

CSSM 502  
HOMEWORK-2  
REPORT

Data Source: World Bank API

Dependent Variable: Life Expectancy at Birth (years)

Independent Variables: School Enrollment rate, secondary (%gross) (explanatory variable)

GDP per capita (\$) (control variable)

This regression analysis aims to understand whether there is a correlation between life expectancy and education. For this purpose, data including estimated life expectancy at birth, enrolment rate for secondary school, and GDP per capita of countries for the year 2018 is gathered from World Bank API. GDP per capita as a parameter that is expected both life expectancy and school enrolment rate is taken as the control variable.

Hyphoteses:

H0(null): There is no relationship between life expectancy at birth(years) and secondary school enrolment rate (%) ( $\beta_1=0$ )

H1(alternative): There is a significant relationship between life expectancy at birth and secondary school enrolment rate. ( $\beta_1 \neq 0$ )

SUMMARY					
	Coefficients	Standart Errors	tstat	Credible Int(min)(0,95)	Credible Int(max)(0,95)
Intercept	57,43239256	0,922734634	62,24150522	55,90579002	58,9589951
SchoolEnrollment	0,15965606	0,01210993	13,18389618	0,139621	0,17969113
GDP	0,00010056	1,4817818E-05	6,78657702	7,604718E-05	0,00012508

SampleSize(n)	163
confidence level	0,95
t value	1,65443290

Regression Equation:

$$y = 57,43 + 0,15X_1 + 0,0001X_2$$

INTERPRETATIONS:

- 1) Since the t-statistic for secondary school enrolment rate which is 13,18 is greater than t value=1,65, with 95% credibility, we reject the null hypothesis which claims that there is no significant relationship between school enrolment rate and life expectancy at birth.
- 2) There is a 95% chance that the true value of  $\beta_1$  lies within the 0,139621 – 0,17969113 interval.
- 3) Based on the regression equation, without any change in GDP, a 1% increase in secondary school enrolment rate results in a 0,15 increase in life expectancy at birth(years).