

ECONOMETRICS 1 - HOMEWORK

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1 The Basics

1.1

var	median	mean	min	max	sd	NAs
agro_emp	18.6	25.1	0.1	86.3	22.3	30
bribery	11.7	17.0	0.0	67.1	14.7	87
gfce	16.5	17.7	5.1	62.9	8.4	36
literacy	93.0	83.6	24.2	100.0	19.3	61
log_gdp	9.4	9.3	6.6	11.6	1.2	22
pop_total	6.2e+06	3.4e+07	1.1e+04	1.4e+09	1.4e+08	2
self_emp	35.0	40.9	0.4	94.8	27.0	30
stocks	6.4	28.8	0.0	538.7	66.8	131
sample_size	715.1	3.6e+03	120.1	1.4e+05	1.3e+04	2

Table 1: Descriptive statistics

1.2

(a)

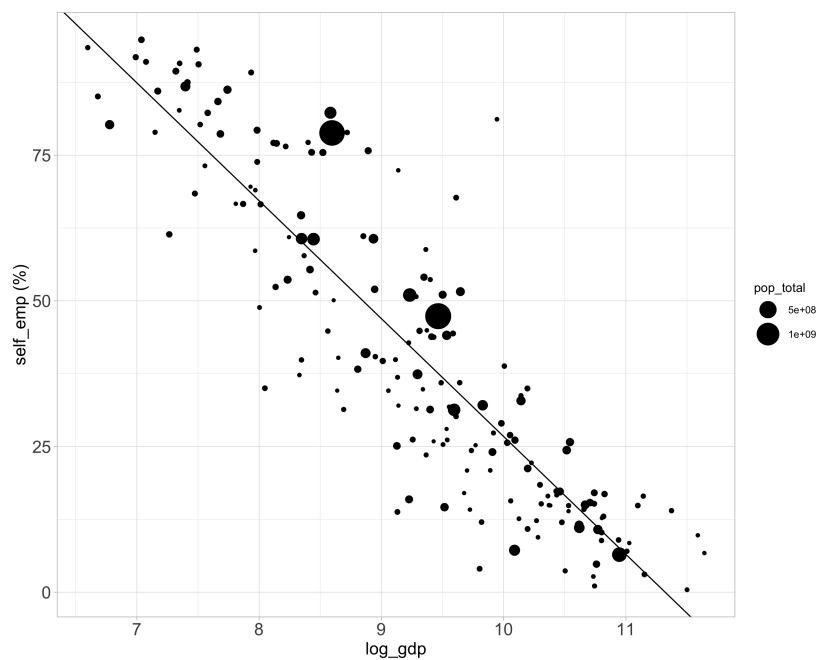


Figure 1: Self employment rate with respect to GDP

Figure 1 shows a clear negative relationship between the share of self employment and gdp. The empirical correlation coefficient is equal to -0.89 which is very close to -1 . The anticorrelation is very strong.

(b)

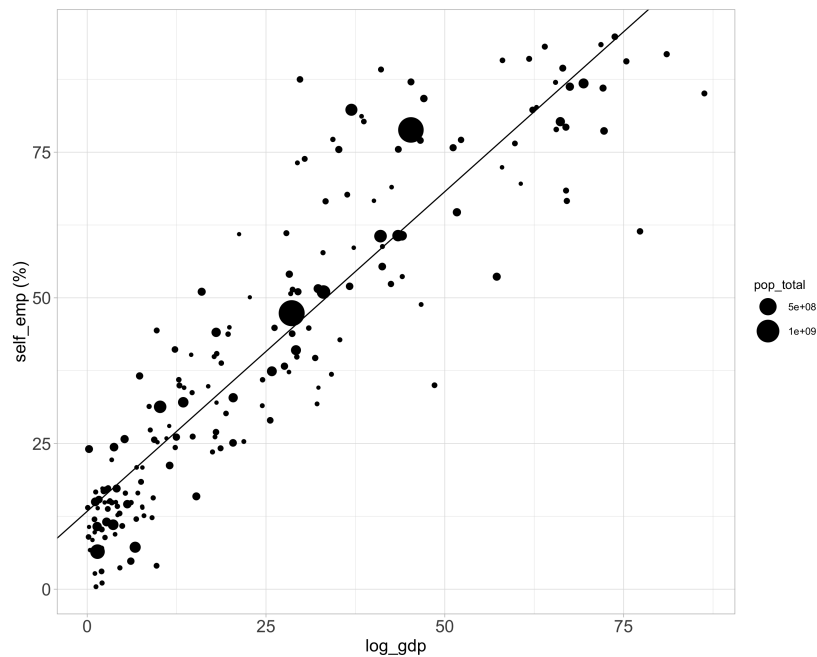


Figure 2: Self employment rate with respect to employment share in the agricultural sector

As in the previous question, Figure 2 shows a clear positive relationship between the share of self employment and share of employment in the agricultural sector. The empirical correlation coefficient is equal to 0.91 which is very close to 1. The correlation is very strong.

(c)

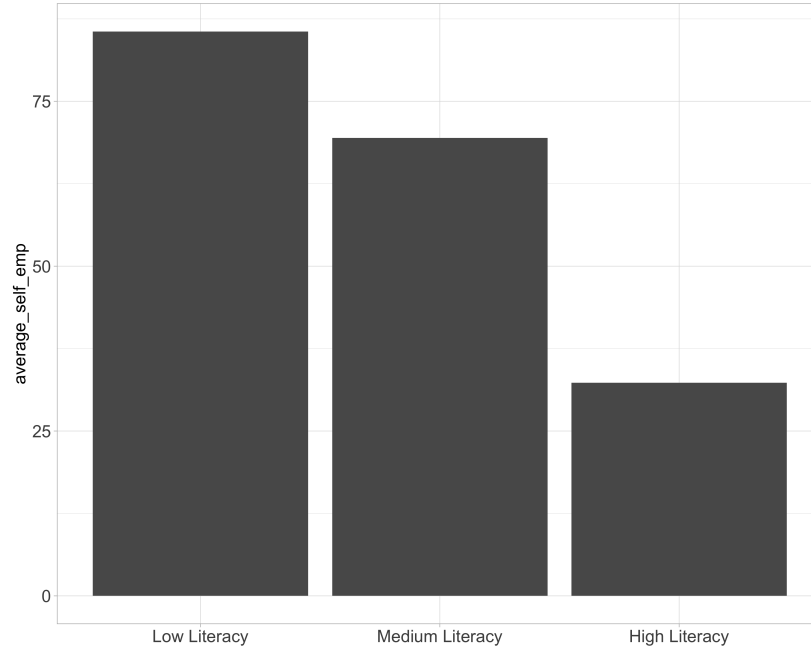


Figure 3: Average self employment rate as a function of the literacy category

Figure 3 seems to demonstrate a negative relationship between the literacy category of the population and the self employment rate.

1.3

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	113.2194	16.3606	6.92	0.0000
log_gdp	-6.5057	1.7553	-3.71	0.0003
literacy	-0.3129	0.0695	-4.50	0.0000
agro_emp	0.5921	0.0797	7.43	0.0000

Table 2: Linear Model

2 Heteroskedasticity & Monte Carlo Simulations

3 Instrumental Variables