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Does gender composition of receiving countries' parliament matter for the pattern of Foreign Aid?

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Abstract

This paper seeks to evaluate whether the gender composition of Parliaments in recipient countries may exert an influence in determining both the level of foreign aid and its allocation to specific sectors. Furthermore, we make an attempt to assess if women's different preferences as policy-makers may also have an impact on aid effectiveness and if the latter may be linked to the level of women political power. The study uses data from the World Bank and OECD (CRS) databases on 37 African countries over the period 1995-2014. The empirical strategy adopted enables us to overcome endogeneity problems arising from the linkages between Aid and Women in Parliament. Empirical findings show that women in Parliament may exert an influence in determining the level of aid, both total and that devoted to social infrastructures sectors, as well as their effectiveness.

Keywords: Foreign aid, Gender, Developing Countries

JEL Classification: F35, J16, O1, O43

1. Introduction

In recent years the idea that women behave in a different manner with respect to men in government affairs and in the political system has widely spread. According to the experimental literature the choices that women involved in political institutions make are more socially oriented than men's, because they are more altruistic and more oriented towards family needs (Goetz et al. 2003, Eckel and Grossman, 1998). Brollo and Troiano (2016), for example, find that female mayors in Brazil attract more discretionary transfers, provide more pre-natal health and are less corrupt than their male counterparts. Chattopadhyay and Duflo (2004), studying the effects of political reservation for women in Indian villages find that, after the rise in women presence in political institutions, policy decisions change in a way that reflects better their interests and preferences. Other researchers (Devlin and Elgie, 2008) demonstrate that, when empowered, women take decisions that promote policies for health, children and family and in general for the social sector, which represents the one collecting most of aid.

Another important aspect, emphasized by the economic debate, is the networking activity and the international solidarity among women present in political institutions (Devlin and Elgie, 2008). In this line, Galligan (2004), looking at Northern Ireland experience, finds that women feel to be better represented by other women and try to rise their gender solidarity.

In this paper, we analyze another possible effect of the female political participation, questioning whether women in parliament may attract more transfers and foreign aid and may influence the distribution of these resources between socio-economic sectors. The idea is that, when empowered, women can use transfers and foreign aid differently from their male counterparts, rather following their own preferences (Brollo and Troiano, 2016).

On the other side, Alesina and Dollar (2000) show that donors prefer to send foreign aid to countries characterized by good institutions and lower levels of corruption. Given Dollar and Gatti (1999) and Swamy et al. (2001) evidences of women in parliament particularly effective in promoting good policies and fairer decision processes, one may conclude that they can also attract more foreign aid.

Besides, the literature states that women are more sensitive to specific well-being needs like education, health, family and gender discrimination (Wängnerud, 2009; Lovenduski and Norris, 2003; Ozdamar, 2017). Consequently, women preferences may favour a larger allocation of aid resources to social infrastructures expenditures.

Following these assumptions, we investigate whether the policy maker identity may exert any influence in the foreign aid decision process. The key point is that this process is generally highly conditioned by the quality of institutions, i.e. by the degree of corruption, the altruistic/selfish attitude of policy makers and their sensitivity to collective or individual groups' well-being. In particular, our aim is to disentangle the influence exerted on the foreign aid decision process by female political participation in recipient countries' parliaments. As far as we know, the only attempts present in the empirical literature refer to the female political empowerment in donor countries.

The study is conducted on a sample of 37 African countries and covers the interval 1995-2014. The sample selection is based on the evidence that, although these countries collected most of the foreign Aid, they performed worse than countries in the rest of the world. Our intent is to verify whether women in Parliament of recipient countries may contribute to change in any way the pattern and the effectiveness of development Aid. An appropriate econometric methodology is used to overcome problems of endogeneity of explanatory variables, in particular the variable women in parliament, will be instrumented with an instrument based on linguistic gender characteristics and universal suffrage.

The results show that a higher share of women in parliament has the ability to attract more overall foreign aid and, in particular, that sent to the Social Sector (Health and Water supply & sanitation). In addition, when women decide on foreign aid for health they manage to improve infant mortality rate. The reason may be their higher interest to for social problems and human beings weaknesses.

The rest of the paper is structured as follows: section two presents the literature review and an outlook on the gender political representation in the African context; section three describes dataset; section four presents the empirical strategy and the econometric results on the impact of women participation on aid attractiveness; section five provides evidences on the impact of women on aid performances; section six concludes.

2. Literature review

2.1 Women in institutions

The theme of women in institutions has long been debated in the literature. Some studies (Jain, 1996; Chattopadhyay and Duflo, 2004; Paxton et al., 2008; Childs et al. 2005) suggest that the involvement of women in politics brings considerable changes within societies. Some empirical

analysis on this issue (Shwindt and Bayer, 2006; Shevchenko, 2002; Caiazza, 2004; Powley, 2006) shows that when the presence of women in Parliament increases, more emphasis is given to policies against gender discrimination and those promoting the support for health and the family. According to this literature, there are several reasons why women govern differently than their male colleagues (Goetz et al., 2003; Croson and Gneezy, 2009; Chattopadhyay and Duflo, 2004; Eckel and Grossman, 1998). Women have different life experiences that they use to support their political decisions. In particular, Chattopadhyay and Duflo (2004) observe that women in politics invest more in infrastructure directly relevant to their own needs. Reingold (2003), by studying the context of legislators in the US, finds evidence of a gender solidarity and shows that women themselves greatly responsible to represent other women and their interests. Galligan (2004) confirms this outcome by showing that in Northern Ireland nearly one third of the female voting population thinks that a woman would better represent their interests.

As regards the motivations for entering in politics, women behave differently than men. An Inter Parliamentary Union (IPU, 1999) survey of women parliamentarians from 65 countries showed that 40% of respondents entered politics because of their social interests and 34% through non-governmental organizations, unlike the more traditional path of political party often followed by their male counterparts. This result closely reflects a well-established tendency among women to engage in civil society as a way to promote projects that support the survival of families. Eckel and Grossman (1998) find that women are more "socially orientated" (altruistic), and men are more "individually orientated" (selfish). They also find that women on average donate more than twice as much as men do, even when the donor cannot be traced back. Hicks et al. (2016) also found that an increase of women in government in donor countries increases the total amount of aid sent and the portion of it allocated to social infrastructures.

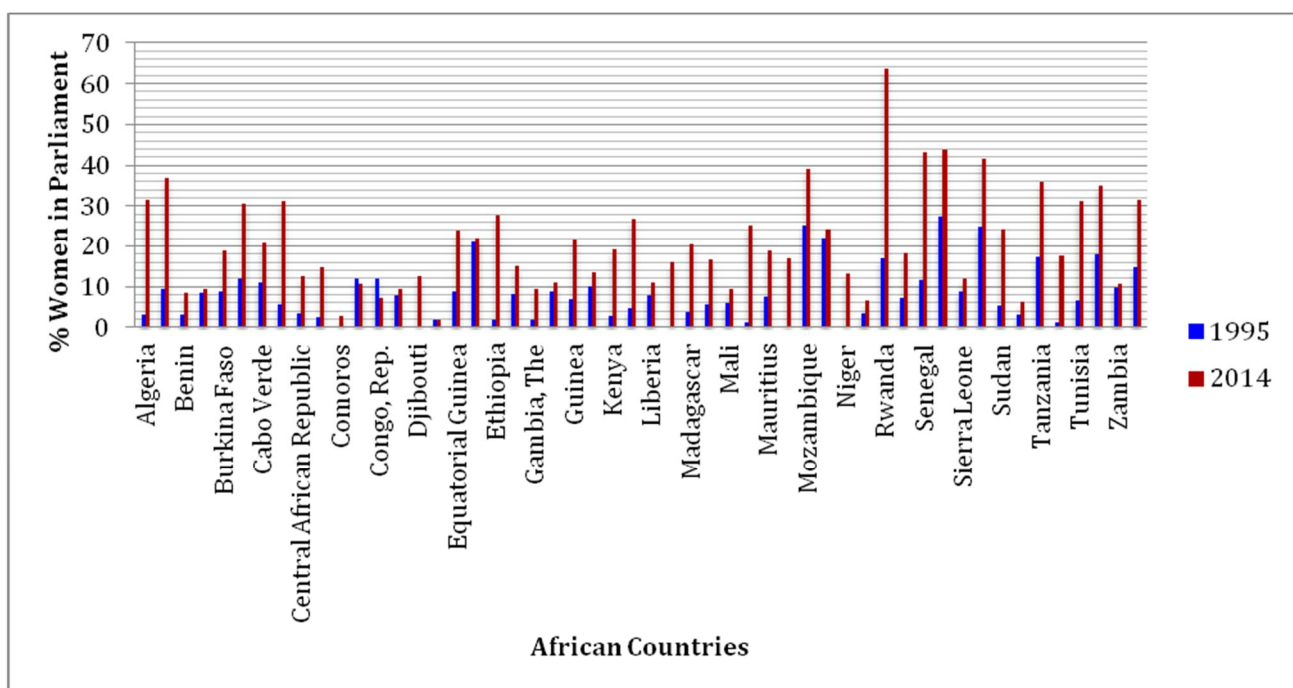
The findings on women impact on corruption are not consistent. On one side, there is a strand of the experimental literature showing that countries with a higher participation of women in politics present lower levels of corruption. Some scholars (Dollar et al., 1999; Swamy et al., 2001) assert that women in political institutions are more likely to follow an ethical conduct, are more trustworthy and fairer than men are. In particular, Dollar et al. (1999) and Swamy et al (2001) suggest that women are particularly effective in promoting honest government and demonstrate that an increase of women in parliament favors lower levels of corruption. Swamy et al. (2001) show that women are less involved in corruption and less likely to tolerate bribes. They show that corruption is less severe in countries presenting a higher presence of women in both parliamentary seats and labor force. However, more recently, some studies found that women are not necessarily

more honest or adverse to corruption than men (Frank et al. 2011). Their main outcome is that women's attitudes and behavior regarding corruption may be influenced by the institutional and cultural contexts of individual countries (Alhassan-Alolo, 2007; Alatas, Cameron, and Chaudhuri, 2009). Treisman (2007) states that women are more likely to be corrupted in autocratic states, where corruption and favoritism are often a way to do business. Esarey and Chirillo (2013) believe that women are less susceptible to corruption in democracies than men are, but they are equally sensitive in autocratic systems. Concluding, the relationship between women in institutions and corruption appears to be strictly influenced by the political and social contexts.

2.2 Women in African Parliaments

In a short period, i.e. the interval 1995-2014, the presence of women in African parliaments has increased extraordinarily in all the countries included in our sample (figure 1). The main consequence of this political empowerment is the crucial role played by women in the decision process regarding projects and policies involving them more closely as for example those promoting social interests and spending on health, nutrition and education.

FIG.1 WOMEN IN AFRICAN PARLIAMENTS IN 1995 AND 2014



Among the studies dealing with women representation in African parliaments, Gretchen and Bauer (2006) show that despite religious, ethnic and class divisions', female policymakers succeed in work together in order to formulate laws concerning welfare and facilitate women's own interests. Similarly, Goetz (2003), in a previous study, found this evidence for Uganda and South Africa. Burnet (2008) showed that a higher representation of women in the Rwanda government paved the

way to democracy and to greater social participation. Powley (2007), finally, explored how women parliamentarians in Rwanda¹ managed to get approved a law strengthening the rights of women in 2000. The new legislation established for the first time the right of women to inherit land. The parliament, actually mostly composed of women (60%), have also actively supported an increasing spending on health and education.

These empirical evidences let one conclude that women in parliaments can modify the institutional context making it more attractive for foreign aid flows as both donors' and recipients' policymakers share their goals. In this line, our aim is to evaluate the impact of gender composition of parliaments in recipient countries on foreign aid inflows, in terms of total aid and aid to social sectors.

2.2 Effectiveness of foreign aid

Most studies on foreign aid effectiveness find that they have a positive effect on growth depending on the quality of the institutions in recipient countries, on the typologies of aid and on the stability of the relationship between donors and recipients. One of the main influential studies is this strand of the literature is that of Burnside and Dollar (2000). In this work, the authors argue that donors should be more selective in sending aid favoring countries with good policies, because only in these countries aid may have a larger positive effect on growth. Several other scholars followed this seminal work (Collier and Dollar, 2001, 2002; Ovaska, 2003; Chauvet and Guillaumont, 2004; Economides et al., 2004). Chauvet and Guillaumont (2008), among them, argues that aid effectiveness depends on specific characteristics of the receiving countries and, if well identified, they should be kept as optimal criteria in the allocation process. Others stressed that aid effectiveness depends also on the typology of aid sent. For example, Clemens, Radelet and Bhavnani (2004) classified aid into three categories: humanitarian; growth enhancing, exerting a positive effect in the long run, such as aid supporting democracy, environment, health or education; assistance aid, that stimulates growth in the short term, such as aid to support the budget and balance of payments, investment in infrastructure and agriculture and industry productive sectors. In particular, they focused on the third group, which accounts for about 45% of total aid flows, and find that there is a positive relationship between short-impact aid and economic growth during a period of four years. Michaelowa and Weber (2006) evaluate education aid performances in terms of growth and provide evidence of a positive correlation when development aid are aimed to increase the primary school enrollment. Similarly, Nunnenkamp, Dreher and Thiele (2008),

¹ In the wake of the Rwandan genocide (1994), which destroyed families, the exclusion of women from land ownership became a critical issue. Indeed, besides a violation of a right, the exclusion of women from land ownership had a negative impact on food production, safety, environment, settlement patterns and family life.

investigate whether aid to specific sectors affect educational outcomes and show that foreign aid significantly increases growth when it is sent to primary school enrollment. Masud and Yontcheva (2005) focus on health aid and demonstrate that it is effective if employed to reduce child mortality. This result, however, is only significant when the assistance is provided by non-governmental organizations (NGOs). Finally, Mishra and Newhouse (2009) examine the relationship between health aid and infant mortality. Their specific model assesses that infant mortality is a function of foreign aid received in the previous period. They find foreign aid to favor economic growth with evidence of larger success of specific public health programs.

3. Data and empirical strategy

This section presents a description of the dataset used for the empirical analysis. We used data on flows of Official Development Aid (ODA) commitment sent to 37 African countries from worldwide donors taken from the OECD Creditor Reporting System dataset. The period covered is 1995-2014, therefore the dataset is structured in a panel framework and each geographical unit presents twenty time-observations.

Data on development aid on individual countries belonging to the Development Assistance Committee (DAC) and multilateral organizations are based on commitments.

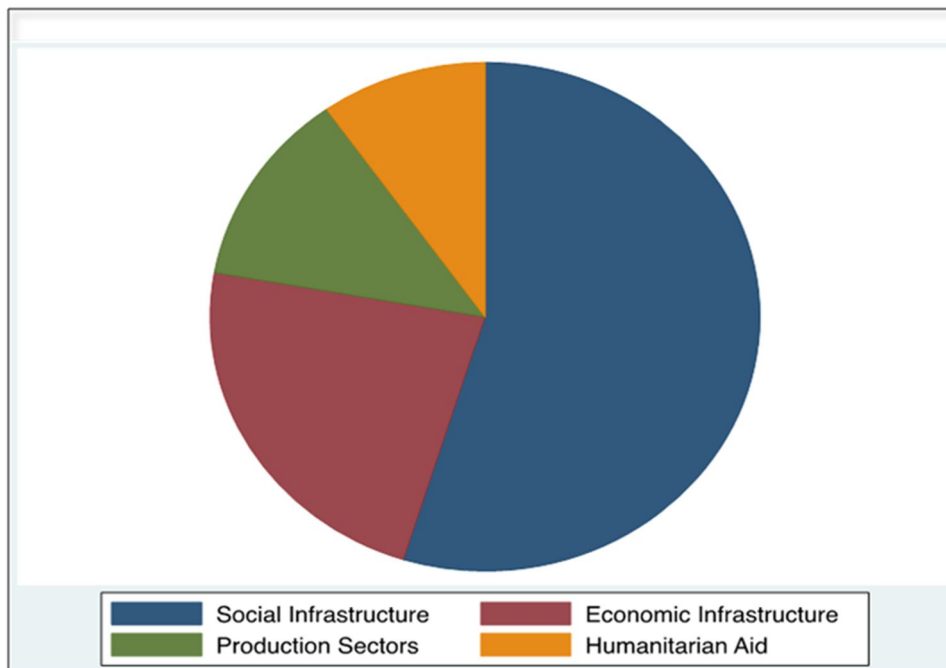
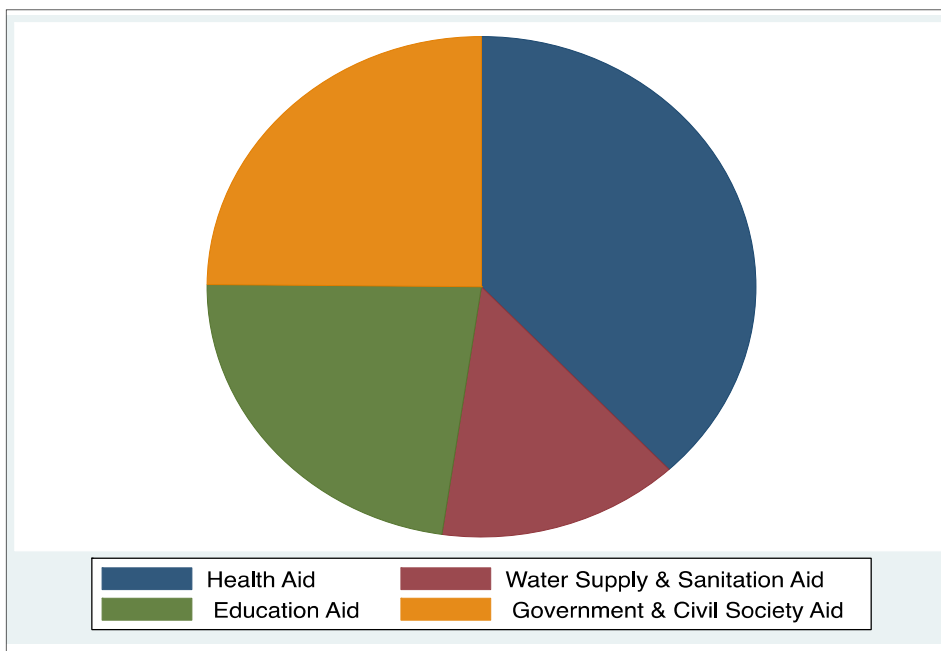


FIG. 2 - FOREIGN AID SECTORS

The figure 2 shows that most of foreign aid devolved to Sub-Saharan African countries in the period 1995-2014 is devolved to the Social Infrastructure and services sector (38%). In contrast, less consistent are flows addressed to other sectors like Economic Infrastructure and services, Production and Humanitarian.

Within the Social Infrastructure and services sector (figure 3), “Health” and the collateral “Water & sanitation” sector receives the larger amount of aid resources (55%), followed by Government and civil society (26%) and Education (19%).

FIG. 3 SOCIAL INFRASTRUCTURE SECTORS



Since our aim is to evaluate whether women in recipient countries’ parliaments may exert any influence on the amount of resources obtained and their effectiveness we take into account the main sector of foreign aid, i.e. social infrastructure and services, and its subsectors.

As regards the determinants of foreign aid, first we consider the female political representation, given by the share of women in African parliaments taken from the Inter Parliamentary Union (IPU) database. In addition, we consider a number of control variables chosen among those suggested by the reference empirical literature. The variable *Polity* (with a five years lag) measure the level of democracy and the quality of governance, it is given by polity IV project dataset.

The variable *Control of Corruption* is one of the six measures of the Worldwide Governance Indicators² (WGI) (Kaufmann et al., 2010). This indicator is provided by the World Bank and the higher its values, the better the quality of institutions. *War* is a binary dummy variable accounting for the presence of factor of crises inducing donors to send aid. At the same time, war may affect also the presence of women in parliament and hence it can be a source of endogeneity. *FDI* is given by the net amount of foreign investments and represents a measure of the openness towards international markets as well as the amount of foreign capital other than aid entering the African countries. Trade openness (*Trade*), instead, is calculated as the sum of total exports and total imports divided by the value of GDP. The variable *Health_expenditure/Government_expenditure* indicates the amount of public capital invested in the health sector. To control for the development level, that may influence both the amount of aid and the participation of women in political institutions, we include the per capita GDP at time t-5 (GDP_{t-5}). The variable *life expectancy* represents a proxy of the level of health in the country. To account for the linkage between major donors and receiving countries we introduce the control variable *influence*, which take the value of one if the major donor is also the former colonizer and zero otherwise.

4. Empirical strategy

4.1 The econometric model and strategy

The analysis aims to assess whether the gender composition of national parliaments in recipient countries may influence both the level and the type of foreign aid sent to some specific sectors. To this end, the empirical relationship between development aid and women in national parliaments can be represented by the following model:

$$\left(\frac{Aid}{Pop}\right)_{it} = \alpha + \beta W_{it} + \gamma X_{it} + \Omega_i + \eta_t + \varepsilon_{it}$$

where $(Aid/Pop)_{it}$ is Aid per capita in country i ($i=1, \dots, 37$) at time t ($t=1, \dots, 20$); W_{it} is the proportion of seats held by women in parliament in receiving country i at time t ; X_{it} is the vector of control variables of receiving countries; Ω_i is a vector of countries fixed effects; η_t is a vector of time fixed effects; ε_{it} represents errors.

First, we estimate the model by means of the Ordinary Least Squared approach (OLS) including lagged values of all the explanatory variables to tackle a source of endogeneity resulting from simultaneity problems.

² The WGI indicators are research data summarizing the opinions on the quality of governance provided by experts interviewed in industrialized as well as in developing countries.

However, other sources of endogeneity may arise, due for example to: *reverse causality*, as developing countries may enlarge the political participation of women in order to obtain more foreign aid; *measurement errors*, highly frequent when measuring the flow of aid; *omitted variables* which may be correlated with foreign aid and the share of women in parliament generating biased results, this problem can be partially solved with the inclusion of country fixed effects. To this extent, we control for: Development level (*GDP*); Political stability (*War*); Health conditions (*Life Expectancy*); Recipient's policies preferences (*Public spending in health*); level of institutions (*Polity and Control of Corruption*).

To treat the endogeneity problem due to reverse causality, we then estimate a model following the Instrumental Variable (IV) approach by instrumenting the endogenous regressor (W_{it}) with a variable based on linguistic gender characteristics and universal suffrage. Indeed, we hypothesize that the share of women in parliament may be affected by cultural and institutional factors. In a society with strong gender differences the political power of women is heavily reduced (Gay et al 2013). However, there are political institution or rules, such as gender quotas, universal suffrage, etc., that favoring women participation in politics can enhance their political power (Hicks et al 2016; Beaman et al. 2006).

Some scholar assert that the presence and intensity of grammatical gender distinctions in a language are robustly associated with women participation in economic and political life (Gay et al, 2013; Santacreu-Vasut *et al.*, 2013). To this extent we use a rescaled³ “Gender Intensity Index”(GII), which associates low values to higher grammatical gender distinctions and high levels to lower gender distinctions.

Regarding universal suffrage, instead, the literature argues that the electoral experience of women in a society, when granted earlier, will favor a larger participation of women in political life (Hicks et al. 2016). To this extent, we build the variable “SUFFRAGE” indicating the accumulated years since female suffrage was granted.

The instrument for the variable W_{it} is given by the interaction between GII and SUFFRAGE. We attend a positive impact of this variable on aid because when there are less gender distinctions and a suffrage granted earlier the number of women in institution can rise increasing the quality of the decision process and, hence, attracting larger amount of resource in terms of foreign aid.

4.2 Results

³ To make the interpretation of results easier, we rescaled the Gender Intensity Index built by Gay et al. (2013) so that lower level indicates less gender distinctions in languages and higher level indicates more distinctions.

The estimation results are presented in Table 1. First, OLS estimation are run for different model specifications. As already pointed out, at an early stage we are interested in evaluating the correlation between aid and women in parliament. We include different controls to verify the robustness of its statistical significance and its sign.

TABLE 1 - OLS ESTIMATION RESULTS: TOTAL AID LEVEL

VARIABLES	Dependent Variable: Total foreign aid as % of Population				
W_lag1	0.991*** (0.347)	0.853** (0.369)	0.952*** (0.345)	0.808** (0.320)	0.984*** (0.317)
polity2_lag5	1.205* (0.675)	0.877 (0.689)	1.197* (0.670)	1.067 (0.676)	1.057 (0.657)
controlofcorruption_lag1	14.41 (8.847)	11.15 (8.930)	14.56 (8.808)	16.24* (8.504)	16.88** (7.972)
fdi_lag1	0.251 (0.244)	0.0735 (0.228)	0.269 (0.253)	0.245 (0.266)	0.283 (0.287)
trade_lag1		0.0734 (0.100)			
Gdp_lag5	-0.000641 (0.00107)	-0.000237 (0.00169)	-0.000615 (0.00105)	-0.000446 (0.00115)	-0.000109 (0.00123)
Influence	-4.143 (4.243)	-5.100 (4.316)	-3.785 (4.182)	-4.014 (4.251)	-4.177 (4.175)
war_lag1			11.04** (4.291)	11.65** (4.413)	11.23** (4.376)
healthexp_governmentexp				1.218** (0.566)	1.178** (0.551)
Life expectancy_lag5					-0.965* (0.489)
Constant	56.80*** (8.630)	49.71*** (14.14)	55.62*** (8.511)	46.46*** (10.71)	97.22*** (27.47)
Observations	528	495	528	523	523
R-squared	0.095	0.080	0.103	0.114	0.120
Number of countries	37	36	37	37	37

All results presented show that the variable women in parliament is positively correlated with foreign aid; the variable polity2 is statistically significant and positive in the first column and in the third; influence is negative but not significant. In column 3 we add the control for war, to account for other factor of crisis that may attract more aid. The interest variable is robust to this inclusion and the same occurs when one by one we add other variables like government expenditure for health, to control for recipient's policies preferences and for development level and health conditions, including GDP and life expectancy, respectively. We consider the model in column 5 as the most representative. As is evident, the OLS models provide interesting answers

regarding the association between women in parliament and foreign aid. Women in parliament appear to have a positive and persistent significant effect on the amount of total aid.

The results in Table 1 indicate that countries with higher percentages of seats held by women tend to attract more foreign aid.

Table 2 shows the OLS estimation results regarding the allocation of aid among different sectors, using all the controls as in column 5 (table 1). The four aid sectors explored are “Social Infrastructure & Services”, “Economic Infrastructure & Services”, “Production” and “Humanitarian”.

TABLE 2 - OLS ESTIMATION RESULTS: ALLOCATION OF AID AMONG SECTORS

VARIABLES	Dependent Variable: Foreign aid as % of Population			
	Social Infrastructure	Economic Infrastructure	Production Sector	Humanitarian Aid
W_lag1	0.690*** (0.221)	0.286* (0.159)	-0.00427 (0.0789)	0.0760 (0.0601)
Polity_lag5	0.394 (0.307)	0.477** (0.213)	0.0173 (0.0576)	0.0494 (0.158)
Controlofcorruption_lag1	10.70** (5.234)	0.765 (3.373)	1.706 (1.376)	0.472 (1.529)
Fdi_lag1	0.0124 (0.0736)	0.116 (0.0789)	0.0130 (0.0164)	0.0743 (0.0627)
GDP_lag5	-0.00124*** (0.000296)	0.000365 (0.000442)	-2.41e-05 (0.000109)	0.000132 (0.000197)
War_lag1	1.845 (1.545)	-0.0157 (1.356)	0.999** (0.459)	5.370** (2.491)
Influence	-1.333 (1.442)	0.986 (1.173)	-0.448 (0.507)	-1.957* (1.158)
Healthexp_governmentexp	0.284 (0.203)	-0.238 (0.181)	0.221 (0.139)	-0.0698 (0.145)
Life expectancy_lag5	-0.473 (0.562)	0.584*** (0.201)	0.200** (0.0805)	-0.0831 (0.0841)
Constant	48.63 (32.08)	-24.52** (11.16)	-7.212* (4.016)	8.158* (4.805)
Observations	523	522	523	506
R-squared	0.154	0.094	0.049	0.074
Number of country	37	37	37	37

Again, women in parliament affects positively the amount of aid sent to social sector and economic infrastructures.

Tables 3 and 4, instead, show OLS estimation results regarding the specific sub-sectors of social and economic sectors. The estimation results show that women in institutions have the power to increase foreign aid sent to health and to the correlated sector of the water supply and sanitation other than the sector of Government and civil society (table 3). By contrast, a more disaggregated analysis of the linkages between women and aid for economic infrastructures, reveals that female

political representation does not have any power to increase foreign aid devolved to more economic sectors like transport, communications, energy, business and banking.

TABLE 3 - OLS ESTIMATION RESULTS: SOCIAL INFRASTRUCTURE & SERVICES AID

VARIABLES	Dependent Variable: Foreign aid as % of Population			
	Health	Water sanitation	Education	Government & Civil Society
W_lag1	0.668*** (0.230)	0.252** (0.0990)	-0.0480 (0.0479)	0.110** (0.0430)
Polity_lag5	0.653** (0.262)	0.245* (0.124)	-0.153* (0.0868)	-0.0478 (0.0677)
Control of corruption_lag1	9.391* (4.867)	3.276 (2.112)	0.324 (1.115)	1.211 (0.945)
Fdi_lag1	0.0449 (0.0781)	0.0365 (0.0307)	0.00779 (0.0307)	-0.000506 (0.0433)
GDP_lag5	-0.000107 (0.000162)	8.41e-05 (0.000102)	-0.000541*** (8.87e-05)	-0.000185 (0.000239)
War_lag1	-0.254 (0.724)	-0.576 (0.385)	0.791 (0.513)	1.660* (0.950)
Influence	-0.0623 (1.181)	0.135 (0.692)	-0.491 (0.441)	-0.549 (0.542)
Healthexp_governmentexp	0.0641 (0.176)	-0.0585 (0.0966)	0.128** (0.0586)	0.106 (0.0706)
Life expectancy_lag5	-0.542 (0.529)	-0.214 (0.213)	0.0637 (0.0843)	-0.0567 (0.0828)
Constant	39.04 (29.04)	14.58 (11.61)	2.713 (3.874)	6.835 (4.627)
Observations	499	524	523	522
R-squared	0.186	0.077	0.055	0.046
Number of country	37	37	37	37

TABLE 4 - OLS ESTIMATION RESULTS: ECONOMIC INFRASTRUCTURE & SERVICES AID

VARIABLES	Dependent Variable: Foreign aid as % of Population				
	Transport	Communications	Energy	Business	Banking
W_lag1	0.0483 (0.0799)	-0.00369 (0.00895)	0.162 (0.104)	0.00984 (0.00815)	-0.00299 (0.0172)
Polity_lag5	0.170 (0.118)	0.00934 (0.0308)	0.364** (0.173)	0.0182 (0.0177)	-0.0272 (0.0253)
Controlofcorruption_lag1	2.146 (1.880)	0.493* (0.289)	-2.739 (1.740)	-0.0701 (0.279)	0.140 (0.247)
Fdi_lag1	0.0578 (0.0430)	0.0110 (0.0120)	0.0573 (0.0566)	-0.00677 (0.00675)	0.00416 (0.0160)

GDP_lag5	0.000219 (0.000284)	9.91e-06 (1.99e-05)	0.000224 (0.000315)	-0.000291 (0.000240)	0.000842 (0.000702)
War_lag1	1.202 (0.850)	0.0715 (0.0897)	-1.061 (1.146)	-0.104 (0.0747)	0.0712 (0.156)
Influence	1.355* (0.709)	0.257 (0.225)	-0.263 (0.837)	-0.201 (0.154)	-0.270 (0.164)
Healthexp_governmentexp	-0.133 (0.117)	-0.00485 (0.0162)	-0.174 (0.111)	-0.0275 (0.0175)	0.0210 (0.0282)
Life expectancy_lag5	0.254** (0.125)	0.0187 (0.0259)	0.375*** (0.128)	-0.0162 (0.0177)	-0.00532 (0.0191)
Constant	-7.533 (6.251)	-0.393 (1.310)	-19.46*** (6.982)	2.082* (1.042)	-0.210 (1.606)
Observations	489	472	452	426	446
R-squared	0.032	0.009	0.099	0.020	0.029
Number of country	37	37	37	37	37

Aware that these results can be biased by endogeneity problems we estimate also an IV model which results are reported in table 5.

TABLE 5 - IV ESTIMATES: 2ND STAGE

VARIABLES	(1) Total	(2) Social Sector	(3) Economic Sector	(4) Production Sector	(5) Humanitarian Sector	(6) Health aid	(7) Education aid	(8) Government aid	(9) Water aid
W_lag1	2.136*** (0.699)	1.823*** (0.358)	0.0267 (0.274)	0.0323 (0.105)	0.334* (0.203)	1.576*** (0.288)	-0.0594 (0.0879)	0.402*** (0.127)	0.346*** (0.117)
Polity_lag5	0.512 (0.518)	-0.142 (0.257)	0.599** (0.235)	-5.03e-05 (0.0666)	-0.0772 (0.164)	0.213 (0.206)	-0.148* (0.0870)	-0.184** (0.0883)	0.200* (0.105)
Controlofcorruption_lag1	17.29*** (5.922)	11.10*** (4.044)	0.687 (2.289)	1.719* (0.910)	0.720 (0.982)	10.34*** (3.767)	0.320 (0.854)	1.311 (0.894)	3.298* (1.928)
Fdi_lag1	0.309 (0.213)	0.0376 (0.0726)	0.112* (0.0600)	0.0138 (0.0218)	0.0928** (0.0461)	0.100 (0.0914)	0.00754 (0.0218)	0.00615 (0.0356)	0.0385 (0.0306)
GDP_lag5	- 0.000314 (0.00111)	- 0.00144*** (0.000402)	0.000421 (0.000274)	-3.07e-05 (9.40e-05)	7.35e-05 (0.000232)	-0.000464 (0.000513)	- 0.000539*** (0.000195)	-0.000237 (0.000160)	6.57e-05 (0.000127)
War_lag1	8.792** (3.945)	-0.550 (1.983)	0.534 (1.208)	0.922* (0.490)	4.917*** (1.648)	-1.878 (1.452)	0.815 (0.510)	1.043 (0.692)	-0.781 (0.567)
Influence	-3.019 (3.612)	-0.194 (1.630)	0.721 (1.206)	-0.411 (0.569)	-1.710*** (0.570)	0.954 (1.230)	-0.502 (0.502)	-0.256 (0.554)	0.229 (0.536)
Healthexp_governmentexp	0.614 (0.543)	-0.270 (0.247)	-0.111 (0.220)	0.203* (0.104)	-0.188* (0.107)	-0.364* (0.198)	0.134* (0.0700)	-0.0356 (0.0826)	-0.105 (0.0847)
Life expectancy_lag5	- 1.924*** (0.731)	-1.416*** (0.477)	0.799*** (0.250)	0.170* (0.0954)	-0.315* (0.184)	-1.283*** (0.418)	0.0732 (0.115)	-0.300** (0.133)	-0.293 (0.200)
Observations	522	522	521	522	505	498	522	521	523
R-squared	0.080	-0.017	0.080	0.047	0.032	0.028	0.055	-0.068	0.072
Number of countries	36	36	36	36	36	36	36	36	36

The IV strategy results confirm the OLS findings: higher shares of women in parliament increase the capacity of a country to attract overall foreign aid and, in particular, that sent to the Social Sector (Health and Water supply & sanitation). In addition, the control variables (control of corruption, war, FDI) are all significant and with the expected signs.

Table 6 presents the results of the first stage that suggests a highly significant relationship between the instrument and the variable “women in Parliament”, supporting instrumental validity. The instrument is highly statistically significant and with the expected sign. Good institutions, the presence of a conflict and of strong international economic linkages, as expected, increase the level of total aid. Furthermore, the instrument report an F-statistics between 35 and 44.

TABLE 6 - IV ESTIMATES: 1ST STAGE

VARIABLES	(1) 1 ^o stage
GIIInv*Suffrage	0.150*** (0.0528)
Polity_lag5	0.356*** (0.129)
Controlofcorruption_lag1	-0.0880 (2.778)
Fdi_lag1	-0.0201 (0.0299)
GDP_lag5	0.000218 (0.000330)
War_lag1	2.456* (1.316)
Influence	-0.277 (0.567)
Healthexp_governmentexp	0.294* (0.164)
Life expectancy_lag5	0.588* (0.327)
Constant	-35.59** (15.45)
Observations	524
Number of country	36

On the basis of the econometric results presented above, we may conclude that women in institutions, considered more altruistic, fair and less corrupted than men, when politically empowered can influence the foreign aid decision-making process and, in particular, the total amount of aid and that for social sector received by laggard countries.

5. Women’s influence on aid performances: a preliminary result

Do women in institutions have the power to influence the effectiveness of foreign aid? In order to investigate this issue, we take the former result of the IV approach and analyze influence of women in parliaments in determining the performance of “health aid”. We consider as a better performance of health aid its ability to reduce infant mortality (Mishra and Newhouse, 2007). Anyway, together with health aid and infant mortality we add in the model an interaction term between women in parliaments and health aid, in order to understand the managing capabilities of women in institutions. OLS estimation strategy is followed in order to get some preliminary results.

The empirical model is therefore modified as follows:

$$IM_{it} = HealthAid_{it} + W_{it} + HealthAid_{it} * W_{it} + \delta Y_{it} + \Omega_i + \eta_t + \varepsilon_{it} \quad (2)$$

where IM_{it} is the Infant mortality rate; $HealthAid_{it}$ is the Aid sent to health sector; Y_{it} is a vector of control variables of receiving countries; Ω_i is a vector of countries fixed effects; η_t is a vector of time fixed effects; ε_{it} represents errors.

Table 7 shows the results obtained from this further empirical exercise. Although giving only an idea of the correlation existing between the variables included in the model, the estimation results reveal that when the interaction variable increases, the infant mortality rate decreases. The coefficient is small but statistically significant and the negative sign indicates that health aid managed in a parliament with a higher female participation may reduce the infant mortality rate

TABLE 7 – WOMEN MANAGING AID AND AID PERFORMANCES

VARIABLES	(1) log Infant Mortality
Log healthaid _{t-3}	0.00106 (0.00198)
W _{t-3}	0.000583 (0.00128)
Log healthaid*w _{t-3}	-0.000369* (0.000184)
Log mortality infant _{t-3}	0.918*** (0.0314)
Log life expectancy _{t-3}	0.241 (0.161)
Healthexp_gdp	-0.00341 (0.00252)
Log gdp _{t-3}	0.0112 (0.0161)
War	0.0352** (0.0150)
Log pop	-0.256*** (0.0618)
Constant	3.378***

	(0.830)
Observations	603
Number of countrycod	36
R-squared	0.971

All other control variables have the expected signs. Indeed, with an increasing life expectancy, public health expenditure and population the infant mortality rate is expected to decrease. By contrast, wars increase the infant mortality rate.

Our findings suggest that aid sent to the health sector is effective to reduce infant mortality when more women are involved in the public policy decision process. The explanation that we give to these results is that women interests coincide with the health aid goals because as both are more orientated to social sectors issues.

6. Conclusions

This paper contributes to the wide debate on foreign aid as it investigates the relationship between the gender identity of policymakers in recipient countries and the amount and the type of aid flows towards these countries. Following a panel data estimation approach using a sample of African countries, we find that women in Parliament increase the level of foreign aid and, for aid devolved to the social sector, they may outperform aid effectiveness. We find a positive correlation between women and foreign aid. This result, obtained for the total amount of aid, aid sent to social infrastructures and aid sent to health and water supply & sanitation, is confirmed also by IV estimation strategy that accounts of the existence of endogeneity problems. This outcome endorses the hypothesis that women may affect the decision process in foreign aid allocation according to their own preferences for a more widespread intervention in social policies.

In a further analysis, we test aid performances using a model that accounts for the connection between health aid, infant mortality and the managing capabilities of women in institutions. In a basic OLS model, we obtain that when the interaction variable increases the infant mortality rate decreases. This outcome shows that aid sent to the health sector becomes effective in reducing infant mortality when more women are empowered to participate to the public policy decision process.

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