

# To what extent does the rule of law affect the education developments?

## Hypothesis: The strength of the rule of law is positively associated with the school life expectancy.

### Introduction

**Motivations:**

Education is widely recognized as a key factor in economic growth, poverty reduction, and social development. However, in many countries, access to education is hampered by various barriers. The rule of law can play a key role in overcoming these barriers and ensuring that all individuals have access to education. Thus, the relationship between the rule of law and educational development is an important topic that merits further investigation. This knowledge can help policymakers, educators, and civil society actors develop more effective strategies to promote equitable and inclusive educational opportunities.

**literature review:**

The rule of law, defined as a concept in which everyone is subject to laws that are publicly promulgated, equally enforced, independently adjudicated, and consistent with international human rights norms, plays a crucial role in advancing educational equity, quality, and access. The review highlights that the rule of law ensures that all people have access to educational opportunities, encourages efficient governance in the education sector, and gives people the freedom to participate in civic life and exercise their rights. The review concludes that education and the rule of law have a nuanced and intricate connection and that education may support the rule of law by empowering people and fostering a robust civil society.

### Database

Main independent variable: Rule of Law: Estimate (ROL)  
Description: Rule of Law captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5.  
Value: The values range from -2.5 to 2.5, with higher values indicating a stronger level of the rule of law and lower values indicating a weaker level of the rule of law.

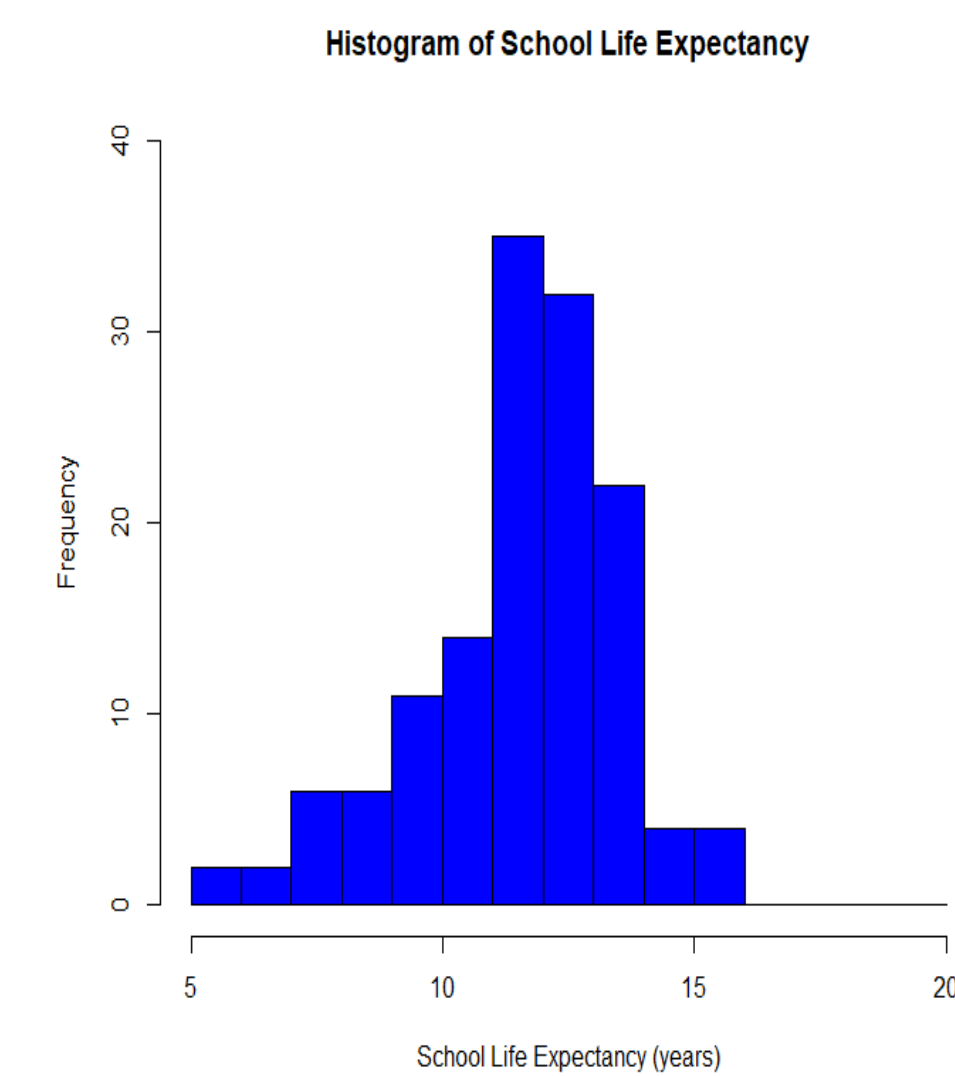
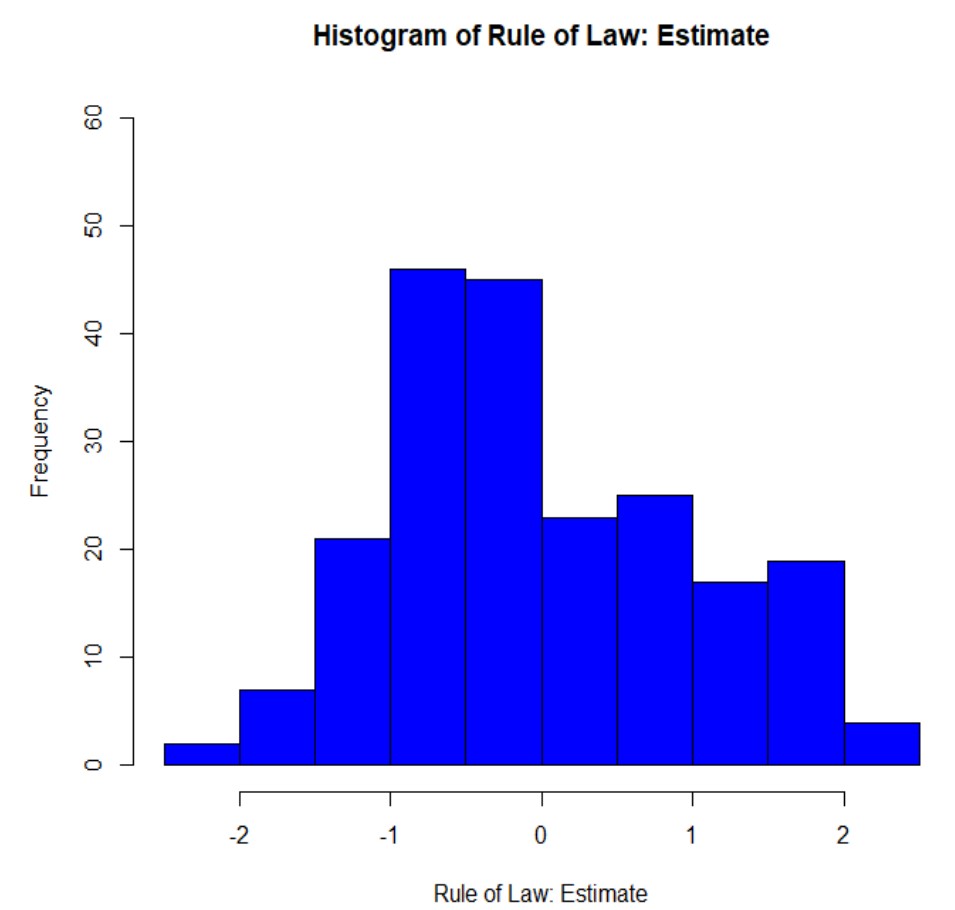
Main dependent variable: School life expectancy, primary and secondary, both sexes (years) (SL)  
Description: School life expectancy (SLE) is the total number of years of schooling (primary and secondary) that a child can expect to receive, assuming that the probability of his or her being enrolled in school at any particular future age is equal to the current enrollment ratio for that age.  
Value: The values range from 0 to 20 years.  
Scoring: Integer values, with missing data represented by '.'.

Other independent variable:

- Government expenditure on education, US\$ (millions)(govex)
- Duration of compulsory education (years)(dec)
- Expenditure on education as % of total government expenditure (ex)
- GDP per capita (current US\$)(gdpper)
- Government Effectiveness: Estimate(ge)
- Control of Corruption: Estimate(coc)
- Political Stability and Absence of Violence/Terrorism: Estimate(psaav)
- Regulatory Quality: Estimate(rq)
- Voice and Accountability: Estimate(vaa)
- Note: All of the data is in the year of 2015

### Method

- Bivariate hypothesis testing
  - Multivariate hypothesis testing
- Reason: Since the data are either interval or Integer values, a linear regression can display the relationship, and a bivariate and multivariate hypothesis testing can display the specific correlation between the independent and dependent variables.



### Results

- central tendency  
ROL:
  - The median is -0.18, the mode is -0.04, mean is 0
  - indicating a slightly skewed distribution.SL:
  - Mean of 11.52 years, median of 11.9 years, mode of 5.54 years
  - indicating some degree of asymmetry.
- Dispersion  
ROL:
  - Interquartile range (IQR) of 1.52, a variance of 1, a standard deviation (SD) of 1, and a range of 4.39
  - indicating that there is moderate dispersion and variability in the rule of law across nations.SL:
  - A range of 10.42, an IQR of 2.16, a variance of 3.98, and an SD of 1.99
  - suggesting a relatively narrow spread and a more consistent school life expectancy across countries.

- Association
  - a correlation coefficient of 0.68
  - the analysis demonstrates a significant positive correlation between the two variables.
  - This suggests that longer life expectancies for students are linked to higher rule of law estimates.
  - the p-value: 7.08832e-20, statistically significant
  - The true correlation from 0.583 to 0.766

- Bivariate hypothesis testing(Model1)
  - a strong positive linear with a coefficient estimate of 1.3724
  - p-value: 2.2e-16, highly significant
  - R-squared value of 0.4691, 47% explained by this model
  - F-statistic: 116.7 on 1,132 degrees of freedom, highly significant
  - Predicted: max 14.18758, min 8.167495

- Multivariate hypothesis testing  
Model 2:
  - dependent variables: rol, govex, ex, gdpper, dec
  - Statistically significant: Rol with coefficient 1.128 (p<0.01)
  - R-squared: 0.544, which is higher than in Model 1
  - Predicted: max 14.70754, min 9.355522Model3:
  - dependent variables: rol, coc, ge, psaaov, rq, vaa
  - Statistically significant: ge(1.401) and psaaov(0.578) (p<0.01)
  - R-squared: 0.564, which is higher than in Model 2
  - Notable rol isn't statistically significant with a coefficient -0.384
  - Predicted: max 14.92913, min 7.301852Model4:
  - Dependent variables: All
  - Statistically significant: ge(1.715) (p<0.01), vaa(0.682) and rq(-1.135) (p<0.05)
  - R-squared: 0.664, which is higher than in Model 1, 2 and 3
  - Notable rol isn't statistically significant with a coefficient 0.029
  - Rq coefficient is negative with a value of -1.135
  - Predicted: max 14.818, min 8.50434

### Conclusions

The study showed positive correlations when considering the level of rule of law and school life expectancy alone, and when considered with other economic and educational factors, and that the other factors had little effect on the dependent variable, but when considered with other political factors, the relationship was not statistically significant, and instead the other dependent variables had positive correlations. Finally when all factors are considered, only other political factors become positively correlated and the result of one of the variables is counter hypothesized.

**Strengths:** One of the strengths is that the study uses a large data set covering a wide range of countries, providing a representative sample of the world. In addition, the study used multiple variables to assess the relationship between rule of law and educational development, providing a comprehensive understanding of the issue. In addition, the use of descriptive statistics, such as measures of central tendency and dispersion, helped to summarize and interpret the data.

**Lamination:** However, the study also has some limitations. One of these limitations is that it is a cross-sectional study, which means that it is not possible to establish causal relationships between variables. Therefore, the study cannot prove that the power of the rule of law leads to improvements in educational development. In addition, the study only considered with school life expectancy and did not include other relevant variables that may affect educational development.

**Suggestions:** To address these limitations, future studies could use a longitudinal design to examine the causal relationship between rule of law and educational development. In addition, future research could consider a more comprehensive set of variables to assess educational development, including variables that reflect the quality of education.

Linear Regression Table				
	Dependent variable:			
	School life expectancy			
	(1)	(2)	(3)	(4)
Rule of Law: Estimate	1.372*** (0.127)	1.128*** (0.243)	-0.384 (0.582)	0.029 (0.857)
Government expenditure on education, US (millions)		0.00001 (0.00002)		0.00001 (0.00001)
Expenditure on education as % of total government expenditure (%)		-0.061* (0.034)		-0.058* (0.055)
GDP per capita (current US)		0.00000 (0.00002)		0.00000 (0.00001)
Duration of compulsory education (years)		0.027 (0.069)		-0.023 (0.987)
Control of Corruption: Estimate			0.082 (0.411)	-0.212 (0.562)
Government Effectiveness: Estimate			1.401*** (0.389)	1.715*** (0.542)
Political Stability and Absence of Violence/Terrorism: Estimate			0.578*** (0.207)	0.452 (0.273)
Regulatory Quality: Estimate			-0.216 (0.374)	-1.231*** (0.449)
Voice and Accountability: Estimate			0.194 (0.213)	0.682*** (0.309)
Constant	11.330*** (0.127)	12.018*** (0.872)	12.362*** (0.120)	12.493*** (0.797)
Observations	234	78	213	78
R2	0.469	0.544	0.564	0.664
Adjusted R2	0.465	0.532	0.543	0.623
Residual Std. Error	1.454 (df = 132)	1.318 (df = 72)	1.349 (df = 126)	1.192 (df = 67)
F-Statistic	116.631*** (df = 1, 132)	17.189*** (df = 1, 72)	27.137*** (df = 6, 126)	13.233*** (df = 36, 67)
Notes: ***p<0.01, **p<0.05, *p<0.1				