AN EXPLORATORY CROSS-COUNTRY ANALYSIS OF GENDERED INSTITUTIONS

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Abstract

The standard empowerment model underlying gender policies by international organizations emphasizes women's access to resources. This paper presents an exploratory analysis of the relative importance of access to resources as compared to women's agency, recognizing that this agency may be limited by gendered institutional constraints. It presents a cross-country analysis with a variety of formal and informal gendered institutions, access to resources and wellbeing achievements. The regression analysis suggests that women's empowerment depends both on access to resources (positively) and on gendered institutions (negatively), with different institutions affecting different dimensions of empowerment.

INTRODUCTION[1]

Since the 1980s, gender policies at the international level have emphasized women's participation in the economy. In particular, international gender policies tend to concentrate on the promotion of women's access to resources, such as jobs, education, land, other assets, and credit. Recent literature on women's empowerment acknowledges that empowerment involves more than access to resources but also implies agency and an enabling institutional context, which together help women to achieve better wellbeing outcomes (Kabeer, 2001; Narayan, 2005a; Alsop, Bertelsen, Holland, 2006; Ibrahim and Alkire, 2007). In the light of the recent literature on women's empowerment, this paper will carry out an innovative exploratory analysis of the role of resources relative to women's agency, captured by gendered institutions that limit this agency. These are non-market institutions that constrain women's economic position as well as economic development in general and are measured in this paper, like all other variables, at the macro level. The next section will briefly discuss the empowerment literature. The two sections thereafter will introduce exploratory models and the data as well as the empirical analysis. The paper will end with a conclusion and policy implication.

The empirical analysis is a cross-country one, whereas most of the literature on women's empowerment is at the micro level. The advantage of a cross-country empirical analysis is that it allows for much more variation in institutions, and hence, it helps to understand more fully how these affect women's agency and access to

[1] This paper has enormously benefitted from discussions at several conferences and seminars. In particular, I would like to thank Arjun Bedi and Francesca Bettio for their helpful comments. Any possible remaining errors are my own responsibility.

resources. At the micro level, for example, a negative effect of gender norms on women's bargaining power has been demonstrated, even to the extent that it overrides a positive effect of resources. In support of a macro-level analysis of empowerment, a useful database has become available, with indicators for gendered institutions for most countries of the world (OECD, 2006). Obviously, data on institutions – which are qualitative of character – have their limitations for quantitative analysis and require a careful assessment in terms of measurement and multi-collinearity. These limitations will be discussed in the empirical part of the paper.

WOMEN'S EMPOWERMENT

Recently, the empowerment literature has been enriched by conceptual and empirical work around issues of measurement, comparison, subjective/objective dimensions, and the recognition of different domains of empowerment (Narayan, 2005a; Walby, 2005; Alsop, Bertelsen, Holland, 2006; Ibrahim and Alkire, 2007). One of the definitions of empowerment emerging from this literature has been formulated by Deepa Nayaran (2005b: 5): 'Empowerment is the expansion of assets and capabilities of poor people to participate in, negotiate with, influence, control, and hold accountable institutions that affect their lives.' Although there are some differences, the literature tends to agree that women's empowerment is a process involving *agency* (referred to in the definition above with wordings like 'negotiate', 'influence', and 'control'), access to *resources* (or assets), and *institutions*, which together affect how women are able to improve their wellbeing absolutely, and, more importantly, relative to men. Moreover, research suggests that the three constitutive elements of

empowerment – agency, resources and institutions – tend to be closely related, so that the absence of one element cannot, or only partially, be compensated by the presence of another. Indeed, as the capability approach has pointed out, agency without resources is rather meaningless when being able to make one's own choices and having the self-confidence to do so are not matched by any real opportunities to choose from (Alkire, 2002 and Robeyns, 2003). While the other way around is equally compelling in cases where women may have access to resources but feel constrained by internalized oppression to actually make use of the available resources (Sen, 1990; Nagar and Raju, 2003).

The role of resources for women's empowerment is well understood. Already in 1986, Pampel and Tanaka demonstrated a U-shaped relationship between economic development and the female labour participation rate, in which the latter might be considered, though with qualifications, as a proxy for empowerment. More recent empirical studies have shown that access to land (Agarwal, 1994; Doss, 2006; Allendorf, 2007), access to credit (Kabeer, 2001) and access to education (Jejeebhoy, 1995) are all important for women's empowerment, and, as other studies show, also for economic development (Klasen, 2002; Lagerlöf, 2003). However, human capital investment is arguably most effective in a context of medium or high economic development, which is not always the case in agricultural economies relying on low technology. In such cases, education, in particular for women, may not be translated effectively through labour market participation into higher incomes and GDP growth (Barro, 2000)[1]. In general, however, the literature indicates that education, at least primary education, tends to have a positive effect on development, and for women through more routes than for men including lower fertility, which may contribute to their empowerment. The role of agency on women's empowerment, however, has

only recently come under the attention of researchers. Agency has been defined ‘as an actor’s or group’s ability to make purposeful choices’ (Alsop et al., 2006: 11), recognizing that psychological as well as social factors are crucial for this. The authors explain that ‘actors need a raised level of consciousness if they are to translate their assets into choices – that is, to become ‘agents’’ (ibid). Drawing on this insight, Solava Ibrahim and Sabina Alkire (2007: 8) define agency, embedded in the social realm, as ‘the ability to act on behalf of what you value and have reason to value.’ Both understandings of agency combine psychological factors with social factors of having control over assets and facing real options. This understanding of agency as embedded in the social realm points at a relationship of agency with the third element for empowerment, namely institutions.

Women face a variety of intangible constraints to plan their lives, to choose their goals, and to make their own choices, inside and outside households, often more so than men. Such constraints, understood as *gendered institutions* (Goetz, 1997), limit their opportunities both in terms of access to resources as well as their agency (Narayan, 2005b). Institutional economics distinguishes between formal institutions, such as laws and regulations, and informal institutions, which are intangible norms, followed without much questioning (Williamson, 2000, Hodgson, 2006). Both types of institutions reflect power relations since institutions tend to be supported and defended by those who derive advantages from these. For gendered institutions, these power relations are embedded in formal and informal expressions of patriarchy (Folbre, 1994; Goetz, 1997). Formal gendered institutions than can be interpreted as codified gendered social norms such as inheritance laws, property rights, or the fiscal system, with different effects for women and men. On the other hand, informal gendered institutions can be understood as the set of non-codified social norms and

cultural practices that impact differently on men and women. This influence of informal gendered institutions leads to stereotype masculine and feminine agency, Bina Agarwal (1997: 1) has explained, by 'ascribing to women and men different abilities, attitudes, desires, personality traits, behaviour patterns, and so on'. This not only results in adaptive preferences (Sen, 1990), which are an internalization of gender inequalities, but experimental research has indicated that gender stereotypes also lead to different self-evaluations, lowering women's self-esteem, motivation and confidence (Biernat et al., 1998; Shih et al., 2006). Hence, women's agency seems negatively affected by gendered rules, laws and rights – formal gendered institutions – on the one hand, and by gendered social norms, cultural practices and beliefs – informal gendered institutions – on the other hand.

Most studies that pay attention to the impact of gendered institutions on women's empowerment have been carried out at the micro level. While these studies in general find a positive impact of access to resources on women's empowerment, as was already referred to above, empirical studies using detailed survey data and case study data indicate that this is not always the case due to the influence of gendered norms, networks, beliefs, and practices (Blumberg, 1991; Mayoux, 2001; Odebode and van Staveren, 2007). For example, a detailed household bargaining study on China has recently found that the standard hypothesis on the role of resources in empowerment, '… that an increase in women's relative household income contribution will enable them greater household decision-making control, is not supported by any regression results …' (MacPhail and Dong, 2007: 114). Or, to give another example, Sharada Srinivasan and Arjun Bedi (2008) have found for Tamil Nadu, that higher levels of education for women does not reduce the incidence of daughter elimination. So, the higher women's educational levels, the more often

women undertake sex-selective abortions, and the stronger the inequality in the state's sex ratio. These findings therefore suggest that it is relevant for the understanding of women's empowerment to focus not only on access to resources but also on the intangible constraints that prevent women from benefiting of resources.

One way to analyze the impact of institutions on agency is a cross-country analysis in which differences in countries' gendered institutions are included in the analysis of women's empowerment. There are only very few studies available that have analyzed gendered institutions in relation to women's wellbeing at the macro level. They have found that labour market segmentation, discrimination, high female unemployment rates and the gender wage gap all limit the benefits that women may derive from their education and labour force participation (Jayaweera, 1997; Elson, 1999; Seguino, 2000; Casale, 2004; Busse and Spielman, 2006). Moreover, a macro-level study by Klasen and Wink (2003) confirms the micro analyses of a positive relationship between women's education and daughter elimination referred to above. What is much less clear from the literature is which types of gendered institutions are responsible for the negative, or at least not positive, effects of women's increased access to resources on their empowerment. This requires a cross-country analysis in which a range of formal and informal gendered institutions is included in order to explore the relative impacts of resources and institutions on womens' empowerment.

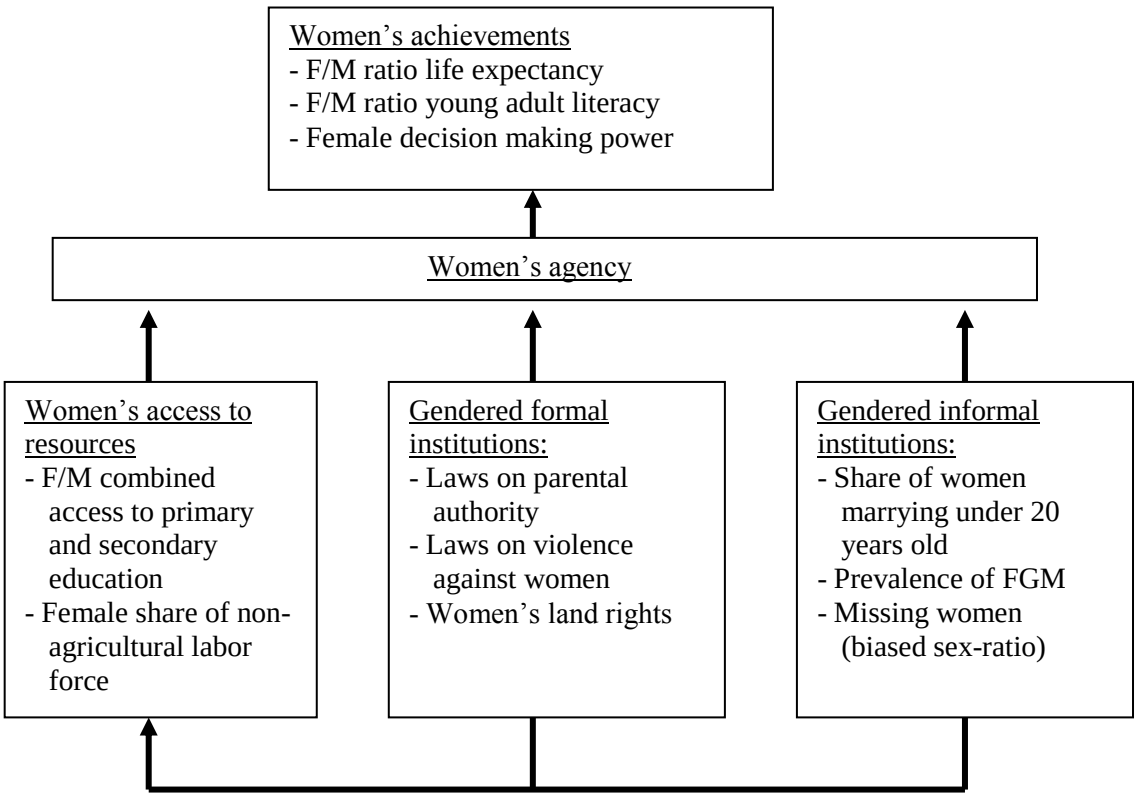
WOMEN'S EMPOWERMENT: MODEL AND DATA

The Empowerment Model

Given the limitations of working with a cross-country dataset with rather crude estimates of variables and no observations over time, which does not allow for panel estimations, I will employ a simplified model. In this model, variables express gender gaps rather than absolute values, because the concepts of gender and empowerment are relative and not absolute. Women's achievements are measured as gender gaps in achievements in health, education and decision making power. Resources are defined in terms of women's relative access to education (gender gaps in combined primary and secondary school enrolment rates) and to jobs (female share of the non-agricultural labour force). Gender gaps are mostly measured as ratios of female scores over male scores, for example for education. In a few cases they are taken as percentages of female out of the total. When the variables will be introduced below, each variable construction will be explained. The appendix provides a list of all variables. The two categories of institutions, formal and informal, each consist of three variables, which are taken from the OECD-GID (Gender, Institutions and Development) database (see explanation below). The empowerment model is presented in figure 1: formal and informal institutions influence women's access to resources, whereas these institutions and women's access to resources together influence women's achievements. This role of gendered institutions, hence, reflects the views in the empowerment literature that gendered institutions not only affect women's and men's access to resources but also that they impact directly on women's achievements, through affecting their agency. Obviously, the direction of causality is not straightforward and various endogeneity effects may occur. For example, a higher

ratio of girl education is likely to increase the female non-agricultural labour force participation rate, whereas higher women's empowerment may increase the average age at marriage. Hence, the regressions results should be taken with caution, because coefficients and their estimated level of significance and/or R square may be biased upwards due to an implicit cumulative effect of feedback effects. But, as indicated earlier, the data set has no observations over time. The estimations presented here only serve an exploratory purpose. Further research is clearly needed and will hopefully be able to reduce endogeneity effects (see for a further discussion of measuring and modelling empowerment: Khwaja, 2005). Hence, gendered institutions are not only likely to constrain women's access to resources, as others have argued with bivariate regression analysis of the same data set (Morrisson and Jütting, 2005),

Figure 1. Women's Empowerment Model



but they are also likely to affect women's agency, directly affecting women's empowerment, irrespective of women's access to resources. This section will empirically explore these two ways in which gendered institutions are expected to affect women's empowerment.

Variables and Data

The data are taken from the World Bank World Development Indicators and the OECD –GID data base. These are the only two datasets with a substantial number of developing countries included for which gender disaggregated data are available. For achievements, the three variables selected are: female/male ratio in life expectancy (FMlife), female/male ratio in young adult literacy (15-24 years) (FMylit), and Female decision making power (Fdec) in politics and the economy (as a percentage of all parliamentarians and managers & professionals). The life expectancy variable reflects women's relative health status and data are widely available and is taken as the ratio of female over male life expectancy. The young adult literacy variable, as a ratio, was chosen because it reflects how current levels of illiteracy may be affected by resources and institutions. Moreover, literacy was preferred over school enrolment because literacy is an expected outcome of school enrolment, so it is more suitable as an achievement measure of wellbeing. The third achievement variable that was selected is a composite index of female decision making power, which is available in the data set as an unweighted average of three indicators that all refer to senior positions: the share of female parliamentarians in the political arena, and the share of women among administrators and managers in the administrative arena, and the share of women among professionals and technical specialists which are top occupations in the standard classifications of occupations.

The two resource variables that have been selected, are key variables in the empowerment literature: access to education and paid employment. They are measured as the gender gap (a ratio) in the combined primary and secondary school enrolment rate (FMedu), and the female share (a percentage) of the non-agricultural labour force (Fnalf). The first one reflects broadly women's relative educational levels compared to men, excluding tertiary education since in many developing countries there is only a small minority of both men and women enrolled at that level. The second resource variable, the female share of the non-agricultural labour force, reflects women's relative access to paid labour. Women's share of the agricultural labour force was excluded because in many developing countries this includes a large proportion of unpaid family workers, who do not derive an independent income from their work.

The variables on gendered institutions lie between zero and one: the more asymmetric the institutions are, disadvantaging women, the closer the values are to one. Six variables were chosen from the thirteen gendered institutions in the GID data base. These were selected using the following criteria[2]. First, variables that are very country or religion specific were dropped, such as polygamy and the obligation to wear a veil in public. Second, there is a risk of multicollinearity when including all available variables in the regression equation. Table 1 below shows the Pearson zero-order correlations between the nine remaining GID variables. The table shows a wide range of correlations, which are all statistically significant, mostly at the 1% confidence level. There appear to be quite high correlations between the four property rights variables: inheritance laws (INH), land rights (LR), credit rights (CR) and other property rights (PR), as shown in the shaded cells. From these four variables, the variable for land rights was selected because they are basic for women in developing

countries, probably more urgent than other property rights. The other correlation values are tolerable, with r = 0.70 between parental authority and land rights as the highest value, while most values are below r = 0.50. The list of gendered institutional variables hence consist of three formal institutions: parental authority (PA), land rights (LR) and laws against violence against women (VIO), and three informal institutions: the extent of the practice of female genital mutilation (FGM), early marriage (EM) and missing women (MW) in the demographic structure of a country.

Table 1. Correlation Table for the Selection of Variables for Gendered Institutions

	PA	INH	LR	EM	FGM	MW	VIO	PR	CR
PA	1.00	0.83 ***	0.70 ***	0.62 ***	0.52 ***	0.477 ***	0.49 ***	0.66 ***	0.61 ***
INH	0.83 ***	1.00	0.73 ***	0.53 ***	0.43 ***	0.461 ***	0.47 ***	0.80 ***	0.74 ***
LR	0.70 ***	0.73 ***	1.00	0.68 ***	0.49 ***	0.313 ***	0.49 ***	0.85 ***	0.78 ***
EM	0.62 ***	0.53 ***	0.68 ***	1.00	0.49 ***	0.229 ***	0.50 ***	0.58 ***	0.48 ***
FGM	0.52	0.43 ***	0.49 ***	0.49 ***	1.00	0.179 **	0.36 ***	0.40 ***	0.36 ***
MW	0.48	0.46 ***	0.31 ***	0.23 **	0.18 **	1.000	0.20 **	0.31 ***	0.32 ***
VIO	0.49	0.47 ***	0.49 ***	0.50 ***	0.36 ***	0.203 **	1.00	0.47 ***	0.47 ***
PR	0.66	0.81 ***	0.85 ***	0.58 ***	0.40 ***	0.307 ***	0.47 ***	1.00	0.92 ***
CR	0.61	0.74 ***	0.78 ***	0.48 ***	0.36 ***	0.315 ***	0.44 ***	0.92 ***	1.00

Notes: N = 99. Level of significance: p < 0.1; ** = p < 0.05; *** = p < 0.01. Shaded cells: these variables were dropped due to high correlations among each other.
Source: GID online, accessed 17 November 2008: http://stats.oecd.org/WBOS/default.aspx?DatasetCode=GID&lang=en.

The GID institutional database has in most cases transformed qualitative information into quantitative data, which necessarily involves some degree of subjectivity. On the other hand, much of the information refers to laws, which are either in place or not, while a few other variables are already quantitative, such as the extent of early marriage. For more detailed information about the opportunities and constraints of the database, please see Christiaan Morrisson and Johannes Jütting (2005). The GID database contains the kind of institutional data that others also have used in analyzing women's empowerment, for example Karen Oppenheim Mason (2005), using data on freedom of movement and wife beating for five Asian countries, and Jayaweera (1997) and Christiaan Grootaert (2005) using the UNDP Gender Development Index (GDI) and Gender Empowerment Measure (GEM) for the analysis of women's empowerment in developing countries and in transition economies. A third limitation of the GID database is that it uses for a single variable observation information about gendered institutions for a variety of years, because of lack of availability of all information for a single year. This, however, should not be a very serious problem because gendered institutions tend to change slowly over time, as is the case with institutions in general (Hodgson, 2006).

EMPIRICAL ANALYSIS[3]

Resource Models

The first step in the empirical analysis, as portrayed in figure 1, is the testing of the resource models for education and employment. The two models have independent variables for resources (RES_i), with i referring to women's relative access to

education (FMedu) and their share in the non-agricultural labour force (Fnalf). The dependent variables are a constant, C, the six gendered institutions, referred to as GI_j, with ε as the error term:

$$RES_i = C + \beta_1 GI_j + \varepsilon \quad (1)$$

Table 2 presents the regression results for the two resource models. The results for the education model show that five out of six coefficients have the expected negative sign and that three coefficients are statistically significant: land rights (-0.13), early marriage (-0.27), and female genital mutilation (-0.10). Hence, the lower women's access to land ownership and the higher the prevalence of early marriage and female genital mutilation, the lower is women's access to education. Whereas marriage between 15 and 19 years is a clear direct constraint on women's school enrolment, lack of land ownership and experience of female genital mutilation are expressions of a patriarchal norm that regards women as men's property, handed over from fathers' to husbands' control, which therefore does not stimulate women's individual accumulation of knowledge and skills.

For the second model, with the female share of the non-agricultural labour force as dependent variable, the results show again three out of the six institutional variables being statistically significant, but only one is the same as in the education model. Of the three non-significant variables two have an unexpected sign, which is difficult to interpret, but parameter values are low. The three variables that are statistically significant all have expected negative signs: parental authority (-0.09), early marriage (-0.34), and missing women (-0.19). In other words, the more parental

authority is granted to the father and the higher the extent of early marriage and missing women, the lower is women's access to the non-agricultural labour force[4].

Table 2. Women's Access to Education and Employment

Indep. Var.	FMedu	Fnalf
PA	0.00	-0.09***
	(0.04)	(0.03)
LR	-0.13***	0.01
	(0.04)	(0.03)
VIO	-0.03	-0.07
	(0.06)	(0.05)
EM	-0.27**	-0.34***
	(0.11)	(0.09)
FGM	-0.10*	0.05
	(0.05)	(0.04)
MW	-0.02	-0.19***
	(0.07)	(0.06)
Constant	1.06***	0.49***
	(0.03)	(0.02)
R^2	0.50***	0.58***
	(F: 15.058)	(F: 21.269)
N	96	99

Notes: Coefficients with standard errors in brackets. Level of significance: t and F- statistics: * = p < 0.1; ** = p < 0.05; *** = p < 0.01. Source: GID online, accessed 17 November 2008: http://stats.oecd.org/WBOS/default.aspx?DatasetCode=GID&lang=en.

These negative relationships can be explained by underlying patriarchal norms that limit women's freedom to earn an independent income outside a family farm and apart from domestic responsibilities.

Although both models have women's access to resources as dependent variables, they clearly have different results. This is because access to education and access to non-agricultural employment measure two different types of resources, which do not necessarily go together. In some countries, women have higher levels of education than men (Argentina and Lesotho for example), while having relatively low levels of labour force participation, whereas in other countries women's education is very low while they do participate in the non-agricultural labour force at a rate that does not differ very much from men, as is the case in various African and South Asian countries. Education provides women with knowledge and information to make their own choices, while paid employment provides them with the actual means to make choices that would require resources and may go against the will of a male partner in the household. Therefore, they do not measure the same thing. Hence, we would not expect a high correlation coefficient between these two dependent variables. This was confirmed in a test with cross-correlations between the female/male education ratio and the female share of the non-agricultural labour force, which resulted in $r = 0.45$.

The resource models have two implications. First, they show that the more asymmetric gender norms and practices are, the less is women's access to resources. This confirms the bivariate results obtained by the initiators of the GID database, Christian Morrisson and Johannes Jütting (2005). Second, the models suggests that informal gendered institutions are more often a constraint for women's access to resources than formal gendered institutions: in each of the two models, two informal against one formal institutional variable were statistically significant. This suggests

that social norms put a stronger constraint on women's access to resources than laws and regulations.

Achievement Models

The models for women's achievements can be specified as follows, in line with figure 1:

$$ACH_l = C + \beta_2 GI_j + \beta_3 GDPln + \beta_4 GDPlnSQ + \beta_5 RES_i + \varepsilon \qquad (2)$$

Achievements (ACH_l) are measured with three variables. FMlife as the female/male ratio in life expectancy and FMylit as the female/male ratio in the young adult literary rate, whereas Fdec is the average share of women as parliamentarians, administrative persons and managers, and professionals and technicians. Gross Domestic Product is included as GDPln and GDPlnSQ as control variables for level of development, also included as a squared variable in order to account for possible nonlinearity, since the sample includes both developing and developed countries. The achievement model for literacy has a new variable, namely primary school enrolment, with a time lag, FMprim91. This variable replaces the current education variable which would lead to high autocorrelation. It is expected to have a high coefficient, because there is a likely strong relationship between school enrolment in the past and youth literacy today. The two resource variables (RES_i) are the ratio of female over male education and the share of women in the non-agricultural labour force, as before, and also the six gendered institutions are the same as before. The results for the three achievement models are shown in table 3. It is important to note here that lack of data for some

Table 3. Women's Achievements in Health, Education, and Decision making

Ind. Var.	FMlife	FMylit	Fdec
GDPln	0.09**	0.15	0.21*
	(0.04)	(0.10)	(0.10)
GDPlnSQ	-0.01**	-0.01*	-0.01*
	(0.00)	(0.01)	(0.00)
PA	-0.02**	-0.02	-0.03
	(0.01)	(0.02)	(0.03)
LR	-0.04***	-0.00	-0.00
	(0.01)	(0.03)	(0.03)
VIO	0.02	0.03	-0.05
	(0.01)	(0.04)	(0.04)
EM	0.04	-0.29***	0.09
	(0.04)	(0.08)	(0.10)
FGM	0.00	-0.01	0.01
	(0.01)	(0.04)	(0.04)
MW	-0.03	0.01	-0.06
	(0.02)	(0.04)	(0.05)
Fnalf	0.04		0.23**
	(0.03)		(0.09)
FMedu	-0.06**		0.12
	(0.03)		(0.07)
FMprim91		0.79***	
		(0.07)	
Constant	0.70***	-0.33	-0.95**
	(0.16)	(0.41)	(0.46)
R^2	0.55***	0.94***	0.63***
	(F: 9.600)	(F: 70.403)	(F: 13.154)
N	90	53	90

Notes: In the second model, the female/male ratio of primary education enrolment in 1991 replaces the current education enrolment variable, which would otherwise be very similar to the dependent variable and hence would cause strong auto-correlation. Coefficients with standard errors in brackets. Level of significance: * = $p < 0.1$; ** = $p < 0.05$; *** = $p < 0.01$.
Sources: World Development Indicators, World Bank, 2008: http://data.worldbank.org/products/data-books/WDI-2008 and GID online, accessed 17 November 2008: http://stats.oecd.org/WBOS/default.aspx?DatasetCode=GID&lang=en.
Empowerment data on achievements for period 2003-2005 and 1991 for FMprim91.

variables has seriously reduced the number of countries included, in particular for model 2, on youth literacy. This makes the results of the second model not very well comparable with the other two models.

The results for the achievement models as presented in table 3 indicate quite varied relationships for women's empowerment. The achievement model for the gender gap in health, measured as the male/female ratio in life expectancy shows that the level of GDP per capita has a relatively strong positive impact (0.09). Also the squared income variable is significant, but negative (-0.01), implying a nonlinear effect of income. This may indicate that men are catching up with women's life expectancy rate when countries get richer, with women following less healthy lifestyles, including through smoking and overweight, in richer countries (see for example a study on the US: Ezzati et al., 2008). Of the two resource variables, only one is statistically significant, women's access to education (-0.06), but it has a negative sign, which is difficult to interpret. Two formal gendered institutions do have a statistically significant negative impact on women's relative health: parental authority (-0.02) and land rights (-0.04). This suggests that gender biased laws and regulations have a stronger impact on women's relative health achievements than gender norms and beliefs.

The achievement model for the gender gap in youth literary shows that GDP is not statistically significant, whereas GDP squared is only barely so, and negative. Income, hence, does not seem to be a strong determinant of women's relative educational achievements. As expected, the gender gap in the lagged primary school enrolment rate, is positive and statistically significant (0.79). This may suggest that the international efforts to achieve MDG 3 may not depend so much on economic development in general but on spending on girls' education. But also the informal

institution of early marriage appears to be influential (-0.29), and statistically significant, which has a clear link to girl's access to education.

The final achievement model, the model for women's decision making power, shows again a different picture. Here, the level of economic development has a relatively strong statistically significant impact, again suggesting nonlinearity (0.21 for lnGDP and -0.01 for lnGDP squared). Women's relative access to jobs has a relatively strong positive and statistically significant impact on women's decision making power (0.23). This may be explained probably not only by the income effect but also by the social participation effect – that is, a strengthening of women's agency – of non-agricultural jobs for women. This effect is important for taking up leadership positions in politics, administration, and management. Finally, when looking at the results for gendered institutions, we see that none of the coefficients is statistically significant. Hence, it is not so much unequal laws or biased social norms that constrain women's leadership roles but low labour force participation and low level of economic development which form hurdles for women to break through the glass ceiling in the economy and politics.

CONCLUSION

The overall picture from the extended women's empowerment model is fourfold. First, the level of development has an important impact on women's achievements in health and political and economic decision making power, but not on literacy. Also, income seems to have a nonlinear effect on women's achievements. Second, in each of the three achievement models in table 3, one of the two resources variables is

statistically significant (even though the negative sign could not be explained in the health achievement model). Third, depending on the type of achievement, different gendered institutions play a role, or none at all. While for health, formal institutions appear to be significant constraints, for education it was an informal institution that appears to limit women's achievements, whereas for political and economic influence, none of the gendered institutions seems to matter. This result suggests that gender policies would be more effective when contextualised to a country's binding constraints in terms of specific laws, regulations, social norms and cultural practices that may negatively affect particular dimensions of women's empowerment. So, legal changes may need to be prioritized to improve women's relative health, whereas the traditional practice of early marriage would be a more likely candidate to address for achieving MDG 3. Fourth, the results point out that women's access to resources is important but not sufficient for women's empowerment. Gendered institutions seem to put a constraint on women's agency, which prevents them from turning their resources effectively into wellbeing achievements.

Of course, these are only exploratory results which need further analysis. They suggest that gender policies may become more effective when they are contextualised and not only help women to increase their access to resources, but also address the constraints to their agency from laws, regulations, norms and practices that underlie particular gendered institutions.

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NOTES

[1] There is more empirical research about the relationship between gender inequality or female labour participation and economic growth. But this is not the topic of this paper, so I will not discuss that literature. Others have provided overviews of women's position across countries, such as UNIFEM, UNDP and the World Economic Forum, but have not included empirical analyses with possible underlying variables . For that reason that literature was also omitted from this paper.

[2] It should be noted that for some variables, for developed countries there is (almost) no variation. But excluding the developed countries from the analysis would result in a dramatic reduction in the number of cases, with subsequent negative impact on the econometric results. For property rights and parental authority the values are zero for all but one OECD country. Only for violence there is considerable variation for OECD countries, with a mean of 0.31 and a standard deviation of 0.16. Early marriage also has some variation for OECD countries.

[3] All models were run using linear regression analysis with SPSS version 16. The countries included are all countries for which data was available, the majority being developing countries in Africa, Asia and Latin America, including China and India and excluding small island economies – see also the appendix. There are no weights for population size, following the standard in cross-country analyses with social data.

ANNEX

This annex provides first a list of all variables presented in the tables and then a list of countries included.

Variable list

CR = credit rights of women

EM = early marriage of women (under age 19)

Fdec = female decision making power (Fdec) in politics and the economy (as a percentage of all parliamentarians and managers & professionals)

FGM = female genital mutilation

FMedu = female-male ratio in primary and secondary enrolment

FMlife = female/male ratio in life expectancy

Fnalf = female non-agricultural labour force participation rate

FMprim91 = female-male ratio of primary school enrolment in the year 1991

FMylit = female/male ratio in young adult literacy (15-24 years)

GDPln = GDP per capita in USD, natural logarithm

GDPlnSQ = GDP per capita in USD, natural logarithm, squared

INH = inheritance rights of women

LR = land rights of women

MW = missing women in demographic statistics

PA = parental authority over girls

PR = property rights of women, other than land rights

VIO = laws on violence against women

Country list

It would take too far to give 5 country lists, each for every model included in tables 2 and 3. To give an indication of the countries included, I will give two country lists. The first list, called table 2, is of the 96 countries included in the education model of table 2. The second list, called table 3, is of the 53 countries included in the youth literacy model of table 3. As can be seen, the majority of countries in both lists are developing countries, including large countries like china and India and excluding very small countries.

Country list table 2:

Algeria, Angola, Argentina, Austria, Bangladesh, Belgium, Benin, Bolivia, Botswana, Brazil, Bulgaria, Burkina Faso, Cameroon, Canada, Central African Republic, Chad, Chile, China, Colombia, Costa Rica, Cote d'Ivoire, Cuba, Czech Republic, Denmark, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Finland, France, Germany, Ghana, Greece, Guinea, Haiti, Honduras, Hungary, Iceland, India, Indonesia, Iran, Ireland, Italy, Japan, Kenya, Korea, Luxembourg, Madagascar, Malawi, Malaysia, Mali, Malta, Mauritania, Mauritius, Mexico, Mozambique, Namibia, Nepal, Netherlands, New Zealand, Nicaragua, Niger, Norway, Pakistan, Panama, Paraguay, Peru, Philippines, Poland, Portugal, Romania, Senegal, Slovak Republic, South Africa, Spain, Sudan, Sweden, Switzerland, Syria, Tanzania, Thailand, Togo, Tunisia, Turkey, Uganda, Ukraine, United Kingdom, United States, Uruguay, Venezuela, Zambia, Zimbabwe.

Country list table 3:

Algeria, Angola, Benin, Bolivia, Botswana, Bulgaria, Burkina Faso, Central African Republic, Chad, Chile, China, Colombia, Costa Rica, Cote d'Ivoire, Dominican Republic, Ecuador, Equatorial Guinea, Ghana, Guinea, Honduras, India, Indonesia, Ireland, Italy, Kenya, Madagascar, Malawi, Malaysia, Mali, Malta, Mauritania, Mauritius, Mexico, Namibia, Nepal, Nicaragua, Niger, Peru, Philippines, Russian Federation, Senegal, South Africa, Sri Lanka, Sudan, Switzerland, Syria, Tanzania, Thailand, Togo, Tunisia, Turkey, Uganda, Ukraine.