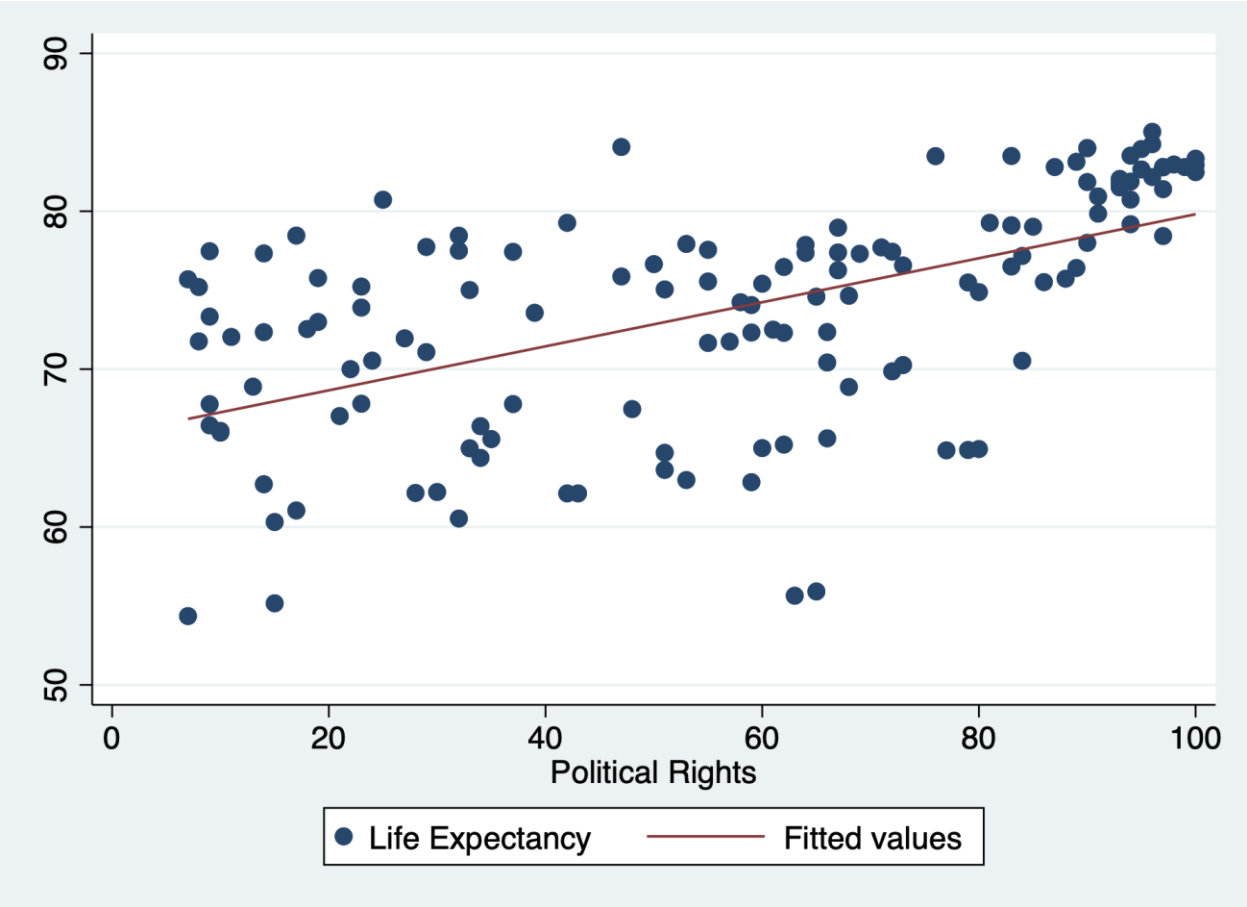
Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

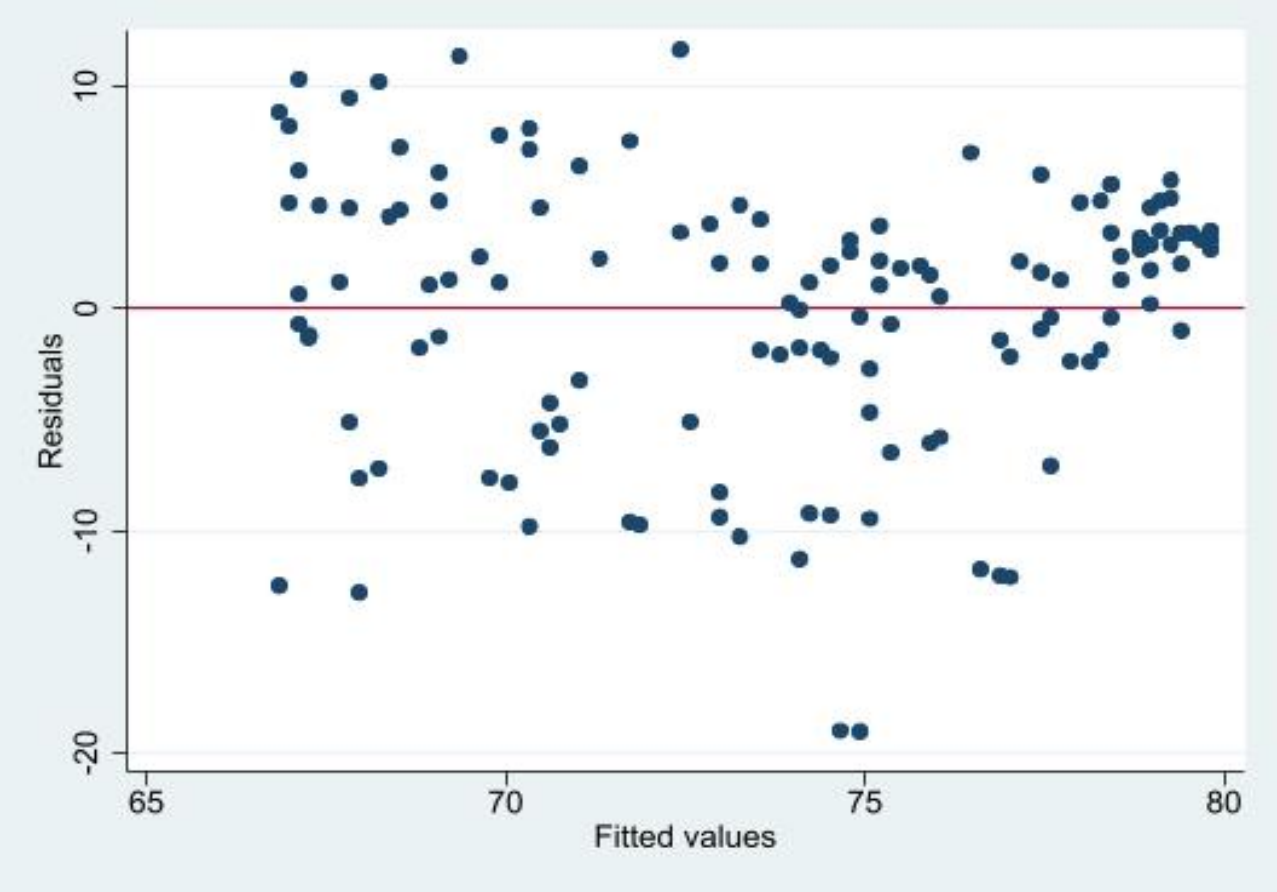
The difference between the two models is that the second model categorizes political freedom into three types: Free, Partly Free and Not Free to analyze the effect of each separately. This is just another way of looking at the same data to draw different conclusions.

The relationship that we can identify is that there is a statistically significant effect of political freedoms on life expectancy, where life expectancy increases by 0.139 years for every unit increase in political freedom (according to the index) on average ceteris paribus. When looking at the results in terms of categories of political freedom, living in a free country results in an increase in life expectancy by 9.2 years on average ceteris paribus.

These results are both statistically and practically significant. We can see the relationship between life expectancy and political freedom in the graph below:



We also want to check the robustness of the model, therefore we can identify the residuals through the graph below which plots the residuals:



In order to check if this model suffers from heteroskedasticity we ran a White's test:

White's test	df	p
H0: Homoskedasticity		
Ha: Unrestricted heteroskedasticity		
chi2(2) = 3.11		
Prob > chi2 = 0.2109		
Cameron & Trivedi's decomposition of IM-test		
chi2		
3.110	2	0.211
14.280	2	0.001
0.040	1	0.833
17.440	5	0.004

From this we can identify that there is heteroskedasticity as the p value is below the alpha of 0.1. This may be because of omitted variable bias. We want to correct for the heteroskedasticity, therefore we include the other variables.

In order to boost the robustness of the model as well as control for other effects, we run the following regressions:

	(1)	(2)
	fifth	sixth
VARIABLES	LifeExpectancy	LifeExpectancy
2.System		0.901
		(0.747)
3.System		1.575*
		(0.935)
Fertility Rate	-2.614***	-2.613***
	(0.398)	(0.404)
GDP per Capita	0.0657***	0.0676***
	(0.0222)	(0.0226)

GINI coefficient	-0.0381	-0.0437
	(0.0423)	(0.0430)
Mean Years of Schooling	-0.124	-0.124
	(0.184)	(0.188)
Peace Index	0.922	0.819
	(0.851)	(0.827)
Gender Inequality	-14.26***	-14.19***
	(3.774)	(3.802)
Healthcare Index	0.00864	0.00835
	(0.0247)	(0.0248)
PoliticalRights	0.0230*	
	(0.0136)	
Constant	83.31***	84.13***
	(4.030)	(4.038)
Observations	136	136
Adjusted R-squared	0.808	0.807

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

From this model we can identify the following:

1. There is still a statistically significant relationship between political freedom and life expectancy, although the effect is smaller than in the regression without the rest of the control variables.
2. GDP, Fertility rate, and Gender Inequality also have statistically significant effects on life expectancy
3. The effects of GINI coefficient, mean years of schooling, conflict and healthcare are statistically insignificant.

These conclusions can be drawn as the alpha is 0.1, which is justifiable given the limited amount of observations in the sample.

The conclusions above raise the questions as to why these variables do not have significant effects, and also whether it would be better to drop them from the model entirely. To decide this, we first analyze whether there is multicollinearity between the control variables by running a pairwise correlation and VIF test.

Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) Fertility Rate	1.000						
(2) GDP per Capita	-0.487	1.000					
(3) GINI coefficient	0.331	-0.326	1.000				
(4) Mean Years of Schooling	-0.787	0.639	-0.383	1.000			
(5) Peace Index	0.445	-0.539	0.207	-0.516	1.000		
(6) Gender Inequality	0.786	-0.744	0.487	-0.862	0.599	1.000	
(7) Healthcare Index	-0.009	-0.037	-0.072	-0.022	-0.070	-0.011	1.000

Variance inflation factor

	VIF	1/VIF
2.System	1.632	.613
3.System	2.706	.37
Fertility Rate	3.29	.304
GDP per Capita	2.626	.381
GINI coefficient	1.425	.702

Mean Years of Schooling	4.688	.213
Peace Index	1.929	.518
Gender Inequality	7.492	.133
Healthcare Index	1.048	.954
Mean VIF	2.982	.

From these results we can identify that there is a high correlation between mean years of schooling and fertility rate, mean years of schooling and gender inequality, peace index and GDP per capita, peace index and mean years of schooling, and peace index and gender inequality (high degree of correlation in this case being defined as above 0.5). Additionally, the VIF test shows a value above 7 for Gender Inequality and 1/VIF shows values above 0.7 and 0.9 for the GINI coefficient and healthcare index variables respectively. From these results we can hypothesize the following: effect of the GINI coefficient, Peace Index and Mean Years of Schooling is being absorbed by the Gender Inequality & Fertility Rate variables.

Therefore we can conclude that there is a high degree of multicollinearity in the model which might explain some of the effects being statistically insignificant. The question remains as to whether the variables should be included in the final model. To analyze the joint impact of these variables on the dependent variable, we run a joint F-test:

(1) GINI coefficient = 0

(2) Mean Years of Schooling= 0

(3) Peace Index = 0

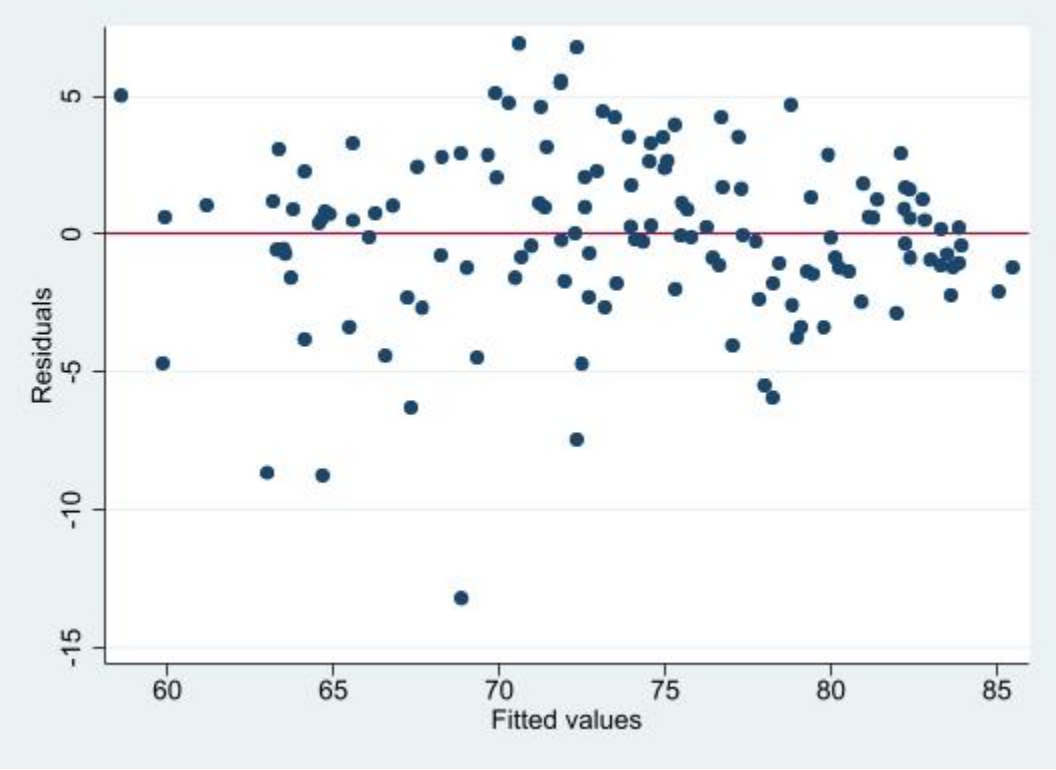
(4) Healthcare Index = 0

F(4, 131) = 58.31

Prob > F = 0.0000

From these results we can identify that there is a joint effect of the four variables that do not have individually significant effects in the model, therefore they should be kept in the model.

Finally we want to look at the residual effects of the model which includes all the variables. We can see them clearly in the graph below.



We run a White's test to check for heteroskedasticity:

White's test

White's test df p

H0: Homoskedasticity

Ha: Unrestricted heteroskedasticity

chi2(51) = 34.16

Prob > chi2 = 0.9663

Cameron & Trivedi's decomposition of IM-test

chi2		
34.160	51	0.966
8.160	9	0.518
1.600	1	0.206
43.930	61	0.951

As the p-value is above 0.1, we can conclude there is no heteroskedasticity in the model. Therefore although this model suffers from multicollinearity, it is still robust in that the variables all have effects on the dependent variable of life expectancy. Finally, the adjusted R-squared value of 0.8 indicates that the model does a relatively good job at explaining the variation in the data. Therefore the final model as regards to this research question is as follows:

$$Life\ Expectancy_i = \beta_0 + \beta_1 Fertility\ Rate + \beta_2 GDPperCapita + \beta_3 GINI + \beta_4 GenderInequality + \beta_5 Schooling + \beta_6 Healthcare + \beta_7 Peace + \beta_i Political\ Freedom$$

We decide to use the fourth model which has all the control variables and political freedom as an indicator variable to more clearly identify the effect of political freedom given a particular state of freedom, which is more conducive to a broader discussion.

We then move on to look at a discussion of the reasons for each individual effect. Fertility rate may impact life expectancy negatively (2 years decrease per live birth per woman on average ceteris paribus) because of birth complications for women, or the expectation of some children not reaching adulthood, incentivizing more births in the family. GDP per capita may impact life expectancy positively (0.6 years increase on average ceteris paribus per 10,000 USD increase in GDP per capita) because of an increase in quality of life due to a stronger economy. Gender Inequality may impact life expectancy negatively (14 years decrease on average ceteris paribus per unit increase in the Gender Inequality index. Because the index is measured from 0 to 1, the effect is practically much smaller for different countries) because having unequal gender parity for around 50% of the population means women cannot access healthcare, education and other quality of life improvers, as well being more likely to be a target of violence, abuse and other negative impacts. The relatively large effect of the gender inequality variable may in part be explained by this variable absorbing the impacts of mean years of schooling, conflict index, and

the GINI coefficient variables (as we saw previously there was high multicollinearity in the model.

For the jointly significant variables of healthcare, GINI coefficient, mean years of schooling and the peace index, the individual effects cannot be identified but as they are jointly significant, we can still hypothesize the reasons for their impacts. Healthcare may impact life expectancy for the intuitive reasons of being able to access life-extending treatments, mean years of schooling may impact life expectancy for the reason of a population making better choices if they are better educated (choices in this case indicating lifestyle choices such as alcohol consumption, smoking, harmful sexual practices). GINI coefficient may impact life expectancy for the reason that higher inequality means a greater power differential between subsections of society, which might lead to a higher crime rate or corruption. Finally, the peace index might impact life expectancy for the reason of higher conflict leading to more premature deaths. However, all of these reasons are still speculative unless backed by further evidence, either by past or future research.

7: Conclusion

From an examination of our results so far, it seems that, even after controlling for a multitude of other variables, there still remains an intrinsic link between the state of freedom and life expectancy.

These results support the idea that instead of democratics politics simply being a tool to bring about factors that lead to human well being. It could potentially be a factor that leads to human well being in and of itself.

There is, however, still a long way to go before this idea can be proven definitively. It still remains to be seen whether there were other significant factors that our model did not account for, despite our best efforts, that can explain away the relationship we see between political freedom and life expectancy even after controlling for other factors.

Finally, there is a question regarding the mechanism through which political freedom affects life expectancy. It is hard to imagine that the act of going to a polling booth can add years to a person's life expectancy. Thus, there is room for research to be conducted about the exact mechanism by which human life is extended under democracy. These pathways could be psychological, such as lower average stress levels throughout life due to the peace of mind associated with living with freedom, or even physical, such as simply a lower chance of going missing at the behest of the state. Irrespective of the exact cause at play, this appears to be an avenue worth investigation.

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