

# **Gender Inequality and Economic Outcomes: Theory and Evidence**

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# Introduction

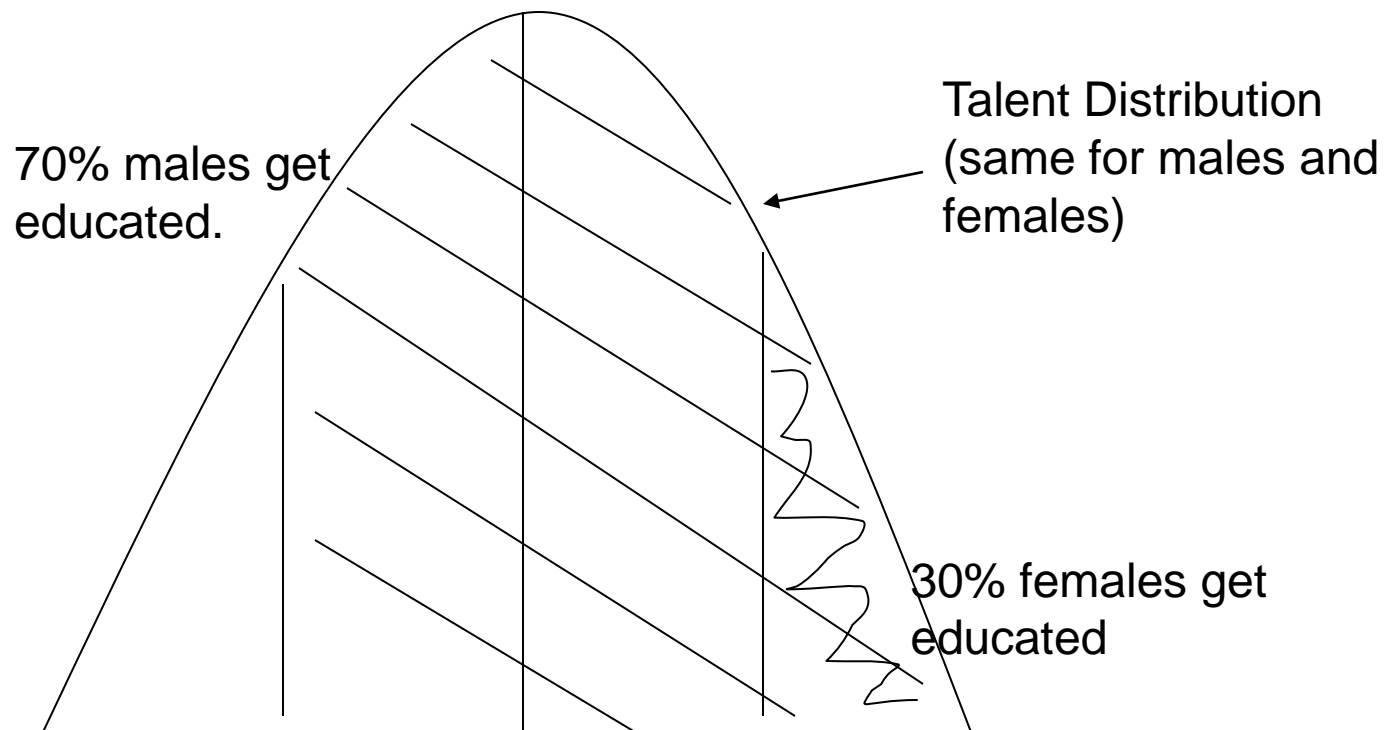
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- Despite considerable progress, gender inequality remains pervasive in many economic and social dimensions;
- Intensity and dimensions differ greatly by region:
  - South Asia: survival, education, employment;
  - Sub-Saharan Africa: education, access to assets;
  - East Asia: life opportunities, pay;
  - Focus here on developing countries;
- Gender inequality is an equity issue;
- Does it also compromise progress in development?
- Some theory and evidence on consequences of gender gaps in education, employment, and social institutions.

- Possible Growth Effects of Gender Gap in Education and Employment
  - Distortion and suboptimal use of talent;
  - Declining marginal return to education;
  - Externalities:
    - Fertility effects
    - Child mortality and education effects.
  - Growth effects of female-intensive export-oriented growth strategies (employment);
  - Gender and governance (employment);
  - Gender and bargaining power at household level;

# Distortion in Talent Use:

## Illustration



# Empirical Analysis

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- Cross-country and panel growth regressions for 1960-2000;
- Include overall education and gender gap in education as growth determinant;
- Include other growth determinants;
- Impact of initial gender gaps (and closing of gaps) on subsequent economic growth;

	TOTAL	MENA	LAC	EAP	OECD	SA	SSA	ECA
<b>G</b>	<b>1.78</b>	<b>2.24</b>	<b>1.53</b>	<b>4.05</b>	<b>2.66</b>	<b>2.09</b>	<b>0.57</b>	<b>3.48</b>
INV	15.48	13.18	13.96	20.53	23.92	11.21	10.45	17.31
POPGRO	1.89	2.75	1.79	2.01	0.73	2.2	2.5	0.91
GDP60	3377	1971	3299	1813	8473	930	1478	2233
GDP00	8693	4462	6897	12033	23153	2186	2375	7910
LFG	2.02	2.95	2.35	2.69	0.86	2.33	2.46	1
RED60	<b>0.7</b>	<b>0.39</b>	<b>0.91</b>	<b>0.59</b>	<b>0.93</b>	<b>0.29</b>	<b>0.47</b>	<b>0.73</b>
RGED	<b>1.03</b>	<b>0.87</b>	<b>1.09</b>	<b>1.24</b>	<b>1.02</b>	<b>0.77</b>	<b>0.97</b>	<b>1.05</b>
EDF60	3.41	0.65	3.26	2.74	6.56	0.89	1.19	5.24
GEDF	0.07	0.11	0.07	0.1	0.07	0.06	0.05	0.09

	1960	1970	1980	1990	2000
<b>East Asia and Pacific</b>					
male economic activity rate, 15-64 (MACT)	90.69	87.82	86.41	85.71	84.94
<b>ratio female-male economic activity rate, 15-64 (RACT)</b>	<b>0.45</b>	<b>0.52</b>	<b>0.61</b>	<b>0.66</b>	<b>0.7</b>
female economic activity rate, 15-64 (FACT)	41.33	46.25	52.85	56.47	59.67
<b>South Asia</b>					
male economic activity rate, 15-64 (MACT)	92.5	90.4	88.6	87.61	86.22
<b>ratio female-male economic activity rate, 15-64 (RACT)</b>	<b>0.52</b>	<b>0.53</b>	<b>0.53</b>	<b>0.55</b>	<b>0.59</b>
female economic activity rate, 15-64 (FACT)	48.61	47.84	47.22	47.88	50.87
<b>Sub Saharan Africa</b>					
male economic activity rate, 15-64 (MACT)	92.65	91.34	89.75	88.59	87.49
<b>ratio female-male economic activity rate, 15-64 (RACT)</b>	<b>0.75</b>	<b>0.75</b>	<b>0.75</b>	<b>0.75</b>	<b>0.75</b>
female economic activity rate, 15-64 (FACT)	69.62	68.59	67.2	66.44	66.1
<b>Middle East and North Africa</b>					
male economic activity rate, 15-64 (MACT)	88.84	85.39	82.03	81.02	81.21
<b>ratio female-male economic activity rate, 15-64 (RACT)</b>	<b>0.24</b>	<b>0.27</b>	<b>0.31</b>	<b>0.34</b>	<b>0.41</b>
female economic activity rate, 15-64 (FACT)	21.56	23.21	25.54	27.50	33.70
<b>Eastern Europe and Central Asia</b>					
male economic activity rate, 15-64 (MACT)	88.67	84.83	83.76	81.47	80.31
<b>ratio female-male economic activity rate, 15-64 (RACT)</b>	<b>0.67</b>	<b>0.73</b>	<b>0.79</b>	<b>0.81</b>	<b>0.84</b>
female economic activity rate, 15-64 (FACT)	59.42	62.18	66.24	65.85	66.97
<b>Latin America and Caribbean</b>					
male economic activity rate, 15-64 (MACT)	91.64	88.57	86.34	85.41	84.63
<b>ratio female-male economic activity rate, 15-64 (RACT)</b>	<b>0.3</b>	<b>0.34</b>	<b>0.41</b>	<b>0.49</b>	<b>0.56</b>
female economic activity rate, 15-64 (FACT)	27.91	30.51	35.73	41.77	46.88
<b>OECD</b>					
male economic activity rate, 15-64 (MACT)	90.28	86.80	84.66	81.55	81.12
<b>ratio female-male economic activity rate, 15-64 (RACT)</b>	<b>0.41</b>	<b>0.50</b>	<b>0.62</b>	<b>0.73</b>	<b>0.77</b>
female economic activity rate, 15-64 (FACT)	37.32	43.16	52.72	59.36	62.82

	<b>Difference SSA-EAP</b>	<b>Difference SA-EAP</b>	<b>Difference MENA- EAP</b>
<b>Total annual growth difference</b>	<b>3.48</b>	<b>1.96</b>	<b>1.74</b>
	<b>Upper bound estimate</b>		
Accounted for by:			
<b>Direct effect of gender inequality in education (1)</b>	0.26 <sup>[1]</sup>	0.52	0.38
Of which:			
Initial ratio (RED60)	0.08	0.20	0.14
Ratio of educational growth (RGED)	0.18	0.31	0.24
<b>Indirect effects:</b>			
via investment	0.08	0.17	0.12
via population growth (3)	0.14	0.33	0.22
via labor force growth (4)	-0.02	-0.06	-0.04
<b>Total Indirect Effect</b>	0.22	0.34	0.30
Of which:			
Initial ratio (RED60)	0.13	0.32	0.22
Ratio of educational growth (RGED)	0.07	0.12	0.09
<b>Total Direct and Indirect effect</b>	<b>0.46</b>	<b>0.95</b>	<b>0.69</b>

# Effects for South Asia

	1960s	1970s	1980s	1990s
<b>Growth difference EAP-SA by decades</b>	<b>2.26</b>	<b>3.86</b>	<b>0.19</b>	<b>0.79</b>
<b>Regression 14</b>				
Education effect (ORED)	0.28	0.25	0.33	0.36
Employment effect (RACT)	-0.26	-0.01	0.29	0.42
Total effect	0.03	0.24	0.63	0.78
<b>Regression 15</b>				
Education effect (ORED)	0.77	0.67	0.90	0.99
Employment effect (RACT)	-0.20	-0.01	0.24	0.33
Total effect	0.56	0.66	1.14	1.32
<b>Regression 16</b>				
Education effect (YRED)	1.30	1.34	1.44	1.21
Employment effect (RACT)	-0.13	-0.01	0.15	0.22
Total effect	1.17	1.33	1.59	1.43

# Effects for Middle East

	1960s	1970s	1980s	1990s
<b>Growth difference EAP-MENA by decades</b>	<b>0.53</b>	<b>1.48</b>	<b>2.71</b>	<b>1.55</b>
<b>Regression 14</b>				
Education effect (ORED)	0.20	0.32	0.30	0.27
Employment effect (RACT)	0.79	0.94	1.11	1.19
Total Effect	0.99	1.26	1.41	1.45
<b>Regression 15</b>				
Education effect (ORED)	0.55	0.88	0.82	0.72
Employment effect (RACT)	0.63	0.75	0.89	0.95
Total effect	1.18	1.62	1.71	1.67

- Results for gender gaps in education hold for the 1990s in cross-section and panel;
- Large growth effect of gender gaps in employment
- Implications for South Asia:
  - Gender gaps in education particularly detrimental
- Implications for MENA:
  - Gender gaps in employment particularly prominent;
- Implications for East Asia:
  - Closing gender gaps part of the growth success;
  - Further reduction in gaps would contribute to continuing progress;

# Role of Social Institutions?

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- OECD Gender and Social Institutions Index;
- OECD Gender and Institutions database;
- Long-lasting legal and cultural barriers and inequalities women face;
- Composite measure of 5 components:

$$\begin{aligned}
 \text{SIGI} &= \frac{1}{5} (\text{Subindex Family Code})^2 + \frac{1}{5} (\text{Subindex Civil Liberties})^2 \\
 &+ \frac{1}{5} (\text{Subindex Physical Integrity})^2 + \frac{1}{5} (\text{Subindex Son preference})^2 \\
 &+ \frac{1}{5} (\text{Subindex Ownership Rights})^2
 \end{aligned}$$

Country	SIGI	
	Ranking	Value
Paraguay	1	0.0024832
Croatia	2	0.00333
Kazakhstan	3	0.0034778
Argentina	4	0.0037899
Costa Rica	5	0.0070934
Russian Federation	6	0.0072524
Philippines	7	0.0078831
El Salvador	8	0.0082581
Ecuador	9	0.0091447
Ukraine	10	0.00969
Mauritius	11	0.009759
Moldova	12	0.0098035
Bolivia	13	0.0098346
Uruguay	14	0.0099167
Venezuela, RB	15	0.0104259
Thailand	16	0.010677
Peru	17	0.0121323
Colombia	18	0.012727
Belarus	19	0.0133856
Hong Kong, China	20	0.0146549
Singapore	21	0.0152573
Cuba	22	0.0160304
Macedonia, FYR	23	0.0178696
Brazil	24	0.0188021
Tunisia	25	0.0190618
Chile	26	0.0195128
Cambodia	27	0.0220188

Country	SIGI	
	Ranking	Value
Nicaragua	28	0.0225149
Trinidad and Tobago	29	0.0228815
Kyrgyz Republic	30	0.0292419
Viet Nam	31	0.0300619
Armenia	32	0.0301177
Georgia	33	0.0306926
Guatemala	34	0.0319271
Tajikistan	35	0.0326237
Honduras	36	0.0331625
Azerbaijan	37	0.0339496
Lao PDR	38	0.0357687
Mongolia	39	0.0391165
Dominican Republic	40	0.0398379
Myanmar	41	0.0462871
Jamaica	42	0.0484293
Morocco	43	0.0534361
Fiji	44	0.0545044
Sri Lanka	45	0.059141
Madagascar	46	0.0695815
Namibia	47	0.0750237
Botswana	48	0.0810172
South Africa	49	0.0867689
Burundi	50	0.1069056
Albania	51	0.1071956
Senegal	52	0.1104056
Tanzania	53	0.1124419
Ghana	54	0.112694
Indonesia	55	0.1277609

			SIGI		
			Country	Ranking	Value
Eritrea	56	0.1364469	Togo	78	0.202518
Kenya	57	0.1370416	Congo, Dem. Rep.	79	0.2044817
Cote d'Ivoire	58	0.1371181	Papua New Guinea	80	0.2093579
Syrian Arab Republic	59	0.1381059	Cameroon	81	0.2165121
Malawi	60	0.1432271	Egypt, Arab Rep.	82	0.2176608
Mauritania	61	0.1497032	China	83	0.2178559
Swaziland	62	0.1565499	Gabon	84	0.2189224
Burkina Faso	63	0.1616069	Zambia	85	0.2193876
Bhutan	64	0.162508	Nigeria	86	0.2199123
Nepal	65	0.1672252	Liberia	87	0.2265095
Rwanda	66	0.1685859	Guinea	88	0.2280293
Niger	67	0.1755873	Ethiopia	89	0.2332508
Equatorial Guinea	68	0.1759719	Bangladesh	90	0.2446482
Gambia, The	69	0.1782978	Libya	91	0.260187
Central African Republic	70	0.1843973	United Arab Emirates	92	0.2657521
Kuwait	71	0.1860213	Iraq	93	0.2752427
Zimbabwe	72	0.1869958	Pakistan	94	0.2832434
Uganda	73	0.1871794	Iran, Islamic Rep.	95	0.3043608
Benin	74	0.1889945	India	96	0.318112
Algeria	75	0.190244	Chad	97	0.3225771
Bahrain	76	0.1965476	Yemen	98	0.3270495
Mozambique	77	0.1995442	Mali	99	0.339493
			Sierra Leone	100	0.3424468
			Afghanistan	101	0.5823044
			Sudan	102	0.6778067

# Impact of Social Institutions?

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- High gender inequality in social institutions has significant impact on:
  - Reducing female enrollments;
  - Increasing fertility rates;
  - Increasing child mortality rates;
  - Increasing corruption;
- Effects over and above effects of region, religion, and income levels;
- Family code, civil liberties, and ownership rights particularly important;

- Reducing inequality in social institutions: a feasible long-term agenda
  - E.g. legal equality in family code and ownership rights;
  - Active promotion of female employment;
- Changing incentives within current structures:
  - Education: Gender-based incentives: The case of Bangladesh;
  - Microcredit and cash transfer programs;
  - Policies to promote reduced fertility and reduce female time burden;
- Female economic and political empowerment;

# ,Cost-effective empowerment'

- Copenhagen Consensus Project 2008:  
How best to spend \$75b. to promote development? Top 30 interventions.
- Four interventions:
  - Conditional Cash Transfer Program linked to female attendance in school (8);
  - Comprehensive reproductive health services (10);
  - Political quotas at the local level (n.r.);
  - Microcredit targeted at women (22).

Table 25:

	Coef.	robust HC3 Std. Err.	t	p-value	95% Conf. Int.	
Subindex Family code	-46.91	13.57	-3.46	0.0010	-74.09	-19.74
sa	-14.33	18.72	-0.77	0.4470	-51.83	23.18
eca	28.10	7.51	3.74	0.0000	13.06	43.14
lac	13.10	8.14	1.61	0.1130	-3.21	29.41
mena	26.39	8.22	3.21	0.0020	9.92	42.85
eap	14.66	9.78	1.50	0.1390	-4.93	34.26
muslim	2.45	4.63	0.53	0.5990	-6.82	11.73
hindu	28.43	19.77	1.44	0.1560	-11.17	68.02
christian	2.41	4.75	0.51	0.6140	-7.11	11.93
GDP	12.71	2.96	4.29	0.0000	6.77	18.64
constant	-43.02	23.68	-1.82	0.0750	-90.46	4.41
Number of obs	67					
R-squared	0.8664					
Prob > F	0.0000					

Table 5: Linear regressions with dependent variable fertility

Specification with SIGI	(1) b/se	(2) b/se	Specification with Subindex	(3) b/se	(4) b/se
<b>SIGI</b>	<b>8.25***</b> (2.31)	<b>1.73</b> (2.61)	<b>Subindex family code</b>	<b>1.89**</b> (0.70)	<b>2.03**</b> (0.70)
GDP		-0.71*** (0.16)	GDP	-0.60*** (0.12)	-0.43*** (0.12)
Muslim		0.52 (0.27)	Muslim	0.34 (0.27)	0.18 (0.27)
Christian		0.25 (0.26)	Christian	0.24 (0.25)	0.46 (0.26)
SA		-1.89*** (0.37)	SA	-1.73*** (0.41)	-1.88*** (0.38)
ECA		-2.44*** (0.48)	ECA	-2.08*** (0.38)	-1.59*** (0.43)
LAC		-0.96* (0.47)	LAC	-0.68 (0.36)	-0.57 (0.40)
MENA		-1.42* (0.63)	MENA	-1.07* (0.50)	-1.23* (0.48)
EAP		-1.74*** (0.42)	EAP	-1.37*** (0.39)	-1.20** (0.38)
Electoral democracy		-0.2 (0.31)	Electoral democracy	0.02 (0.29)	-0.03 (0.30)
FH civil liberties		-0.02 (0.17)	FH civil liberties	-0.11 (0.13)	-0.14 (0.13)
			Literacy female		-1.62** (0.60)
			Aids		-0.51 (0.30)
constant	<b>2.55***</b> (0.25)	<b>9.76***</b> (1.82)	constant	<b>7.89***</b> (1.30)	<b>7.47***</b> (1.29)
Number of obs.	100	97	Number of obs.	106	99
Adj. R-Square	0.31	0.82	Adj. R-Square	0.80	0.84
Prob>F	0.0006	0.0000	Prob>F	0.0000	0.0000

Table 6: Linear regressions with dependent variable child mortality

Specification with SIGI	(1) b/se	(2) b/se	Specification with Subindex	(3) b/se	(4) b/se
SIGI	318.56** (108.81)	50.42 (150.58)	Subindex family code	80.14** (25.85)	77.23* (31.50)
GDP		-22.55** (7.35)	GDP	-20.24*** (5.34)	-13.82** (5.09)
Muslim		26.61 (14.13)	Muslim	14.23 (13.13)	5.74 (14.50)
Christian		7.49 (11.72)	Christian	9.47 (10.31)	14.27 (10.81)
SA		-68.33*** (18.87)	SA	-61.30*** (17.05)	-71.03*** (16.33)
ECA		-85.65*** (23.82)	ECA	-66.13*** (16.75)	-53.16* (20.65)
LAC		-66.65** (23.84)	LAC	-50.69*** (14.88)	-50.23** (18.89)
MENA		-97.73*** (26.90)	MENA	-86.25*** (21.71)	-93.71*** (23.48)
EAP		-73.44*** (17.23)	EAP	-59.37*** (15.02)	-55.65** (17.85)
Electoral democracy		-0.79 (15.86)	Electoral democracy	7.05 (15.96)	1.75 (14.80)
FH civil liberties		-4.54 (7.86)	FH civil liberties	-8.33 (6.65)	-8.32 (6.44)
			Literacy female		-62.77** (21.39)
			Aids		-19.02 (14.56)
constant	43.38*** (10.80)	272.39** (93.09)	constant	209.47** (66.26)	209.34** (63.27)
Number of obs.	99	97	Number of obs.	106	99
Adj. R-Square	0.28	0.79	Adj. R-Square	0.79	0.82
Prob>F	0.0043	0.0000	Prob>F	0.0000	0.0000

Table 7: Linear regressions with dependent variable voice and accountability

Specification with SIGI	(1) b/se	(2) b/se	(3) b/se	Specification with Subindex	(4) b/se	(5) b/se
SIGI	-2.60*** (0.50)	-1.42** (0.48)	-1.59** (0.54)	Subindex civil liberties	-0.61** (0.23)	-0.65** (0.23)
GDP		0.27*** (0.06)	0.30*** (0.06)	GDP	0.31*** (0.05)	0.27*** (0.06)
Muslim		0.18 (0.13)	0.15 (0.14)	Muslim	0.16 (0.13)	0.21 (0.14)
Christian		-0.03 (0.12)	-0.04 (0.13)	Christian	-0.05 (0.12)	-0.08 (0.12)
SA		-0.27 (0.20)	-0.28 (0.21)	SA	-0.12 (0.18)	-0.04 (0.20)
ECA		-0.64*** (0.14)	-0.56* (0.22)	ECA	-0.52*** (0.13)	-0.57** (0.22)
LAC		-0.40* (0.17)	-0.41* (0.18)	LAC	-0.32* (0.15)	-0.31 (0.16)
MENA		-0.45 (0.23)	-0.47 (0.25)	MENA	-0.27 (0.19)	-0.23 (0.24)
EAP		-0.30* (0.14)	-0.21 (0.21)	EAP	-0.14 (0.13)	-0.21 (0.18)
Electoral democracy		1.10** (0.12)	1.07*** (0.11)	Electoral democracy	1.13** (0.10)	1.14*** (0.10)
Parliament			0.01 (0.01)	Parliament		0.01 (0.01)
Literacy population			-0.31 (0.42)	Literacy population		0.24 (0.37)
Openness			-0.07 (0.36)	Openness		0.23 (0.22)
Ethnic			-0.07 (0.25)	Ethnic		0.01 (0.23)
constant	-0.23* (0.10)	-2.80*** (0.45)	-2.77*** (0.47)	constant	-3.28*** (0.41)	-3.37*** (0.39)
Number of obs.	102	97	95	Number of obs.	112	108
Adj. R-Square	0.18	0.69	0.69	Adj. R-Square	0.68	0.69
Prob>F	0.0000	0.0000	0.0000	Prob>F	0.0000	0.0000

Table 8: Linear regressions with dependent variable rule of law

Specification with SIGI	(1) b/se	(2) b/se	(3) b/se	Specification with Subindex	(4) b/se	(5) b/se
SIGI	-1.73*** (0.49)	-1.88*** (0.53)	-1.33* (0.60)	Subindex ownership rights	-0.89*** (0.20)	-0.71** (0.23)
GDP		0.41*** (0.08)	0.36*** (0.07)	GDP	0.37*** (0.08)	0.30*** (0.07)
Muslim		0 (0.16)	-0.04 (0.16)	Muslim	-0.03 (0.13)	-0.02 (0.14)
Christian		-0.18 (0.15)	-0.18 (0.14)	Christian	-0.11 (0.14)	-0.14 (0.13)
SA		0.18 (0.22)	0.26 (0.24)	SA	0.11 (0.17)	0.21 (0.20)
ECA		-0.84*** (0.18)	-0.67* (0.27)	ECA	-0.93*** (0.16)	-0.83*** (0.22)
LAC		-0.74*** (0.19)	-0.54* (0.21)	LAC	-0.78*** (0.19)	-0.61** (0.19)
MENA		-0.14 (0.27)	0.17 (0.32)	MENA	-0.09 (0.25)	0.18 (0.29)
EAP		-0.31 (0.16)	-0.28 (0.23)	EAP	-0.35* (0.15)	-0.36 (0.20)
Electoral democracy		0.33* (0.14)	0.40** (0.13)	Electoral democracy	0.38** (0.11)	0.44*** (0.11)
Parliament			0.01 (0.01)	Parliament		0.01 (0.01)
Literacy population			-0.29 (0.42)	Literacy population		-0.03 (0.38)
Openness			0.69* (0.33)	Openness		0.71** (0.27)
Ethnic			-0.07 (0.32)	Ethnic		-0.12 (0.28)
constant	-0.35*** (0.10)	-3.37*** (0.58)	-3.32*** (0.52)	constant	-3.06*** (0.56)	-2.94*** (0.53)
Number of obs.	102	97	95	Number of obs.	112	108
Adj. R-Square	0.09	0.49	0.51	Adj. R-Square	0.53	0.56
Prob>F	0.0006	0.0000	0.0000	Prob>F	0.0000	0.0000