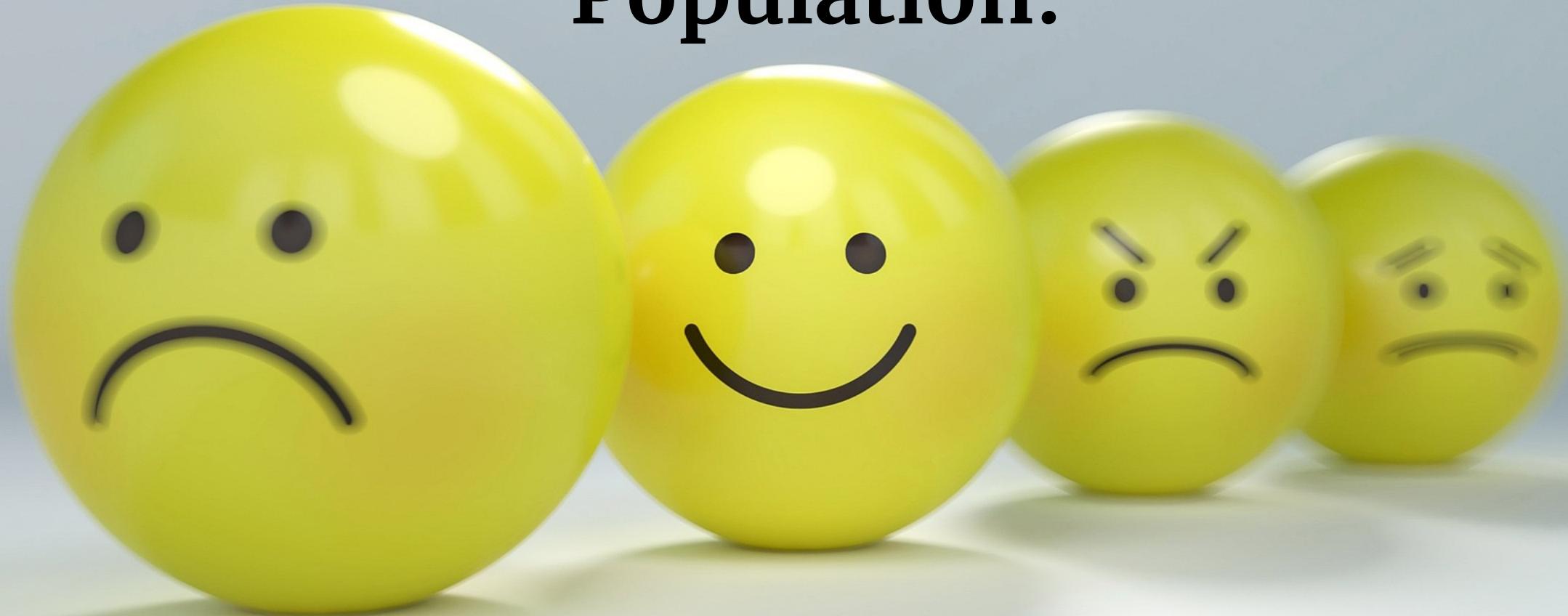
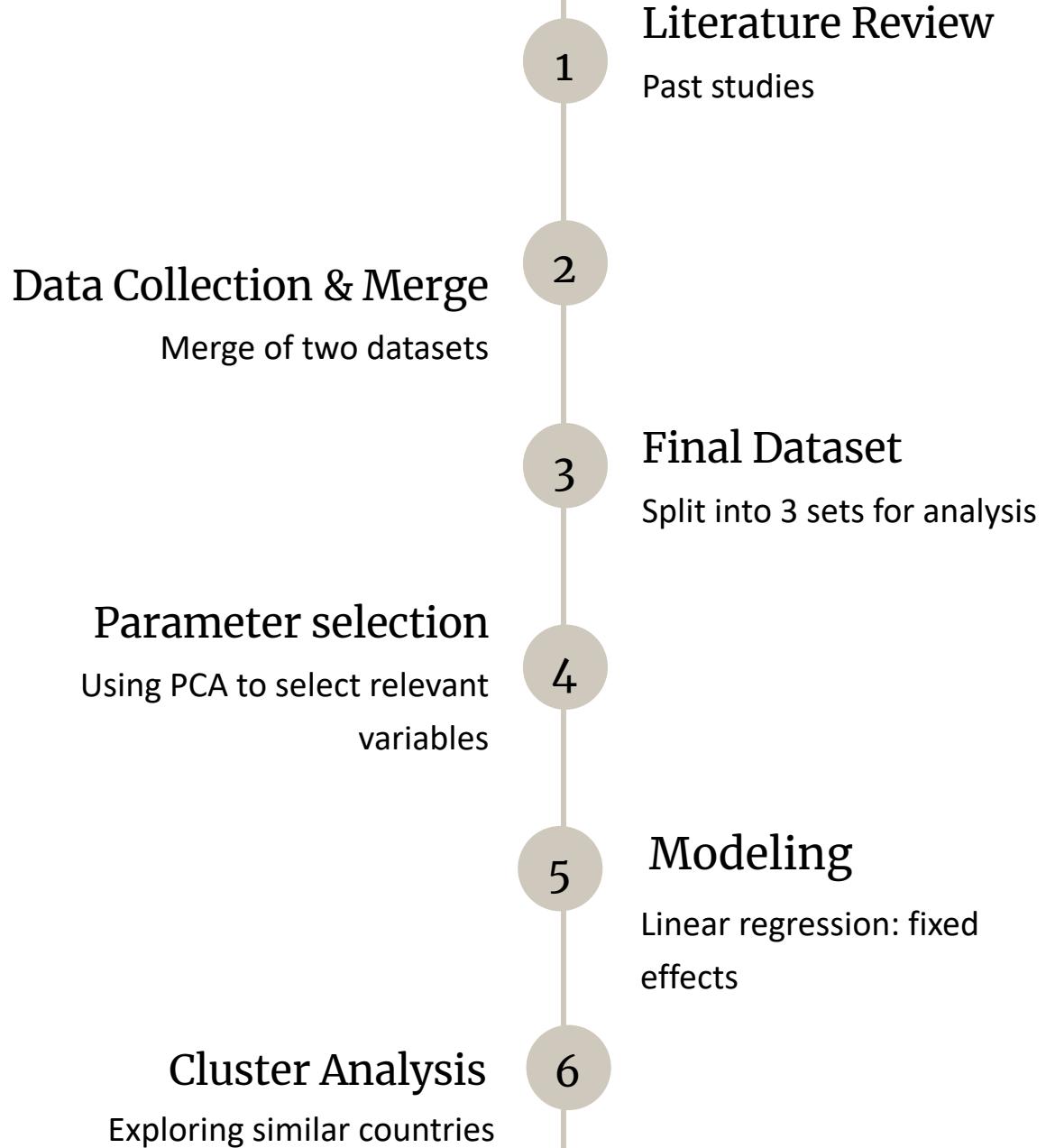


What makes for a Happy Population:



an Economic, Social, and Citizen Opinions Investigation





Happiness
Subjective well-being
Satisfaction
Utility
Well-being
Welfare

There is enough evidence that individuals are able and willing to provide meaningful **Self-Reported Happiness** that leads to many new insights on individual happiness and motivations.

(Ferrer-i-Carbonell, 2013)

In developed nations, economic progress buys only a small amount of extra happiness.
(Oswald, 1997)

Subjective well-being varies directly with income, inversely with material aspirations. At the start of the life cycle, higher income groups were happier since they were able to purchase more. However, income growth does not cause well-being to increase. With an increase in income, material aspirations increase relatively equivalent to income growth. The two relations cancel one another.
(Easterlin, 2001)

In Japan, improved conditions for groups targeted by reform correlated with increases in well-being.
(Sarracino et al., 2022)

In Europe, happiness is negatively affected by unemployment rate. Spending social resources on unemployment protection and active labour policies have a positive impact on well-being.
(Bonasia et al., 2022)

Country
year
Life Ladder
Log GDP per capita
Social support
Healthy life expectancy at birth
Freedom to make life choices
Generosity
Perceptions of corruption
Positive affect
Negative affect
Confidence in national government
Access to clean fuels and technologies for cooking (% of population)
Access to clean fuels and technologies for cooking, urban (% of urban population)
Access to electricity, rural (% of rural population)
Access to clean fuels and technologies for cooking, rural (% of rural population)
Access to electricity (% of population)
Access to electricity, urban (% of urban population)
Account ownership at a financial institution or with a mobile-money-service provider (% of population ages 15+)
Account ownership at a financial institution or with a mobile-money-service provider, older adults (% of population ages 25+)
Account ownership at a financial institution or with a mobile-money-service provider, poorest 40% (% of population ages 15+)
Adequacy of social insurance programs (% of total welfare of beneficiary households)
Adequacy of social protection and labor programs (% of total welfare of beneficiary households)
Adequacy of social safety net programs (% of total welfare of beneficiary households)
Adequacy of unemployment benefits and ALMP (% of total welfare of beneficiary households)
Adjusted net enrollment rate, primary (% of primary school age children)
Adjusted net national income (annual % growth)
Adjusted net national income (constant 2015 US\$)
Adjusted net national income (current US\$)
Adjusted net national income per capita (annual % growth)
Adjusted net national income per capita (constant 2015 US\$)
Adjusted net national income per capita (current US\$)
Adjusted net savings, excluding particulate emission damage (% of GNI)
Adjusted net savings, excluding particulate emission damage (current US\$)
Adjusted net savings, including particulate emission damage (% of GNI)
Adjusted net savings, including particulate emission damage (current US\$)
Agricultural irrigated land (% of total agricultural land)
Agricultural land (% of land area)
Agricultural land (sq. km)
Average working hours of children, study and work, ages 7-14 (hours per week)



World Happiness
Report
2005–2021
12 Variables

Average working hours of children, working only, ages 7-14 (hours per week)
Children in employment, total (% of children ages 7-14)
Children out of school (% of primary school age)
Children out of school, female (% of female primary school age)
Children out of school, male (% of male primary school age)
Coverage of social insurance programs (% of population)
GDP (constant 2015 US\$)
GDP (current US\$)
GDP per capita (constant 2015 US\$)
GDP growth (annual %)
GDP per capita (current US\$)
Gini index
Gross savings (% of GNI)
Income share held by highest 10%
Income share held by lowest 10%
Inflation, consumer prices (annual %)
Labor force participation rate for ages 15-24, total (%) (national estimate)
Labor force, total
Literacy rate, adult total (% of people ages 15 and above)
Literacy rate, youth total (% of people ages 15-24)
Population, total
Unemployment, total (% of total labor force) (national estimate)
Women making their own informed decisions regarding sexual relations, contraceptive use and reproductive health care (% of women age 15-49)
Women participating in the three decisions (own health care, major household purchases, and visiting family) (% of women age 15-49)
Women who believe a husband is justified in beating his wife (any of five reasons) (%)
Women who believe a husband is justified in beating his wife when she argues with him (%)
Women who believe a husband is justified in beating his wife when she burns the food (%)
Women who believe a husband is justified in beating his wife when she neglects the children (%)
Women who believe a husband is justified in beating his wife when she goes out without telling him (%)
Women who believe a husband is justified in beating his wife when she refuses sex with him (%)
Urban population (% of total population)
Total greenhouse gas emissions (% change from 1990)
Mortality rate, infant (per 1,000 live births)
Suicide mortality rate (per 100,000 population)
Tax revenue (% of GDP)
Forest area (% of land area)
Arable land (% of land area)
Population living in slums (% of urban population)
Military expenditure (% of GDP)
High-technology exports (% of manufactured exports)
Central government debt, total (% of GDP)
Expense (% of GDP)
Strength of legal rights index (0=weak to 12=strong)
Individuals using the Internet (% of population)

Total of 83 Variables

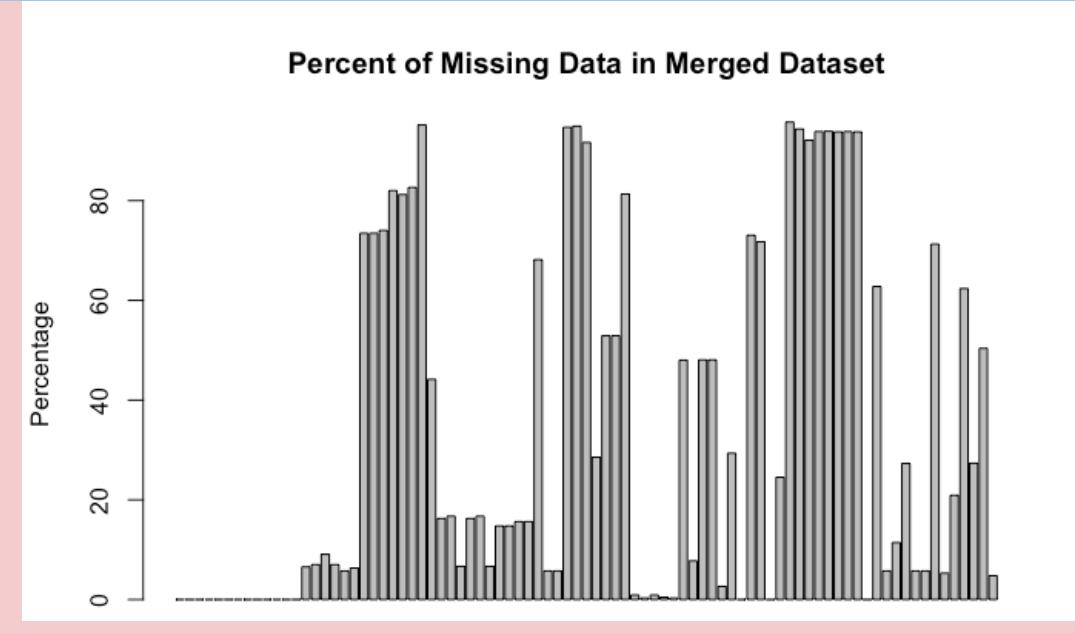
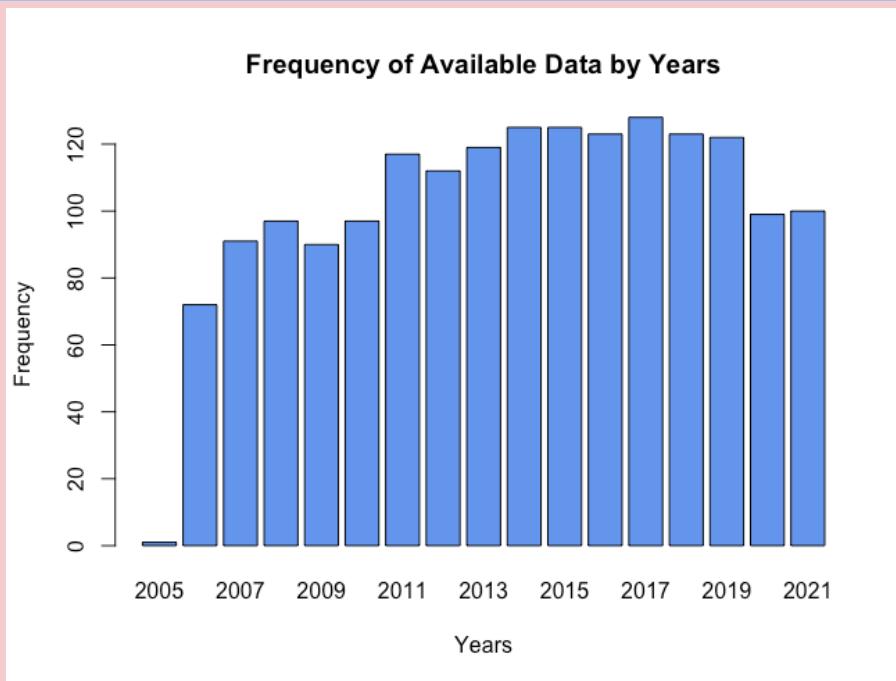


World Bank
2000–2021
72 Variables

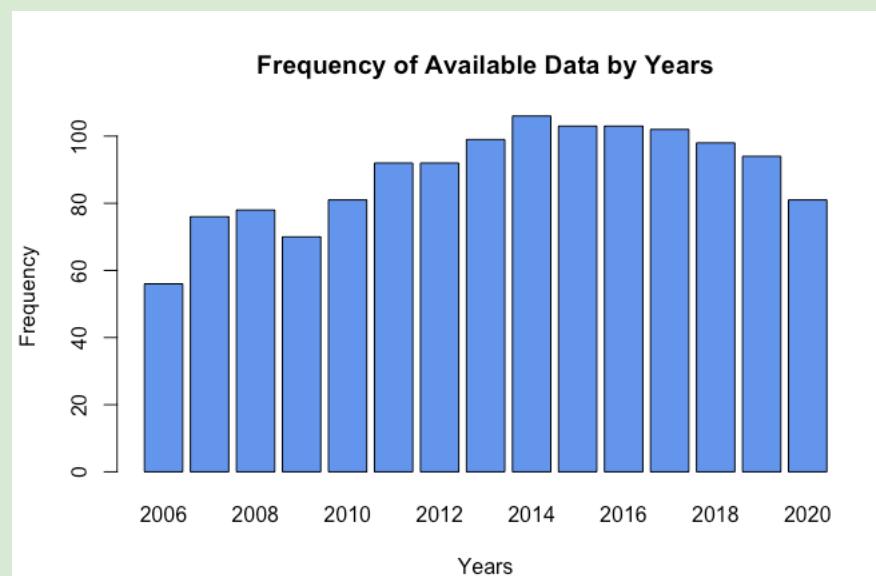
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84 Variables
1741 Observations
↓
1340 Observations

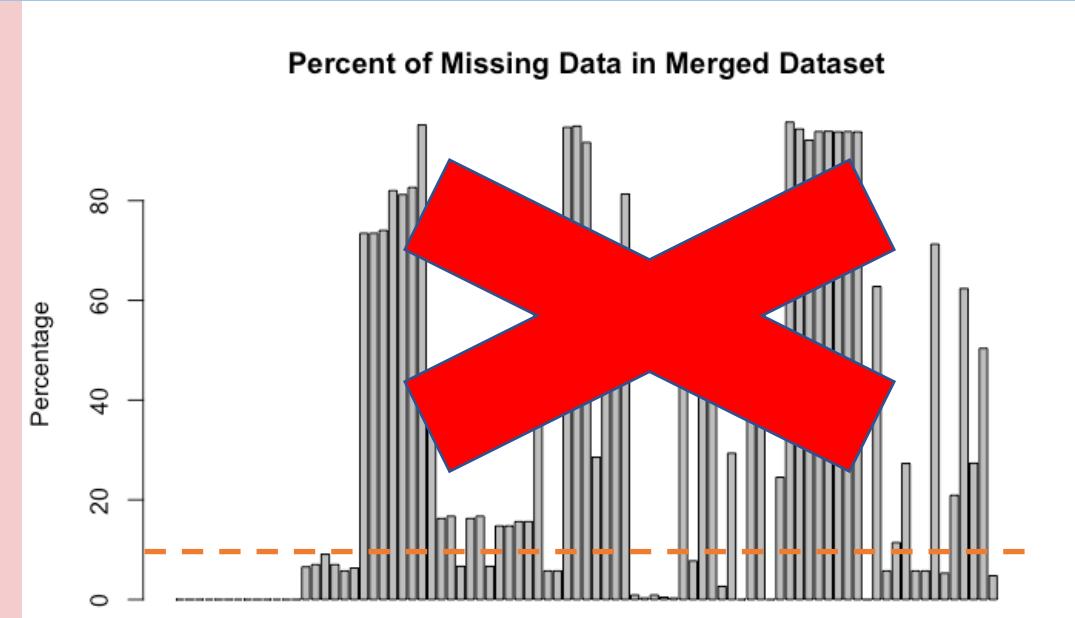
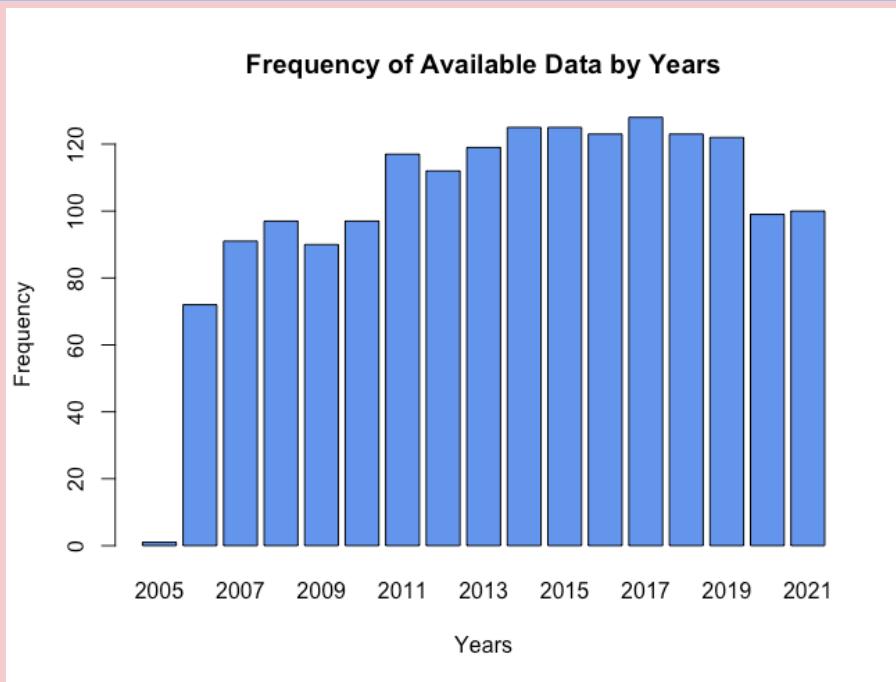


Final Dataset
2006 - 2020
37 Variables
1331 Observations

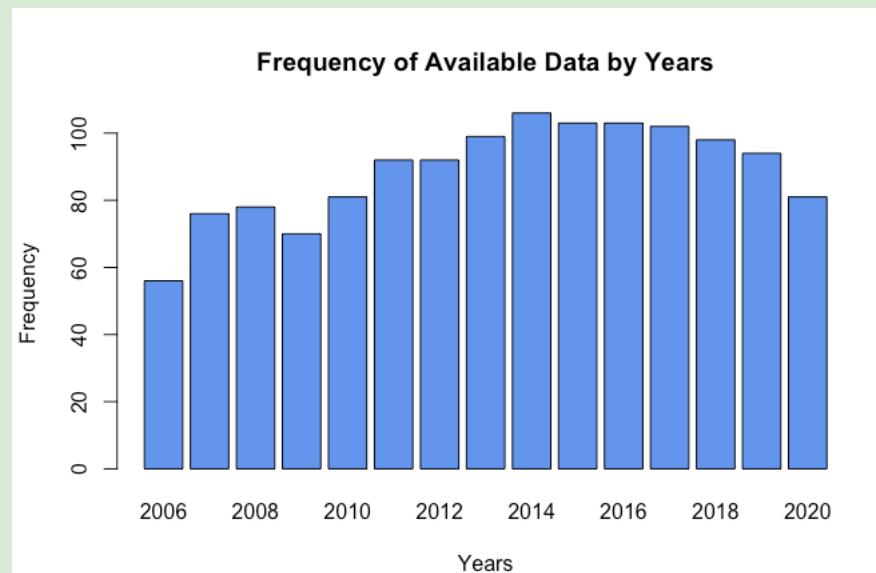
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with more than 10%
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84 Variables
1741 Observations
↓
1340 Observations

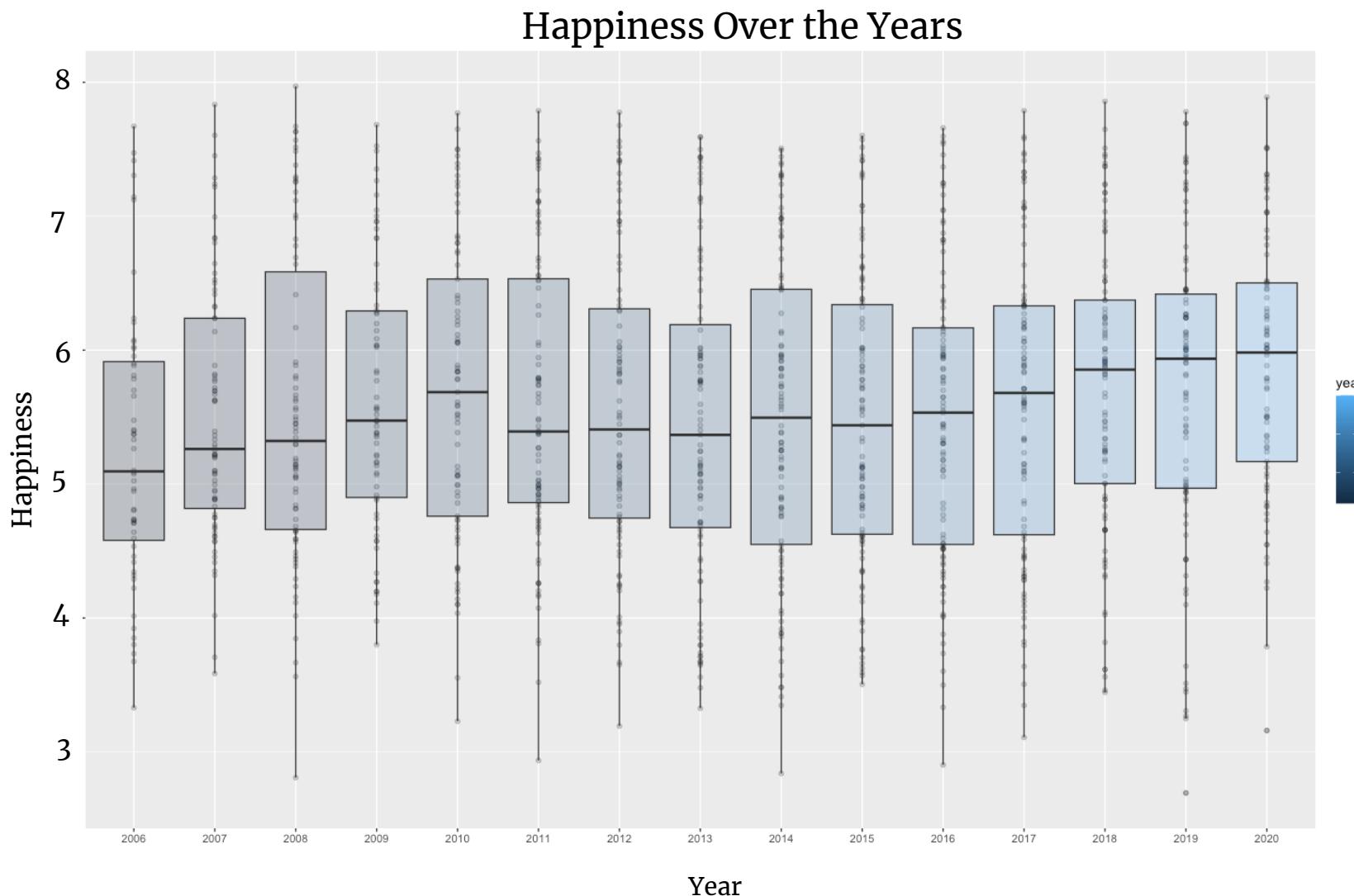


Final Dataset
2006 - 2020
37 Variables
1331 Observations

Happiness (DV)

Life ladder: *Imagine yourself on a ladder, from 0 (worse) - 10, which step are you on now*

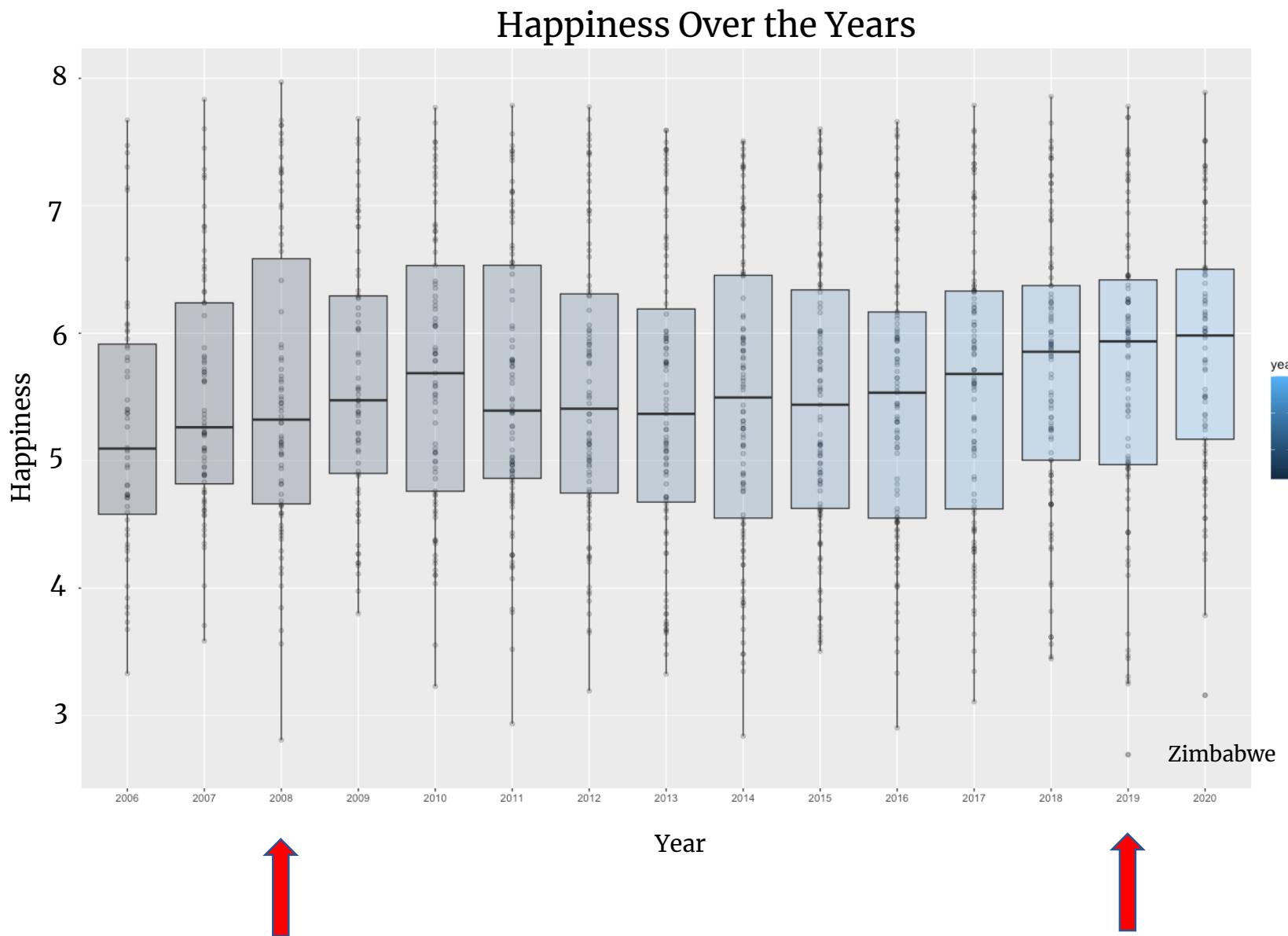
"Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?"



Happiness (DV)

Life ladder: Imagine yourself on a ladder, from 0 (worse) - 10, which step are you on now

"Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?"



Economic (19 Variables)

Country
year
Life Ladder
Log GDP per capita
Adjusted net national income (current US\$)
Adjusted net national income per capita (current US\$)
Agricultural land (% of land area)
Agricultural land (sq. km)
GDP (constant 2015 US\$)
GDP (current US\$)
GDP per capita (constant 2015 US\$)
GDP growth (annual %)
GDP per capita (current US\$)
Gross savings (% of GNI)
Inflation, consumer prices (annual %)
Labor force, total
Population, total
Mortality rate, infant (per 1,000 live births)
Military expenditure (% of GDP)

Citizen opinions (11 Variables)

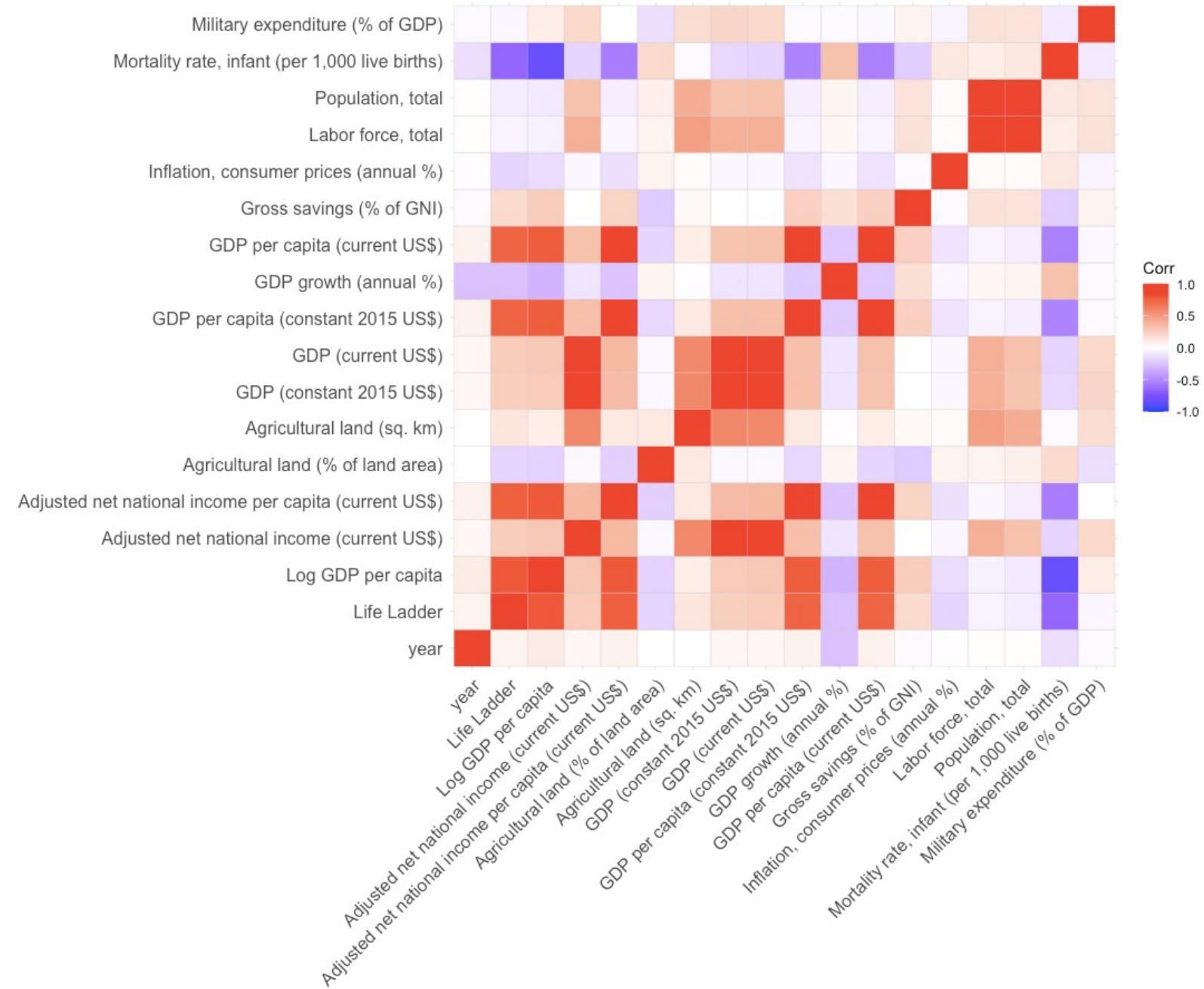
Country
year
Life Ladder
Social support
Healthy life expectancy at birth
Freedom to make life choices
Generosity
Perceptions of corruption
Positive affect
Negative affect
Confidence in national government

Social (13 Variables)

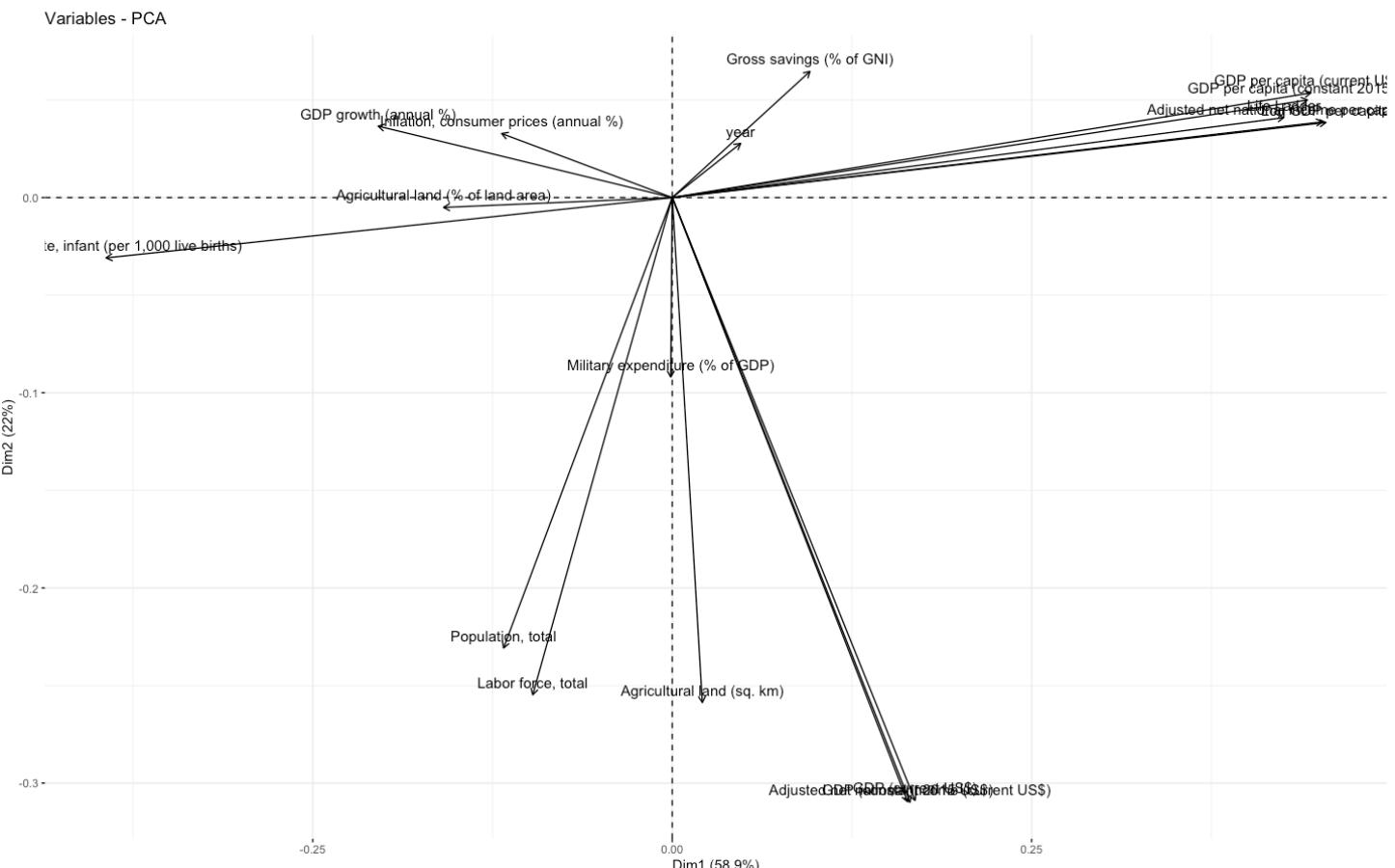
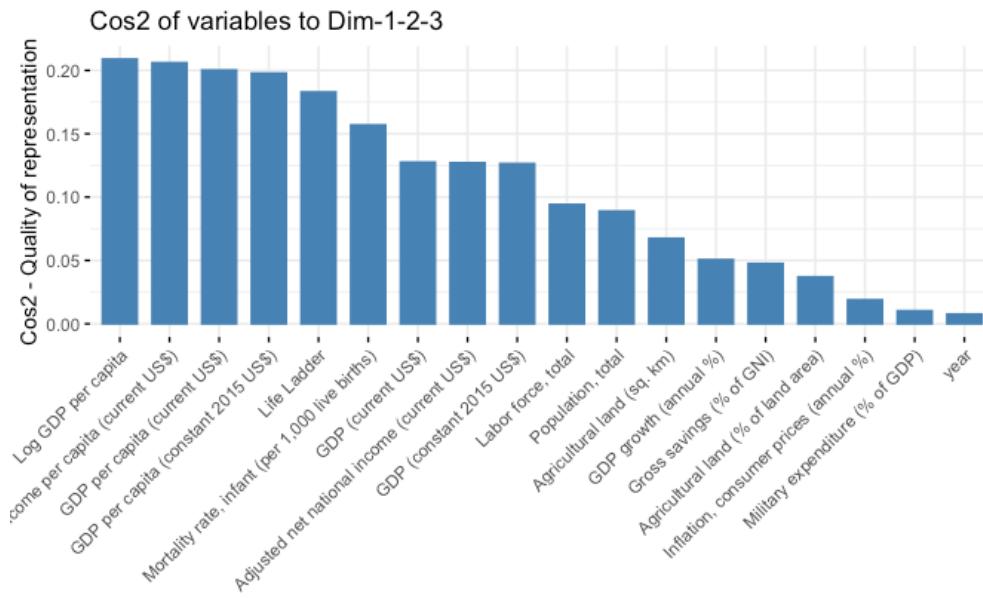
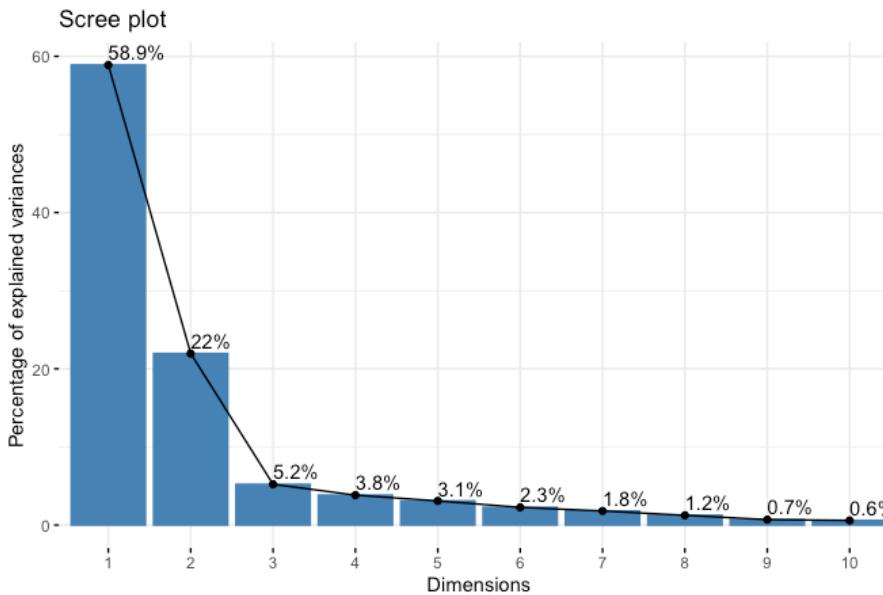
Country
year
Life Ladder
Access to clean fuels and technologies for cooking (% of population)
Access to clean fuels and technologies for cooking, urban (% of urban population)
Access to electricity, rural (% of rural population)
Access to clean fuels and technologies for cooking, rural (% of rural population)
Access to electricity (% of population)
Access to electricity, urban (% of urban population)
Urban population (% of total population)
Forest area (% of land area)
Arable land (% of land area)
Individuals using the Internet (% of population)

Economic (19 Variables)

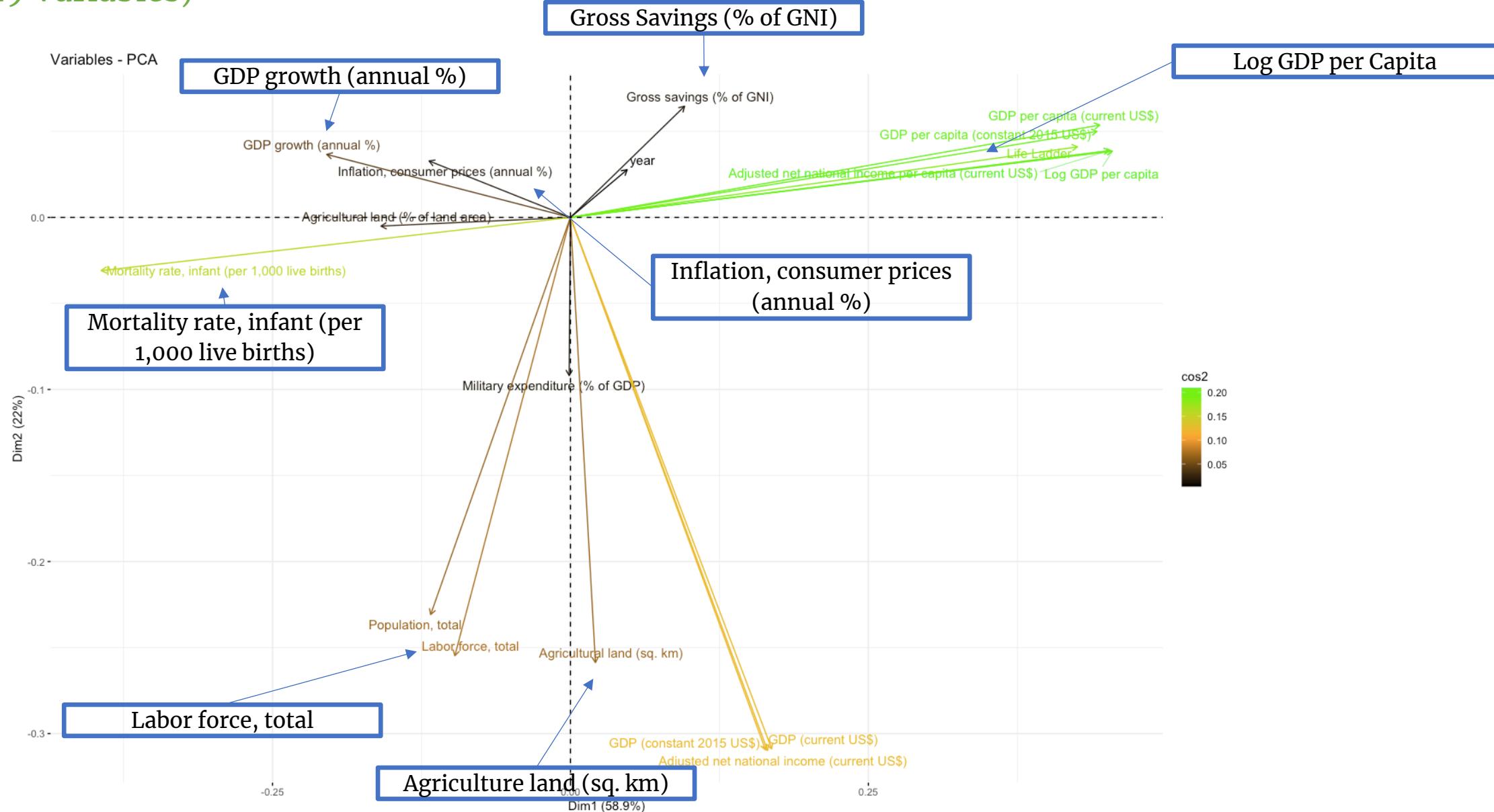
Country
year
Life Ladder
Log GDP per capita
Adjusted net national income (current US\$)
Adjusted net national income per capita (current US\$)
Agricultural land (% of land area)
Agricultural land (sq. km)
GDP (constant 2015 US\$)
GDP (current US\$)
GDP per capita (constant 2015 US\$)
GDP growth (annual %)
GDP per capita (current US\$)
Gross savings (% of GNI)
Inflation, consumer prices (annual %)
Labor force, total
Population, total
Mortality rate, infant (per 1,000 live births)
Military expenditure (% of GDP)



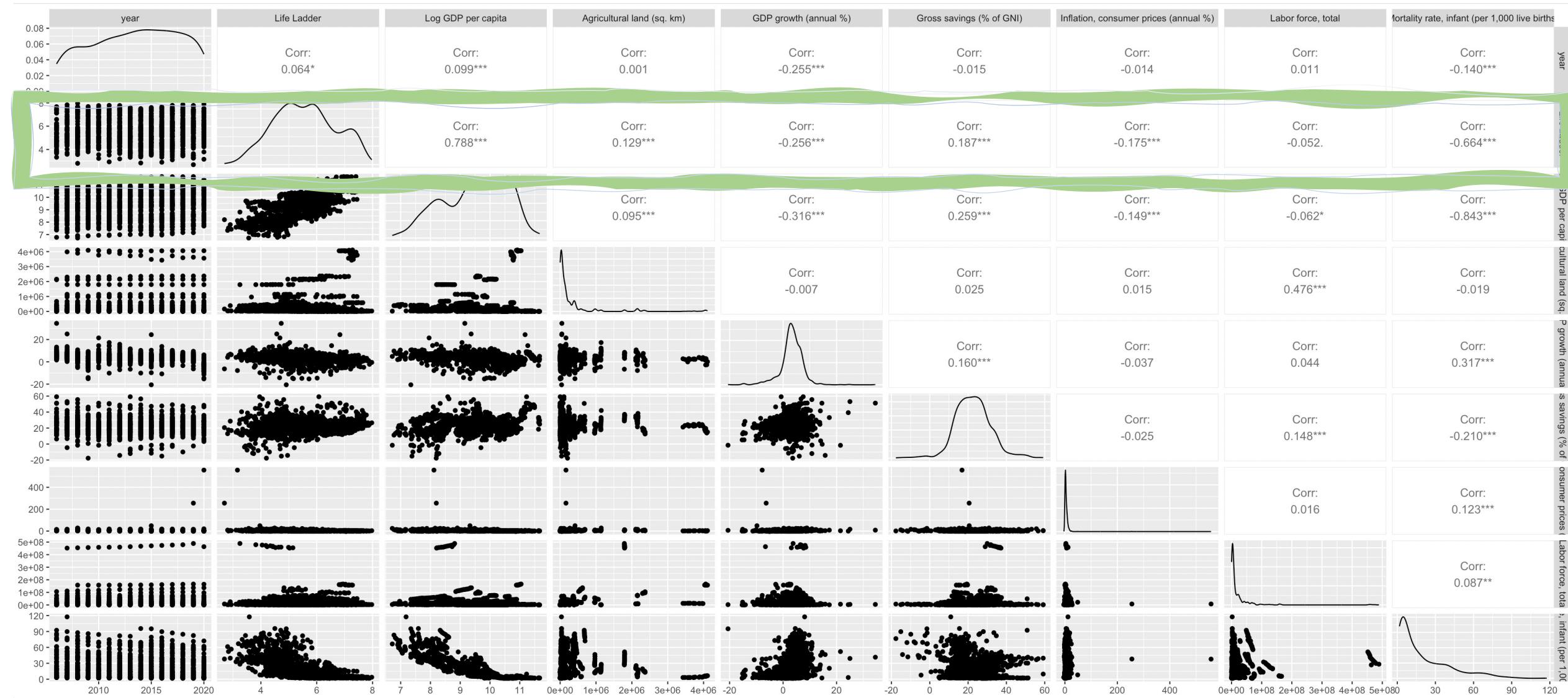
Economic (19 Variables)



Economic (19 Variables)

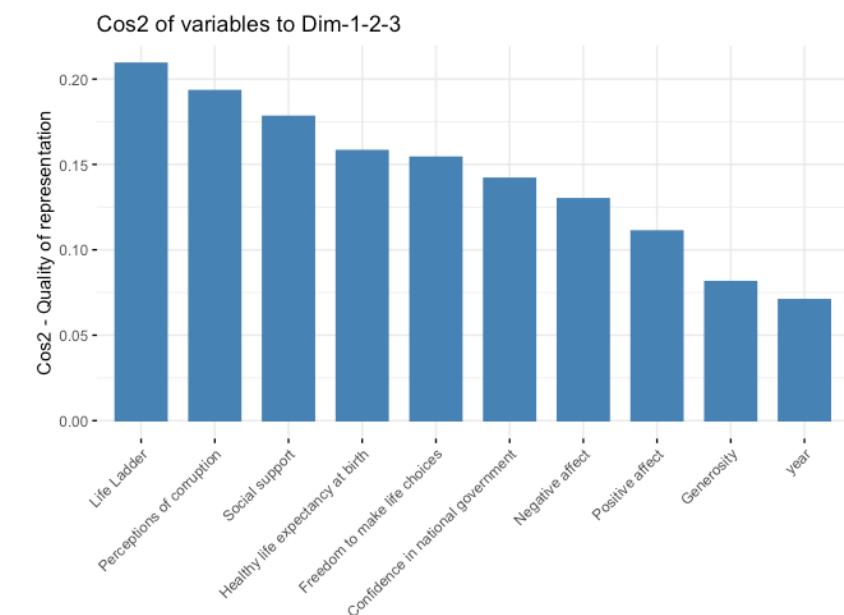
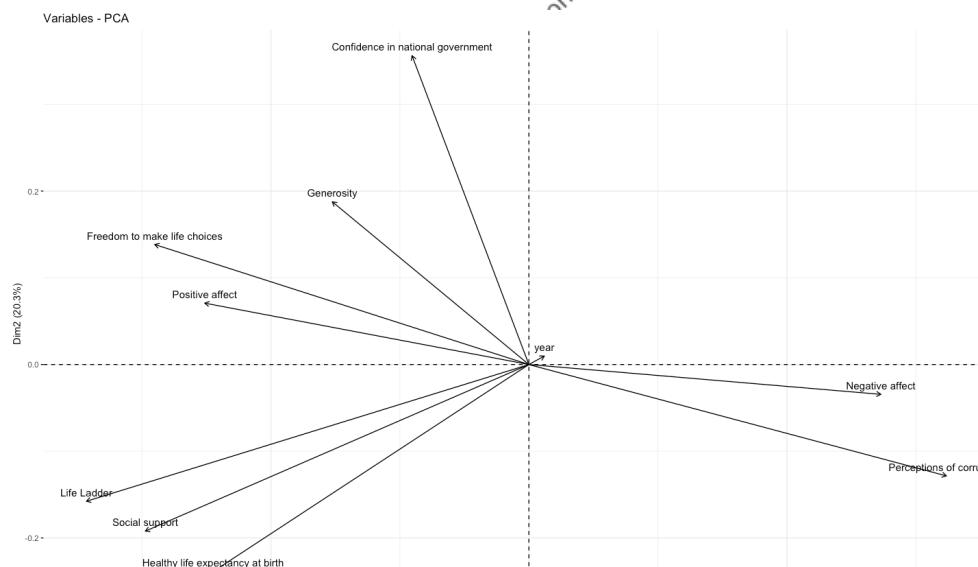
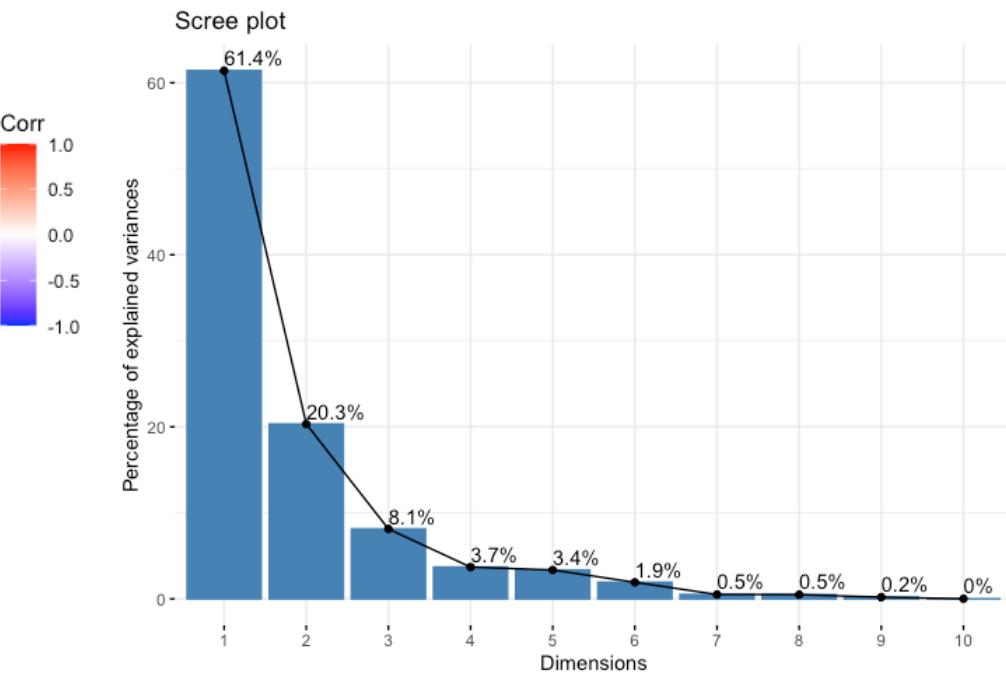
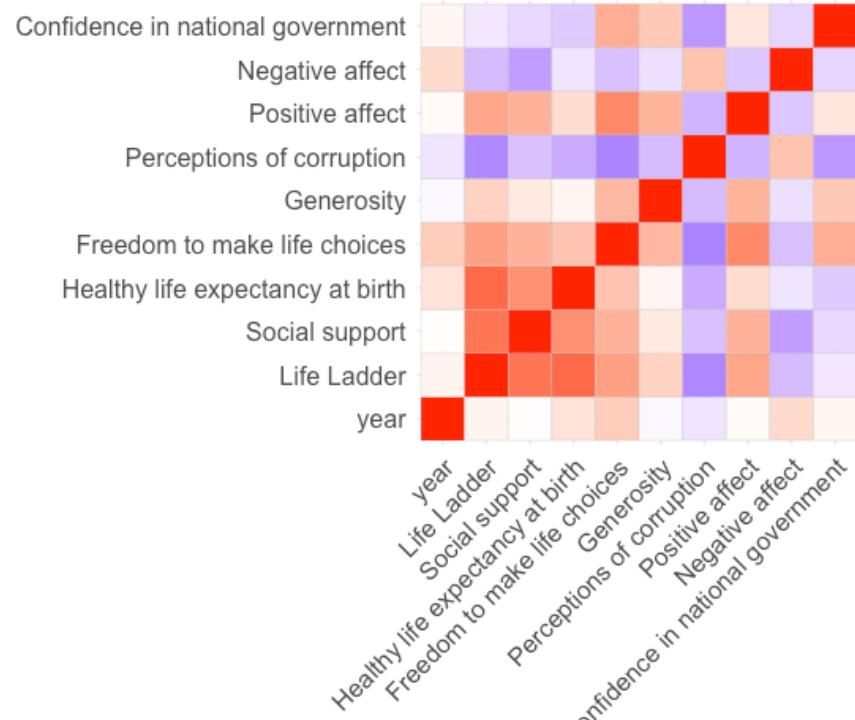


Economic (10 Variables)

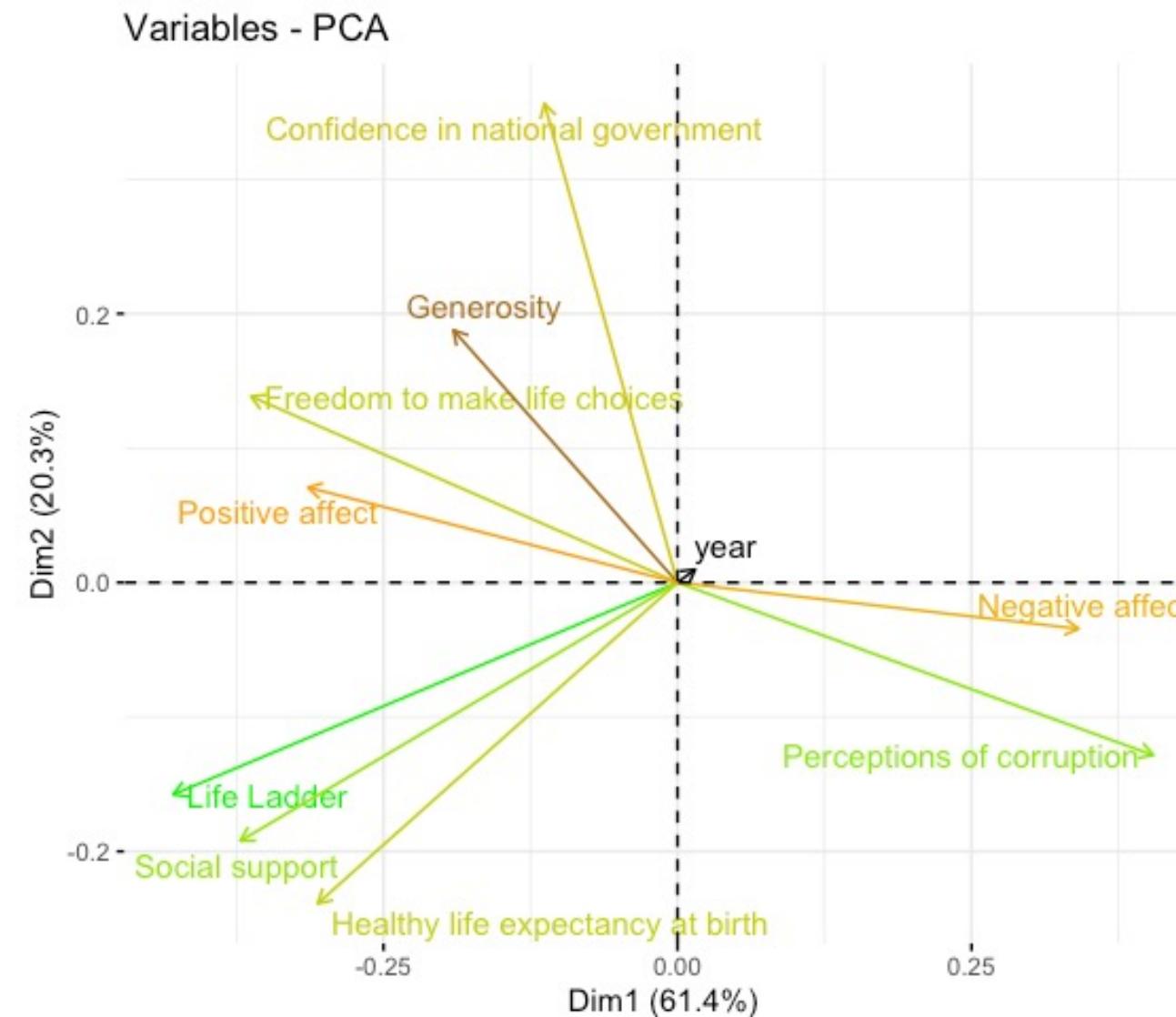


Citizen opinions (11 Variables)

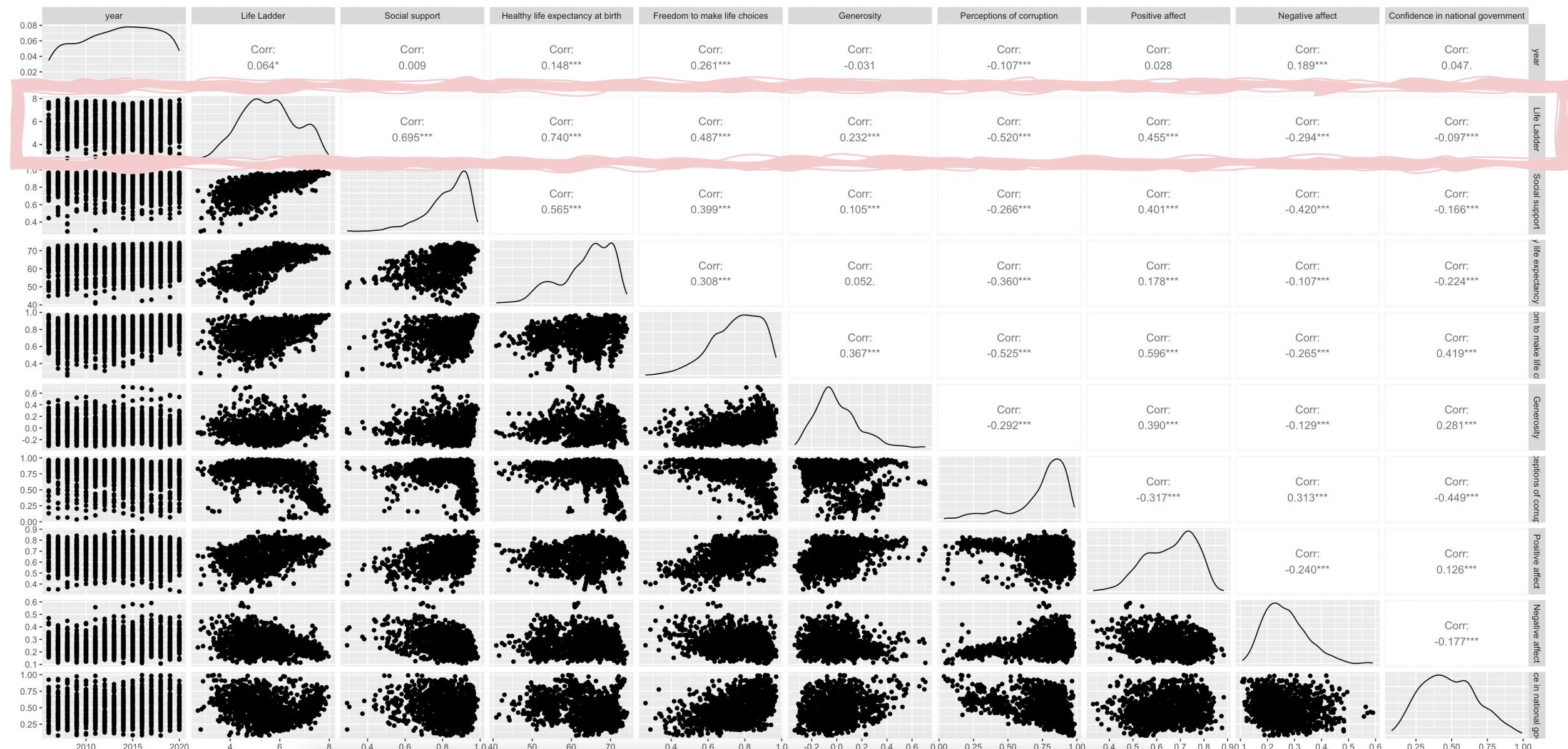
Country
year
Life Ladder
Social support
Healthy life expectancy at birth
Freedom to make life choices
Generosity
Perceptions of corruption
Positive affect
Negative affect
Confidence in national government



Citizen opinions (11 Variables)

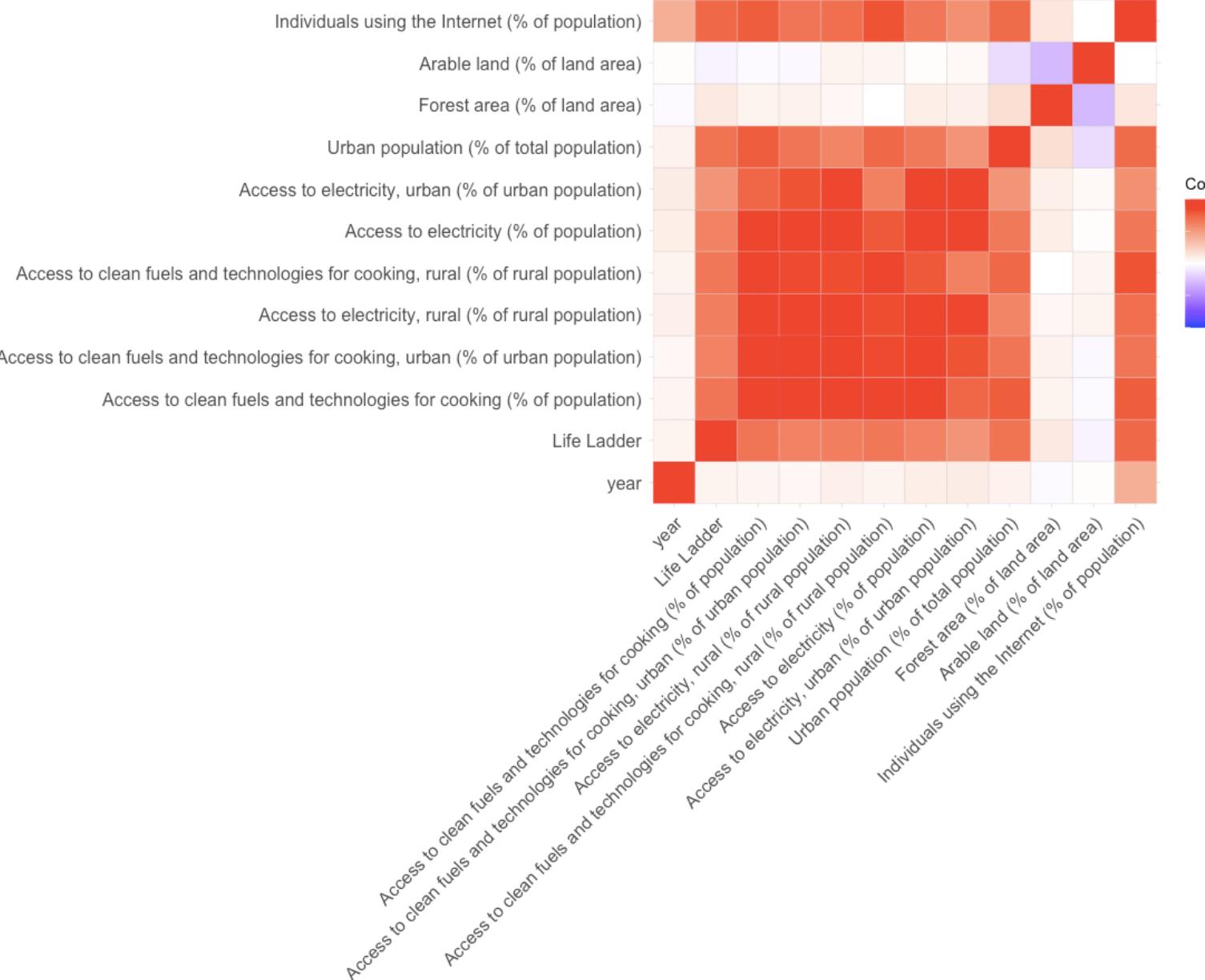


Citizen opinions (11 Variables)



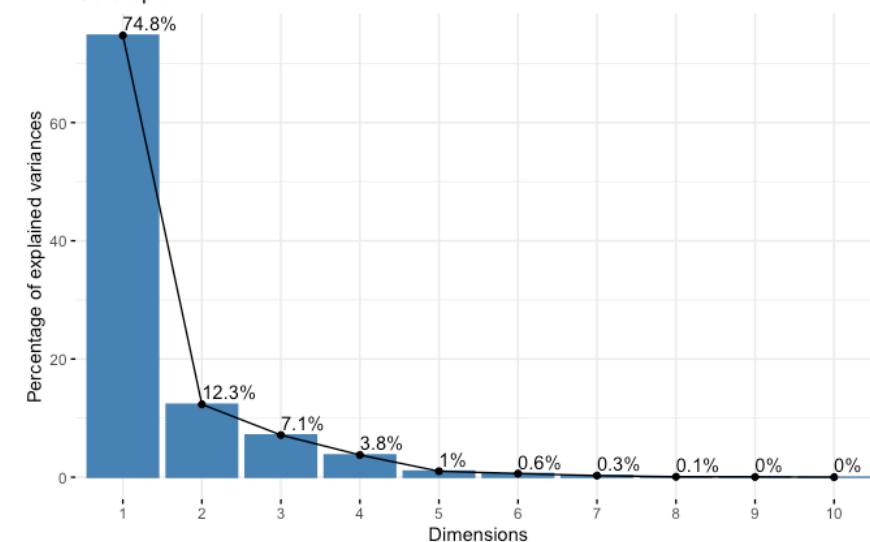
Social (13 Variables)

Country
year
Life Ladder
Access to clean fuels and technologies for cooking (% of population)
Access to clean fuels and technologies for cooking, urban (% of urban population)
Access to electricity, rural (% of rural population)
Access to clean fuels and technologies for cooking, rural (% of rural population)
Access to electricity (% of population)
Access to electricity, urban (% of urban population)
Urban population (% of total population)
Forest area (% of land area)
Arable land (% of land area)
Individuals using the Internet (% of population)

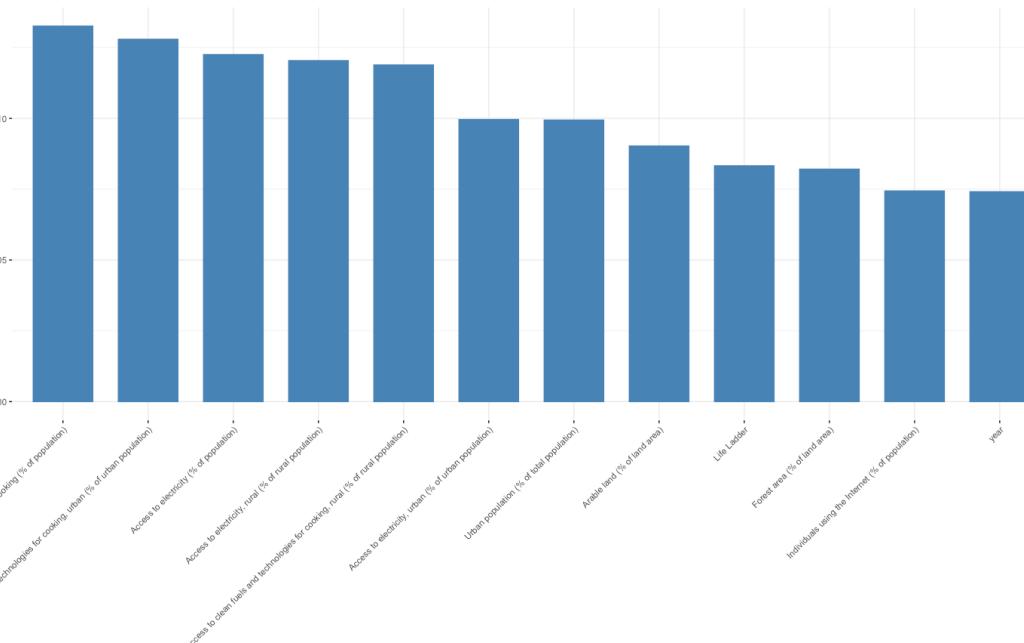


Social (13 Variables)

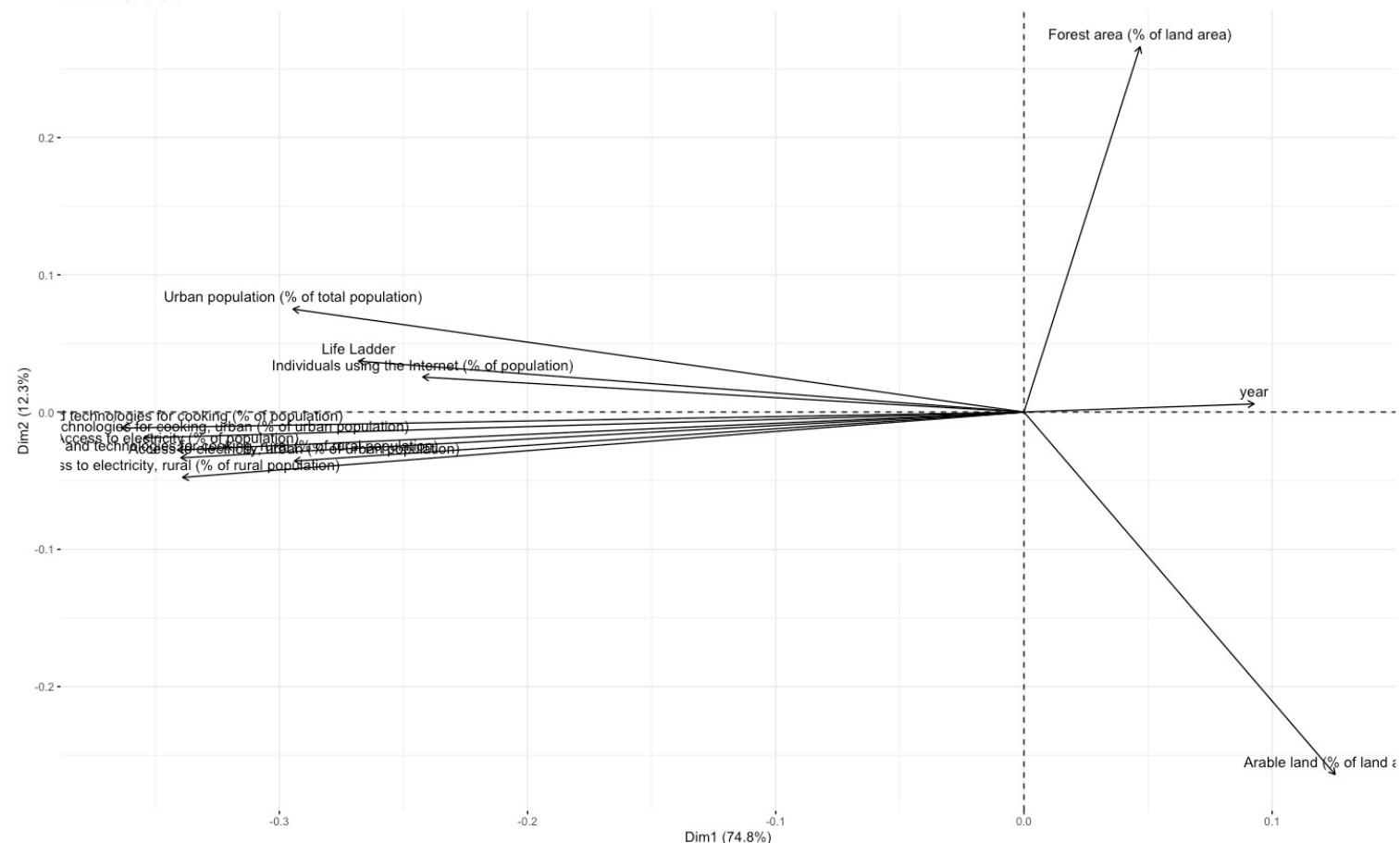
Scree plot



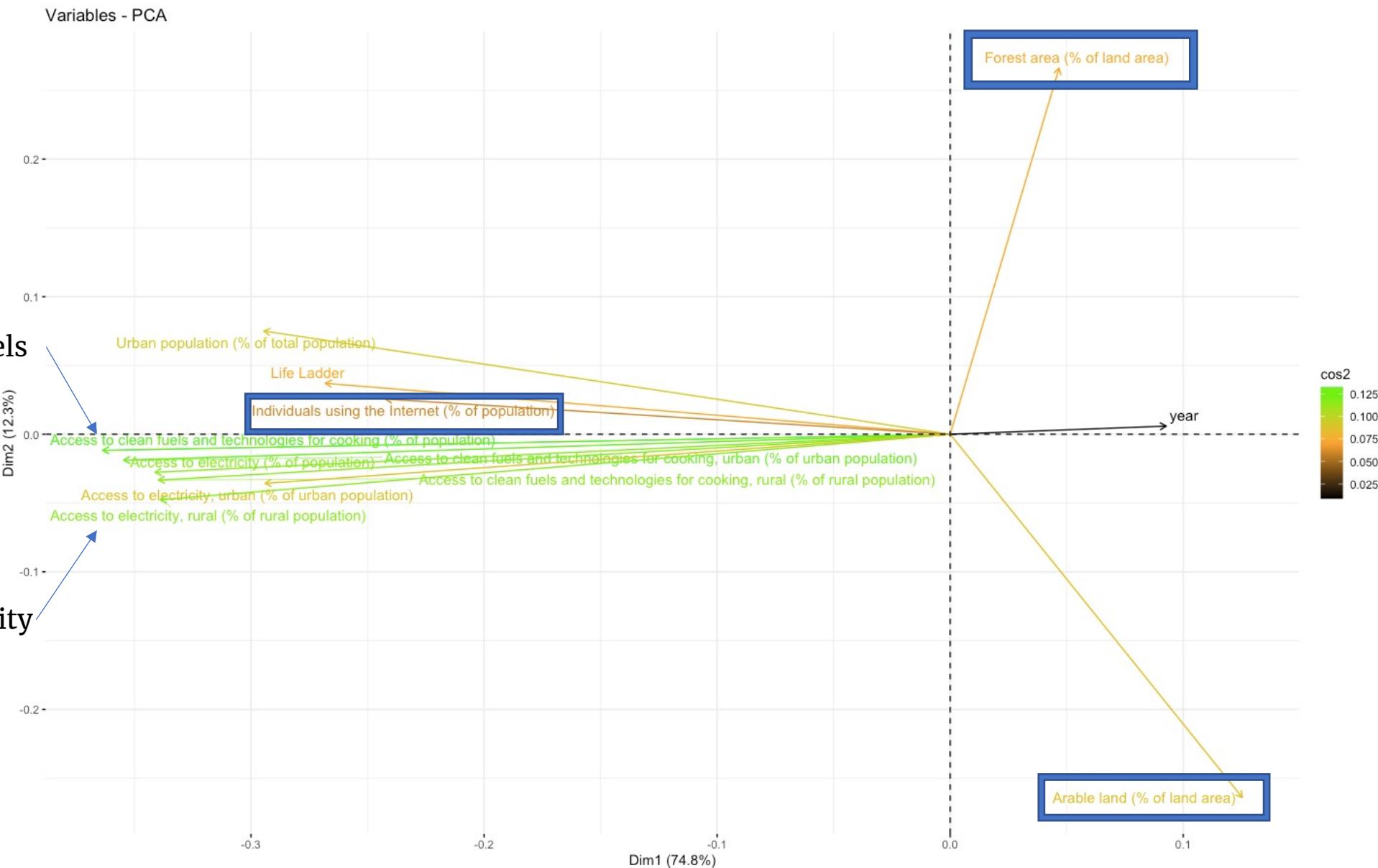
Cos2 of variables to Dim-1-2-3-4



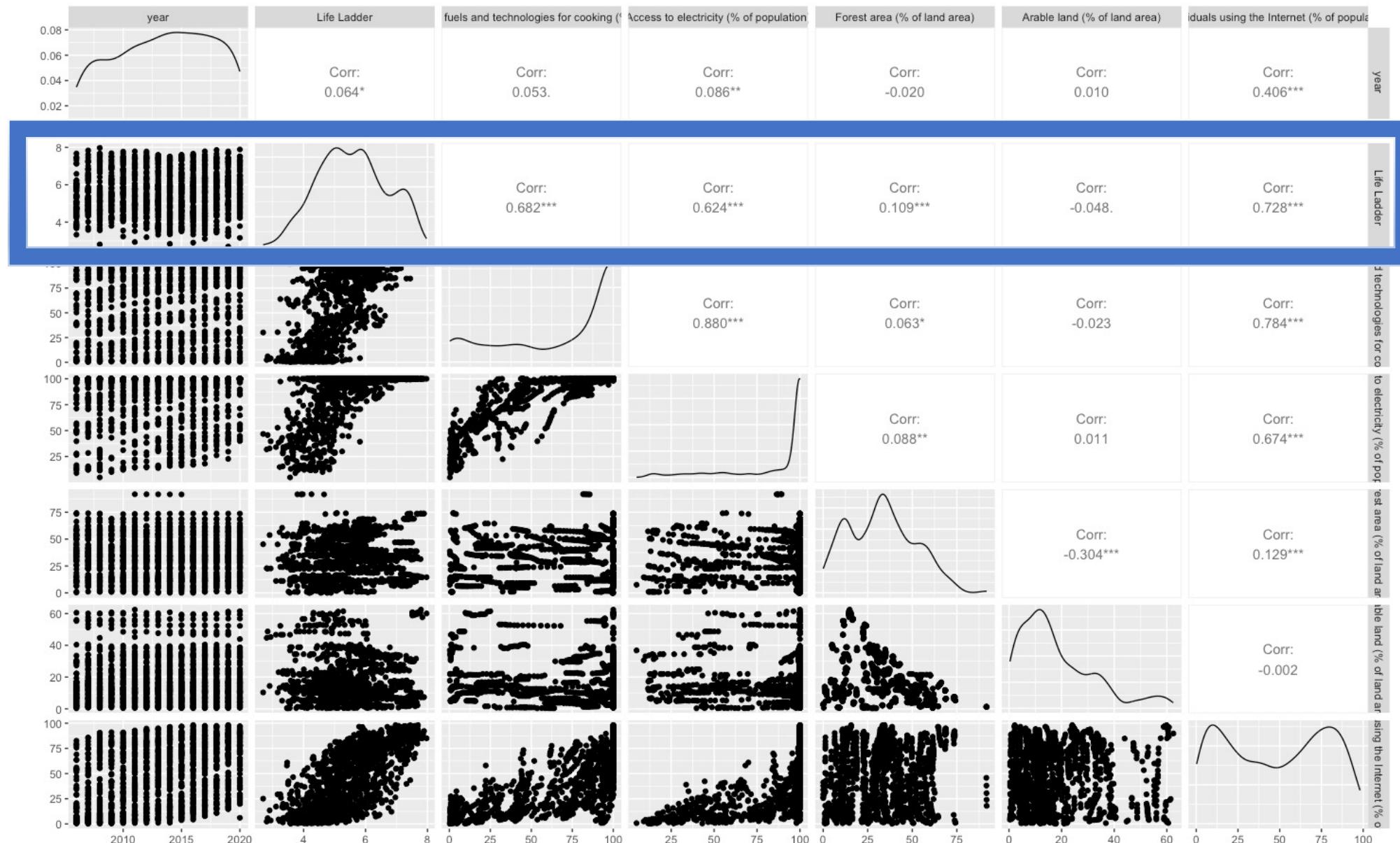
Variables - PCA



Social (13 Variables)



Social (8 Variables)



Economic (19 Variables)				Citizen opinions (11 Variables)				Social (13 Variables)			
Economic on Happiness				Subjective on Happiness				Social on Happiness			
Predictors	Estimates	CI	p	Predictors	Estimates	CI	p	Predictors	Estimates	CI	p
Log GDP per capita	1.65	1.35 – 1.96	<0.001	Social support	0.20	0.15 – 0.25	<0.001	Access to clean fuels and technologies for cooking (% of population)	0.19	-0.01 – 0.39	0.069
Agricultural land (sq km)	0.04	-0.58 – 0.65	0.902	Healthy life expectancy at birth	-0.26	-0.42 – -0.11	0.001	Access to electricity (% of population)	-0.12	-0.23 – 0.00	0.053
GDP growth (annual %)	0.03	0.01 – 0.06	0.012	Freedom to make life choices	0.05	0.01 – 0.09	0.027	Forest area (% of land area)	-0.03	-0.45 – 0.40	0.899
Gross savings (% of GNI)	0.01	-0.03 – 0.05	0.574	Generosity	0.04	0.00 – 0.09	0.045	Arable land (% of land area)	0.14	-0.12 – 0.41	0.289
Inflation consumer prices (annual %)	-0.04	-0.06 – -0.02	<0.001	Perceptions of corruption	-0.11	-0.18 – -0.04	0.002	Individuals using the Internet (% of population)	0.07	-0.01 – 0.16	0.089
Mortality rate, infant (per 1,000 live births)	-0.09	-0.24 – 0.05	0.215	Positive affect	0.16	0.11 – 0.21	<0.001	N country_name	120		
Labor force, total	-2.35	-2.90 – -1.80	<0.001	Negative affect	-0.03	-0.07 – 0.00	0.059	N year	15		
N country_name	120			Confidence in national government	0.05	0.01 – 0.10	0.022	Observations	1331		
N year	15			N country_name	120			AIC	784.263		
Observations	1331			N year	15			Observations	1331		
AIC	784.263			Observations	1331			AIC	982.411		

Data Collection & Merge

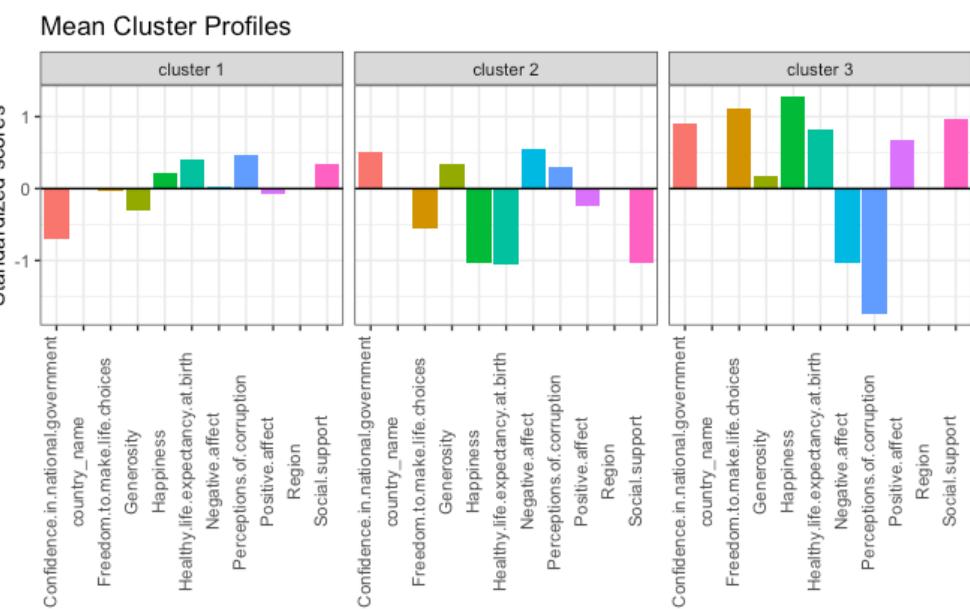
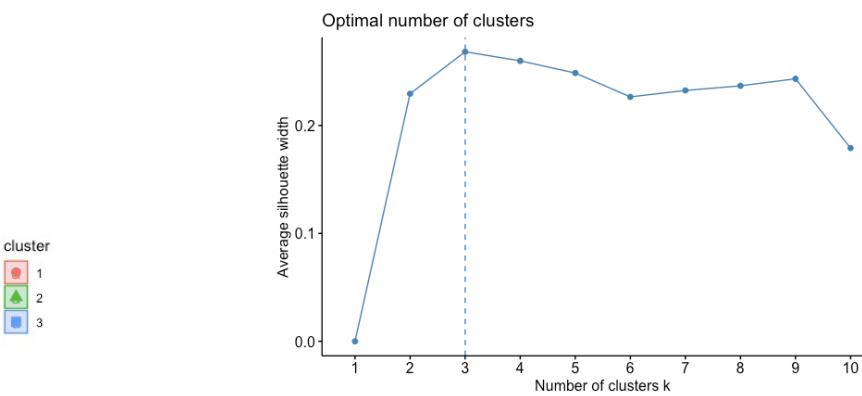
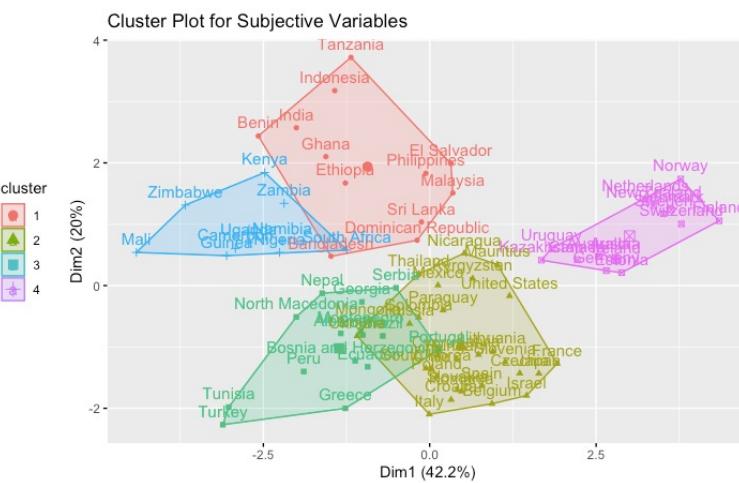
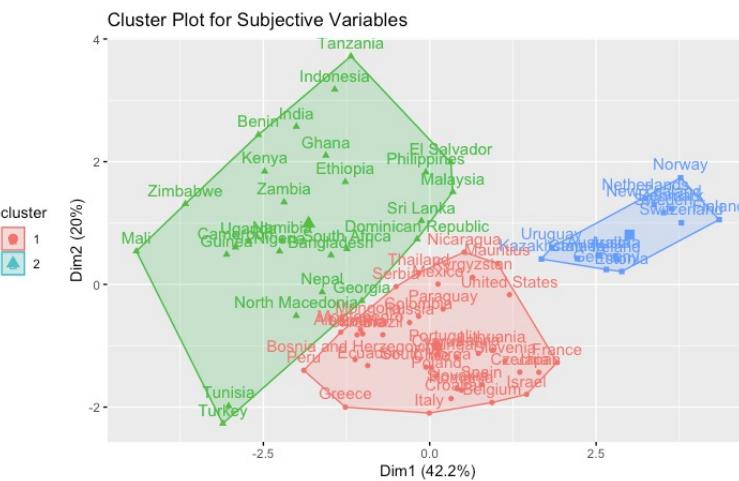
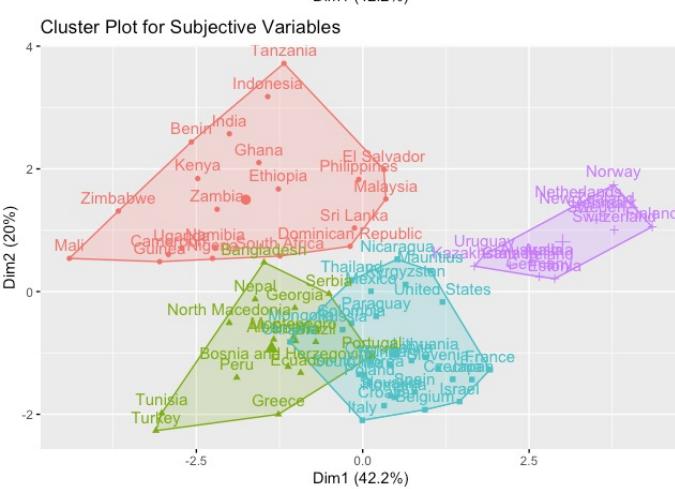
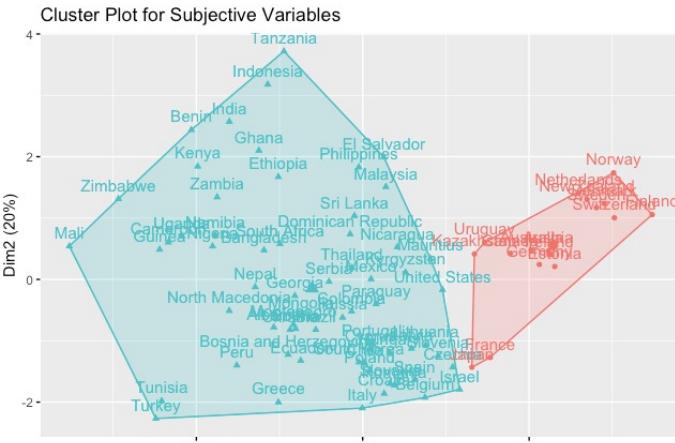
Final Dataset

Parameter selection

Modeling

Cluster Analysis

Citizen opinions (11 Variables)



To be continued