INDICATORS OF SOCIAL WELL-BEING, EDUCATION, GENRE EQUALITY AND WORLD DEVELOPMENT: ANALYSIS OF 132 COUNTRIES, 2000-2008

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Abstract. In this article we present an analysis of several socio-economic indicators related with quality of life, economic development, human capital, social capital and women participation in politics, management, labor and income. We present some econometric models which relate women income ratio with political, management and labor participation, as well as with the educational level of population, quality of government and real GDP per capita. Regarding quality of life we also analyze some indicators related with health assistance, education expenditure and poverty eradication. The overall conclusion is that international cooperation to foster education is of uppermost importance for world development and human wellbeing. Among the initiatives to reach the Millennium Development Goals it is of uppermost importance to reach a closer cooperation between development economists, journalists, educators and other social agents highly motivated to increase international cooperation for education and poverty eradication.

Keywords: Government quality, Education and Development, Well-being Indicators, World Development, Genre Equality, MDGs.
JEL: C5, O51, O52 O53, O54, O55

1. Introduction

It is very important to achieve the Millennium Development Goals, and other aims addressed to better quality of life of human beings in the World, to foster international cooperation in order to achieve higher levels of education. Here we analyze the relationship between education, life satisfaction, women empowerment measure, quality of government indicators and other variables. In sections 2 we analyze the correlation of an indicator of Life Satisfaction with other indexes of welfare. In section 3 we analyse correlations of Gem08 as an indicator of Women life opportunities and welfare. In section 4 we present the estimation of several econometric models which show the positive effect of education on socio-economic

development and welfare. Finally in section 5 we present a summary of conclusions.

2. Indicators of development and social welfare, 2000-2008.

Here we relate indicators of Life Satisfaction, Gross Domestic Product per capita, Women equality of opportunities, Government Quality, and Expenditure on Health and Education per capita.

Table A1, in the Annex, shows the 132 countries of this study in alphabetical order, indicating their ranking position accordingly to high levels of real Gross Domestic Product per capita at PPPs and of the index of social welfare I4.

I4 is a compound index of relative position, in comparison with World average, of a country in economic development and well-being, given by the average of three indexes. Each ratio is calculated dividing the indicator in a country by the World average of that indicator.

I1= mean of the ratios of Satisfaction with Life and GDP per capita.
I2= average of the ratios of Gov1 and Gov2.
I3= average of the ratios of Eduh00 and Tyr99

The indexes are calculated by dividing the each of the following variables by the corresponding World non weighted average:

Satisfaction with Life is measured by the SWL2F, based in the index of Happiness of Marks(2006) and White(2007).

Ph05pp =Gross Domestic Product (GDP) per head of year 2005 in dollars at Purchasing Power Parities (PPPs), from WB(2008).

Gov1x=Voice of citizens: indicator of quality of government calculated from Kaufmann et al(2008), by a change of origin and scale, from the scale -2.5 to 2-5 to the scale 0 to 10.

Gov2x=Government Effectiveness, another indicator of quality of government calculated from Kaufmann et al(2008), by a change of origin and scale, from the original -2.5 to 2-5 scale to a scale 0 to 10.

Eduh00=Educational Expenditure per inhabitant: average of Public Education per capital during the 10 past years, calculated from World Bank statistics and other international sources (see Annex)

Tyr99f=Average years of schooling per inhabitant in 1999, calculated from Barro and Lee and own estimations for a few cases without available data (see Table A2 in the Annex).

I4 includes many, although not all, of the indicators that explain the level of welfare in a country. It has a high positive correlation with real production per capita, not only because high levels of real GDP per capita (Ph) usually has positive impact on other welfare variables, but also because both variables I4 and Ph generally depend on the educational level of population which has positive influence in many variables related with development and welfare as seen in Guisan(2009 b) and other studies. Table 1 shows the positive correlation of I4 and Ph05pp with indicators of the educational level of population: Eduh00 and Tyr04 (years of schooling in 2004).

Table 1. Correlation of Education with welfare index I4 and Ph05pp

	I4	Ph05pp	Tyr04	Eduh00
I4	1.0000	0.9729	0.8728	0.9633
Ph05pp	0.9729	1.0000	0.8393	0.9265

Table 2 shows the positive correlation of Swl2f with the Gender Empowerment Measure of United Nations (Gem08), real Gdp per head in year 2005 (Ph05pp), Total years of education (Tyr99f), Education expenditure per head (Eduh00), Health Expenditure per head (Healthh), Gov1x07 (indicator of *voice of citizens*) and Gov2x07 (indicator of *government effectiveness*).

Table 1. Correlation of Life Satisfaction with other indicators

	Gem 08	Ph05 pp	Tyr 99f	Eduh 00	Healthh	Gov1 x07	Gov2 x07
Swl2f	0.4592	0.5577	0.4174	0.6450	0.5925	0.3273	0.5293

There are many relationships among those indicators, being the educational level of population (Tyr99f) and education expenditure per capita (Eduh00) very important because human capital leads usually to higher levels of investment and production per capita, better levels of health expenditure per inhabitant and improves both indicators of Government quality (Gov1x07: voice of citizens and Gov2x07: Government effectiveness.

3. Education, Well-being and Genre Equality Opportunities

The educational level of population has usually a positive impact on equality of opportunities for women, and other social groups. Graph 1 shows this relation, for the 49 countries with available data of GEM (Genre Empowerment Measure) in the report of UN(2008), between the value of this variable in year 2008 (GEM08) with our estimation of average years of schooling of population in year 2004 (tyr04) which is an update of the most recent Barro and Lee´s series.

Graph 1. Genre Equality Measure and Education

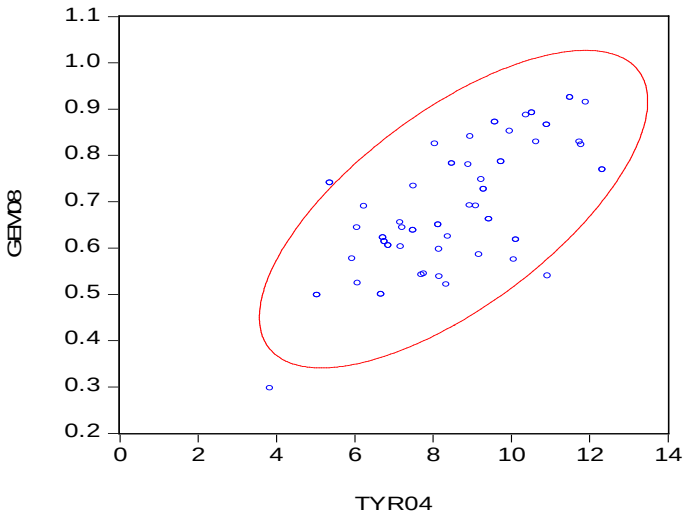

Table 3. Correlation coefficients with GEM08

	I4	Ph05pp	Tyr04	Eduh	Healthh	Gov1x07	Gov2x07
Gem08	0.81	0.75	0.68	0.74	0.74	0.72	0.74

As seen in Guisan, Aguayo and Exposito(2001), Guisan and Neira(2006) and other studies, education has a high positive effect on development, contributing to increase of Gdp per capital (PH), as well as expenditure on health and education per capita (Healthh and Eduh) and other variables. Besides as seen in Guisan(2009) and other studies, education has usually a positive effects on the indicators of

quality of Government (Gov1x and Gov2x). Besides, as we analyze in the next section, education has usually a positive effect on equality of opportunities for women.

3. Cross-section models of 132 countries.

Real GDP per capita in year 2000 (PH00PP) and Gov2x (Government Effectiveness, calculated as explained in the Annex) in year 2000 are two variables with positive and significant effect on SWL2. We have included dummies for positive effects (DP1 and DP2) and for negative effects (DN1 and DN2).

Model 1. Equation of Satisfaction with Life

Dependent Variable: SWL2				
Method: Least Squares Sample: 1 132				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	142.8102	2.794203	51.10943	0.0000
PH00PP	0.694826	0.159594	4.353720	0.0000
GOV2X00	9.779330	0.746114	13.10703	0.0000
DP1	40.86724	1.924386	21.23650	0.0000
DP2	20.85061	1.893083	11.01410	0.0000
DN1	-52.74395	2.155998	-24.46381	0.0000
DN2	-25.03973	1.658369	-15.09901	0.0000
R-squared	0.966601	Mean dependent var		194.6211
Adjusted R-squared	0.964998	S.D. dependent var		38.11204
S.E. of regression	7.130327	Akaike info criterion		6.818164
Sum squared resid	6355.196	Schwarz criterion		6.971040
Log likelihood	-442.9988	Hannan-Quinn criter.		6.880285
F-statistic	602.9382	Durbin-Watson stat		1.958695
Prob(F-statistic)	0.000000			

Graph A1 in the Annex shows the high goodness of fit by showing the positive correlation between actual and estimated values of SWL2.

Some countries are included in both positive groups, what means that they have a value of SWL2 62 points over the expected value of the estimated regression. A few countries are included in both negative groups and it implies that they seems to have 78 points in

SWL2 less than expected. These differences may be due to overestimation of some components of the index SWL2 or to particular features of the countries.

Model 2. GDP per head in 2005 (PH05PP) related with EDUH00

Dependent Variable: PH05PP: PH00PP+C(11)*EDUH00				
Method: Restricted least squares. Sample 1 132				
Variable	Coeff.	Std. Error	t-Statistic	Prob.
C(11)	1.674940	0.183444	9.130547	0.0000
R-squared	0.981724	Mean dependent var		9397.568
Adjusted R-squared	0.981724	S.D. dependent var		9995.665
S.E. of regression	1351.290	Akaike info criterion		17.26305
Sum squared resid	2.39E+08	Schwarz criterion		17.28489
Log likelihood	-1138.362	Hannan-Quinn criter.		17.27193
Durbin-Watson stat	1.754548			

Model 3. GDP per head in 2005 (Ph05pp) and schooling (Tyr99)

Dependent Variable: PH05PP				
Method: Restricted least squares: 1 132				
PH05PP=PH00PP+C(11)*TYR99F				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(11)	206.4135	15.49864	13.31817	0.0000
R-squared	0.987296	Mean dependent var		9397.568
Adjusted R-squared	0.987296	S.D. dependent var		9995.665
S.E. of regression	1126.649	Akaike info criterion		16.89943
Sum squared resid	1.66E+08	Schwarz criterion		16.92127
Log likelihood	-1114.362	Hannan-Quinn criter.		16.90831
Durbin-Watson stat	1.947356			

Models 2 and 3 show the positive effect that the educational level of population generally has on real GDP per capita. The coefficient of education includes not only the direct effect of this variable but the

effects of many other factors of production (investment. Social capital and other ones, as those explained in Guisan(2008)) which have a high linear correlation with the indicators of education.

One indicator of social capital is "government effectiveness", GOVEFFECT, which is usually positively correlated with "voice of citizens" which is another important indicator of social capital. Those indicators have interesting positive relationships with the educational level of population and the evolution of real GDP per capita.

Models 4 and 5 show some of those relationships, including the positive effect of education on both indicators of Government quality.

Model 4. Government Effectiveness

Dependent Variable: GOVEFFECT				
Method: Least Squares				
Included observations: 132				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
PH05PP	0.034938	0.009086	3.845450	0.0002
VOICE	0.437336	0.042729	10.23516	0.0000
C	-0.743685	0.090172	-8.247452	0.0000
DAREA1	0.474930	0.145787	3.257712	0.0015
TYR99F	0.047905	0.019606	2.443340	0.0160
D25	1.133462	0.321579	3.524671	0.0006
D75	1.217005	0.318239	3.824186	0.0002
D58	-0.992444	0.322128	-3.080898	0.0026
D106	1.824282	0.336969	5.413790	0.0000
EDUH00	0.302983	0.148489	2.040440	0.0435
R-squared	0.912536	Mean dependent var		-0.022197
Adjusted R-squared	0.906083	S.D. dependent var		1.021858
S.E. of regression	0.313157	Akaike info criterion		0.588511
Sum squared resid	11.96422	Schwarz criterion		0.806905
Log likelihood	-28.84171	F-statistic		141.4280
Durbin-Watson stat	2.024693	Prob(F-statistic)		0.000000

Model 5. Voice of citizens

Dependent Variable: VOICE				
Method: Least Squares. Included observations: 132				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.855343	0.135623	-6.306788	0.0000
TYR99F	0.076758	0.033203	2.311790	0.0226
PH05PP/1000	0.050080	0.008955	5.592131	0.0000
D10	-1.834056	0.529377	-3.464558	0.0007
D25	-1.579462	0.526853	-2.997917	0.0033
D39	-1.575225	0.527983	-2.983478	0.0035
D55	-1.379614	0.526295	-2.621368	0.0099
D83	-1.582243	0.529612	-2.987551	0.0034
D101	-1.239339	0.529887	-2.338876	0.0211
D103	-1.689155	0.533989	-3.163280	0.0020
D106	-1.538032	0.534587	-2.877047	0.0048
D114	-1.527679	0.528671	-2.889660	0.0046
D121	-2.041931	0.526288	-3.879871	0.0002
D127	-1.560962	0.529274	-2.949250	0.0039
D129	-1.299990	0.528166	-2.461330	0.0153
D132	-1.150598	0.527954	-2.179353	0.0313
R-squared	0.749719	Mean dependent var		-0.0958
Adjusted R-squared	0.717355	S.D. dependent var		0.9849
S.E. of regression	0.523652	Akaike info criterion		1.6572
Sum squared resid	31.80851	Schwarz criterion		2.0066
Log likelihood	-93.37739	F-statistic		23.1652
Durbin-Watson stat	1.903259	Prob(F-statistic)		0.000000

The variables included in Models 4 and 5 are:

GOVEFFECT: Government Effectiveness. Indicator of social capital from Kaufman et al (2008).
PH05PP: real Gdp per capita in thousand Dollars at 2005 prices and Purchasing Power Parities. Source World Bank.

VOICE: Voice of citizens. Indicator of social capital from Kaufman et al(2008)

TYR99F= Totally year of Schooling, data from Barro and Lee and own estimations for missing data.

EDUH00: average annual public expenditure on education for the period 1995-2005.

Dummy variables: DArea1 and Di (i=25, 58, 75, 106, in equation 4), and Di (i=10, 25, 39, 55, 83, 101, 103, 106,114, 121, 127, 129, 132 in equation 5): Dummies of Area or country, explained in the Annex.

Education has direct and indirect effect on quality of life for Women. Model 6 presents the positive effects of several women ratio, in the women income ratio. The sample is limited to 49 countries. The variables included in the equation are, besides educational level (Tyr99f) and voice of citizens (gov1x) are:

WINCR08: Women Income Ratio in year 2008. From United Nations with a correction for Austria as seen in the Annex.
GEMRATIO1, 2, 3: Are the GEM ratios corresponding to political, management and technical participation of Women in comparison with men.

Model 6. Income ratio of Women in comparison with Men.

Dependent Variable: WINCR08				
Method: Least Squares. Included observations: 49 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GEMRATIO1	0.179161	0.049599	3.612183	0.0008
GEMRATIO2	0.210398	0.070423	2.987616	0.0046
GEMRATIO3	0.139119	0.023643	5.884179	0.0000
TYR99F/10	0.210713	0.053988	3.902979	0.0003
GOV1X07/10	0.163989	0.075148	2.182222	0.0345
R-squared	0.719191	Mean dependent var		0.601429
Adjusted R-squared	0.693663	S.D. dependent var		0.112101
S.E. of regression	0.062045	Akaike info criterion		-2.625449
Sum squared resid	0.169384	Schwarz criterion		-2.432407
Log likelihood	69.32351	Hannan-Quinn criter.		-2.552209
Durbin-Watson stat	2.284641			

Besides the direct effect of education in equation 6, we should have into account other indirect and positive effects of education through its positive impact on other explanatory variables, particularly on

Gov1x, Gemratio1 and Gemratio2. In the Annex we comment on the limitations of some indicators.
The results where very alike using our provisional estimation of Tyr04 instead of Tyr99, with coefficients of 0.1806, 0.2086, 0.1429, 0.2057, and 0.1562. All the coefficients where significant.

4. Conclusions

We have found clear evidence of positive effects of education in several indicators of socio-economic development, including on the improvement of equality of opportunities for women.
Model 1 shows the positive effects that economic development and government effectiveness usually has in satisfaction with life.
Models 2 and 3 show the positive effects of education, and other missing variables related with the educational level of population, on economic development.
Model 4 allow us to confirm direct and indirect positive effects of the educational level of population on government effectiveness as well as the positive effect of voice of citizens of the explained variable.
Model 5 present the positive effects of education and development on the indicator of voice of citizens.
Model 6 shows that increase of women ratios in political, management and technical position is positively related with the increase in women income ratio.

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Annex

A1. Correlation among welfare indicators and education

As seen in Guisan and Neira(2006) and Guisan(2009), among other studies, education has a highly positive role to explain the increase of real production per capita. Social capital is also fostered by increase in the educational level of population and particularly the indicators of quality of government as well as social trust and other important variables for economic development and human well-being. In this section we analyse several indicators in 132 countries.

Tables A3 and A4 show the correlations between the components of indexes and the indexes I1, I2 e I3: SWL2, the index of Satisfaction with Life is highly correlated with Government Effectiveness, Educational Expenditure per capita and Gross Domestic Product per head (GDPH). The latter variable is high correlated with the past expenditure on education, Government Effectiveness and average total years of schooling (Tyr).

Table A3. Correlation between components of the indexes

	LIFE SWL2	GDPH	EDUH00	TYR99	VOICE	GOV. EFFECT.
LIFE SWL2	1.00	0.63	0.64	0.54	0.55	0.65
GDPH	0.63	1.00	0.93	0.84	0.72	0.89
EDUH00	0.64	0.93	1.00	0.78	0.69	0.84
TYR99	0.54	0.84	0.78	1.00	0.66	0.82
VOICE	0.55	0.72	0.69	0.66	1.00	0.81
GOV. EFFECT.	0.65	0.89	0.84	0.82	0.81	1.00

Table A4. Correlation between the indexes I1, I2, I3

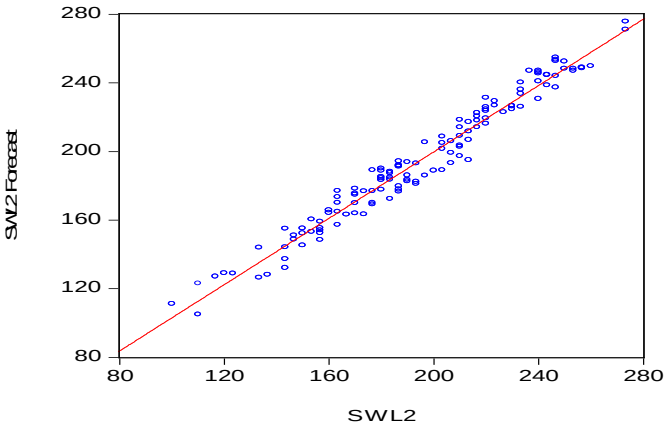
	I1	I2	I3
I1	1	0.8556	0.9444
I2	0.8556	1	0.8369
I3	0.9444	0.8369	1

The variables which measure the educational level of population: Past Educational Expenditure (EDUH00) and average total years of education (Tyr), are highly correlated with GDPH and Government Effectiveness by two reasons: 1) as a cause of the value of production and effectiveness, and 2) as a consequence of past values of both variables which contributed to increase education.

Voice of citizens andGovernment Effectiveness are highly correlated with GDPH and the educational level of population, as well as positively correlated each other. The econometric models seen here and in Guisan(2009) show that high levels of Voice of citizens usually foster Government effectiveness.

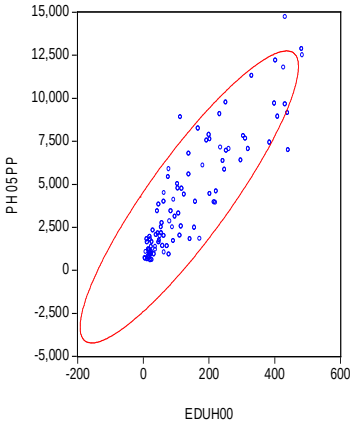
Graph A1 shows the relation beetwen fitted and actual values of *Satisfaction with Life* (SWL2), the dependent variable in Model 1.

Graph A1. Estimated and actual values of SWL2

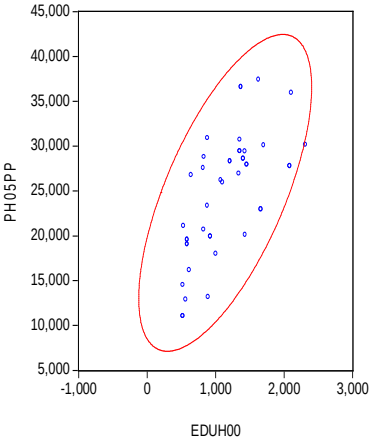


Graphs A2 and A3 show the positive correlation between past expenditure on education and GDP per head in year 2005.

Graph A2. Countries with Eduh<600

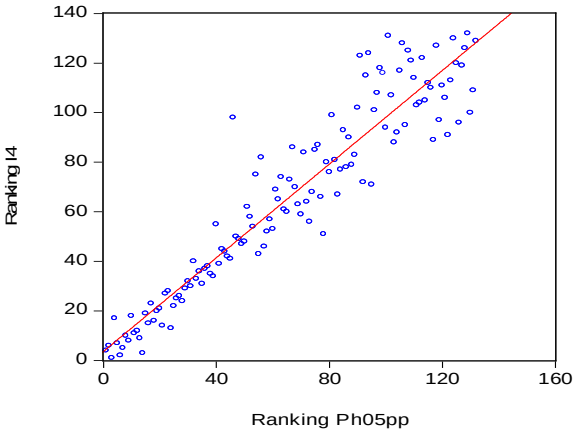


Graph A3. Countries with Eduh>600



Graph A4 shows the high positive correlation between the ranking position of countries in the welfare index I4 and in the Gdp per capita at purchasing power parities in year 2005 (Ph05pp).

Graph A4: ranking position of countries: Ph and I4



A2. Comments on Welfare indicators

Welfare indicators include many relevant variables that influence quality of life. Improvements for the future should include low levels of delinquency and other variables that also contribute to social welfare. Besides it should be interesting the distinction between private life and public life. In some countries it may happen that satisfaction with private life (family, friends) reaches good positions while public life (particularly satisfaction with government quality) does not reach a good level. An average indicator would not be enough in that case to know the real quality of life of that country. We here include some supplementary comments and suggestions about the indicators used in this study.

A2.1. Government Quality indicators: France and Spain

The indicators provided by Kaufmann et al(2008) are highly valuable and useful for international comparisons and the evolution through time of social capital quality. They have made an extraordinary work and have reached very good performance, in spite of the difficulties to summarize complex features of social quality in a few indexes We expect that in the future they will even advance in their important achievements.

The variables *Voice of citizens* and *Government Effectiveness* correspond to values provided by Kaufmann et al. and varies between -2.5 (worst situation) to 2.5 (best situation). From this variables we have built the indicators Gov1x and Gov2x in a scale from 0 to 10, with a change of origin and scale.

Regarding the indicator *Voice of citizens* we find an overvaluation of the data of Spain in comparison with France, and in this regard we would suggest to take into account and index of the quality of electoral systems. Quality is in many regards superior in France, where citizens have the opportunity to elect among individual candidates while in Spain the list of candidates is blocked and decided, usually in a non democratic way, by the top level oligarchs of political parties.

This problems with the low democratic performance of electoral system and procedures in Spain has arisen a great concern among citizens with 91% of people that thinks that "political decisions are not taken in parliament but outside among powerful groups" as it may be seen in the CIS survey (Centro de Investigaciones Sociológicas/ Spanish Center of Social Surveys), and only 9% of people believes that the parliament works properly.

WVS(2008) also shows higher levels of confidence of citizens in several public institutions in France in comparison with Spain, and the most recent figures of this study are as follows:

Confidence in legal system: 57.54% in France, 46.96% in Spain.
Confidence in Civil Service: 60.1% in France and 40.9% in Spain.

A2.2. Women participation indicators

Accordingly to UN: "*Gender equality means equal opportunities, rights and responsibilities for women and men, girls and boys. Equality does not mean that women and men are the same but that women's and men's opportunities, rights and responsibilities do not depend on whether they are born female or male. It implies that the interests, needs and priorities of both women and men are taken into consideration"*

The statistical data about Gender Empowerment Measure (GEM) published by UN(2008) include 49 of the 132 countries of this study. The values are based in political participation, management ratio, technical labour ratio and income ratio. The values of the indexes *Gem08* and Women Income Ratio (*Wincr08*) appear in table A2.

Political representation index.

The number of seats of women in parliaments is not always a good indicator of women political influence, because we should have into account several considerations, related with the electoral system: For example in countries with *majority systems*, like the UK and the USA, the number of women seats is very often lower than in countries with *proportional system*, like Spain, but it may happen that in *majority systems* women have more power in the party systems of selection of candidates (elected by women and men of the party followers in an even and democratic participation) than in

proportional systems, where a oligarchy of inside powers (usually mainly man powers) may decide the list without democratic selection by the party followers. After election women in majority systems may have more political power, because they due their election to democratic selection, than in proportional electoral systems where they may be very strongly conditioned by the party oligarchy.

In this regard we find that figures of Gem08 and Wincr08 of Spain, and likely other countries with proportional electoral systems where candidates are designed by party oligarchies, may be overvalued in comparison with the United Kingdom and the United States and other countries with more citizens (women and men) have more power than party oligarchies in the selection of political candidates.

Accordingly to United Nations the countries of table A2 with index equal to or higher than 33% of women political participation are: Argentina (39.8), Belgium (36.2), Costa Rica (36.8), Denmark (38.0), Finland (41.5), Netherlands (37.8), New Zealand (33.1), Norway (36.1), Spain (33.6), Sweden (47.0).

Management and technical participation indexes.

Regarding the management and technical influence of women it seems that in many countries is overvalued because the indicators do not represent the presence of women in the high levels of decision of firms and institutions, which are very low for the moment with a few positive exceptions in the more developed countries.

The study by Smith, Smith, and Verner (2005) examines the relationship in the case of women in top executive jobs and on boards of directors. They use data for the 2500 largest Danish firms observed during the period 1993-2001 and find that the proportion of women in top management jobs tends to have positive effects on firm performance and that the results show that the positive effects of women in top management depend on the qualifications of female top managers. In their study the figures of women participation as Chief Executive Officer (CEO) or in Board of Directors are very low, for example only 5.9% and 11.7%, respectively, in a country with high level of Women equality index, like Denmark in 2005, among the 113 largest firms. They compare data from US, UK, France, Sweden, Norway and Denmark, and the highest percentage

of female representation among CEO corresponds to Sweden with 15.0% and for Board of Directors to Norway with 21.6%.
The 21 top countries by management participation in the UN statistics, with 33% or higher values, are: Australia (38), Bulgaria (62), Canada (36), Estonia (34), France (38), Germany (38), Hungary (37), Italy (33), Kazakhstan ((38), Latvia (41), Lithuania (40), New Zealand (40), Norway (33), Panama (45), Poland (35), Portugal (33), Russia (39), Slovenia (33), UK (35), USA (42), Uruguay (40).
A group of 10 countries reach an index equal or higher than 30% and lower than 33%: Belgium (31), Costa Rica (30), Finland (30), Ireland (31), Israel (30), Romania (30), Singapore (31), Spain (32), Sweden (32) and Switzerland (31). The other 18 countries are below 30%.

The technical index takes usually values between 40% and 60% and it does not represent the opportunities for women in the higher levels, where they usually get only low percentages.

A3. Data

Tabla A1. Gross Domestic Product per capita and indicators I1, I2, I3, I4.

Nb	Country	Ph00 pp	Ph05 pp	Rank Ph05	Rank I4	I1	I2	I3	I4
1	Albania	3703	4757	68	70	0.65	0.95	0.61	0.74
2	Algeria	5418	6361	61	69	0.78	0.71	0.72	0.74
3	Angola	1795	2170	91	123	0.53	0.56	0.26	0.45
4	Argentina	12173	12899	33	33	1.27	1.06	1.46	1.26
5	Armenia	2422	4484	71	84	0.56	0.84	0.63	0.67
6	Australia	25417	28306	12	12	2.13	1.70	2.47	2.10
7	Austria	28987	30109	7	5	2.27	1.66	2.95	2.29
8	Azerbaijan	2571	5016	67	86	0.69	0.66	0.65	0.67
9	Bangladesh	1479	1786	102	107	0.58	0.73	0.24	0.52
10	Belarus	4828	7051	56	82	0.72	0.40	0.94	0.69
11	Belgium	27303	28798	10	18	2.16	1.64	1.83	1.88
12	Benin	959	1000	119	97	0.52	0.98	0.21	0.57
13	Bolivia	2398	2555	86	78	0.60	0.86	0.63	0.70
14	Botswana	7702	9652	42	45	0.98	1.27	1.02	1.09
15	Brazil	7301	7808	49	47	0.95	1.09	0.79	0.94
16	Bulgaria	5979	7866	48	49	0.79	1.18	0.86	0.94
17	Burkina Faso	998	1093	115	112	0.46	0.79	0.23	0.49

18	Burundi	584	584	132	129	0.29	0.59	0.23	0.37
19	Cambodia	1859	2321	90	102	0.60	0.68	0.34	0.54
20	Cameroon	1866	1978	97	108	0.54	0.65	0.34	0.51
21	Canada	27290	29415	9	8	2.22	1.69	2.82	2.24
22	C. African R.	1155	1024	118	127	0.47	0.55	0.21	0.41
23	Chad	840	1616	106	128	0.47	0.43	0.23	0.38
24	Chile	9121	11301	38	35	1.16	1.47	1.11	1.25
25	China	3928	5878	63	74	0.85	0.70	0.60	0.72
26	China H-K	26045	30896	4	17	2.21	1.51	1.95	1.89
27	Colombia	6244	6949	58	52	0.99	0.97	0.76	0.91
28	Congo, DR	669	679	129	132	0.32	0.38	0.29	0.33
29	Congo, R.	958	931	120	111	0.54	0.52	0.45	0.50
30	Costa Rica	8621	8931	45	41	1.12	1.29	1.05	1.15
31	Côte d´Ivoire	1576	1401	109	121	0.46	0.49	0.41	0.45
32	Croatia	9546	11779	37	38	1.13	1.23	1.13	1.17
33	Czech R.	15373	19067	27	26	1.56	1.43	1.46	1.48
34	Denmark	28750	30163	6	2	2.31	1.80	3.84	2.65
35	Dominican R.	6426	6779	59	57	0.96	0.97	0.63	0.85
36	Ecuador	3374	3821	79	80	0.68	0.77	0.63	0.69
37	Egypt	3599	3985	76	87	0.62	0.68	0.64	0.65
38	El Salvador	4595	4742	69	63	0.82	0.99	0.54	0.78
39	Eritrea	912	907	124	130	0.43	0.31	0.29	0.34
40	Estonia	9763	14515	31	30	1.21	1.48	1.29	1.33
41	Ethiopia	781	896	125	120	0.45	0.69	0.23	0.46
42	Finland	25554	27947	13	9	2.15	1.73	2.75	2.21
43	France	25698	26941	16	15	2.00	1.55	2.44	2.00
44	Georgia	1881	2842	84	77	0.50	0.96	0.64	0.70
45	Germany	25481	26216	18	16	2.01	1.65	2.23	1.96
46	Ghana	1893	2149	92	72	0.65	1.12	0.42	0.73
47	Greece	17392	21101	22	27	1.66	1.32	1.42	1.47
48	Guatemala	3978	3997	75	85	0.81	0.84	0.35	0.67
49	Guinea	1976	2040	94	124	0.55	0.47	0.30	0.44
50	Haiti	1797	1642	105	117	0.56	0.60	0.27	0.47
51	Honduras	2506	2494	88	79	0.75	0.86	0.47	0.69
52	Hungary	12975	16177	29	29	1.35	1.39	1.55	1.43
53	India	2422	3118	83	67	0.63	1.11	0.54	0.76
54	Indonesia	3028	3437	80	76	0.75	0.91	0.47	0.71
55	Iran	5826	7137	54	75	0.89	0.55	0.71	0.72
56	Ireland	30532	36621	2	6	2.60	1.65	2.54	2.27

57	Israel	23858	22960	21	14	1.80	1.42	2.93	2.05
58	Italy	24995	25956	19	20	1.97	1.32	2.02	1.77
59	Jamaica	3651	3934	78	51	0.81	1.18	0.74	0.91
60	Japan	26220	27568	15	19	2.00	1.48	1.90	1.79
61	Jordan	3954	4585	70	59	0.68	0.95	0.93	0.85
62	Kazakhstan	4595	7617	51	62	0.90	0.69	0.79	0.79
63	Kenya	1018	1042	117	89	0.54	0.89	0.43	0.62
64	Korea R.	16179	19560	26	25	1.54	1.42	1.66	1.54
65	Kuwait	16505	20695	23	28	1.72	0.97	1.67	1.45
66	Kyrgyzstan	1560	1730	103	88	0.66	0.74	0.52	0.64
67	Lao	1570	1952	98	118	0.57	0.52	0.32	0.47
68	Latvia	7907	12192	36	37	1.05	1.31	1.15	1.17
69	Lebanon	4390	5425	66	73	0.77	0.81	0.60	0.73
70	Lesotho	2122	2472	89	83	0.50	0.96	0.59	0.68
71	Lithuania	8761	12864	34	36	1.09	1.38	1.21	1.22
72	Macedonia	6060	6392	60	53	0.76	1.00	0.91	0.89
73	Madagascar	825	802	126	96	0.54	0.96	0.26	0.58
74	Malawi	586	597	131	109	0.43	0.85	0.26	0.51
75	Malaysia	8927	9699	41	39	1.15	1.13	1.20	1.16
76	Mali	780	930	121	106	0.50	0.97	0.09	0.52
77	Mauritania	1730	1993	96	101	0.56	0.73	0.34	0.54
78	Mexico	9048	9132	43	44	1.08	1.05	1.15	1.09
79	Moldova	1332	1707	104	92	0.39	0.78	0.65	0.61
80	Mongolia	1610	2013	95	71	0.68	0.91	0.61	0.73
81	Morocco	3545	3954	77	66	0.69	0.88	0.72	0.76
82	Mozambique	877	1220	112	104	0.53	0.93	0.12	0.53
83	Myanmar	1238	1800	101	131	0.55	0.24	0.23	0.34
84	Namibia	6058	6980	57	46	0.93	1.18	0.94	1.01
85	Nepal	1323	1368	110	114	0.54	0.68	0.22	0.48
86	Netherlands	28610	29452	8	10	2.21	1.71	2.54	2.15
87	New Zealand	19615	20135	24	13	1.71	1.72	2.84	2.09
88	Nicaragua	3278	3291	82	81	0.71	0.82	0.52	0.69
89	Niger	703	716	128	126	0.42	0.77	0.09	0.43
90	Nigeria	882	1058	116	110	0.53	0.72	0.26	0.50
91	Norway	34208	35956	3	1	2.55	1.77	3.73	2.68
92	Pakistan	1926	2149	93	115	0.48	0.68	0.27	0.48
93	Panama	6164	7052	55	43	0.99	1.18	1.10	1.09
94	Papua-NewG	2325	2505	87	90	0.67	0.90	0.28	0.62
95	Paraguay	4553	4437	72	64	0.79	0.78	0.76	0.78

96	Peru	4722	5569	65	60	0.78	0.94	0.82	0.84
97	Philippines	4027	4401	73	56	0.78	0.99	0.82	0.86
98	Poland	10385	12505	35	31	1.17	1.27	1.48	1.31
99	Portugal	18255	18000	28	24	1.48	1.46	1.72	1.55
100	Romania	5887	8236	47	50	0.88	1.10	0.80	0.93
101	Russia	7096	9747	40	55	0.89	0.73	1.00	0.87
102	Rwanda	1039	1193	113	122	0.44	0.69	0.22	0.45
103	Saudi Arabia	12374	13175	32	40	1.33	0.66	1.48	1.15
104	Senegal	1435	1615	107	95	0.57	0.95	0.25	0.59
105	Sierra Leone	466	720	127	119	0.47	0.74	0.18	0.46
106	Singapore	23744	26764	17	23	2.01	1.42	1.53	1.65
107	Slovakia	11304	14722	30	32	1.25	1.38	1.21	1.28
108	Slovenia	16861	19940	25	22	1.63	1.47	1.92	1.67
109	South Africa	9488	11044	39	34	1.08	1.32	1.35	1.25
110	Spain	21401	23368	20	21	1.84	1.44	1.76	1.68
111	Sri Lanka	3626	4087	74	68	0.74	0.88	0.65	0.76
112	Sweden	25900	27784	14	3	2.14	1.75	3.66	2.52
113	Switzerland	30161	30729	5	7	2.34	1.80	2.64	2.26
114	Syrian A.R.	3243	3437	81	99	0.62	0.48	0.61	0.57
115	Tajikistan	785	1173	114	105	0.58	0.57	0.42	0.52
116	Tanzania	522	653	130	100	0.51	0.91	0.29	0.57
117	Thailand	6279	7649	50	48	0.96	0.93	0.93	0.94
118	Togo	1439	1411	108	125	0.49	0.48	0.32	0.43
119	Tunisia	6252	7423	53	54	0.94	0.86	0.86	0.89
120	Turkey	6510	7540	52	58	0.86	1.03	0.67	0.85
121	Turkmenistan	3668	8900	46	98	0.82	0.32	0.58	0.57
122	Uganda	1249	1363	111	103	0.48	0.85	0.29	0.54
123	Ukraine	4109	6086	62	65	0.63	0.88	0.81	0.77
124	UK	26332	28628	11	11	2.13	1.67	2.61	2.14
125	USA	33970	37437	1	4	2.63	1.58	3.15	2.45
126	Uruguay	8781	9087	44	42	1.02	1.34	0.93	1.10
127	Uzbekistan	1516	1812	100	94	0.64	0.48	0.65	0.59
128	Venezuela	5685	5842	64	61	0.94	0.73	0.81	0.83
129	Viet Nam	2014	2739	85	93	0.67	0.61	0.54	0.60
130	Yemen R.	788	920	123	113	0.58	0.60	0.27	0.48
131	Zambia	774	930	122	91	0.47	0.85	0.50	0.61
132	Zimbabwe	2499	1832	99	116	0.38	0.41	0.65	0.48

Source: World Bank, other international sources and own calculations.

Tabla A2. Education indicators 1995-2004 and Women participation 2008

Country	tyr 95f2	tyr 99f	Tyr 04	eduh 95	eduh 00	Gem 08	Wincr 08
Albania	5.18	5.49	5.49	141	105	-	-
Algeria	3.91	4.72	5.74	384	242	-	-
Angola	1.93	2.21	2.21	33	56	-	-
Argentina	8.12	8.49	8.95	294	562	0.692	0.56
Armenia	5.77	6.28	6.28	158	63	-	
Australia	10.31	10.57	10.91	1051	1210	0.866	0.73
Austria*	8.44	8.80	9.24	1213	1702	0.810	0.59
Azerbaijan	5.60	5.96	5.96	112	104	-	-
Bangladesh	2.32	2.45	2.61	31	22	-	-
Belarus	6.57	6.99	6.99	266	260	-	-
Belgium	8.55	8.73	8.96	1063	830	0.841	0.52
Benin	1.95	2.10	2.29	111	23	-	-
Bolivia	5.18	5.54	5.98	68	115	-	-
Botswana	4.70	5.36	6.17	399	432	-	-
Brazil	4.18	4.56	5.04	259	304	0.498	0.56
Bulgaria	6.50	6.87	6.87	245	200	0.605	0.66
Burkina Faso	2.04	2.26	2.26	12	24	-	-
Burundi	2.00	2.28	2.28	21	21	-	-
Cambodia	3.14	3.42	3.42	29	29	-	-
Cameroon	2.75	3.17	3.69	59	51	-	-
Canada	11.18	11.43	11.75	1620	1425	0.829	0.65
C. African R.	1.99	2.11	2.26	30	18	-	-
Chad	2.25	2.41	2.41	19	12	-	-
Chile	7.53	7.89	8.35	245	330	0.521	0.41
China	5.48	5.74	6.06	48	77	-	-
H-K.China	9.33	9.47	9.63	646	880	-	-
Colombia	4.68	5.01	5.43	209	253	-	-
Congo, DR	2.99	3.18	3.41	38	6	-	-
Congo, R.	4.27	4.68	5.20	101	33	-	-
Costa Rica	5.82	6.01	6.25	265	409	0.690	0.56
Côte d´Ivoire	3.02	3.64	3.64	90	72	-	-
Croatia	6.44	6.73	6.73	157	427	0.622	0.69
Czech R.	7.84	8.14	8.14	459	584	0.650	0.60
Denmark	9.86	10.09	10.38	1591	2311	0.887	0.74
Dominican R.	4.87	5.17	5.55	64	138	-	-
Ecuador	6.25	6.52	6.87	131	47	0.605	0.57

Egypt	4.24	5.05	6.06	181	159	-	-
El Salvador	4.05	4.50	5.06	40	117	-	-
Eritrea	2.76	3.06	3.06	26	22	-	-
Estonia	6.82	7.17	7.17	213	521	0.655	0.63
Ethiopia	2.02	2.33	2.33	26	24	-	-
Finland	9.82	10.14	10.53	1238	1454	0.892	0.72
France	7.94	8.38	8.91	1157	1336	0.780	0.62
Georgia	5.85	6.16	6.16	34	80	-	-
Germany	9.57	9.75	9.97	835	1075	0.852	0.61
Ghana	3.75	4.01	4.33	63	54	-	-
Greece	8.05	8.52	9.10	361	530	0.691	0.53
Guatemala	2.79	3.12	3.54	56	62	-	-
Guinea	2.45	2.83	2.83	40	40	-	-
Haiti	2.56	2.67	2.81	13	26	-	-
Honduras	3.89	4.08	4.33	78	89	-	-
Hungary	8.52	8.81	9.18	423	614	0.586	0.67
India	4.16	4.77	5.53	48	97	-	-
Indonesia	4.03	4.71	5.55	48	43	-	-
Iran	3.98	4.66	5.50	251	235	-	-
Ireland	8.79	9.02	9.30	1019	1371	0.727	0.58
Israel	9.06	9.23	9.44	910	1661	0.662	0.67
Italy	6.60	7.00	7.51	1055	1102	0.734	0.49
Jamaica	4.92	5.22	5.59	184	220	-	-
Japan	9.44	9.72	10.07	1003	818	0.575	0.46
Jordan	6.42	7.37	8.55	197	222	-	-
Kazakhstan	5.69	6.08	6.08	153	203	0.524	0.68
Kenya	3.50	3.99	4.60	90	63	-	-
Korea R.	10.09	10.46	10.93	443	586	0.540	0.52
Kuwait	6.54	7.05	7.69	1495	825	-	-
Kyrgyzstan	4.79	5.29	5.29	62	48	-	-
Lao	2.92	3.40	3.40	34	20	-	-
Latvia	6.78	7.22	7.22	346	402	0.644	0.67
Lebanon	5.43	5.81	5.81	47	76	-	-
Lesotho	4.25	4.47	4.73	84	156	-	-
Lithuania	6.34	6.77	6.77	143	483	0.614	0.72
Macedonia	5.75	6.06	6.06	40	297	0.644	0.49
Madagascar	2.49	2.76	2.76	10	15	-	-
Malawi	2.60	2.58	2.57	20	26	-	-
Malaysia	7.65	7.88	8.17	439	399	0.538	0.44

Mali	0.69	0.76	0.84	11	21	-	-
Mauritania	2.84	3.02	3.02	91	62	-	-
Mexico	6.37	6.73	7.18	423	439	0.603	0.42
Moldova	5.62	6.08	6.08	152	92	-	-
Mongolia	4.90	5.33	5.33	172	111	-	-
Morocco	4.77	5.12	5.12	200	216	-	-
Mozambique	1.01	1.19	1.43	34	16	-	-
Myanmar	2.29	2.44	2.64	16	10	-	-
Namibia	3.96	4.26	4.26	340	441	-	-
Nepal	1.53	1.94	2.44	31	37	-	-
Netherlands	8.96	9.24	9.59	1141	1353	0.872	0.66
New Zealand	11.31	11.52	11.79	1222	1430	0.823	0.72
Nicaragua	4.01	4.42	4.94	72	108	-	-
Niger	0.69	0.82	0.98	25	16	-	-
Nigeria	2.56	2.91	2.91	7	7	-	-
Norway	11.82	11.86	11.91	1949	2104	0.915	0.79
Pakistan	2.38	2.45	2.55	60	44	-	-
Panama	7.70	7.90	8.16	340	319	0.597	0.62
PapuaN.Guinea	2.09	2.39	2.77	180	54	-	-
Paraguay	5.73	5.74	5.75	99	203	-	-
Peru	6.92	7.33	7.85	55	138	-	-
Philippines	7.33	7.62	7.97	67	124	-	-
Poland	9.73	9.90	10.13	296	484	0.618	0.60
Portugal	4.54	4.91	5.38	642	1004	0.741	0.61
Romania	6.36	6.68	6.68	91	167	0.500	0.70
Russia	7.17	7.77	7.77	231	251	0.544	0.63
Rwanda	1.76	2.03	2.35	27	37	-	-
Saudi Arabia	3.48	3.84	3.84	89	890	0.297	0.17
Senegal	2.05	2.23	2.45	70	47	-	-
Sierra Leone	1.65	1.99	2.42	11	5	-	-
Singapore	7.82	8.12	8.49	729	639	0.782	0.52
Slovakia	7.14	7.50	7.50	380	432	0.638	0.59
Slovenia	8.10	8.39	8.39	443	924	0.625	0.62
South Africa	8.07	7.87	7.61	272	520	-	-
Spain	6.62	7.25	8.05	654	880	0.825	0.53
Sri Lanka	5.61	6.09	6.70	98	92	-	-
Sweden	11.23	11.36	11.51	1511	2082	0.925	0.84
Switzerland	10.18	10.39	10.64	1270	1351	0.829	0.66
Syrian A.R.	5.21	5.74	6.41	232	84	-	-

Tajikistan	4.00	4.53	4.53	130	19	-	-
Tanzania	2.83	3.17	3.17	32	12	-	-
Thailand	5.73	6.10	6.56	275	311	-	-
Togo	2.67	2.83	3.02	71	59	-	-
Tunisia	3.58	4.20	4.97	293	384	-	-
Turkey	4.57	4.80	5.07	157	193	-	-
Turkmenistan	4.56	4.97	4.97	247	113	-	-
Uganda	2.70	2.95	3.27	19	24	-	-
Ukraine	6.15	6.60	6.60	203	181	-	-
UK	9.03	9.35	9.75	955	1403	0.786	0.70
USA	12.18	12.25	12.33	1371	1627	0.769	0.64
Uruguay	6.88	7.25	7.71	192	233	0.542	0.57
Uzbekistan	4.93	5.41	5.41	263	142	-	-
Venezuela	5.35	5.61	5.94	418	247	0.577	0.54
Viet Nam	4.85	5.32	5.32	23	57	-	-
Yemen R.	1.73	2.00	2.00	114	78	-	-
Zambia	5.56	5.43	5.28	26	19	-	-
Zimbabwe	4.43	4.88	5.43	169	172	-	-

Note: Tyr=Total years of Education. Eduh=public expenditure per year and inhabitant. Sources: Barro and Lee for Tyr in 1995 and 1999, and own provisional estimations for missing data in those years and for all countries in 2004. World Bank for public expenditure and own calculations.

* UN(2008) for Gender Empowerment Measure (Gem) and Women/Men income ratio (Wincr08), with changes for Austria, where the value of Wincr08 in the United Nations statistics seems undervalued in comparison with Austrian statistics. For that reason we have used 0.59 instead of 0.40 for this variable and estimated, by comparison with Switzerland a value of Gem08 around 0.810 for Austria instead of the UN figure of 0.748.