Socio-economic factors for Democracy

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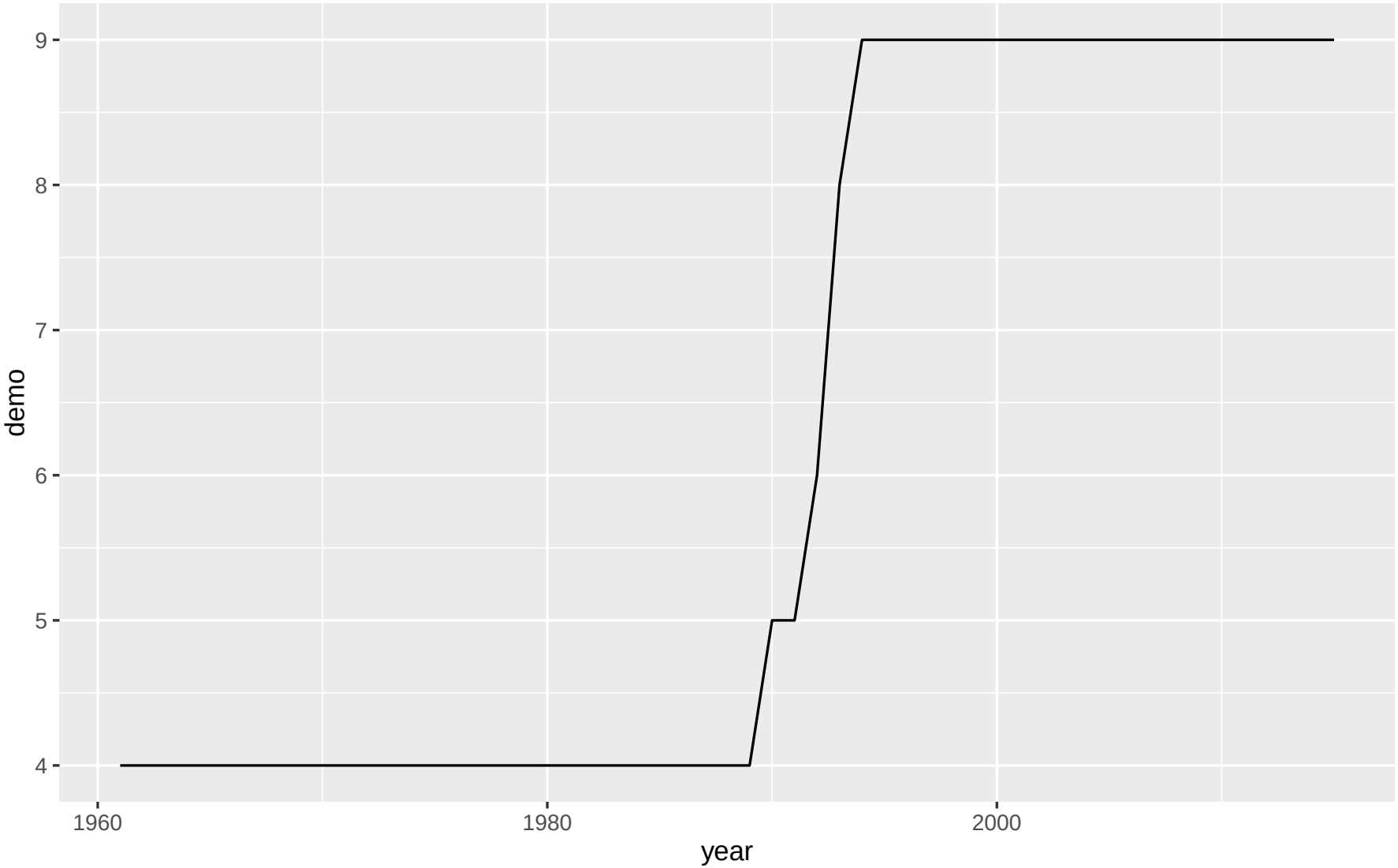
Democracy? Democratization?

Background Research 1 - Factors for Democratization

Background Research 2 - Democratization in Africa

Research Question and Hypotheses

Democratization in South Africa



Explanetory variables

variable name	detail	source
gdppc	Gross National Production Per Capita	World Bank
pe	Primary enrollment in education	United Nations
mr	Infant Mortaliry Rate	United Nations
gi	gender inequality in labor market	United Nations

Regression results

Table 2: Regression results for each country

	Dependent variable:		
	demo		
	(1)	(2)	(3)
log(gdppc)	−2.78*	1.86***	−6.37
	(1.43)	(0.56)	(3.79)
log(pe)	0.81	−3.29	9.05
	(2.83)	(2.31)	(8.68)
log(mr)	−11.16	2.84***	−34.05***
	(7.05)	(0.84)	(9.39)
log(gi)	−43.66***	4.61	−147.18***
	(13.70)	(2.85)	(38.41)
Constant	44.40	23.80	21.71
	(73.50)	(22.73)	(157.22)
Observations	17	21	19
R^2	0.93	0.85	0.92
Adjusted R^2	0.90	0.82	0.90
Residual Std. Error	0.72 (df = 12)	0.28 (df = 16)	1.94 (df = 14)
F Statistic	38.99*** (df = 4; 12)	23.04*** (df = 4; 16)	42.66*** (df = 4; 14)
Note:			*p<0.1; **p<0.05; ***p<0.01

Figure 1: drawing

Pooled OLS

Table 3: Pooled OLS

	Dependent variable:
	demo
log(gdppc)	−0.64
	(1.39)
log(pe)	−1.10**
	(0.46)
log(mr)	−6.89**
	(3.06)
log(gi)	−39.08***
	(10.91)
Constant	41.87*
	(21.14)
Observations	57
R^2	0.72
Adjusted R^2	0.70
Residual Std. Error	3.16 (df = 52)
F Statistic	33.01*** (df = 4; 52)
Note:	*p<0.1; **p<0.05; ***p<0.01

Figure 2: drawing

Heteroscedasticity in residuals

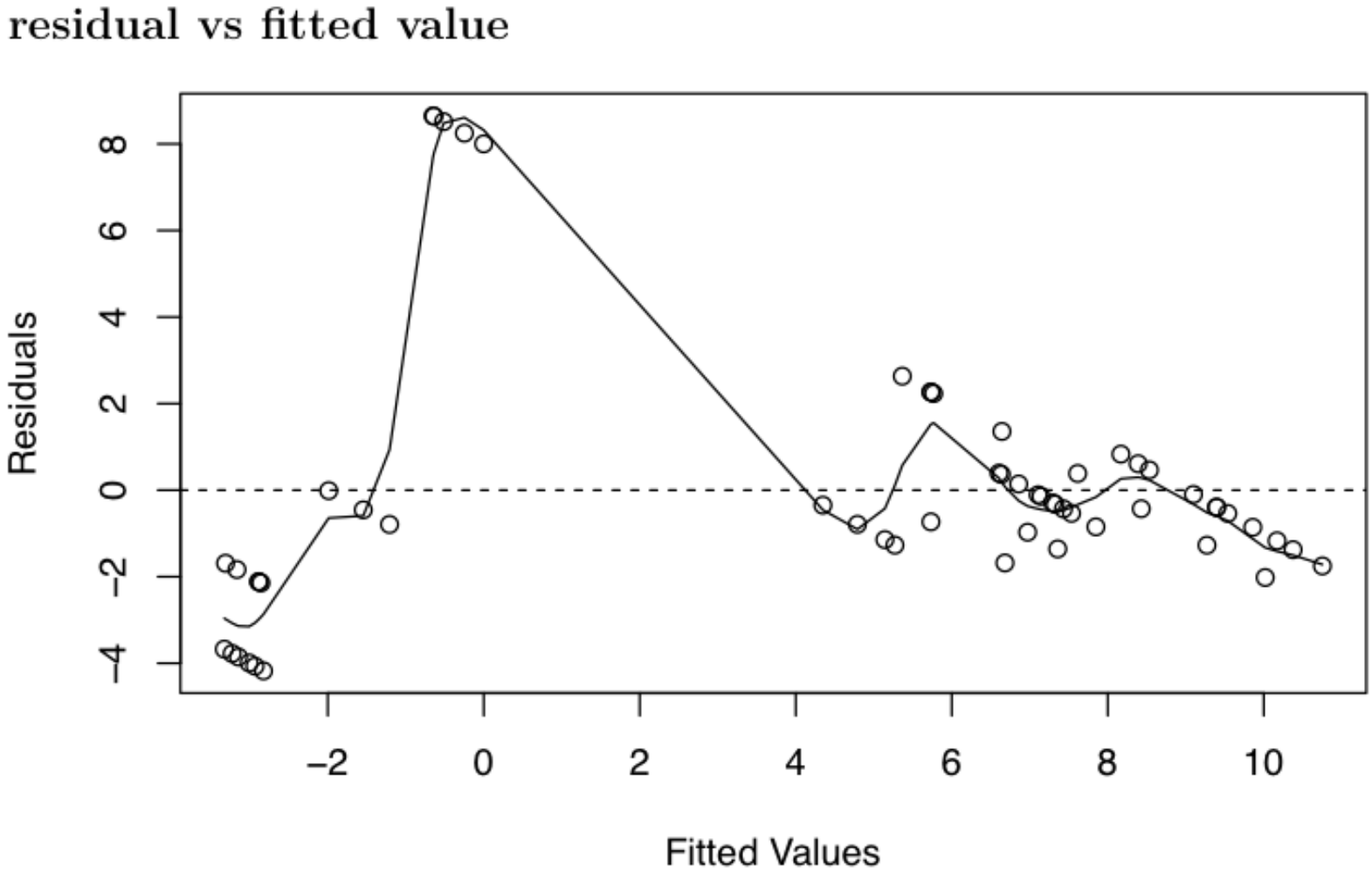


Figure 3: drawing

Fixed-Effect model

1. and (2) are the results of pooled OLS and fixed OLS.

Table 4: pooled OLS and fixed effects OLS

	Dependent variable:	
	demo	
	(1)	(2)
log(gdppc)	−0.644	−1.496
	(1.393)	(1.424)
log(pe)	−1.103**	15.793***
	(0.456)	(4.012)
log(mr)	−6.886**	−12.087***
	(3.062)	(3.176)
log(gi)	−39.075***	−28.940**
	(10.914)	(11.221)
Constant	41.873*	
	(21.138)	
Observations	57	57
R^2	0.717	0.610
Adjusted R^2	0.696	0.563
F Statistic	33.013*** (df = 4; 52)	19.532*** (df = 4; 50)
Note:		*p<0.1; **p<0.05; ***p<0.01

Do panel specific effect exist?

```
pFtest(fixed,pooled)
```

```
##
##  F test for individual effects
##
## data:  demo ~ log(gdppc) + log(pe) + log(mr) + log(gi)
## F = 17.075, df1 = 2, df2 = 50, p-value = 2.228e-06
## alternative hypothesis: significant effects
```

Figure 5: drawing

We have to reject the null-hypothesis.(there is no panel specific effects)

Now, no more heteroscedasticity

```
##
##  Lagrange Multiplier Test - (Breusch-Pagan) for unbalanced panels
##
## data:  demo ~ log(gdppc) + log(pe) + log(mr) + log(gi)
## chisq = 0.67568, df = 1, p-value = 0.4111
## alternative hypothesis: significant effects
```

we cannot reject the null hypothesis. (residuals doesn't correlated with independent variables)

Figure 6: drawing

we cannot reject the null hypothesis. (residuals doesn't correlated with independent variables)

results

$$democratization = -1.496log(gdppc) + 15.793log(pe) - 12.087log(mr) - 28.940log(gi) + \alpha_i$$

where a_i represents panel specific effects

Figure 7: drawing

Conclusion

References