

« Gender Gap in public good preferences in Africa: Do gender norms matter? »

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I present new evidence on how norms and traditions can affect women's public good preferences in Africa. A substantial literature has examined the determinants of gender differences in political attitudes. Existing work has found a gender gap in public good preferences. However, there are few attempts to explain this gap. In this article, I aim to investigate whether the preferences of men and women differ in Africa, and if so, to explore the source of the observed gender differences. The choice of Africa is not insignificant as it is a region where the weight of tradition is strong regarding the role of men and women in the society. There are very few works of women's political attitudes in this part of the world, either in order to understand differences of behavior between men and women in terms of political priorities or the impact of this gender gap in the development process. Using Afrobarometer data for 36 African countries, I investigate whether and how the preferences of men and women differ. The results show that norms about the role of women play a role in explaining differences in gender preferences. Women in Africa have systematically a preference for social field (education, health) regardless of their view on gender role. Women with a conservative opinion on gender role have similar preferences as men by reporting higher preferences for additional investment in agriculture.

Keywords: gender gap, social norms, tradition, policy priorities,

JEL: H41, J16, O15, O55,

1. Introduction

Gender refers to differences, roles and expectations assigned by society to women and men. These roles are learned, can change over time and are influenced by the culture, education, economic environments, politics, crises and conflicts (UNESCO, 2000). In developed countries it is well established that women's preferences and choices differ systematically from those of men (Byrnes, Miller, and Schafer 1999; Niederle and Vesterlund 2007). Indeed, differences in values and political behavior between men and women have long been subjects of study in Western and Indian societies, but few have been done in Africa. This paper provides some empirical evidence to bring new lines of reflection on the interaction between socially constructed gender roles in Africa and the gender gap in public good preferences. The importance of gender identity norms has been highlighted by Bertrand et al. (2016) in the marriage market. They show in a panel of developed countries that marriage deficit is higher for skilled women in countries with conservative attitudes of gender norms. The choice of Africa is meaningful as it is a region of the world where the weight of tradition is strong regarding the role of men and women in the society and women's participation in public management is a relatively new concept in this region. To my knowledge, there are very few studies of women's political attitudes in this part of the world, either to understand differences of behavior between men and women in terms of political priorities or the impact of this gender gap in the development process. Gender roles inside the family or in the community can be considered as key factors contributing to a gender gap in several dimensions observed in Africa. The gender gap has traditionally been characterized by a tendency towards increased conservatism in women versus men in electoral preferences, ideology and also in political attitudes. For Inglehart and Norris (2003) contrary to expectations, women of all ages are becoming in addition more liberal compared to men. This suggests that existing models of party loyalty and political preference based on sex, in which women are supposed to be held back by discriminatory traditions, may not apply in developing countries, particularly in Africa. Some reasons have been advanced to explain gender differences in policy preferences: the greater risk aversion of women and the resulting desire for insurance; women's lower expected incomes leading to redistributive support; and a preference for social spending such as basic infrastructure (eg water supply), health and education that impacts the production of household goods, including children, on which women tend to specialize. However, the economic literature lacks evidence on why women are more risk averse or have higher preferences for social goods. Are women more social just because they are women (due to innate factors for example), or rather because of their background or their level of empowerment? The environment where women grow up might also play an important role through gender norms and the global view about gender role in the society. This paper attempts to shed

light on these questions using data from the last round of the Afrobarometer surveys collected between 2014 and 2016 in 36 countries in Africa. Using multilevel models to consider gender norms at the individual and the country level and to account for the correlation of preferences within the same country, I find that preferences in public goods are indeed very gendered. On average, men and women with the same characteristics have different preferences with women preferring additional public investment in education and health while men preferring investment in infrastructure and agriculture. Gender norms play a role only in preferences for agriculture. Women with a conservative opinion on their role in the society request more additional investment in agriculture.

The paper is organized as follows: section 2 provides a literature review, section 3 presents the data and some descriptive statistics, section 4 describes the empirical strategy, section 5 reports and discusses the results and section 6 concludes.

2. Related literature

Differences in values and political behavior between men and women have long been subjects of study in Western societies. Several economic studies on gender preferences show that women are more concerned about social policy issues (Funk and Garthmann, 2006, 2010, 2007 ; Oskarson and Wängnerud, 2013). Lott and Kenny (1999), Abrams and Settle (1999) and Toke and Dallal (2008) in their respective studies also show that women have a preference for social spending relative to other types of public spending. The literature on women's representativeness has examined the impact of the gender composition of the electorate by using the introduction of suffrage as an exogenous change in the composition of the constituency. These studies have shown an effect of a strong representation of women on public spending choices. For example, Besley and Case (2003) use US state panel data and show that an increase in women's representation in decision-making improves homemaker spending and reinforces the child support benefit. In the same vein, a study conducted on Sweden by Esaiasson and Holmberg (1993) find that women parliamentarians are significantly more receptive to family and environmental laws than men. Funk and Gathmann (2010) shows that the policy of female leaders on Switzerland affects the composition of public expenditure by increasing spending on health and social protection. Svaleryd (2007) shows from survey data in Sweden that women have a greater preference for public social spending than men. Thus, the demand for public social spending tends to increase when the women's level of representation in parliament increases. Women's suffrage in the United States has led policy-makers to focus on juvenile and maternal health and has helped reduce child mortality (Miller 2008).

A large part of the literature has confirmed the role of women in politics, especially on bills in the United States. From an empirical analysis, Thomas (1991) shows that states with higher female representation

tend to introduce and pass bills dealing primarily with women, children and families. On a study based on 12 states Thomas and Welch (1991) also find that compared to men women attach more importance to legislation concerning their status, family issues and children. Besley and Case (2000) show that policies on workers' compensation and child support are more likely to be introduced in states with high rates of women in parliament.

Literature in developing countries

Further studies of the effect of women's representation in decision-making on policy choices have been conducted in developing countries such as India. Clots-Figueras (2008a, 2008b) finds that women's elected representatives have a totally different influence from that of their male counterparts on political decisions and public spending. Indeed, he shows that women invest more than men in children's education and health care. In addition, women's elected representatives who occupy the seats reserved for castes and disadvantaged tribes invest more in health and education. Chattopadhyay and Duflo (2004) also study the importance of women's political representation on local public spending choices in a province of India. They use political reserves for women in India to study the impact of women's leadership on political decisions. They show that the occupation of a council seat affects the types of public goods provided. More specifically, female leaders will invest more in goods linked to their own concerns, such as access to safe drinking water, maternity and health. Iyer et al. (2011) find that an increase in the representation of women in local government significantly reduces crimes against women in India, thus promoting access to justice for women.

Causes of gender differences

A complementary literature sought to test and understand the causes of these differences in gender preferences. Edlund and Pande (2002) and Edlund, Pande and Haider (2005) focus on the role of marriage models in explaining why women demand more social goods. For several years, marriage has been declining. This decline is due both to the increase of the number of divorces but also to the possibility of being able to form other types of unions including pacs (civil solidarity pact) or concubinage. These changes have enriched men, while women have become poorer and especially confronting with greater uncertainty about their income. Economic theory implies that it will then require greater income redistribution and more family-based social spending, which may explain the changes in public spending. Edlund and Pande (2002) find that after divorce, women become more left-wing. On the other hand, Cavalcanti and Tavares (2011) explain the increase of the social expenses by the opening of the labor

market to women. In fact, greater participation of women in the labor market increase their demand for public goods that could reduce the cost of housework, for example childcare. The data seem to corroborate both hypotheses, whether in a sample of countries or at the individual level. Such evidence indicates that the socio-economic environment in which women live can affect the gap between their political preferences and those of men. Gottlieb and al. (2016) find that the absence of women in the labour market and their social vulnerability are the main causes of the difference in preference between men and women.

3. Data and Descriptive Statistics

- **The Afrobarometer surveys**

To carry out my empirical analysis, I use data from the Afrobarometer, round 6. The Afrobarometer, round 6, is a survey that took place in thirty six African countries between 2014 and 2016. In total 53,935 individuals were interviewed in these following countries: Algeria, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Cote d'Ivoire, Egypt, Gabon, Ghana, Guinea, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, São Tomé and Príncipe, Senegal, Sierra Leone, South Africa, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia, Zimbabwe. It is a face-to-face interview where the questions are in the local language. Samples are randomly drawn to be nationally representative and stratified by gender to ensure a well-balanced sample by gender.

- **Dependent variable: Priority for investment**

The main dependent variable is the respondents' priority for government's investment. To build this variable, I use question Q65A and Q65B of the survey, which is: "If the government of this country could increase its spending, which of the following areas do you think should be the top priority for additional investment?" Q65A refers to the first priority and Q65B to the second priority. Each respondent was asked to give one of the following seven responses: 1= Education, 2=Infrastructure, like roads and bridges 3= Security, like the police and military, 4=Healthcare, 5=Agricultural development, 6=Energy supply, 0=None of the above. In this paper, I keep the four most cited priorities which are Education, Healthcare, Infrastructure and Agriculture. The other policy areas have very low proportions in the data. Table 1 presents the distribution of respondents' public goods prioritizations as a function of their gender. For each of the four public goods, the priority variable is equal to 1 if the respondent has selected the given public good as first or second priority, and 0 otherwise. Education and health are by far the most requested public goods. 54.7% of respondents prefer that the state invest more in education and 50.2% of them demand more investment in health. Infrastructure and agriculture are less cited than education and

health but an important part of the respondents ranked them as top priority (respectively 27.2% and 28.9%).

As regard to the distribution of public good preferences by gender, a striking point is that all the differences are strongly significant at the 1% level suggesting that men and women do not rank public priorities in the same way. Women request more investment in education and health. The difference in the proportion of men and women is 2.3% for education and 4.4% for health. Conversely, men request more investment in infrastructure and agriculture. The difference is 3.3% for infrastructure and 3.2% for agriculture.

Table 1: Top priority for additional investment by gender

	Total	Female	Male	Difference (%):
	(%)	(%)	(%)	Female - Male
Education	54.7	55.8	53.5	2.3***
Healthcare	50.2	52.4	48.0	4.4***
Infrastructure	27.2	25.6	28.9	-3.3***
Agriculture	28.9	27.3	30.5	-3.2***

* p<0.1, ** p<0.05, *** p<0.01

- **Explanatory variables**

The key explanatory variable is gender. In the sample, 49.7% are men and 50.3 are women. The choice of the additional explanatory variables is based on the previous literature in this field. As standard independent variables, I include age, education, residence area, employment status and income.

Education is divided into four categories: "no formal education" which includes 19.0% of the people, "primary" (28.9%), "secondary" (42.1%) and "university" with the lowest proportion (9.8%) of the sample. Employment status has four categories: employed full time, employed part time respectively 27.0% and 11.9% of the sample and unemployed (37.5%) and looking for jobs (23.2%). I expect that education and access to employment reduce significantly the gender gap in public good's preferences because educated and empowered women have a greater interest in policies such as infrastructure investment compared to women whose livelihoods primarily depend on their spouse or extended family (Gottlieb et al. 2016). To look at whether the public good's preferences are associated with the people's experience, I group individuals into five different categories of age corresponding to quintile groups: under 25, 25 – 30, 31 – 38, 39 – 50 and above 50 years old. Regarding the place of residence, I distinguish people living in rural areas (57.9%) versus urban areas (42.1%). I build an income index using a multiple correspondence analysis (MCA) with variables reflecting the wealth of the respondent's household like ownership of some goods (radio, TV, car, mobile phone), the source of water, the location of toilet and the

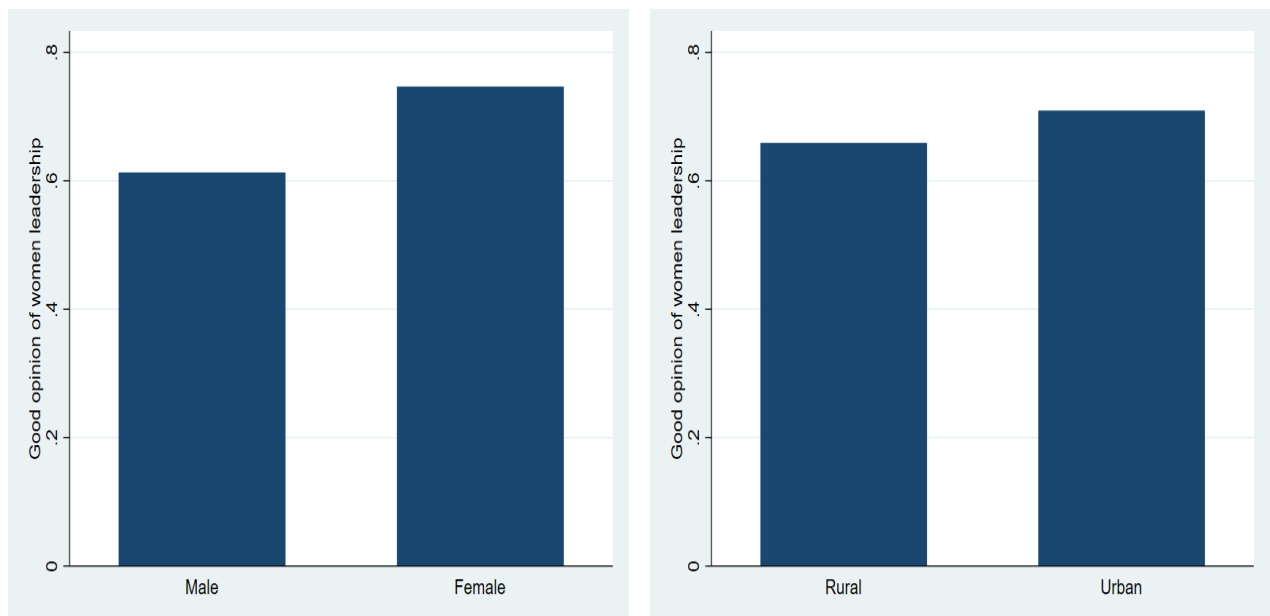
type of shelter. I also use a variable indicating the perception of the respondent of his/her living conditions compared to other people in the country. 35.1% think that their living condition is worse and 30.3% think that they are better off.

A special emphasis is put on the opinion regarding the role of women in the society. This variable is measured with the question Q18 of the Afrobarometer survey. In this question, the respondent is asked to choose the statement which is closest to his/her view between the two:

- i. "Men make better political leaders than women, and should be elected rather than women"
- ii. "Women should have the same chance of being elected to political office as men"

In this paper, I make this variable indicating a positive perception of women role. It takes 1 for the second statement and 0 for the first statement. 66.3% of the sample think that women should have the same chance to be elected as men while 31.2% think that men make better political leaders. Women are more likely to have a positive view of their role. 74.6% of women think that women can be as good as men while this proportion is only 61.3% for men. The difference of means is significant at the 1% level. This difference between men and women in this gender opinion is even larger than the difference between urban and rural area. This evidence demonstrates the importance of the gender gap. Unsurprisingly people in urban areas have a more modern view of gender role compared to people in rural areas. 70.9% of people living in urban areas have a good opinion of women leadership compared to 65.9% in rural areas.

Figure 1: Opinion on women leadership by gender and residence area



The proportion of people with a good opinion of female leadership is very heterogeneous among the 36 countries of the study sample (Table 2). On average, 67.7% of the respondents have a positive opinion on

women leadership in a country. Countries like Algeria, Sudan, Egypt or Niger have the lowest proportion of individuals with a good opinion of female leadership. Cabo Verde has the highest proportion (92.7%).

Table 2: Proportion of individuals having a good opinion of women leadership by country

Country	Proportion of respondents with a good opinion of women leadership (%)	Country	Proportion of respondents with a good opinion of women leadership (%)
Algeria	37,4	Cameroon	69,6
Sudan	43,5	Ghana	70,5
Egypt	44,1	Sao Tome and Principe	71,2
Niger	45,0	Mozambique	71,4
Nigeria	50,5	Zambia	72,5
Liberia	57,7	Benin	72,9
Mali	58,1	South Africa	73,3
Lesotho	59,9	Burundi	73,6
Sierra Leone	60,7	Uganda	74,9
Burkina Faso	60,81	Kenya	77,9
Madagascar	61,1	Swaziland	78,8
Guinea	61,5	Namibia	79,5
Malawi	62,5	Cote d'Ivoire	79,8
Tunisia	63,2	Mauritius	79,8
Senegal	66,2	Botswana	84,7
Morocco	67,2	Gabon	87,3
Tanzania	69,0	Togo	88,3
Zimbabwe	69,6	Cape Verde	92,7

4. Empirical Strategy

To measure the impact of gender on priority for additional investment, I follow recent developments in this literature using a multilevel model. Given the data used in this paper and the research question, a multilevel model has several advantages over a classical regression model. First, the data are collected with a multilevel structure. Surveys are done separately for each country and sometimes in different years. A multilevel model is a natural way to account for this data structure. Second, a multilevel model offers a convenient way to account for the correlation of individuals within the same country. And finally, the multilevel level model provides a coherent framework to include variables in different levels (typically individual and country level variables).

The basic equation estimated in this paper is written as follows:

$$y_{ij} = \alpha_{0j} + \beta_1 female_{ij} + \beta_2 X_{ij} + \varepsilon_{ij}$$

$$\alpha_{0j} = \beta_0 + u_j \quad (1)$$

Index i denotes the individual and j the country.

y_{ij} is a binary variable indicating whether a given public good is cited among the top two priorities for additional government spending. Recall that four public goods are studied in this paper: education, health, infrastructure and agriculture. I aim to measure the impact of gender for each priority for government spending, therefore four different equations are estimated. For instance, for the regression on education, y_{ij} takes the value 1 if for the respondent i in country j , education is a priority for government spending and 0 otherwise.

$female_{ij}$ is the main variable of interest and is equal to 1 for female and 0 for male.

X_{ij} is a set of individual characteristics including the age of the respondent, the residence area (urban vs rural), the employment status, the education level, a wealth index and the perception of the living conditions compared to other people in the country.

ε_{ij} is an error term at the individual level.

α_{0j} is a term reflecting the hierarchical feature of the model. It denotes the fact that each country j has its own intercept. α_{0j} can be decomposed into a simple intercept β_0 and a country-varying intercept u_j . u_j is a random effect and is assumed to be independent of the individual error term ε_{ij} .

Since the dependent variable is binary, a multilevel logistic regression is used to estimate the impact of gender on priority for additional investment. The coefficient β_1 indicates how likely women answer that a given policy area should be the top priority for government spending. β_1 positive indicates that women claim more additional investment in a given area than men and β_1 negative denotes that women claim less additional investment.

A second step of this study is to lighten which factors explain the potential difference of preferences between men and women. An interest is given to the opinion on gender role in the society. The main variable used to capture this aspect is the opinion of people on whether women could be as good political leaders as men. To measure the impact of this variable on the difference on political preferences between men and women, an interaction term is introduced in equation (1):

$$y_{ij} = \beta_0 + u_j + \beta_1 female_{ij} + \beta_2 X_{ij} + \beta_3 women_leader_{ij} + \beta_4 female_{ij} * women_leader_{ij} + \varepsilon_{ij} \quad (2)$$

The variable $women_leader_{ij}$ takes the value 1 if the respondent’s opinion is “women should have the same chance of being elected to political office as men” and 0 if the respondent thinks that “men make better political leaders than women, and should be elected rather than women”.

The coefficient β_1 captures the direct effect of gender on political preferences, β_3 is positive if a favorable opinion on women leadership which reflects a sense of a modern or progressive view is associated with a high likelihood to report that the given policy domain is a top priority. β_4 indicates how the impact of gender on political preferences depends on the fact of having modern or old views about the role of women in the society. Typically, the same signs for β_1 and β_4 imply that modern (or less conservative) women are more distant from men in term of preferences. Conversely, opposite signs for β_1 and β_4 suggest that modern women are more likely to have the same preferences as men.

In a third step, I attempt to capture a more macro effect. The opinion of gender role is now measured at the country level. Thus, the question of interest is how the impact on gender on political preferences depends on the country’s attachment to conservative views on gender role. This country-level variable is measured as the proportion of people answering that women should have the same chance to be elected as men. The individual-level variable on the degree of modernity introduced in the previous equation is now among other control variables (X_{ij}). The country-level variable is included and then interacted with gender.

$$y_{ij} = \beta_0 + u_j + \beta_1 female_{ij} + \beta_2 X_{ij} + \beta_3 women_leader_j + \beta_4 female_{ij} * women_leader_j + \varepsilon_{ij} \quad (3)$$

In this equation, the variable $women_leader$ is indexed j rather than ij as previously, indicating that it is measured at the country-level. In equation (3), the coefficient β_3 denotes how norms on the role of women in the country influence the likelihood to specify a given policy domain as a top priority for government spending. The coefficient of the interaction term β_4 evaluates how the impact of gender on political priority may change according to the prevailing norm in the country toward gender role.

5. Results

In a first subsection, I present the impact of gender on public good preferences with some heterogeneity analysis. I introduce in a second subsection, the analysis on the role of gender and document how it may affect the basic impact of gender estimated in the first subsection.

5.1. Impact of gender on public good preferences

The first set of results is reported in Table 3 and confirms the findings in the descriptive statistics. With all control variables included, women significantly request more additional spending in education and health. These public goods are often referred to as social goods. On the other side, men claim for more additional investment in infrastructure and agriculture. All these effects are significant at the 1% level. This pattern of the results is usually found in the literature (Gilligan, 1982; Hutchings et al., 2004). Women are depicted to care more for others and to develop a general disposition of protecting the vulnerable. This would be due to the gendered norm of the society which spur women to develop these traits throughout their education process. This refers to the ethics of care theory. This result is illustrated in figure 2 which represents the odd ratio of female compared to male as regard to policy preferences.

Regarding the control variables, a clear pattern appears with the relationship between age and policy priority. Young people request more spending in education while individuals above 39 request more spending in healthcare. Individuals above 25, are more likely to cite agriculture as their top priority compared to those under 25. People living in urban area ask for more spending in education and health while those in rural area are more concerned about infrastructure and agriculture.

Compared to individuals who are inactive in the labor market, unemployed individuals and those employed in part-time job are less likely to request for additional spending in education. The unemployed population request more investment in healthcare and those in part-time job are more concerned about agriculture. The education level is strongly related to the policy priority. More educated people (primary level or higher) are more likely to mention education as their top priority and less likely to mention agriculture.

People who have a good perception of their living conditions compared to others claim for more spending in education and less in health and agriculture. The income index follows a similar pattern, it is positively associated to the preference in education and negatively associated to the preference in infrastructure and agriculture.

Table 3: Gender differences in public good preferences

	(1) Education	(2) Health	(3) Infrastructure	(4) Agriculture
Female	0.117*** (0.0235)	0.195*** (0.0260)	-0.183*** (0.0219)	-0.176*** (0.0273)
Age (reference=Under 25)				
25 - 30	-0.139*** (0.0467)	0.0036 (0.0362)	0.0223 (0.0349)	0.127*** (0.0414)
31 - 38	-0.178*** (0.0486)	0.0483 (0.0368)	0.0490 (0.0357)	0.170*** (0.0503)
39 - 50	-0.165*** (0.0460)	0.0626* (0.0380)	0.0127 (0.0398)	0.199*** (0.0497)
Above 50	-0.345*** (0.0581)	0.135*** (0.0449)	0.0494 (0.0541)	0.283*** (0.0574)
Residence Area (reference=Rural)				
Urban	0.128*** (0.0380)	0.192*** (0.0344)	-0.302*** (0.0454)	-0.317*** (0.0532)
Occupation status (reference=Inactive)				
Unemployed	-0.0569* (0.0340)	0.0630** (0.0292)	-0.0155 (0.0435)	0.00547 (0.0254)
Part-time job	-0.119*** (0.0393)	-0.0139 (0.0332)	0.0220 (0.0458)	0.0755* (0.0432)
Full-time job	-0.112 (0.0755)	-0.0178 (0.0338)	-0.0228 (0.0437)	0.0736 (0.0683)
Education (reference=No formal education)				
Primary	0.166*** (0.0510)	0.0267 (0.0380)	0.0585 (0.0429)	-0.0951* (0.0509)
Secondary	0.434*** (0.0532)	0.0556 (0.0517)	-0.0422 (0.0592)	-0.275*** (0.0579)
University	0.531*** (0.0832)	-0.00556 (0.0657)	-0.0200 (0.0828)	-0.233*** (0.0766)
Living conditions compared to others (reference=Worse)				
Same	0.0420** (0.0195)	-0.0509** (0.0254)	0.0118 (0.0295)	-0.0140 (0.0310)

Table - continued

	(1) Education	(2) Health	(3) Infrastructure	(4) Agriculture
Better	0.0716** (0.0315)	-0.108*** (0.0328)	0.0334 (0.0327)	-0.0524* (0.0307)
Income index	0.442** (0.196)	0.200 (0.137)	-0.460*** (0.174)	-0.661*** (0.148)
Constant	-0.210* (0.122)	-0.275*** (0.0957)	-0.632*** (0.131)	-0.406*** (0.143)
No. of Observations	53935	53935	53935	53935
No. of Countries	36	36	36	36

Robust standard errors in parentheses

* p<0.1, ** p<0.05, *** p<0.01

Gender differences in public good preferences may be due to the relative vulnerability of women, making them to claim more social goods as education and health. Therefore, empowered women who are well educated with good jobs, may not be different from men in terms of public good preferences (Gottlieb et al., 2016). This thesis is explored with estimations presented in tables 4 and 5 which display the impact of gender by education level and employment status. Clearly, the results do not support the thesis of a reducing gap when women are empowered. In table 4, the sample is divided into three groups according to the level of education. The gender gaps in public good preferences are nearly the same among the following three groups: no education, primary education and secondary or higher. The point estimate of being female is significant at the 1% level and the magnitudes of the effect are very close in the three subsamples. The odd-ratios are varying between 1.1 and 1.2 for preferences in education and health and between 0.8 and 0.9 for preferences in infrastructure and agriculture. The pattern is the same in table 5 in which the sample is divided according to the employment status: inactive, unemployed and employed.

These results suggest that the education and the employment status – which are indicators of empowerment – do not explain gender differences in public good preferences. Women ask more additional spending in education and health and less in infrastructure and agriculture regardless their level of education and employment status.

Figure 2: Odd ratio of being female on public good preferences

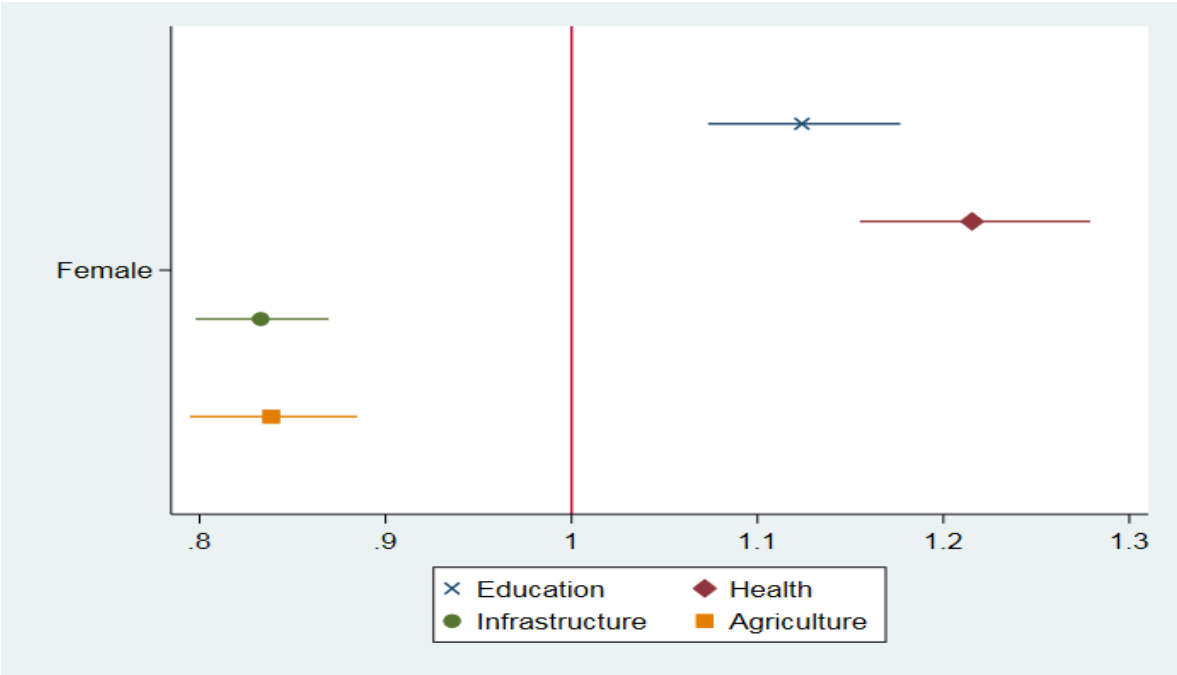


Table 4: Gender differences in public good preferences by education level**Preferences for Education**

	(1) No formal education	(2) Primary education	(3) Secondary education or higher
Female	0.115*** (0.0447)	0.175*** (0.0565)	0.103*** (0.0373)
No. of Observations	10223	15574	27983
No. of Countries	36	36	36

Preferences for Health

	(1) No formal education	(2) Primary education	(3) Secondary education or higher
Female	0.215*** (0.0414)	0.164*** (0.0524)	0.208*** (0.0259)
No. of Observations	10223	15574	27983
No. of Countries	36	36	36

Preferences for Infrastructure

	(1) No formal education	(2) Primary education	(3) Secondary education or higher
Female	-0.160*** (0.0534)	-0.249*** (0.0395)	-0.166*** (0.0269)
No. of Observations	10223	15574	27983
No. of Countries	36	36	36

Preferences for Agriculture

	(1) No formal education	(2) Primary education	(3) Secondary education or higher
Female	-0.145*** (0.0451)	-0.140*** (0.0491)	-0.230*** (0.0385)
No. of Observations	10223	15574	27983
No. of Countries	36	36	36

Robust standard errors in parentheses

* p<0.1, ** p<0.05, *** p<0.01

Table 5: Gender differences in public good preferences by occupation**Preferences for Education**

	(1) Inactive	(2) Unemployed	(3) Employed
Female	0.101*** (0.0336)	0.0922** (0.0379)	0.147*** (0.0379)
No. of Observations	20221	12503	20967
No. of Countries	36	36	36

Preferences for Health

	(1) Inactive	(2) Unemployed	(3) Employed
Female	0.203*** (0.0431)	0.223*** (0.0398)	0.163*** (0.0278)
No. of Observations	20221	12503	20967
No. of Countries	36	36	36

Preferences for Infrastructure

	(1) Inactive	(2) Unemployed	(3) Employed
Female	-0.195*** (0.0351)	-0.120*** (0.0417)	-0.200*** (0.0369)
No. of Observations	20221	12503	20967
No. of Countries	36	36	36

Preferences for Agriculture

	(1) Inactive	(2) Unemployed	(3) Employed
Female	-0.186*** (0.0353)	-0.268*** (0.0477)	-0.124** (0.0517)
No. of Observations	20221	12503	20967
No. of Countries	36	36	36

Robust standard errors in parentheses

* p<0.1, ** p<0.05, *** p<0.01

5.2. Opinion on women leadership

In this subsection, I further investigate which factors make women more social than men. As seen previously, women empowerment fails to explain the gender gap preferences in public policy. Results presented above imply that women regardless of their empowerment (measured by education level and employment status), prefer social goods (education and health) instead of public goods related to infrastructure or agriculture. I test another potential alternative to explain why women are more social than men. Gender norms in the society could be a key factor explaining gender differences. In fact, women could prefer social goods because the education they received and the mentalities that shaped their ideals and principles make them more interested in social affairs. This hypothesis is tested using a variable measuring the perception on whether women could be good leaders and should be elected in political office. This variable is introduced in the empirical model to assess how it can shift the gender gap in public good preferences.

Results are presented in Table 6. People with a positive view of women leadership ask for more spending in education. This effect is significant at the 1% level. The remaining policy domains are not affected by the opinion on women leadership. Therefore, everything else equal, it seems that people with a more modern view on gender role, are more likely to place education as a top priority. This effect is not driven by the simple fact that these people may be more educated and thus claim for more spending in education because the education level is already controlled in the model. This result suggests that people with a more progressive opinion on gender norm value education more than the other domains studied in this paper.

The results for the interaction term between gender and opinion on women role suggest that more progressive women – those with a favorable view of women leadership – are not different from other women in terms of preferences for education, health and infrastructure. However, for agriculture, the interaction term is negative and significant at the 5 percent level. Therefore, women who have a good opinion of women leadership are less likely to mention agriculture as a priority for government spending. This suggests that conservative women are more concerned about additional spending in agriculture and have preferences closer than those of men in this particular policy domain. One potential explanation of this closing gap between men and women is that conservative women are more likely to maintain a traditional relationship with their husband leading them to adopt their husband's opinion or view. This result on agriculture leads to investigate the heterogeneity between rural and urban area as agriculture is much more practiced in rural area. This heterogeneity analysis shown in table 7 reveals that this closing gender gap is only observed in urban area. Indeed in rural area, public good preferences and opinion on gender norms are more homogeneous and there is also much less variation between men and women which hinders to find any significant impact.

Table 6: Gender differences in public good preferences - Impact of the opinion about gender leadership

	(1) Education	(2) Health	(3) Infrastructure	(4) Agriculture
Female	0.144*** (0.0339)	0.167*** (0.0474)	-0.218*** (0.0391)	-0.102*** (0.0382)
Good opinion of women leadership	0.128*** (0.0320)	0.0426 (0.0361)	-0.0467 (0.0353)	-0.0505 (0.0425)
Female * Good opinion of women leadership	-0.0600 (0.0375)	0.0338 (0.0510)	0.0560 (0.0482)	-0.0904** (0.0419)
Age (reference=Under 25)				
25 - 30	-0.139*** (0.0467)	0.0040 (0.0363)	0.0225 (0.0348)	0.127*** (0.0415)
31 - 38	-0.177*** (0.0483)	0.0496 (0.0366)	0.0493 (0.0356)	0.171*** (0.0503)
39 - 50	-0.165*** (0.0458)	0.0633* (0.0379)	0.0135 (0.0397)	0.201*** (0.0496)
Above 50	-0.347*** (0.0579)	0.136*** (0.0446)	0.0510 (0.0539)	0.286*** (0.0571)
Residence Area (reference=Rural)				
Urban	0.127*** (0.0382)	0.192*** (0.0343)	-0.302*** (0.0454)	-0.317*** (0.0533)
Occupation status (reference=Inactive)				
Unemployed	-0.0579* (0.0340)	0.0620** (0.0292)	-0.0156 (0.0434)	0.00687 (0.0254)
Part-time job	-0.119*** (0.0389)	-0.0150 (0.0335)	0.0208 (0.0456)	0.0762* (0.0432)
Full-time job	-0.112 (0.0753)	-0.0187 (0.0338)	-0.0234 (0.0437)	0.0755 (0.0683)
Education (reference=No formal education)				
Primary	0.162*** (0.0510)	0.0229 (0.0378)	0.0582 (0.0425)	-0.0949* (0.0503)

Table - continued

	(1) Education	(2) Health	(3) Infrastructure	(4) Agriculture
Secondary	0.425*** (0.0526)	0.0486 (0.0507)	-0.0415 (0.0582)	-0.271*** (0.0572)
University	0.517*** (0.0816)	-0.0149 (0.0648)	-0.0181 (0.0816)	-0.227*** (0.0757)
Living conditions compared to others (reference=Worse)				
Same	0.0406** (0.0196)	-0.0515** (0.0253)	0.0123 (0.0294)	-0.0133 (0.0310)
Better	0.0689** (0.0315)	-0.110*** (0.0329)	0.0338 (0.0326)	-0.0528* (0.0308)
Income Index	0.434** (0.195)	0.194 (0.138)	-0.459*** (0.174)	-0.654*** (0.148)
Constant	-0.271** (0.123)	-0.289*** (0.103)	-0.604*** (0.135)	-0.382*** (0.143)
No. of Observations	53935	53935	53935	53935
No. of Countries	36	36	36	36

Robust standard errors in parentheses

* p<0.1, ** p<0.05, *** p<0.01

In a next step, the opinion about gender role is captured also at the country level to reflect how the prevalence of the norm in the whole country may affect individual preferences and more particularly the gender gap in policy preferences (Table 8). The introduction of this country-level variable adds insightful results. The individual opinion on women leadership impacts now positively and significantly preferences in education and health and negatively preferences in agriculture. This means that individuals with a modern view of gender role favor more education and health and are less concerned by agriculture. The country-level variable itself does not significantly affect any of the policy domain. The interaction term is negative and significant at the 1% percent level for preferences in agriculture. This latter effect is in line with the results found above and suggests that in countries where people have a more conservative view on gender role in the society, men and women have similar preferences in public policy in agriculture. In these countries, the gender gap in preferences in agriculture is much smaller. Conversely, when people in a country hold a modern opinion on gender role in the society, women have fewer preferences for additional investment in agriculture. In “modern” countries, preferences in agriculture of women deviate from those of men. This result is illustrated in figure 3 which displays the odd ratio of the interaction term.

As robustness checks, I include other country-level variables in the model to assess how these variables can change the results (appendix 3). The macro level variables included are: the proportion of seats held by women in national parliament, the fertility rate, the logarithm of GDP per capita and the unemployment rate for male and female. Controlling for these variables does not change the results. The interaction term remains negative and significant at the 1 % level and the point estimate is roughly the same. Interestingly, the proportion of seats held by women in national parliament is positively associated with preference in health and negatively associated with preference in infrastructure.

Table 7: Gender differences in public good preferences by residence area - Impact of the opinion about gender leadership

	Education		Health		Infrastructure		Agriculture	
	(1) Rural	(2) Urban	(3) Rural	(4) Urban	(5) Rural	(6) Urban	(7) Rural	(8) Urban
Female	0.111*** (0.0391)	0.208*** (0.0602)	0.123** (0.0612)	0.226*** (0.0515)	-0.176*** (0.0485)	-0.277*** (0.0598)	-0.0902** (0.0424)	-0.114* (0.0628)
Good opinion of women leadership	0.108*** (0.0349)	0.166*** (0.0487)	0.0340 (0.0364)	0.0570 (0.0490)	-0.0197 (0.0441)	-0.0812 (0.0572)	-0.0445 (0.0490)	-0.0619 (0.0600)
Female*Good opinion of women leadership	-0.0497 (0.0494)	-0.0857 (0.0692)	0.0576 (0.0548)	-0.0017 (0.0678)	0.0341 (0.0511)	0.0868 (0.0797)	-0.0599 (0.0568)	-0.150** (0.0694)
No. of Observations	31246	22689	31246	22689	31246	22689	31246	22689
No. of Countries	36	36	36	36	36	36	36	36

Robust standard errors in parentheses

* p<0.1, ** p<0.05, *** p<0.01

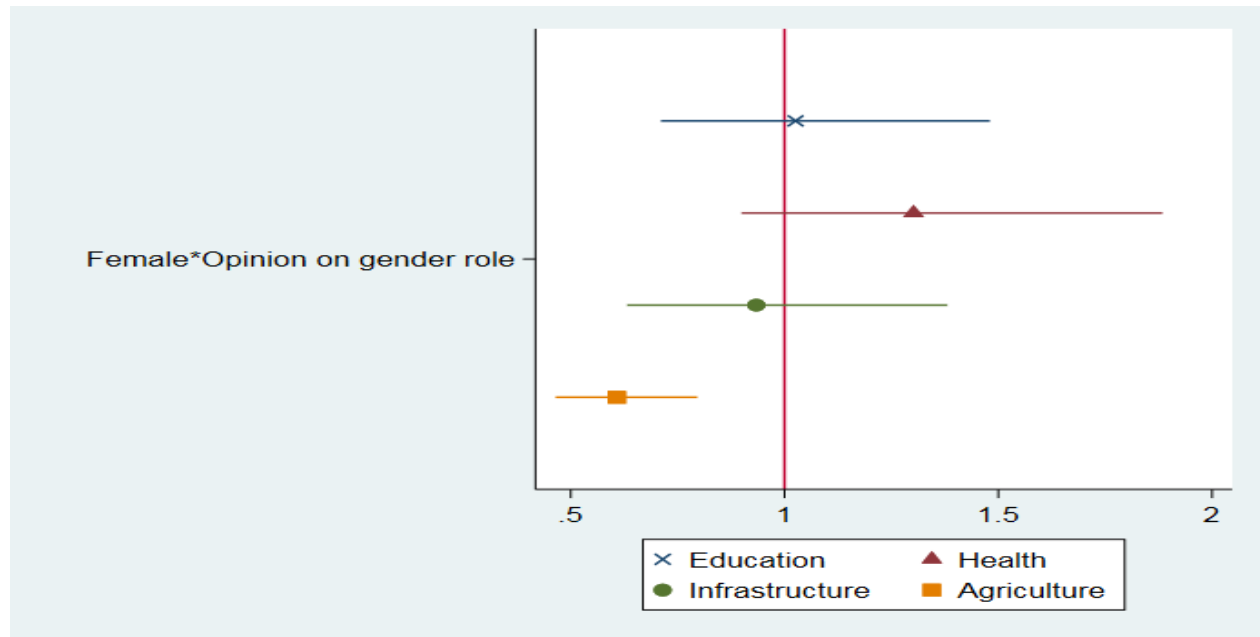
Table 8: Gender differences in public good preferences - Impact of the opinion about gender leadership at the country level

	(1) Education	(2) Health	(3) Infrastructure	(4) Agriculture
Female	0.0851 (0.139)	0.0072 (0.142)	-0.133 (0.146)	0.173* (0.0964)
Good opinion of women leadership	0.101*** (0.0266)	0.0581** (0.0294)	-0.0227 (0.0326)	-0.0902*** (0.0328)
Good opinion of women leadership at the country level	0.0485 (0.444)	0.202 (0.685)	0.0462 (0.707)	0.510 (0.639)
Female * Good opinion of women leadership at the country level	0.0255 (0.187)	0.264 (0.189)	-0.0683 (0.199)	-0.497*** (0.137)
No. of Observations	53935	53935	53935	53935
No. of Countries	36	36	36	36

Robust standard errors in parentheses

* p<0.1, ** p<0.05, *** p<0.01

Figure 3: Odd ratio of the interaction variable being female and having a good opinion on gender role on public good preferences



6. Conclusion

In this paper I attempt to contribute to a better understanding of gender gap in public good preferences in Africa and to explore the role of gender norms on these differences. In western countries it is well established that women's choices and preferences differ consistently from those of men. However, this observed gap is shrinking with the increasing women empowerment within the home and within the society as a whole. Several studies in developed countries and in some developing countries like India show that a positive change in the economic and social situation of women will close the gender gap in political attitudes and priorities. However, in the case of Africa, the weight of tradition and norms may raise doubts on this question. Results found in this paper suggest that regardless their level of education and their employment status, women always exhibit preferences for social goods: education and health. These results strongly support the ethic of care theory which states that women are more likely to take responsibility to caring for others and protecting the most vulnerable in the society due to differentiated socialization patterns. My findings imply that this responsibility assigned to women remain unchanged when women are more empowered. Furthermore, I study whether the gender gap in policy preferences could be reduced when considering constructed norms on gender role. This paper shows that the gender gap still exists among people with a traditional view of gender role – those who think that women could not be good leaders – in all policy preferences except in agriculture. Indeed, women with a traditional opinion on gender role exhibit higher preferences in agriculture, reducing the gap with men. A potential explanation lies on the fact that more traditional women may be more likely to comply with men preferences.

The evidence shown in this paper is a strong advocacy for a better representativeness of women in the political sphere in Africa. Indeed, the gender gap in political preferences seems more rooted in Africa and may not be explained by the economic and social conditions of women. In addition, modern women could even deviate more from men's preferences. These results highlight the importance to fully involve women in the decision-making process in order to account for the wide range of policy preferences of the population.

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Appendix

Appendix 1: Descriptive Statistics - Categorical Variables

Variable	Number of observations	Mean (%)
Gender		
Female	53935	50.31
Male	53935	49.69
Age		
Under 25	53935	20.29
25 - 30	53935	20.43
31 - 38	53935	19.80
39 - 50	53935	20.78
Above 50	53935	18.70
Residence Area		
Rural	53935	57.93
Urban	53935	42.07
Employment Status		
Inactive	53935	37.49
Unemployed	53935	23.18
Part-time Job	53935	11.91
Full-time Job	53935	26.96
Missing	53935	0.45
Education Level		
No formal Education	53935	18.95
Primary	53935	28.88
Secondary	53935	42.07
University	53935	9.81
Missing	53935	0.29
Living Conditions compared to others		
Worse	53935	35.09
Same	53935	32.09
Better	53935	30.30
Missing	53935	2.52

Appendix 2: Descriptive Statistics - Continuous Variable

Variable	Mean	Standard Error	Minimum	Maximum
Income Index	53935	0.46	0	1

Appendix 3: Gender differences in public good preferences – controlling for cross-country characteristics

	(1) Education	(2) Health	(3) Infrastructure	(4) Agriculture	(1) Education
Female		0.0849 (0.139)	0.0071 (0.142)	-0.134 (0.146)	0.174* (0.0967)
Good opinion of women leadership		0.101*** (0.0266)	0.0581** (0.0294)	-0.0227 (0.0326)	-0.0906*** (0.0327)
Good opinion of women leadership at the country level		0.0829 (0.502)	0.779 (0.640)	-0.395 (0.736)	0.721 (0.591)
Female * Good opinion of women leadership at the country level		0.0256 (0.187)	0.264 (0.189)	-0.0680 (0.199)	-0.498*** (0.138)
Age (reference=Under 25)					
25 - 30		-0.139*** (0.0468)	0.0043 (0.0364)	0.0225 (0.0349)	0.126*** (0.0417)
31 - 38		-0.177*** (0.0483)	0.0500 (0.0368)	0.0493 (0.0356)	0.170*** (0.0504)
39 - 50		-0.165*** (0.0458)	0.0639* (0.0381)	0.0132 (0.0398)	0.201*** (0.0498)
above 50		-0.346*** (0.0580)	0.136*** (0.0450)	0.0504 (0.0541)	0.289*** (0.0574)
Residence Area (reference=Rural)					
Urban		0.127*** (0.0381)	0.191*** (0.0340)	-0.301*** (0.0455)	-0.318*** (0.0535)
Occupation status (reference=Inactive)					
unemployed		-0.0591* (0.0336)	0.0608** (0.0288)	-0.0152 (0.0434)	0.0093 (0.0252)
part-time job		-0.120*** (0.0391)	-0.0177 (0.0336)	0.0226 (0.0459)	0.0786* (0.0429)
full-time job		-0.113 (0.0759)	-0.0216 (0.0336)	-0.0219 (0.0441)	0.0779 (0.0681)

Table - continued

Education (reference=No formal education)				
primary	0.162*** (0.0513)	0.0212 (0.0383)	0.0593 (0.0425)	-0.0930* (0.0496)
secondary	0.424*** (0.0527)	0.0468 (0.0507)	-0.0407 (0.0585)	-0.270*** (0.0569)
university	0.517*** (0.0816)	-0.0167 (0.0650)	-0.0170 (0.0817)	-0.226*** (0.0756)
Living conditions compared to others (reference=Worse)				
same	0.0404** (0.0195)	-0.0512** (0.0254)	0.0120 (0.0295)	-0.0138 (0.0311)
better	0.0692** (0.0315)	-0.109*** (0.0327)	0.0336 (0.0327)	-0.0532* (0.0306)
Income Index	0.431** (0.197)	0.203 (0.139)	-0.467*** (0.175)	-0.631*** (0.145)
Percentage of women in parliament	-0.0026 (0.0059)	0.0107* (0.0055)	-0.0121* (0.0066)	-0.0062 (0.0084)
Fertility rate	0.0774 (0.0775)	0.145 (0.0984)	-0.135 (0.111)	0.0695 (0.0782)
Log Gdp per capita	0.0807 (0.135)	0.110 (0.181)	-0.0643 (0.135)	-0.0709 (0.141)
Unemployment rate of male	0.0062 (0.0191)	-0.0500* (0.0268)	0.0332* (0.0182)	0.0184 (0.0239)
Unemployment rate of female	0.0074 (0.0161)	0.0298 (0.0232)	-0.0266* (0.0154)	-0.0244 (0.0184)
Constant	-1.407 (1.472)	-2.685 (1.671)	1.095 (1.734)	0.0125 (1.326)
No. of Observations	53935	53935	53935	53935
No. of Countries	36	36	36	36

Standard errors in parentheses
* p<0.1, ** p<0.05, *** p<0.01