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Abstract

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Keywords: Gender quotas; Experimental methods; Development aid; Political attitudes and behavior

JEL codes: D72; P48; D02; O17

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1 Introduction

Over the last decades, there have been many legal reforms aimed at improving the position of women by increasing their political power in the public sphere. Gender quotas are prominent among them. Half of the countries nowadays use some type of electoral quota for their parliament.[1] The core idea behind such quotas is to recruit women into positions of leadership and to ensure that women have influence over decision making processes, advancing representation and possibly producing downstream effects on attitudes towards women and their influence in other political fora. A considerable literature suggests that gender quotas can lead to changes in the type of public goods provided (Chattopadhyay and Duflo, 2004), the role of women in the community and attitudes towards them (Beaman et al., 2012; Bhavnani, 2009). This literature has largely focused on the impact of legal reforms — reserved seats, legal candidate quotas, and political party quotas — implemented by governments. However, there is no guarantee that similar results will obtain if gender parity is introduced through other means, such as development organizations who lack the legal leverage but are often the only vehicle for social change when the state is weak (Mansuri and Rao, 2013). In this study, we explore the effects of gender quotas imposed by foreign development organizations in small rural communities in the Democratic Republic of Congo (DRC).[2]

There are a number of reasons to expand the focus beyond the use of legal gender quota reforms to similar institutional innovations implemented by development agencies.

First, gender quotas are a popular tool in development programming. That is, the optimism around the impact of gender quotas has shaped development practice and women's roles and rights are now a central component to many development programs. For example, since the 1990s, "participatory development," and community-driven development (CDD) programs in particular, has become a favored model for development.[3] As part of these programs, development agencies very often mandate some sort of women's participation. The GoBifo program in Sierra Leone (studied by e.g. Casey et al. (2013)) required that one of the three co-signatories on the community bank account be female; encouraged women to manage their own projects; made evidence of inclusion in project implementation a prerequisite for the release of funding tranches; and required field staff to record how many women and youth attended and spoke up in meetings. The NSP program in Afghanistan

[1] Source: http://www.quotaproject.org/.

[2] By women's empowerment we refer broadly to women's ability to influence the allocation of resources that are relevant for their well-being. This is broadly consistent with definitions given in Kabeer (2000) and Narayan-Parker (2002) though more focused on collective decision making. More precise operationalizations are introduced below.

[3] Mansuri and Rao (2013) quote a figure of $85bn in World Bank spending in the last decade alone on this broad class of interventions.

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(studied by e.g. Beath et al. (2013)) established gender-balanced village development councils, mandated involvement of women in council elections and in the selection of village development projects, as well as the implementation of at least one project that should specifically benefit women.[4]

A second reason to focus on gender parity provisions introduced by development actors is that they are often the actors most likely to promote such innovations. In many developing countries — including many in which issues related to women's empowerment are salient — the reach of the government is limited. Many state functions are undertaken by development agencies and it are these actors that are often most likely to implement public projects at scale. In these contexts, development actors may thus control the practical mechanisms to undertake activities to improve the role of women.

Finally, while development actors may be the actors most likely to apply these innovations, the lessons from the experiences of government actors may not extend to them. Points of difference include the legitimacy that they enjoy — which may be greater or less than the state's in different contexts. Another difference is that the innovations they introduce may be less structural in nature. Quotas studied in other contexts often focus on reforms to existing formal, long-lived, electoral institutions. In contrast, development actors often create new, short-lived, parallel institutions — for example a committee with gender parity that manages the implementation of a development project — that may not enjoy the institutional strength needed to impose meaningful constraints on actual decision making.[5] We return to these and other differences below when we discuss differences in our findings compared to the existing literature.

To assess the impact of gender quotas implemented by external development actors on women's empowerment, we build on a field experiment that was implemented between 2007 and 2010 in 661 communities in the DRC. As part of a CDD program, communities participated in elections to select ten-member management committees, which were responsible for overseeing a development project of $3,000 in their community.[6] In a randomly selected half of the villages, the committees were required to contain five men and five women. In the other half, the communities were free to choose the committee's gender composition. The random allocation of gender parity requirements allows us to assess the causal impact of development agencies' efforts to place women in leadership positions on the subsequent empowerment of women.

[4] As the World Bank's IEG (2016, p.5) writes, "By giving voice to women, CDD provides an opportunity for women to influence local decisions so that they more closely reflect their preferences and their needs, as stressed by the recent World Bank Group Gender Strategy (World Bank, 2015)."

[5] See Murphy (1990) for a classic account of how "backstage" decision making process can diverge from what seems apparent given "frontstage" institutional structures.

[6] US$3,000 is a large sum in these villages, where most citizens are subsistence farmers and the economy is largely unmonetized.

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We explore the impact of promoting women's access to leadership positions across three outcomes. First, we use project records collected by our implementing partner across all 661 villages to learn about project selection for the CDD program. Second, we examine project selection and the position of women in the community after the program. To measure these downstream effects, we introduced an independent, unconditional cash transfer intervention implemented by local universities in a random sample of the parity and non-parity areas after the field experiment. Selected communities (one village in each cluster of villages, selected proportionate to size) received $1,000, which they could manage without conditions or oversight over a two month period. Comparing differences in implementation of this program between parity and non-parity communities (Were different projects selected? Did women take leading roles in managing the $1,000?), allows us to measure decisions on public goods provision and actual behavior related to women's role in their community. Finally, we build on data on citizen attitudes to learn about individuals' attitudes towards women.

Across a range of measures we find no evidence that promoting women's access to leadership positions has an effect on women's empowerment. The intervention did not lead to clear changes in the type of public goods provided during the program. We also find no evidence of effects on project selection and the position of women in the community after the program. There is also no evidence that the treatment led to different attitudes towards women regarding their role in the community. The coefficient sizes that we find are small. For instance, one of the strongest results suggests that the gender quota increases the share of women that were a member in a later development project committee by 1.7 percentage points from a baseline of 22 percent. Many coefficients also point in the opposite direction of what was expected. We further discuss whether the null result stems from differences in context or differences in the nature of the intervention, relative to successful cases elsewhere. Finally, the lack of average effects on project choice is likely due to the fact that there are few differences in self-reported project preferences between women and men at baseline. Yet supplementary analysis suggests that even when these differences do exist, women's preferences are not more likely to prevail in treated areas.

Evidence from this case and elsewhere suggests that differences may be attributable to the relative weakness of social interventions by development organizations in terms of levels of engagement, duration of interventions, and delegation of decision making responsibility. As noted, the positive evidence related to gender quotas to date is largely drawn from cases where these innovations were introduced by governments using legal reforms to existing institutions. These findings have inspired development practitioners who seek to introduce similar changes through similar institutional innovations. Our null findings from Congo highlight the challenge of drawing inferences across cases on the effects of very different

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types of institutional reforms for tackling gender inequality.

In the next section we introduce previous work related to gender quotas. Section 3 anchors this study in the Congolese context, describing both the position of women and and pre-existing decision making structures. Section 4 discusses the field experiment and measurement strategy. Section 5 presents the results. We discuss our results in Section 6, and conclude in Section 7.

2 Previous Work on Women in Leadership Positions

The literature to date has largely built on the case of India to learn about the impact of gender quotas. In 1992, a constitutional amendment was adopted in India that mandated that one-third of all seats on village councils (GPs) and a third of all presidencies of these councils be reserved for women. Many states randomly rotate the council seats and presidencies reserved for women, which allowed researchers to make causal claims about this policy. A first set of studies explores how this reform affects policy choices.[7] Chattopadhyay and Duflo (2004) compare reserved and unreserved village councils in India's West Bengal and Rajasthan, and find that having women in leadership positions leads to more investment in public goods in sectors in which women have expressed a preference and less in those that are more closely linked to men's concerns. In contrast, Ban and Rao (2008) explore data from Andhra Pradesh, Karnataka, Kerala, and Tamil Nadu and find no evidence that women politicians make decisions that are more in line with the needs of women. From these studies we posit the hypothesis that *mandating women in leadership positions has an effect on the type of public goods provided*, and assess whether this holds in a setting in which the institutional innovation is introduced by development agencies.

Other studies examine downstream effects on political outcomes and attitudes towards women. Beaman et al. (2012) find that prior exposure to a female village council leader leads to electoral gains for women. They suggest that reservations work because it improves perceptions of female leader effectiveness and weakens stereotypes about gender roles in the public and domestic spheres. In related work, Beaman et al. (2009) argue that exposure to women leadership counters men's bias against women's effectiveness in leadership positions — though changing broader attitudes and norms appear more difficult. Similarly, Bhavnani (2009) shows that the probability of a woman winning office is five times higher where the constituency was reserved for women in the previous election. He shows that reservations introduce into politics women who are able to win elections after reservations lapse and increase the willingness of parties to grant women tickets. Exploiting a natural

[7] Possibly resulting from differences in underlying policy preferences (e.g. Inglehart and Norris (2000); Edlund and Pande (2002); Paxton et al. (2007)).

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experiment in Sweden, O'Brien and Rickne (2016) find that quotas have a positive impact on women's selection (but not reappointment) to top political posts.[8] Related to Africa, Clayton (2014) exploits a subnational randomized policy experiment in Lesotho with single-member districts reserved for female community councilors, and finds that electoral gender quotas have a negative impact on the political engagement of female citizens. She argues that this result stems from female citizens' suspicion of affirmative action measures for women in politics rather than an overall rejection of female representation.[9] Following these studies we test two additional hypotheses: *mandating women leadership strengthens their role in the community more broadly, and improves attitudes towards them.*

The current literature has thus focused largely on the impact of legal reforms of existing institutions. In contrast, our study investigates whether similar institutional innovations can improve the position of women when implemented by development actors. We know of only one other paper with a similar focus to ours. Beath et al. (2013) examine the effect on women's empowerment of a development program in Afghanistan that mandated women's community participation.[10] The program had positive effects on the acceptance of female participation in local governance, and their engagement in income-generating activities, but it did not affect women's roles in household decision-making or attitudes towards the general role of women in the community. Our study diverges in three important ways. First, the development program under study in Beath et al. (2013) was a compound intervention that included both the creation of elected gender-balanced local councils and the allocation of funds. Cleanly disentangling the effects of placing women in leadership positions from a resource-effect requires independent variation in the institutions and the fund allocations, which we do in this study. Second, to measure women's empowerment, Beath et al. (2013) make use of direct questioning in surveys and focus groups. These strategies, however, may be prone to social desirability bias, especially after activities are undertaken to empower women. In response, in addition to the survey data, this study builds on project data about project choice and measures collected during the implementation of an independent, unconditional transfer program, which we carried out after the field experiment. This additional activity allows us to obtain information about actual behavior related to women's empowerment. The third contribution relates to scope. Beath et al. (2013) focus on attitudes towards women and their role within the household and community. In this study we also explore the impact on policy decisions. As we saw above, efforts to improve women's empowerment may affect the types of public goods provided. Our data allows us

[8] In fact, Besley et al. (2017) show how this imposed quota increased the competence of the political class in Sweden by reducing the share of mediocre men.

[9] Barnes and Burchard (2012), in contrast, use data from twenty sub-Saharan African countries and show that increased representation of women in parliament is positively related to women's political engagement.

[10] Mansuri and Rao (2013) also reference a paper by Leino (2007) that is not currently publicly available.

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to test this claim in the Congo.

3 Context

3.1 Women in Eastern Congo

Congo scores poorly when it comes to the status of women, possibly reflecting the continued importance of traditional structures and decades of poor governance and chronic conflict. Despite diversity in their beliefs and practices, all ethnic groups in Congo share underlying gender inequality (CEDAW, 2011). Congolese law reflects these inequalities. By law, the man is the head of the family, and the woman manages the household.[11] Women face restrictions on their freedom of movement and access to public spaces. By law, married women are obliged to live in a residence of their husband's choosing, and cannot apply for a passport without their husband's consent.[12] The position of women has likely worsened due to conflict, which has engulfed the country over the last two decades.[13] In some accounts, violence is specifically targeted towards women as a tactic of war to destroy community and family bonds.[14] Overall, Congo ranks 150 out of 156 in the UNDP's 2015 gender inequality index — an index based on indicators related to reproductive health, empowerment and economic status.[15]

The Congolese government has enacted a set of institutional reforms intended to address these inequalities. In the 2006 Constitution women enjoy the same rights as men to vote in and stand for election to political office. Women have the right to equal representation in national, provincial and local institutions, with the Congolese government ensuring the implementation of gender parity in these institutions.[16] Furthermore, political parties' lists are obliged to have equal representation of men and women (although we note that women

[11] Article 444 and 445 of the Family Code (CEDAW, 2004).

[12] Article 165 of the Family Code (CEDAW, 2004).

[13] This study's research area — South Kivu, Maniema and Haut Katanga — was home to the start of the First and Second Congolese Wars (1996-1997 and 1998-2003). The latter, with the direct involvement of eight African nations and 25 armed groups, has been the deadliest war in modern African history (IRC, 2007). Despite the formal end to the war in July 2003, much of the program area continues to experience conflict.

[14] According to the Congolese Minister for Gender, Family, and Children, more than one million women and girls (of a total population of 70 million) have been victim of sexual violence (HRW, 2009). Recent studies show that these numbers are likely to be an understatement, with some estimating that an average of 121 per 1000 women of reproductive age have been raped in their lifetime (Peterman et al., 2011). Particularly noteworthy is that most (sexual) violence against women takes place within the household, with an estimated 221 per 1000 women experiencing intimate partner sexual violence (Peterman et al., 2011). This result is in line with international research indicating that intimate partner sexual violence is the most pervasive form of violence against women (e.g. Heise et al. (2002)).

[15] In comparison, India ranks 124th on this index.

[16] Article 14 of the 2006 Constitution, as amended in 2011.

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currently occupy only 8.2% of the seats in parliament).[17] One explanation for women's continued poor status despite institutional innovation is that the reach of the Congolese government is limited. In Congo, the government has little impact on individuals' lives. For example, in Eastern Congo citizen's knowledge about the national government is low. Our data (described in greater detail below) shows how only 27% of Congolese are able to name the country's ruling party, and only 17% know the name of the country's prime minister. Also the presence of the government is limited. Only around 2% of village development projects are initiated by the Congolese government. In contrast, in large parts of Congo, non-state actors play a more important role in the daily lives of Congolese citizens — their presence in many cases being a direct consequence of government weakness. External development agencies and the Catholic Church are most prominent among them (Titeca and de Herdt (2011); Seay (2013)). For example, our data suggests that 53% of village development projects in Eastern Congo were initiated by NGOs. These stylized facts suggest that in Congo, as in many developing countries, external actors may be better placed to improve the role of women. Moreover, many development actors think that they can play this transformative role (e.g. USAID (2015); UNDP (2014); DFID (2008)).

Our data confirm the precarious position of women in the Congo. We gathered information on the position of men and women in the household. For example, we asked our respondents (by design half men, half women) to describe their previous day, hour-by-hour. Figure 1 illustrates how a 'typical' rural citizen in Eastern Congo spend their day. We find that cooking, collecting water and cleaning the house are almost exclusively female activities. On average, women spend one and a half hours per day cooking, while this is only 15 minutes for men. Collecting water takes women around 25 minutes of their day, while men only spend on average 1 minute per day on this activity. Women spend about 30 minutes on cleaning the house, while this is five minutes for men. In contrast, leisure is a male activity. While women have only around six minutes leisure per day, on average, men have an average of 30 minutes leisure. These differences between men and women are statistically significant ($p < 0.001$).

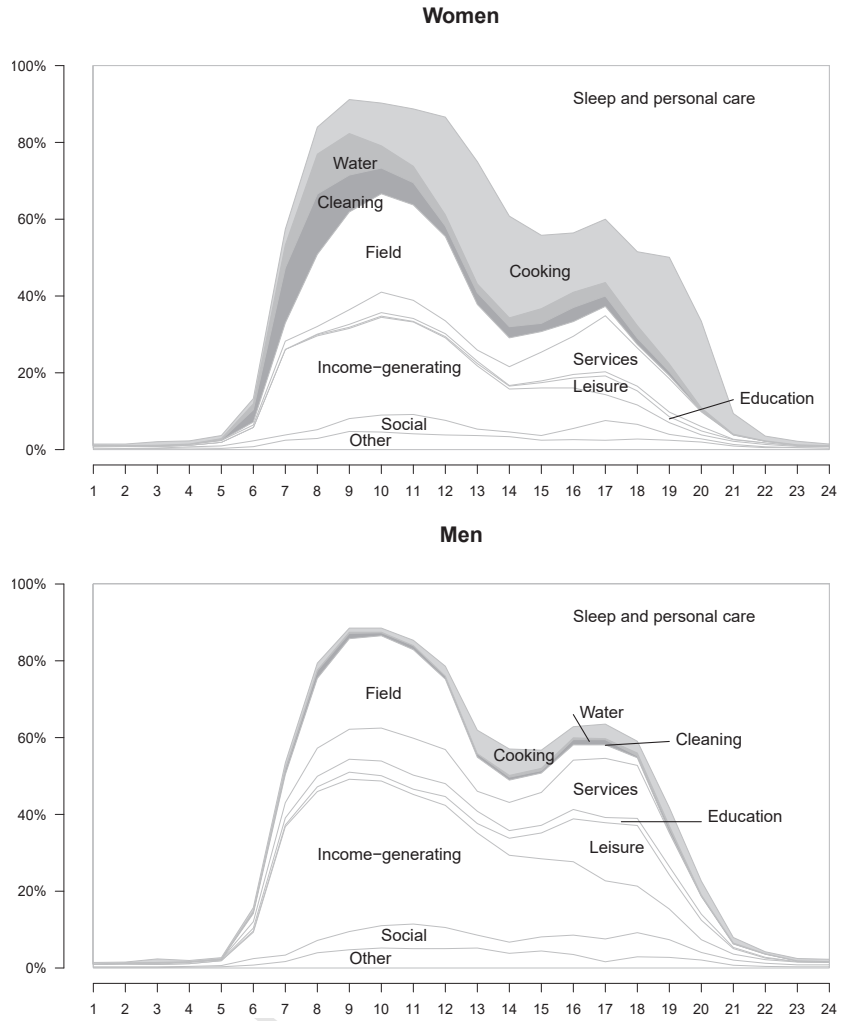
Next, we explore whether there are differences by gender in the outcomes that this study will explore — project preferences, women's role in the community and attitudes towards women's empowerment. We base this analysis on data from randomly selected communities in the same area of Eastern Congo as this study, but who did not participate in the CDD program.[18] The data presented can thus capture preferences in the absence

[17] Article 13(3) of the 2006 Electoral Law as amended in 2011.

[18] Within blocks, village clusters were randomly assigned to the CDD program. We restrict the analysis in this section to those 43 blocks in which parity lotteries were held and focus on those village clusters that were randomly sampled not to have the CDD program. In total, we collected project preferences data (Table 1) from five villagers in 117 villages and attitudes data (Table 2) from five respondents in 203

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Figure 1: Time Allocation Women and Men



Notes: Based on questions UT1-24. 'Sleep and personal care' includes sleep, eating and drinking, grooming and rest. 'Water' refers to water collection. 'Cleaning' includes house cleaning, dishes, gardening and household management. 'Field' refers to work in the field for household consumption. 'Service' refers to helping others. 'Education' refers to being in class or doing homework. 'Leisure' includes talking and communicating with fellow villagers, sports, TV and bar. 'Income-generating' includes work related travel, search for work, domestic work for in another household, work in the village, work in the field, hunting and fishing, hired work for someone else, work for the state, other work. 'Social' refers to organizational, civic and religious activities, including: spiritual and religious activities, participation in a village meeting, public work for the village (e.g. route reparation), other volunteer activities. 'Other' includes being sick and travel not related to work.

villages.

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of the CDD program. We asked villagers about their preferred project in the hypothetical scenario where the village receives a development grant of $900 dollar. Responses include a wide variety of projects, which we group together in five sectors. Table 1 shows the preference by gender across sectors. Among men, projects in the agriculture sector, which includes the purchase of poultry and the distribution of fertilizer, are the most popular and account for around 27% of projects. Projects related to water and sanitation (Watsan) and health are the next most often mentioned at 16%. Fourth most popular among men are projects in the education sector (12%). Finally, private projects — which includes (family or individual) projects, the distribution of money, and credit systems — and projects in the transport sector such as the construction of a bridge or a market are the least popular among men. Table 1 shows that, unlike other settings (Beath et al., 2013), there are only minor differences between men and women in average responses. A finer analysis, available in supplementary material, suggests that gender does not explain variation in preferences even at more local levels.[19]

Table 1: Project Preferences by Gender

	Health	Edu.	Transport	Watsan	Agric.	Private
Difference for women	-0.029	-0.028	-0.019	0.012	0.005	0.042
(se)	(0.026)	(0.02)	(0.015)	(0.024)	(0.033)	(0.023)*
Men	0.158	0.115	0.047	0.158	0.269	0.039
N	543	543	543	543	543	543

Notes: Differences in preferences by gender. We report sample average treatment effects. Regressions use block fixed effects. Standard errors clustered at the village cluster level. Based on question AV14. $*p \leq 0.10, **p \leq 0.05, ***p \leq 0.01$.

Our data also shed light on the position of Congolese women in their communities. For example, we asked respondents whether they attended a village meeting during the six months preceding the survey. About 44% of male respondents answered 'yes', while this was the case for only 28% of female respondents. Among those that attended a meeting, we asked whether they spoke up during the last meeting. Men report to have given their opinion in 71% of cases, while women only did so in 37% of the cases. These differences between men and women are statistically strong as well as substantively large ($p < 0.001$). These difference in participation also arise when it comes to national level politics. As we saw above, citizen's knowledge about the national government is generally low among the Congolese populace. However, we find that this knowledge is particularly low for women respondents who can only correctly mention the name of the country's ruling party in 16%

[19]Specifically, except for the private goods category, we cannot reject the null that preferences are the same across gender groups in each of the lottery bin areas in the study.

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of the cases, while 36% of men can correctly report the ruling party. Similarly, while 24% of men can correctly report the name of the country's prime minister, this number decreases to 10% for female respondents.

Finally, we explore attitudes towards women. We asked our respondents to position themselves on four statements related to women's rights and roles: 1) Women should have the same rights as men; 2) If a man mistreats his wife she has a right to complain; 3) A woman should have the same opportunities as men to occupy socio-administrative positions in the village; 4) Women have knowledge to contribute and so should be eligible to serve as presidents of development committees in the village. We create a score that equals 1 (2) for those (strongly) agreeing with the statement, and -1 (-2) for those (strongly) disagreeing. Respondents may also register as indifferent (0). Table 2 presents the responses by gender. We find that, on average, men in Eastern Congo often agree with the empowering statement. Surprisingly perhaps, in our sample women agree less than men with the empowering statements, although the differences across genders are not statistically significant.

Table 2: Attitudes Towards Women by Gender

	Same rights as men	Complain if mistreated	Socio-admin positions	Eligible for president
Difference for women	-0.103	-0.085	-0.062	0
(se)	(0.082)	(0.088)	(0.08)	(0.069)
Men	0.185	0.501	0.768	0.798
N	950	950	951	957

Notes: Differences in attitudes by gender. We report sample average treatment effects. Regressions use block fixed effects. Standard errors clustered at the village cluster level. Based on question QG8-QG11. $*p \leq 0.10, **p \leq 0.05, ***p \leq 0.01$.

3.2 The Institutional Context at the Community Level

The development program we study created committees responsible for managing project funds. Our implementing partner used these committees as a vehicle to place women in leadership positions. To understand the impact of this institutional innovation, we also briefly introduce the existing local institutional context in which these committees were created.

The village chief is the most important decision maker at the local level in Congolese villages. The chief — almost always male (from our data less than 2.5% of chiefs are women) — is responsible for land allocation, resolving disputes, public goods provision,

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and other issues related to the community. There are at least two reasons why chiefs play such a key role. First, the chief controls within village resources such as land (e.g. Vlassenroot and Huggins (2005) for the DRC). Second, chiefs enjoy popular legitimacy, giving the chief a moral claim to his position. That traditional leaders play a central role to community life is the case in much of the developing world (e.g. Acemoglu et al. (2014), Logan (2013)).

Our data confirms the claim that chiefs enjoy popular legitimacy when it comes to village governance. To assess legitimacy we gave each respondent a hypothetical scenario in which the village received funds, and asked who *should have* most influence on beneficiary selection. A majority of respondents (51%) stated that this should be the village chief; other often-mentioned actors largely come from within the village: villagers (23%), village wise men (8%), religious leaders (10%), and youth associations (1%). Few respondents mentioned women associations (1%), chiefdom leader (1%), or the Congolese government (2%), and 5% of respondents are of the opinion that nobody should have most influence. We find that men and women have very similar opinions about the role the village chief should take: 51% of women is of the opinion that the village chief should decide on beneficiary selection, while this is 52% for men.[20]

In sum, in Eastern Congo a largely male institution controls decision making but does so with broad support from both men and women.

4 A Field Experiment in Eastern Congo

4.1 A Community-Driven Development Program

This study draws on variation produced by a large scale development program, "Tuungane," which was implemented in 1,250 villages in the Congolese provinces of South Kivu, Maniema, Haut Katanga and Tanganyika. With an average of around 1,424 inhabitants per village, the program sought to reach a beneficiary population of approximately 1.8 million people.[21] The program was implemented in about four years, with the phase we study here finished after around two years.[22] During this two-year period the implementing agency undertook a number of activities. Local election teams were established and trained to mobilize and guide village populations to ensure a good understanding of the *Tuungane* program and the subsequent elections to form so-called Village Development

[20] We find very similar results when we ask our respondents about who should decide on the allocation of these development funds across different projects.

[21] The program's budget was £30m (USD $46m), which includes the cost of the larger infrastructure projects that is not part of this study.

[22] See Figure 2 in the appendix for an illustration of the timing of implementation across provinces, and the period when we collected our data.

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Committees ("VDCs"). Each of the 1,250 VDCs consisted of ten individuals: two presidents, two secretaries, two treasures, two mobilizers, and two inclusion officers. Next, VDCs, in consultation with the population, decided how to allocate an envelope of $3,000 for a maximum of two projects. The proposed project(s) was then voted on by the whole village. In the two years following project selection, VDCs were responsible for project implementation, which included a number of activities: convene community meetings, mobilize community participation, manage project funds, and report to the community about funds management and project implementation.[23] The process went hand in hand with intensive trainings and monitoring by the implementing partner.[24] In all, this phase of *Tuungane* implemented a total of 1,812 projects at a value of $3,707,624.[25]

4.2 The Gender Parity Treatment

In 2006, prior to the start of the program the subsequent year, the research team worked together with the implementing partner to design *Tuungane* in such a way to assess the impact of women in leadership positions. Specifically, a random subset of all *Tuungane* villages were assigned to a gender parity condition: the ten-member strong VDC committees were required to contain five men and five women: one man and one women would occupy each position.[26] In another random subset of villages this requirement did not exist, and communities were free to choose the gender composition of their *Tuungane* VDC committees. The treatment effect we explore is thus the impact of a gender parity provision. This type of provision reflects common donor practices. We discuss the salience of a 50% provision compared with other possibilities in Section 6.2.

[23] Decisions within the VDC committee were decided by majority vote, and had to be validated by a general assembly of the community. In the case of conflict, the issue would be brought to the "Advisory Board," which is composed of influential community members including the village chief. If a VDC member had to be replaced, a community-wide election was held to choose an individual with the same gender. VDC members were not compensated.

[24] Trainings focused on a number of topics: the roles and responsibilities of VDC members, leadership and good governance, gender and vulnerability, the "Do No Harm" principle, and financial management.

[25] The majority of projects took place in the education sector. The 813 education projects included building 420 school rooms, renovating another 1,348, and the purchase of 11,795 school furnishing items (benches, tables, chairs, etc.). A total of 325 projects took place in the water and sanitation (Watsan) sector, which led to the construction of 413 springs, 227 wells and pumps, and 150 latrines. Livelihood projects were also popular. A total of 225 such project took place, constructing 28 markets, purchasing 1,328 goats, 415 chickens, 18,266 agricultural tools (spades, hoes, mattocks, rakes, etc.), and 12,765 kilograms of seeds. A total of 223 projects took place in the health sector: 89 health posts or maternity clinics were constructed, 72 were rehabilitated, and 101 health facilities were equipped. 149 projects took place in the transport sector, mainly to construct and improve roads. Finally, *Tuungane* implemented 77 'other' projects, which included the construction of a morgue, the installation of electricity lines, the distribution of 1,599 blankets, and the acquisition of a field for pygmies. Source: IRC (2012).

[26] This design feature was included to decrease the possibility that women would have only symbolic roles on the VDC committees.

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4.3 Assignment to the Gender Parity Treatment and Identification

The details of the randomization procedure are as follows. The 1,250 *Tuungane* villages were grouped into 280 village clusters, which were grouped into 83 blocks. The composition of the clusters and blocks were determined by geographic considerations. Village clusters are groupings of neighboring villages, grouped together by the implementing NGOs. The communities inside the clusters thus tend to have similar characteristics. The blocks generally correspond to chiefdoms, which are administrative units in Congo. This blocking structure guarantees balance at a fine level of administrative organization as well as strong geographic balance. In total, 43 blocks in South Kivu, Maniema and Haut Katanga were (not randomly) selected to participate in the field experiment.[27] Within the blocks, half of the village clusters were randomly selected to enter a "parity lottery".[28] In total, 149 village clusters (661 villages) entered the lottery. Within each block, half of these village clusters were randomly assigned to the variation in treatment.[29] Table 3 maps the total number of village clusters per block that entered the lottery and the number of village clusters assigned to the parity treatment. We see that in all but two cases, half of the lottery participants are selected to the treatment.[30] In total, 75 village clusters (and thus all 337 VDCs in those clusters) were randomly assigned to the gender parity treatment. The other 74 clusters (325 VDCs) were free to choose the gender composition of their VDC committee. In the remainder of the paper we will only focus on those areas that entered the parity lottery.

The creation of a parity treatment and control group, which share the same characteristics in expectation before the onset of the program, allows us to investigate the causal impact of having women in leadership positions. Table 10 in Appendix B shows evidence that the randomization procedure was successful in ensuring substantive balance between the gender parity treatment and control group. This study's empirical strategy is therefore straightforward. In the next section we compare mean outcomes in parity and non-parity communities that participated in the parity lottery, which provides unbiased estimates of the average treatment effect (Rubin, 1974). For efficiency reasons we report sample average treatment effects, ignoring small differences in sampling of individuals in different sized households to the survey and in sampling different sized village within clusters. We use

[27] Not all 83 blocks participated for logistical reasons.

[28] In the case of blocks with odd numbers of village clusters the target was itself set randomly so that 50% assignment probabilities were maintained.

[29] We again ensured 50% assignment probabilities in cases where an odd number of village clusters were selected into the lottery within a block.

[30] That in two cases not half of the lottery participants are selected for gender parity is likely the result of data inconsistencies. Note that the block in which all village clusters are assigned to parity drops out because we use block fixed effects. Excluding the remaining block from the analysis gives similar results as those reported in the main text.

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Table 3: Blocks and clusters.

	0	1	2	3	4	5	6
1	4	3	0	0	0	0	0
2	0	11	0	0	0	0	0
3	0	4	4	0	0	0	0
4	0	0	6	0	1	0	0
5	0	0	2	1	0	0	0
6	0	0	0	3	0	0	0
7	0	0	1	0	0	0	0
8	0	0	0	0	1	0	0
9	0	0	0	0	0	1	0
11	0	0	0	0	0	0	1

Notes: Table shows distribution of the 43 blocks in terms of block size (rows) and the number of clusters in the parity condition (columns) according to project data.

block fixed effects to control for average differences across blocks (assignment propensities were the same inach each block), and cluster our standard errors at the village cluster level for those analyses with more than one observation per cluster.

4.4 Measuring Women's Empowerment

A difficulty with measuring possible sensitive social outcomes — such as the role of women — is that responses may reflect different types of desirability biases. Respondents may provide answers to survey questions that reflect what they believe researchers want to hear. Lab-in-the-field type measures can also face problems. They can suffer from an interpretation challenge: we might observe unbiased effects but those effects may be measured on a metric with no clear real-life interpretation. In response, this study exploits direct behavioral measures generated through an independent cash delivery project ("Recherche-Action sur les Projets d'Impact pour le Développement," henceforth RAPID). Between 2010 and 2012, RAPID visited one village in each *Tuungane* village cluster and implemented an unconditional cash transfer program in which the villages received grants of $1,000 to be used on projects that benefit the village. Communities were able to identify and implement projects subject to minimal constraints.[31] Importantly, the unconditional cash transfer

[31] The key constraints were that some uses were ruled out if these were likely to result in harm (such as the purchase of weapons) and the grant had to be spent out within a two month period — in order to be able to assess the use of funds in a timely manner.

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left communities free to decide who should manage the funds and how decisions should be made. We rolled the RAPID project out in four steps (A-D) over the course of 2-3 months. The key features are described in Table 4, including the data that we collected during project implementation.

Table 4: The RAPID Behavioral Measure

Step	Description	Features
A	Team schedules village meeting and conducts surveys	Initial meeting with the village chief to ask him to convene a public meeting. Survey conducted among 5 randomly selected households. By design, half of the respondents are men, half are women.
	Village meeting and additional surveys	The RAPID project is described in a public village meeting. Surveys are conducted with selected groups of those present during the meeting.
B	Collection of forms	Meeting with RAPID committee members only. Measures are taken of the village's decisions regarding how to use funding and who is entrusted to manage it.
C	Disbursement of funds by IRC and CARE	$1,000 are disbursed in private to a select group of members identified by the RAPID committee.
D	Auditing	Auditing is undertaken to track the use of all funds.
	Follow-up surveys	Surveys are conducted among 10 randomly selected households (5 are those surveyed during Step A). By design half of the respondents are men, half are women. Also surveys conducted with two *Tuungane* VDC members.

Notes: Key features of the $1,000 unconditional cash transfer program.

The RAPID project allows us to measure actual behavior related to women's empowerment. For example, there was no constraint placed on the composition of the RAPID committee other than size (at least 2 members and no more than 8). An examination of the composition of RAPID committees thus provides an opportunity to assess whether having had women in leadership positions during *Tuuungane* lasted over time. We will discuss our outcome measures in detail in the next section.

4.5 Data Sources and Attrition

Our study builds on multiple data sources. To learn about project selection for the *Tuungane* program we build on project records collected by our implementing partner.

To learn about the the downstream effects on project selection for the RAPID program and the position of women in the community, we build on data collected as part of the RAPID project. As discussed above, we aimed to implement RAPID in one (randomly selected) community in each of the 149 village clusters. In total, we were able to implement

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Step A-C in 105 villages (54 parity, 51 control), and Step D in 103 villages (52 parity, 51 control). There are a number of reasons for attrition. Chief among these reasons was data loss in one of the three provinces taking part in the gender parity lotteries, Maniema. Political tensions in Maniema in the run up to the 2011 elections led to the expulsion of our teams from the entire province. Other data loss occurred due to inaccessibility of communities for security and logistical reasons, which include theft of tablets. Since attrition primarily took place at the block level or above, there is near perfect parity in the rate of attrition between treated and untreated units. We provide a more detailed discussion in Appendix C, where we establish that there is no relation between the data loss and parity treatment status.[32]

Our third outcome of interest are downstream effects on attitudes, which builds on data collected during RAPID's Step D. Furthermore, in parallel to Step D, we visited a second (randomly selected) community in each of the 149 village clusters. In these communities, which did not receive RAPID, we only conducted the household survey among five randomly selected households (half men, half women). We were able to collect information in 97 communities (50 parity, 47 control). Again, in appendix C we show how there is no relation between the data loss and parity treatment status. Results in Section 5.3 build on Step D data from both RAPID and these survey-only villages, adding up to 200 villages.

4.6 Project Implementation and Manipulation Check

Before moving to the results, we verify that the gender parity treatment was actually implemented and that in fact more women occupy VDC position in communities with gender parity.

The main text reports results based on gender parity as recorded by the research team in 2006. Project records, collected in 2010, deviate in small ways from the research team's data in their record of treatment status. The project reports parity treatment assignment for 12 village clusters that the research team records as assigned to control, and records an assignment to the non-parity condition to 11 clusters that the research team data records as assigned to parity. This discrepancy likely reflects errors in record keeping. We report results based on project data in Appendix F, where we present very similar results. Furthermore, in Appendix G we present results based on local average treatment effects, where we instrument project data by research data. Again, we obtain very similar results.

Do VDCs in communities assigned to gender parity actually contain more women? The distribution of women on the VDC committee is presented in the top row in Figure 3, where we separate nonparity and parity areas. We find significantly fewer women on

[32] We acknowledge that although the probability of attrition is similar across treatment conditions, those villages lost in treatment and control conditions may be different.

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VDC committees in areas where gender parity was not mandated. Based on research data we find that women hold around 4.7 of the ten VDC seats in parity areas. In nonparity areas, communities voted, on average, only 3.1 women to the management committee.[33] Regressing the number of women VDC members on the parity requirement, we find that the difference is statistically significant ($p<0.001$). We now explore if the gender parity treatment had an impact on women's empowerment.

5 Results

We explore the impact of women in leadership positions on three outcomes. First, project selection for the *Tuungane* program. Second, the downstream effects on project selection for the RAPID program and the position of women in community decision-making. And, finally, the downstream effects on attitudes.

5.1 Project Selection

We first assess whether gender parity has an impact on project selection for *Tuungane*. The communities taking part in *Tuungane* implemented a wide variety of projects.[34] Table 5 shows that projects related to education are particularly popular, accounting for more than half of all projects. Water and sanitation (Watsan) and health projects account for around 18% and 12% of all projects in control areas, respectively. Agriculture and transport projects are the least popular.[35] Overall, we find largely similar patterns in areas with and without gender parity. The dominant project type, education, is selected with similar frequency in parity and nonparity areas. There is some evidence that having women on the *Tuungane* VDC committee leads to a drop in the selection of water and sanitation projects, though we note that this is just one of five analyses and not indicative of strong differences in project choices.[36] Finally, we conduct an omnibus test on the null hypothesis that project choices in parity and nonparity conditions are drawn from the same theoretical distribution. We fail to reject the hypothesis with a p-value of 0.45 in a χ^2 test.[37]

One reason for this null result may be the fact that, on average, women's preferences are similar to men's preferences (Table 1), which suggests that this was a setting in which

[33] Based on project data these numbers are 5 and 2.7, respective.

[34] A number of VDCs implemented more than one *Tuungane* project. At times also in different sectors. The dependent variable is the share of projects selected by a VDC in a sector.

[35] The project shares do not sum to one because of an 'Other' category (5% of projects).

[36] Note that this finding is different from the result found in Chattopadhyay and Duflo (2004) where women's leadership was associated with a greater investment in Watsan (a sector favored by women in that study).

[37] The simple χ^2 ignores the blocking and cluster function; taking a p value from a F test following a multinomial logit model produces a similar result.

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descriptive representation is not needed to produce substantive representation, at least in terms of these sectoral priorities.[38] This does not preclude the possibility that the intervention could influence behaviors and attitudes, which we turn to next.

Table 5: Effect of Parity Requirement

	Tuungane project choice				
	Health	Education	Transport	Watsan	Agriculture
Parity Effect	0.028	0	0.026	-0.059	0.022
(se)	(0.024)	(0.033)	(0.021)	(0.025)**	(0.015)
Control	0.124	0.513	0.066	0.182	0.047
N	654	654	654	654	654

Notes: Effect of parity requirement. We report sample average treatment effects. Regressions use block fixed effects. Standard errors clustered at the village cluster level. Based on implementing partner's project data and includes villages that were and were not surveyed by the research teams. $*p \leq 0.10, **p \leq 0.05, ***p \leq 0.01$.

5.2 Downstream Behavioral Effects

The downstream effects on RAPID project selection are perhaps more important than the direct effects on *Tuungane* project choice. Whereas the *Tuungane* projects were implemented with guidance from the implementing partner — which might have affected the projects selected[39] — communities were entirely free to choose a RAPID project, which was subsequently implemented with minimal oversight. Moreover, RAPID took place after the *Tuungane* program, which makes it possible to investigate whether impacts of women in leadership positions last over time. Table 6 shows that project choice for RAPID is quite different than choices under *Tuungane*, with 30% of all RAPID projects chosen falling in the agriculture sector. This sector includes projects like goat raising and the distribution of fertilizer and other agricultural goods such as seeds.[40] Given RAPID's shorter term period (two months compared to two years for *Tuungane*) and smaller budget ($1,000 instead of *Tuungane*'s $3,000), a focus on projects in this sector is not surprising.

Table 6 shows that RAPID project selection, like *Tuungane* project selection, is largely similar in areas with and without gender parity. There is some evidence for greater in-

[38] In Table 12 in Appendix D we present results conditional on being in the same area as discussed in the remainder of the section. We find similar results.

[39] Anecdotal evidence suggests that implementing agents at times nudged communities towards certain types of projects. See also Humphreys et al. (2006) who find strong influence of discussion leaders in free deliberations.

[40] The project shares do not sum to one because of an 'Other' category (5% of projects).

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vestment in transport, but no differences in investments in Watsan or any of the other sectors. We thus find no evidence that the parity intervention led to greater reflection of women's preferences in project selection. We again conduct an omnibus test to test whether RAPID project choices are different across nonparity and parity conditions. We do not find evidence that this is the case (p=0.16).

Table 6: Downstream Effects on RAPID Project Choice

	RAPID project choice					
	Health	Education	Transport	Watsan	Agriculture	Private
Parity Effect	-0.107	-0.05	0.149	-0.001	0.011	-0.022
(se)	(0.06)*	(0.07)	(0.068)**	(0.073)	(0.097)	(0.023)
Control	0.137	0.137	0.039	0.137	0.373	0.039
N	105	105	105	105	105	105

Notes: Effect of parity requirement. We report sample average treatment effects. Regressions use block fixed effects. Includes only villages where RAPID implemented. Based on question B23. $*p \leq 0.10, **p \leq 0.05, ***p \leq 0.01$.

For the RAPID project choice we can implement a still finer analysis to assess whether the parity treatment influenced women's ability to have their preferences translate into village level choices. That is, we assess whether women's stated preferences translate into project choices at higher rates (relative to men's preferences) in parity areas. The advantage of this analysis is that it could pick up the effects of differences that may exist in preferences between genders even if on average there are few differences. Results are shown in Table 13 in Appendix E. There are two striking results. First, there is little evidence for male dominance in control conditions. Second, the parity condition, if anything, renders women's preferences (albeit post-treatment preferences) *less* predictive of outcomes relative to men's preferences.

Next, we examine three finer-grained behavioral measures on inputs to community decision making. First, during Step A, we recorded the number of people that attended the initial meeting to learn about the RAPID project. For the project we asked for an attendance rates of 25% or more. No compensation was provided for participation. We recorded attendance rates by men and women. Second, during this initial RAPID meeting, communities discussed their preferences for a RAPID project. Our enumerators observed this discussion and recorded how many and which citizens were active in the conversation, coding in detail the number of interventions by gender and age category of the speaker, the length of the interventions, as well as to whom the interventions were directed. Third, as part of RAPID, communities were asked to create a management committee. There

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was no constraint placed on the composition of these committees other than size (at least 2 members and no more than 8). Insofar as women in leadership positions affects the role of women inside the community, we can reasonably expect women to be present and participate more in the discussions about RAPID and to take on leadership roles during the RAPID program.

Table 7: Downstream Effects on Decision-making Inputs

	Share of women among those that...		
	were present	spoke	were on committee
Parity Effect	-0.007	-0.004	0.017
(se)	(0.026)	(0.031)	(0.036)
Control	0.439	0.266	0.220
N	104	105	105

Notes: Effect of parity requirement. We report sample average treatment effects. Regressions use block fixed effects. Based on questions: AM8, AD1, and B13. $*p \leq 0.10, **p \leq 0.05, ***p \leq 0.01$.

The results are given in Table 7. We find that in areas without gender parity around 44% of those present during the Step A meeting are women. In parity communities, on average, 43% of those in attendance were women. The difference is very small and not statistically significant. We also find no evidence of impact when it comes to participation during these meetings. On average, 27% of all interventions were made by women, with marginally fewer interventions in parity communities. Moving to the RAPID committee composition, we find that there is a strong tendency towards male domination of committees: the average size of the RAPID committee is 7.6 members, of which only 1.7 members are women (or 22%). In fact, of 105 RAPID committees only 12 had gender parity in the RAPID committee and exactly half of these had been in the *Tuungane* gender parity treatment, and half in control. The rest of the RAPID committees had more men than women.[41] Table 7 shows that the share of women on the RAPID committee in parity and non-parity communities is largely the same. In summary, we find no evidence that having had women in leadership positions during the *Tuungane* program led to a change in the role of women in the community.

[41] The breakdown is as follows: 0 women members = 16%, 1 = 30%, 2 = 28%, 3 = 18%, 4 = 8%.

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5.3 Attitudes Towards the Role of Women

Finally, we assess whether having had women in leadership positions has an impact on attitudes towards women. Even if there are no substantial effects on decision making, women's participation in decision making could still affect attitudes through demonstration effects.

Table 8 reports the estimated effects of the parity treatment on the reported responses of five randomly sampled subjects to the attitudinal questions described in section 3.1.[42] We present the impact of gender parity on each statement individually, and for a combined measure at the end.[43] The table shows average values for those communities that did not have the parity requirement, and the effect of mandating gender parity. We find no evidence that attitudes are different in areas with gender parity compared to those areas where villagers were free to choose the gender composition of their VDC committee. Indeed in three of four measures, as well as the overall index, the effects point negative.

Table 8: Downstream Effects on Attitudes

	Same rights as men	Complain if mistreated	Socio-admin positions	Eligible for president	Index
Parity Effect	0.041	-0.071	-0.074	-0.103	-0.067
(se)	(0.125)	(0.088)	(0.095)	(0.084)	(0.08)
Control	0.255	0.523	0.793	0.825	0
N	912	904	916	919	930

Notes: Effect of parity requirement. We report sample average treatment effects. Regressions use block fixed effects. Standard errors clustered at the village cluster level. Based on questionss QG8 - QG11. $*p \leq 0.10, **p \leq 0.05, ***p \leq 0.01$.

[42] Surveys were implemented in villages that had the RAPID intervention as well as villages in the same clusters that did not.

[43] We add the latter because it may be that all individual measures trend positive, but none is individually statistically significant. In such a case it is possible that effects are jointly significant across the family of measures. Conversely, it may be that by chance a measure is significant in a family while most are not, or even trend in the wrong direction. In such a case it is possible that there are no significant effects across the family of measures. In order to generate a meaningful summary of multiple effects within each family we follow the approach of Kling et al. (2007) and create a standardized index that we indicate with 'Index' in Table 8. The measure is created as follows. First, we redefine each of the variables of interest in a family, so that higher values for each variable imply positive effects. Second, we rescale each of the redefined variables using the (weighted) mean and standard deviation of the control group units. The index is then the standardized average of the redefined rescaled variables.

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6 Discussion

Our study finds no evidence that the use of gender quotas by development actors in a large scale development intervention had an impact on project choice, the role of women in the community, or attitudes towards women. From one perspective the absence of effects may not be surprising. Existing gender relations can be resilient, and more fundamental change may require changes to fundamentals such as women's level of education. In the absence of changes to underlying power positions, the formal rules imposed by external groups may be of little consequence. This view resonates with a qualitative study of the *Tuungane* program, which found that illiteracy and a lack of education are some of the key barriers to active participation in community decision-making by women (IRC, 2014).

Although this perspective may be correct, it ignores the fact that confidence in this kind of programmatic interventions finds support elsewhere, as we outlined in Section 2. Thus, our question becomes: What might explain this null result, given evidence elsewhere of the effectiveness of quota based strategies?

Explanations could include features specific to the context in Eastern Congo and features specific to the intervention. We discuss these now.

6.1 Context

A first possibility to account for differences in outcomes between Congo and India is that the intervention in India took place in a context that was more receptive to efforts to change gender policies. The Indian intervention was internally generated in the sense that it emerged from Indian political processes (even if not at the GP level where it was implemented). This does not mean that the intervention was popular in India — and some accounts suggest that it was not (e.g. Polgreen (2010)). But it signals that knowledgeable local actors believed that it could have an effect. This condition is perhaps less likely to hold if institutional innovation is introduced as a matter of policy by development actors independent of contextual characteristics.

Another reason could be that, in our context, men's and women's preferences differ too little. Chattopadhyay and Duflo (2004) found differences in preferences — proxied by the types of formal requests brought to the GP — by men and women across other sectors. In West Bengal, women complain more often than men about drinking water and roads. In Rajasthan, women complain more often than men about drinking water but less often about roads. In Table 1 we show baseline preferences over public goods by gender. In contrast to the Indian case, we find few differences between men and women in preferences over projects in Eastern Congo. In this context the lack of effects of parity provisions on project choice is not surprising. Though this feature cannot account for the lack of effects

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on other behavioral measures of empowerment, where there are clear differences in the positions of men and women, and for gender attitudes more broadly.

Third, men's and women's attitudes to the gender relations may differ too little for demonstration effects to induce change. Table 2 shows how men and women in Eastern Congo have also largely similar opinions about four statements related to women's empowerment. In the study of Beaman et al. (2009) the differences on attitudes between men and women in India were also not strong; men and women evaluate the effectiveness of a hypothetical female leader largely similarly. They find that exposure to women leadership counters men's bias against women's effectiveness in leadership positions, although changes in broader attitudes and norms appear more difficult. Beaman et al. (2009) collected survey data from 6,642 male and 6,568 female respondents in 495 villages spread across the 165 GPs in Birbhum district. The survey also asked respondents to position themselves on ten statements related to women's empowerment. Table 22 in the appendix presents the responses using this data, by gender. We find that across nine of the ten statements, men and women do differ significantly; in some cases more men agreeing with a statement empowering women, while in other cases it is women that agree more with a statement supporting women's empowerment.[44] Thus although the data from Eastern Congo do not suggest a disconnect between the attitudes of men and women, the patterns from India do not suggest that this is a particularly salient feature. Theoretically it is also not clear that such differences are important. In a context in which there are clear gender imbalances in terms of positions of power in the village, learning could arise for both men and women even if there are no differences at the outset; moreover attitudinal differences could provide reasons for resistance to change.

6.2 The Intervention

There are at least five candidate explanations for the null result that are related to the intervention itself, all of which focus on ways that the intervention was or was not strong in some sense.

First, our study focused on changes in committee composition from male-dominated to parity structures. It is possible that parity is not enough to effect change. In India the reservation system ensured that women had monopoly control over a top position in selected areas and not simply greater representation. Other studies suggest important differences in behavior when groups are composed entirely of women rather than being mixed, as was the case in this study's parity areas (see for example Greig and Bohnet

[44] For example, significantly more women are of the opinion that it would be a good idea to elect a woman as the President of India. More women are also of the opinion that a man is never justified in hitting his wife. On the other hand, more women are also of the opinion that a wife should not contradict her husband in public.

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(2009)). While it is possible that monopoly control may be required, there are still a number of logics through which 50% representation could produce a change in decisions. Most obviously, the increase from a minority to parity changes the coalitional power of groups on different issues whether or not those coalitions are composed entirely of women. In addition, the quantitative increase increases the scope for women to have their voices heard and produce demonstration effects.[45] These effects are plausibly enhanced by the fact that the intervention was designed to ensure that the positions of women were not trivial on these committees; *Tuungane* management committees in parity areas included women as co-presidents, co-secretary, co-treasurers and so on, and not simply as ordinary members. While we cannot rule out that effects would have been different with a more monopolistic allocation of power to women, we believe the treatment examined is for some purposes, more relevant. A parity allocation more closely reflects common donor practices, and is quite typical of the kind that is expected to generate strong effects.[46]

A second possible explanation is that two years of exposure is simply too short to produce meaningful effects. Beaman et al. (2009), for example, find that in India, the evaluation of female leaders was lower in those areas that had only a single period of mandated exposure before closing the gap in a second term. This suggests that effects may be slow to kick in. This logic may be in operation in Eastern Congo as well. More precisely, change may require sustained exposure to women in power of the form that is not typical of development projects. Development projects tend to be short in duration and the key decision making procedures in development projects are often front loaded.[47]

A third possibility is that the intervention, while ex-ante promising, was subverted in practice by communities. In response to the gender parity requirement, village elites might have selected women that they expected to be weak in their leadership role. During Step D (Table 4), in addition to the household surveys, we also conducted interviews with two members of the *Tuungane* VDC committee. This data allows us to compare the characteristics of women on the VDC committees to those of randomly selected women

[45]For discussion related to the importance of critical mass as well as decision rules matter for whether women's descriptive representation leads to substantive representation see e.g. Karpowitz et al. (2015) and Mendelberg et al. (2013).

[46]One piece of evidence that speaks in favor of this possibility comes from a survey implemented prior to launching our endline data collection. The survey asked project implementers (12 respondents) as well as a (convenience) sample of seven researchers working in Eastern Congo and Rwanda whether it was 'very unlikely', 'unlikely', 'likely' or 'very likely' that in parity zones, compared to non-parity zones, there would be a greater propensity of women to take on leadership roles. While 42% of implementers thought this unlikely, 50% thought this likely and 8% very likely. Among researchers 57% thought this unlikely, while 29% thought this likely and even 14% very likely. These beliefs reflect moderate ex ante confidence in the gender parity requirement.

[47]Specifically, here the development actors expected any social effects to emerge early and longer term assessment of the *Tuungane* program also do not suggest broader long term social effects. See Laudati et al. (2017) for a five year follow up.

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from the community. This question is not only important in and of itself, it also allows us to learn about our null result. If this type of selection is taking place we may expect that in non-parity communities a woman's level of education is an important determinant for VDC membership, while in parity communities it is not. Table 23 in the appendix presents the results from regressing a woman's VDC membership on a set of individual characteristics that we think are important for taking on a leadership position: a) wealth (as measured by whether the household's roof is made of metal), b) the woman's age (and a squared term), c) whether the woman is born in the village, and d) years of education. To test the claim whether in parity communities a woman's level of education is a less important determinant for VDC membership than in non-parity areas, we interact the latter with the gender parity status of the village. We find that education and age are important correlates of VDC membership, which resonates with results found in IRC (2014). These variables are statistically significant ($p < 0.01$), and remain robust to a large number of different model specifications. While Table 23 suggests that education is a less strong predictor of women's committee membership in parity areas, this difference is not statistically significant.

A fourth possibility is that the institutions targeted were not relevant: they may control too small budgets and/or are not the formal institutions enforced by the state. Although the budget allocated by the community as part of the *Tuungane* process — \$3,000 — is small relative to amounts allocated elsewhere (for instance in Chattopadhyay and Duflo (2004), the gender quotas are introduced at the level of the Gram Panchayat, which is responsible for public buildings, irrigation, drinking water, roads, repairs, roads, and welfare programs including pensions), it is still large relative to funds provided by the state in this area. More consequential, in our opinion, are the differences in the form of the institutions. The institutions targeted in India are a part of the formal state apparatus. Since the 1992 amendment to the constitution, the village council has primary responsibility in implementing development programs, as well as in identifying the needs of the villages under its jurisdiction. In Eastern Congo, traditional leaders are central to community level decision making and public goods provision (Section 3.2). Traditional leaders were not targeted in the project. Our implementing partner created the VDCs: a new, parallel institution, which does not exhibit the longevity of formal institutions. These novel institutional mechanisms may be weak and impose little constraint on actual decision making.

A final possible reason is that the power of the entire committee — and not just the power of women relative to men — was weak. Although in principle key decisions are made by the management committees, considerable efforts are taken by the development actors themselves to ensure that projects do not fail. This can include steering with respect to optimal project choice in an area (possibly reflecting engineering considerations or the support that could be provided by implementers) as well as measures to ensure limits

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Table 9: Possible Explanations for Null Result

Explanation	Relevance	Discussion
Social context related factors		
1. Community is not receptive	Possible	The intervention was externally imposed
2. Similar preferences	Likely	Men and women have similar preferences
3. Similar attitudes towards women	Unlikely	Lack of difference similar to India
Intervention related factors		
1. Weak role for women in committee	Possible	Women had no monopoly control
2. Short duration	Possible	Only two years of exposure
3. Elite capture of women selection	Unlikely	Similar female members by treatment
4. Wrong institution targeted	Possible	NGO did not target existing institutions
5. Committees were too weak	Possible	Strong NGO oversight over activities

Notes: Social context and intervention-related factors that may explain the study's null result.

on the misuse of funds. While such oversight might ensure better development project outcomes, it could undermine social learning that comes through the imposition of decision making structures.In this regard the lack of impact of an institutional innovation is best understood in the light of a broader failure of CDD-type development programs to produce social change (e.g. Casey et al. (2013); Fearon et al. (2009); Avdeenko and Gilligan (2015), and Humphreys et al. (2017) specifically for the Congolese context).

Table 9 summarizes the above discussion. We find that both context and intervention-specific explanations may explain the null result. We return to this in the conclusion.

7 Conclusion

Optimism that institutional innovations can be used to strengthen the position of women has shaped development thinking and the design of development programs. We study the impact of one particularly popular innovation — gender parity provisions — that was implemented through a development program in the Democratic Republic of Congo. In each participating community, the development program formed a management committee to oversee the implementation of projects with an envelope of $3,000. A total of 661 communities entered a lottery: 337 communities were assigned to obligatory gender parity of the management committee, 324 communities were free to choose the committee's gender composition. By having women take on leadership roles it was expected that the program would lead to changes in the type of public goods provided and have further downstream effects on the role of women in communities and attitudes towards them. The random allocation of gender parity allows us to evaluate these claims causally.

Although other studies have found that innovations in formal institutions can alter

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the position of women, we find no evidence that efforts by development actors to produce the same results in the context of developing programming is successful. In the program we examined, the types of public goods produced were largely unaffected by the gender parity treatment and we find no evidence that women became more involved in community decision-making nor that gender parity improved attitudes about women.

We probe possible reasons for these null results. Although statistical power is a common concern when studies yield null results, many of the weak effects we see here are precisely estimated and a number of the larger effects trend in the wrong direction. We focus instead on more substantive explanations. We find no evidence that these results are due to bad implementation or, specifically, that the gender parity condition was undermined by communities selecting underqualified women to serve in mandated positions. We find some evidence that preferences do not diverge strongly by gender and this might account for the lack of effects on project choice, although this does not provide a compelling account for null results on downstream outcomes.

More compelling explanations, we believe, stem from the substantive differences in treatment that arise from the translation of parity principles in more formal institutions to parity provisions in development programming. That is, our study highlights a challenge for drawing inferences across cases on program effects. The evidence for the effects of gender parity provisions come from cases where considerable power is given to women for extended periods. When international development agencies seek to imitate these innovations they do so for problems in which their ability to re-allocate power is limited on multiple fronts. They generally cannot replace or reform existing institutions. They often work over much shorter time periods. And, perhaps most ironically, development actors often operate with incentives that render project failure costly for them and so they seek to generate homogeneously successful outcomes no matter who the nominal decision makers are. These features may matter for a broader class of innovations than parity provisions and may signal the dangers of implementing small-scale design decisions based on learning from more structural institutional variation.

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ACCEPTED MANUSCRIPT

References

Acemoglu, D., Reed, T., and Robinson, J. A. (2014). Chiefs: Elite Control of Civil Society and Economic Development in Sierra Leone. *Journal of Political Economy*, 122(2):319–368.

Avdeenko, A. and Gilligan, M. J. (2015). International Interventions to Build Social Capital. *American Political Science Review*, 109(3):427–449.

Ban, R. and Rao, V. (2008). Tokenism or Agency? The Impact of Women's Reservations on Village Democracies in South India. *Economic Development and Cultural Change*, 56(3):501–530.

Barnes, T. D. and Burchard, S. M. (2012). "Engendering" Politics: The Impact of Descriptive Representation on Women's Political Engagement in Sub-Saharan Africa. *Comparative Political Studies*, 46(7):767–790.

Beaman, L., Chattopadhyay, R., Duflo, E., Pande, R., and Topalova, P. (2009). Powerful Women: Does Exposure Reduce Bias? *Quarterly Journal of Economics*, 124(4):1497–1540.

Beaman, L., Duflo, E., Pande, R., and Topalova, P. (2012). Female Leadership Raises Aspirations and Educational Attainment for Girls: A Policy Experiment in India. *Science*, 335:582–587.

Beath, A., Christia, F., and Enikolopov, R. (2013). Empowering Women through Development Aid: Evidence from a Field Experiment in Afghanistan. *American Political Science Review*, 107(3):540–557.

Besley, T., Folke, O., Persson, T., and Rickne, J. (2017). Gender Quotas and the Crisis of the Mediocre Man: Theory and Evidence from Sweden. *American Economic Review*, 107(8):2204–2242.

Bhavnani, R. R. (2009). Do Electoral Quotas Work after They are Withdrawn? Evidence from a Natural Experiment in India. *American Political Science Review*, 103(1):23–35.

Casey, K., Glennerster, R., and Miguel, E. (2013). Reshaping Institutions: Evidence on Aid Impacts using a Preanalysis Plan. *Quarterly Journal of Economics*, 127(4):1755–1812.

CEDAW (2004). Committee on the Elimination of Discrimination Against Women: Democratic Republic of Congo. Technical report.

ACCEPTED MANUSCRIPT

CEDAW (2011). Committee on the Elimination of Discrimination Against Women: Democratic Republic of Congo. Technical report.

Chattopadhyay, R. and Duflo, E. (2004). Women as Policy Makers: Evidence from a Randomized Policy Experiment in India. *Econometrica*, 72(5):1409–1443.

Clayton, A. (2014). Women's Political Engagement Under Quota-Mandated Female Representation: Evidence From a Randomized Policy Experiment. *Comparative Political Studies*, 48(3):1–37.

DFID (2008). The Gender Manual: A Practical Guide. Technical report.

Edlund, L. and Pande, R. (2002). Why Have Women Become Left-Wing? The Political Gender Gap and the Decline in Marriage. *Quarterly Journal of Economics*, 117(3):917–961.

Fearon, J. D., Humphreys, M., and Weinstein, J. (2009). Can Development Aid Contribute to Social Cohesion after Civil War? *American Economic Review: Papers & Proceedings*, 99(2):287–291.

Greig, F. and Bohnet, I. (2009). Exploring Gendered Behavior in the Field with Experiments: Why Public Goods are Provided by Women in a Nairobi Slum. *Journal of Economic Behavior and Organization*, 70(1):1–9.

Heise, L., Ellsberg, M., and Gottmoeller, M. (2002). A Global Overview of Gender-based Violence. *International Journal of Gynecology and Obstetrics*, 78(S1):S5–S14.

HRW (2009). Soldiers Who Rape, Commanders Who Condone: Sexual Violence and Military Reform in the Democratic Republic of Congo. Technical report.

Humphreys, M., Masters, W. A., and Sandbu, M. E. (2006). The Role of Leaders in Democratic Deliberations: Results from a Field Experiment in Sao Tome and Principe. *World Politics*, 58:583–622.

Humphreys, M., Sanchez de la Sierra, R., and Van der Windt, P. (2017). Social Engineering in the Tropics: A Grassroots Democratization Experiment in the Congo. *Working paper*.

IEG (2016). Women's Empowerment in Rural Community-Driven Development Projects. Technical report, Washington D.C.

Inglehart, R. and Norris, P. (2000). The Developmental Theory of the Gender Gap: Women's and Men's Voting Behavior in Global Perspective. *International Political Science Review*, 21(4):441–463.

ACCEPTED MANUSCRIPT

IRC (2007). Mortality in the Democratic Republic of Congo: An Ongoing Crisis. Technical report.

IRC (2012). Tuungane Phase I (2007-2010): IRC's Achievements in Community Driven Reconstruction in DR Congo. Technical report.

IRC (2014). Les Femmes Exceptionnelles Dans le Programme Tuungane: Profils et Contextes Favorables à Leur Emancipation. Technical report.

Kabeer, N. (2000). Resources, Agency, Achievements: Reflections on the Measurement of Women's Empowerment. *Development and Change*, 30:435–464.

Karpowitz, C. F., Mendelberg, T., and Mattioli, L. (2015). Why Women's Numbers Elevate Women's Influence, and when They do Not: Rules, Norms, and Authority in Political Discussion. *Politics, Groups, and Identities*, 3(1):149–177.

Kling, J. R., Liebman, J. B., and Katz, L. F. (2007). Experimental Analysis of Neighborhood Effects. *Econometrica*, 75(1):83–119.

Laudati, A., Mvukiyehe, E., and Van der Windt, P. (2017). Participatory Development in Fragile and Conflict-affected Contexts: Final Report of the Tuungane 1 Program. Technical report, World Bank, Washington D.C.

Leino, J. (2007). Ladies First? Gender and the Community Management of Water Infrastructure in Kenya. *Working paper*.

Logan, C. (2013). The Roots of Resilience: Exploring Popular Support for African Traditional Authorities. *African Affairs*, 112(448):353–376.

Mansuri, G. and Rao, V. (2013). *Localizing Development: Does Participation Work?* World Bank Policy Report.

Mendelberg, T., Karpowitz, C. F., and Goedert, N. (2013). Does Descriptive Representation Facilitate Women's Distinctive Voice? How Gender Composition and Decision Rules Affect Deliberation. *American Journal of Political Science*, 58(2):291–306.

Murphy, W. P. (1990). Creating the Appearance of Consensus in Mende Political Discourse. *American Anthropologist*, 92(1):24–41.

Narayan-Parker, D. (2002). *Empowerment and Poverty Reduction: A Sourcebook*. World Bank, Washington D.C.

O'Brien, D. Z. and Rickne, J. (2016). Gender Quotas and Women's Political Leadership. *American Political Science Review*, 110(1):112–126.

ACCEPTED MANUSCRIPT

Paxton, P., Kunovich, S., and Hughes, M. M. (2007). Gender in Politics. *Annual Review of Sociology*, 33:263–284.

Peterman, A., Palermo, T., and Bredenkamp, C. (2011). Estimates and Determinants of Sexual Violence Against Women in the Democratic Republic of Congo. *American Journal of Public Health*, 101(6):1060–1068.

Polgreen, L. (2010). Uproar in India Over Female Lawmaker Quota. *Times of India*.

Rubin, D. B. (1974). Estimating Causal Effects of Treatments in Randomized and Non-randomized Studies. *Journal of Educational Psychology*, 66(5):688–701.

Seay, L. E. (2013). Effective Responses: Protestants, Catholics and the Provision of Health Care in the Post-war Kivus. *Review of African Political Economy*, 40(135):83–97.

Titeca, K. and de Herdt, T. (2011). Real Governance Beyond the 'Failed State': Negotiating Education in the Democratic Republic of the Congo. *African Affairs*, 110(439):213–231.

UNDP (2014). UNDP Gender Equality Strategy 2014-2017 The Future We Want: Rights and Empowerment. Technical report.

USAID (2015). Gender Equality and Female Empowerment. Technical report.

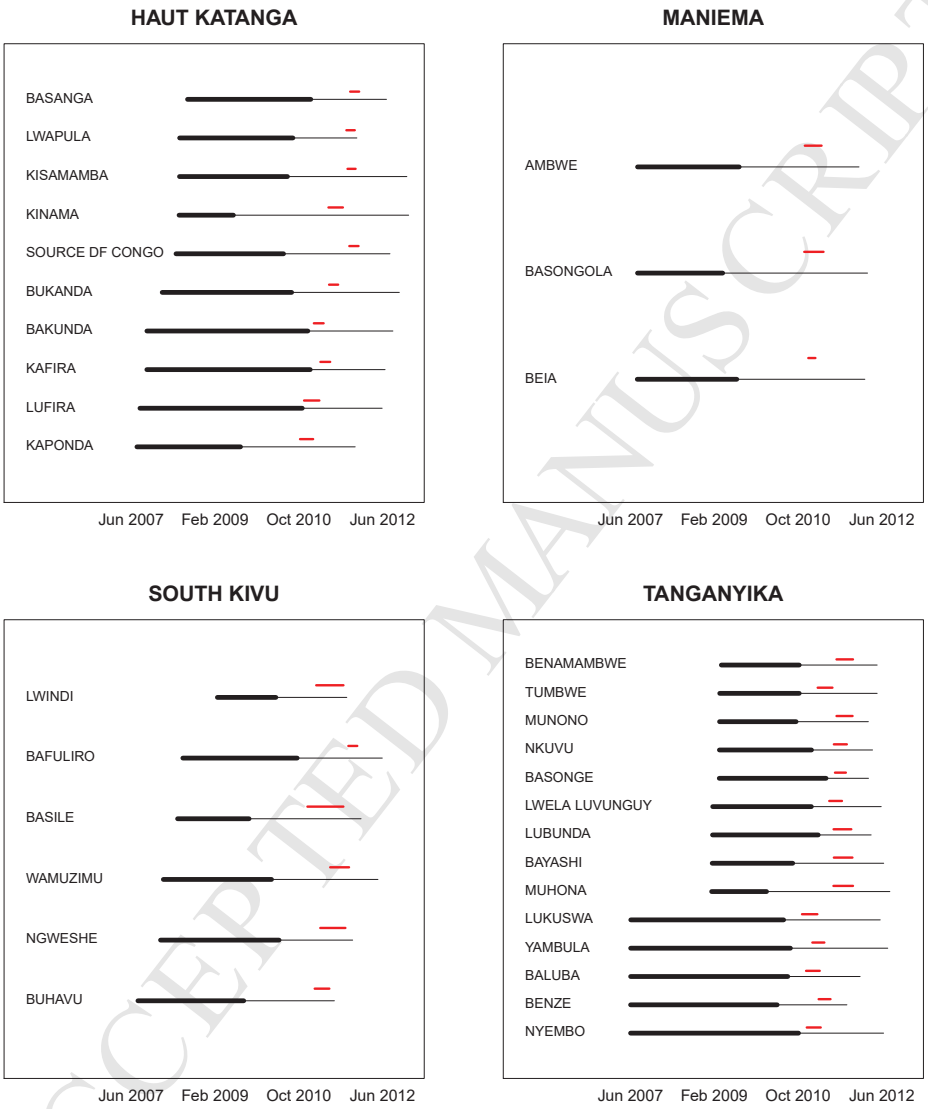
Vlassenroot, K. and Huggins, C. (2005). Land, Migration and Conflict in Eastern DRC. In Huggins, C. and Clover, J., editors, *From the Ground Up: Land Rights, Conflict and Peace in Sub-Saharan Africa*, pages 115–194. ISS, Pretoria.

World Bank (2015). Gender Equality, Poverty Reduction, and Inclusive Growth. Technical report, Washington D.C.

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A Timing of Intervention and Measurement

Figure 2: Timeline of Implementation



Notes: Thin black lines indicate length of the *Tuungane* program per chiefdom. Thick line indicates the first (VDC) phase, which is the one we study here. Shorter, red lines indicate the period of measurement (RAPID) in that chiefdom. Source: Authors' drawing.

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B Balance

The analyzes in this paper rely on randomization, which guarantees that the parity and non-parity areas are similar in expectation. In practice, however, it is possible for them to differ simply by virtue of unlucky draws. In response, we compare the different treatment conditions. Because we do not have baseline data for our study villages, we make use of the data collected in 2012. We limit ourselves to pre-treatment information and variables that do not change due to the treatment. We analyze the following variables. Distance from a set of (nearest) points of importance: well, market, public transport, primary school, secondary school, health facility, pharmacy, clinic, mine, post office, and the chiefdom headquarters. Distance data (measured in hours of walking) is based on individual responses, mean aggregated to the village level. We also collect data on the presence of infrastructure in the village in 2006: wells, schools, clinics, churches and meeting halls. This data comes from a chief survey that we conducted during Step D in RAPID and non-RAPID villages. In total, 172 of the 200 village chiefs could be interviewed. From the chief we also collected data on the number of IDPs, returned-IDPs, refugees and repatriated refugees that entered the village in 2006. Two notes need to be made regarding these immigration measures. First, many chiefs responded with "Don't know". Second, only in three villages did the village chief indicate that refugees moved into the village, and in only one village did the chief indicate that refugees were repatriated; all of these took place in nonparity areas. Finally, at the individual level we analyze gender and age. That is, we obtain information from the respondent about all the other individuals (both adults and children) in the household. Across all measures we do not obtain the target number of observations because some respondents replied: "Don't know," "Not Applicable" or "Refuses to respond".

Table 10 lists the mean and standard deviation for each variable for the parity and the non-parity areas. We also test the difference between both, where we cluster the errors at the village cluster level and use block fixed effects. The results suggest that there are no strong differences across the parity and the nonparity groups, which is consistent with what is to be expected given the random assignment.

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Table 10: Balance Test

	Parity	Sd.	Nonparity	Sd.	Diff.	Se.	P-value	N
Distance water source	0.47	0.49	0.40	0.38	0.09	0.07	0.25	152
Distance market	3.09	5.68	3.23	6.95	0.67	0.93	0.47	152
Distance transport	3.13	5.62	3.21	5.50	0.73	0.90	0.42	152
Distance primary school	1.06	3.76	0.63	0.72	0.52	0.53	0.33	152
Distance secondary school	1.86	4.06	2.14	5.60	-0.21	0.82	0.80	152
Distance clinic/hospital	1.78	4.07	1.38	1.58	0.31	0.63	0.62	152
Distance pharmacy	2.60	5.55	2.09	3.30	0.48	0.79	0.55	152
Distance maternity clinic	2.44	4.27	2.63	2.96	-0.15	0.68	0.83	152
Distance mine	12.80	20.77	17.50	36.24	-7.60	3.97	0.06	152
Distance police post	3.06	5.51	3.78	5.44	-0.62	0.97	0.52	152
Distance chiefdom HQ	7.92	12.03	10.78	11.56	-2.95	2.10	0.16	152
Wells in 2006	1.07	2.11	0.88	1.93	0.19	0.36	0.59	168
Schools in 2006	2.37	4.02	2.96	4.00	-0.44	0.54	0.41	169
Clinics in 2006	0.49	1.37	0.28	0.48	0.24	0.18	0.17	170
Churches in 2006	1.62	1.76	1.68	1.75	-0.06	0.23	0.80	169
Halls in 2006	0.02	0.15	0.07	0.46	-0.05	0.05	0.31	169
IDPs in 2006	40.28	271.88	18.21	85.96	33.05	44.10	0.46	117
IDPs returned in 2006	57.87	408.12	12.83	47.66	48.50	59.92	0.42	112
Refugees in 2006	0.00	0.00	1.10	5.24	-0.94	0.51	0.07	119
Refugees Repatriated in 2006	0.00	0.00	0.05	0.38	-0.04	0.04	0.32	122
Share of men	0.51	0.50	0.50	0.50	0.01	0.01	0.31	10771
Average age	21.54	18.38	21.10	18.24	0.06	0.36	0.87	10408

Notes: Balance information. Regressions use block fixed effects. Standard errors clustered at the village cluster level. $*p \leq 0.10, **p \leq 0.05, ***p \leq 0.01$.

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C Attrition and Missing Responses

In this section, we discuss attrition and missing responses in more detail. We also show that both are unrelated to the gender parity treatment status. Table 11 gives, for each result table in the main text, an overview of the number of targeted observations, the number of observations actually used for analysis, and possible imbalances between treatment conditions and a brief observation.

First, we make use of data provided by our implementing partner to examine the selection of projects in *Tuungane* (Table 5). The data contains information on all 661 villages (from 149 village clusters). In our analysis, we make use of 654 villages because project documents miss information about project choice for seven villages. The imbalance across treatment conditions is due to four villages with missing information, all of which are in the same (nonparity) cluster; thus only one cluster is affected by this data loss.

Second, to examine downstream effects on RAPID project selection and behavior (Tables 6 and 7), we build on data collected during steps A and B of the RAPID project. We targeted to implement RAPID in one (randomly selected) community of the 149 village clusters. In total, Step A of RAPID was implemented in 110 villages, and Step B in 105 villages. For Step A, we collected data in 49/54 villages in Haut Katanga, 12/51 villages in Maniema, and 44/44 villages in South Kivu. We lost 39 villages in Maniema because of political tensions in the run up to the 2011 elections, which led to the expulsion of our teams from the entire province. This is by far the most important source of data loss, yet it takes place at a level above the level of the lottery blocks. We also lost data on 5 villages in Haut Katanga (for which we do have Step B and D data). Those analyses involving Step A data thus make use of information from 105 villages. Note that for Table 7's indicator related to the share of women present during Step A's general assembly, we lose one observation because one village recorded 4014 men present, which we believe is a transcription error. We dropped this outlier. For Step B, we collected data in 54/54 villages in Haut Katanga, 10/51 villages in Maniema, and 41/44 villages in South Kivu. For three villages in South Kivu we do not have Step B data (we do have Step A and D data for these villages). Those analyses involving Step B data thus also make use of information from 105 villages. Again, we find no evidence that the missing data is related to the parity treatment status.

Our third outcome of interest are downstream effects on attitudes (Table 8), which builds on data collected during RAPID's Step D. In fact, in parallel to Step D, we aimed to visit a second (randomly selected) community in each of the 149 community clusters. In these communities, which did not receive RAPID, we only conducted the household survey among five randomly selected households (half men, half women). We thus targeted 1,490

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respondents from 298 villages. In total, we collected data in 200 instead of the 298 targeted villages (103 RAPID villages and 97 survey-only villages). In Haut Katanga, we were able to visit 102 of the 108 targeted villages. Six villages we were unable to reach for security reasons. In Maniema, we collected Step D data in only 10 of the targeted 102 villages. Again, this major source of data loss took place at a level above the lottery bins and thus affected villages equally in all treatment conditions. In South Kivu, data was collected in all 88 targeted villages. Table 8, however, does not make use of 1,000 respondents from these 200 villages. The first reason for data missingness is failures in the field, ranging from loss, damage, or theft of tablets, water damage to paper surveys, or enumerator error in the implementation of surveys or particular questions. Given the challenging environment to collect data in the Congo, this category is relatively small and affects a total of 6.5% of surveys (65 respondents). The remaining data missingness comes from respondents that answer either "I don't know," "I refuse to respond" or "Not Applicable". We report the numbers in Table 11. There is again no evidence that the missing data is related to the parity treatment status.

In sum, the data suggest that the probability of attrition is similar across treatment conditions. Although unlikely, we acknowledge that those villages lost in treatment and control conditions may be different.

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Table 11: Overview Attrition and Missing Responses

	Target	Number	Missing Parity	Missing Nonparity	Beta	(se)
Table 5: Health	661	654	1	6	-0.016	0.014
Table 5: Education	661	654	1	6	-0.016	0.014
Table 5: Transport	661	654	1	6	-0.016	0.014
Table 5: Watsan	661	654	1	6	-0.016	0.014
Table 5: Agri.	661	654	1	6	-0.016	0.014
Table 6: Health	149	105	21	23	-0.028	0.027
Table 6: Education	149	105	21	23	-0.028	0.027
Table 6: Transport	149	105	21	23	-0.028	0.027
Table 6: Watsan	149	105	21	23	-0.028	0.027
Table 6: Agri.	149	105	21	23	-0.028	0.027
Table 6: Private	149	105	21	23	-0.028	0.027
Table 7: Were present	149	104	24	21	0.027	0.036
Table 7: Spoke	149	105	24	20	0.036	0.034
Table 7: Committee	149	105	21	23	-0.028	0.027
Table 8: Same rights	1490	912	278	300	-0.038	0.022
Table 8: Complain	1490	904	286	300	-0.023	0.022
Table 8: Socio-admin	1490	916	278	296	-0.028	0.022
Table 8: President	1490	919	276	295	-0.030	0.022

Table presents number of targeted observations, number of observations used for analyses, and difference between both across treatment condition. Standard errors clustered at the village cluster level. $*p \leq 0.10, **p \leq 0.05, ***p \leq 0.01$. Related to Table 5, project documents missed information about project choice for 7 out of 661 VDCs. Imbalance is due to 4 VDCs being in one cluster. Related to Table 6, Step B: expulsion from Maniema province (41 villages); data loss 3 villages. Related to Table 7, Step A: expulsion from Maniema (39), data loss 5 villages. One village recorded 4014 men present, which we believe is an error. Related to Table 8, Step D: expulsion from Maniema (98). Per indicator: 4 NAs, 18 DKs, 1 RRs; 2 NAs, 29 DKs; 3 NAs, 14 DKs, 3 RRs; 4 NAs, 13 DKs. For all indicators: no data for 65 households.

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D *Tuungane* Project Choice in RAPID Communities

In this section, we provide results for *Tuungane* project choice for those areas that are under study in the remainder of the results section. We only know in which *Tuungane* village cluster our 105 RAPID villages are located (not the *Tuungane* village). As a result, we present result for all *Tuungane* villages located in those village clusters where we collected RAPID data. With around 4 to 5 VDCs per village cluster, this adds up to 443 observations. Table 12 presents the results. Results are very similar to Table 5.

Table 12: *Tuungane* Project Choice in RAPID Communities

	Tuungane project choice				
	Health	Education	Transport	Watsan	Agriculture
Parity Effect	0.034	-0.002	0.024	-0.065	0.027
(se)	(0.027)	(0.045)	(0.029)	(0.031)**	(0.021)
Control	443	443	443	443	443

Notes: Effect of parity requirement. We report sample average treatment effects. Regressions use block fixed effects. Standard errors clustered at the village level. Based on implementing partner's project data and includes villages that were and were not surveyed by the research teams. $*p \leq 0.10, **p \leq 0.05, ***p \leq 0.01$.

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E Male Dominance

Do women's stated preferences translate into project choices at higher rates (relative to men's preferences) in parity areas? Table 13 presents results. The coarse measure groups projects by sector: health, education, transport, watsan, agriculture and private. The 'fine measure' is a disaggregation.

Table 13: Translation of Male and Female Preferences to RAPID Project Choice

	Preferences realized	
	Coarse measure	Fine measure
Parity Condition	-0.088	0.026
(se)	(0.075)	(0.069)
Male	-0.06	0.014
(se)	(0.049)	(0.043)
Interaction	0.145	0.001
(se)	(0.074)**	(0.067)
N	444	444

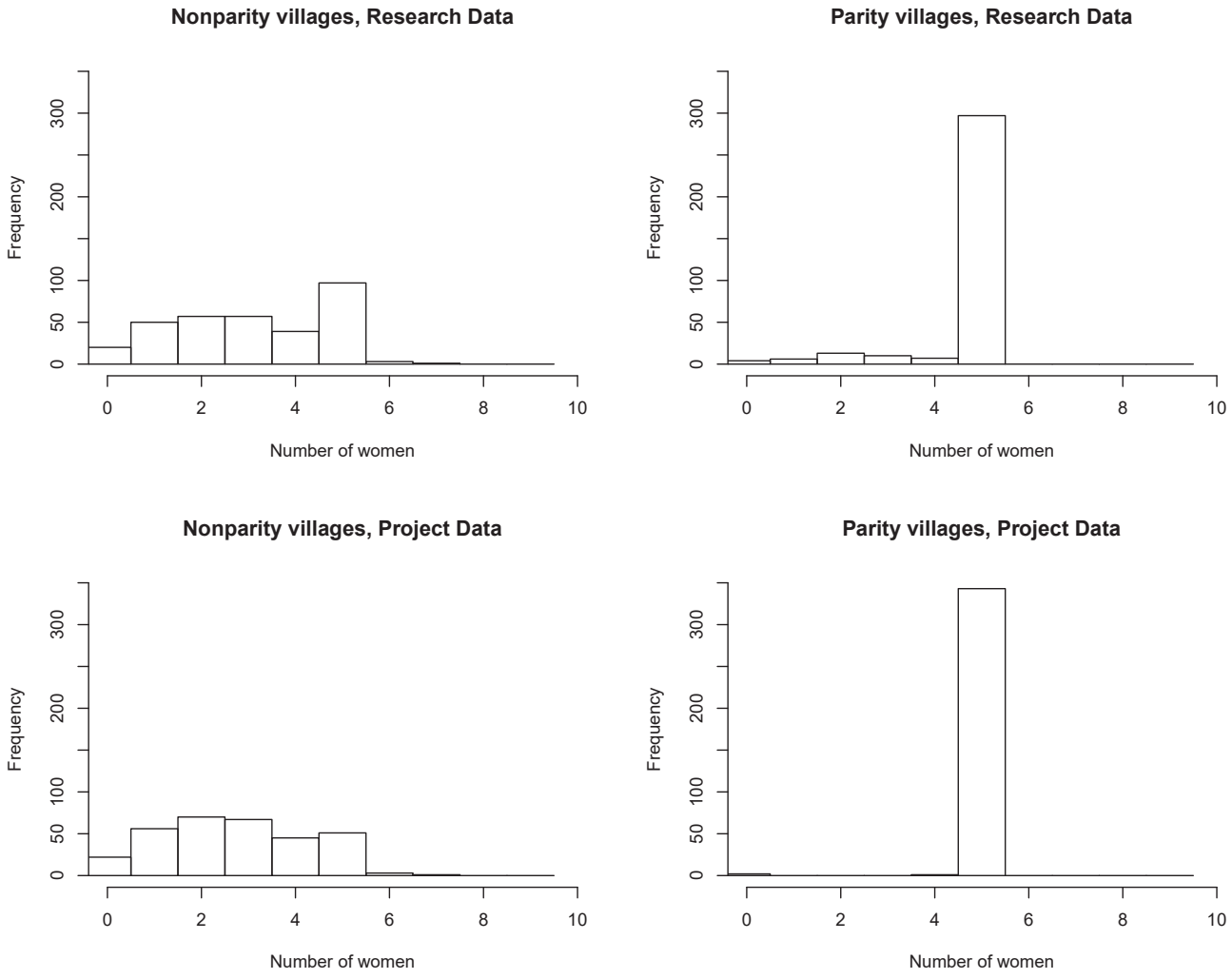
Notes: Effect of parity requirement on whether individual's ex ante project correspond to RAPID project choice. The 'fine measure' is a disaggregation of project sector. We report sample average treatment effects. Regressions use block fixed effects. Standard errors clustered at the village cluster level. Includes only villages where RAPID implemented. $*p \leq 0.10, **p \leq 0.05, ***p \leq 0.01$.

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F Gender Parity Based on Project Data

The main text reports results based on gender parity as recorded by the research team in 2006. The distribution of women on the VDC committee is presented in the top row in Figure 3, where we separate nonparity and parity areas.

Figure 3: Project and Research Data



Notes:

As we discussed in the main text, the research data recorded in 2006 differs from the records of the implementing partner in 2010. The bottom row of Figure 3 presents the distribution of women on the VDC committee across nonparity and parity areas based on

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project data. Tables 14 to 17 reproduces the four main result tables, where we base our analyses on project data.

Table 14: Effect of Parity Requirement - Project data

	Tuungane project choice				
	Health	Education	Transport	Watsan	Agriculture
Parity Effect	0.003	0.067	0.019	-0.086	0
(se)	(0.024)	(0.033)**	(0.021)	(0.024)***	(0.015)
Control	0.13	0.48	0.07	0.2	0.06
N	654	654	654	654	654

Notes: Effect of parity requirement. We report sample average treatment effects. Regressions use block fixed effects. Standard errors clustered at the village cluster level. Based on implementing partner's project data and includes villages that were and were not surveyed by the research teams. $*p \leq 0.10, **p \leq 0.05, ***p \leq 0.01$.

Table 15: Downstream Effects on RAPID Project Choice - Project data

	RAPID project choice					
	Health	Education	Transport	Watsan	Agriculture	Private
Parity Effect	-0.061	0.023	0.004	-0.031	0.106	-0.022
(se)	(0.062)	(0.073)	(0.069)	(0.068)	(0.096)	(0.022)
Control	0.12	0.1	0.1	0.14	0.34	0.04
N	105	105	105	105	105	105

Notes: Effect of parity requirement. We report sample average treatment effects. Regressions use block fixed effects. Includes only villages where RAPID implemented. Based on question B23. $*p \leq 0.10, **p \leq 0.05, ***p \leq 0.01$.

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Table 16: Downstream Effects on Decision-making Inputs - Project data

	Share of women among those that...		
	were present	spoke	were on committee
Parity Effect	-0.023	0.055	0.016
(se)	(0.026)	(0.033)*	(0.036)
Control	0.45	0.24	0.22
N	104	105	105

Notes: Effect of parity requirement. We report sample average treatment effects. Regressions use block fixed effects. Based on questions: AM8, AD1, and B13. $*p \leq 0.10, **p \leq 0.05, ***p \leq 0.01$.

Table 17: Downstream Effects on Attitudes - Project data

	Same rights as men	Complain if mistreated	Socio-admin positions	Eligible for president	Index
Parity Effect	-0.109	-0.064	-0.018	-0.051	-0.072
(se)	(0.124)	(0.089)	(0.093)	(0.082)	(0.078)
Control	0.315	0.519	0.764	0.799	-0.002
N	912	904	916	919	930

Notes: Effect of parity requirement. We report sample average treatment effects. Regressions use block fixed effects. Standard errors clustered at the village cluster level. Based on questionss QG8 - QG11. $*p \leq 0.10, **p \leq 0.05, ***p \leq 0.01$.

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G Local Average Treatment Effects

In this section we present local average treatment effects, where the research data serves as instrument and the treatment is program data.

Table 18: Effect of Parity Requirement - LATE analysis

	Tuungane project choice				
	Health	Education	Transport	Watsan	Agriculture
Parity Effect	0.04	0	0.036	-0.083	0.031
(se)	(0.034)	(0.047)	(0.029)	(0.034)**	(0.021)
Control	0.13	0.48	0.07	0.2	0.06
N	654	654	654	654	654

Notes: Effect of parity requirement. We report sample average treatment effects. Regressions use block fixed effects. Standard errors clustered at the village cluster level. Based on implementing partner's project data and includes villages that were and were not surveyed by the research teams. $*p \leq 0.10, **p \leq 0.05, ***p \leq 0.01$.

Table 19: Downstream Effects on RAPID Project Choice - LATE analysis

	RAPID project choice					
	Health	Education	Transport	Watsan	Agriculture	Private
Parity Effect	-0.204	-0.094	0.283	-0.001	0.021	-0.042
(se)	(0.12)*	(0.139)	(0.152)*	(0.139)	(0.184)	(0.044)
Control	0.12	0.1	0.1	0.14	0.34	0.04
N	105	105	105	105	105	105

Notes: Effect of parity requirement. We report sample average treatment effects. Regressions use block fixed effects. Includes only villages where RAPID implemented. Based on question B23. $*p \leq 0.10, **p \leq 0.05, ***p \leq 0.01$.

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Table 20: Downstream Effects on Decision-making Inputs - LATE analysis

	Share of women among those that...		
	were present	spoke	were on committee
Parity Effect	-0.011	-0.007	0.032
(se)	(0.042)	(0.053)	(0.068)
Control	0.45	0.24	0.22
N	104	105	105

Notes: Effect of parity requirement. We report sample average treatment effects. Regressions use block fixed effects. Based on questions: AM8, AD1, and B13. $*p \leq 0.10, **p \leq 0.05, ***p \leq 0.01$.

Table 21: Downstream Effects on Attitudes - LATE analysis

	Same rights as men	Complain if mistreated	Socio-admin positions	Eligible for president	Index
Parity Effect	0.077	-0.134	-0.136	-0.188	-0.123
(se)	(0.233)	(0.166)	(0.177)	(0.158)	(0.146)
Control	0.315	0.519	0.764	0.799	-0.002
N	912	904	916	919	930

Notes: Effect of parity requirement. We report sample average treatment effects. Regressions use block fixed effects. Standard errors clustered at the village cluster level. Based on questionss QG8 - QG11. $*p \leq 0.10, **p \leq 0.05, ***p \leq 0.01$.

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H Attitudes Towards Women Empowerment in India

Beaman et al. (2009) collected survey data from 6,642 male and 6,568 female respondents in 495 villages spread across the 165 GPs in Birbhum district.[48] The data include information about attitudes towards women's empowerment. Specifically, the survey asked respondents to position themselves on the following ten statements:

1. A man is never justified in hitting his wife
2. Parents should maintain stricter control over their daughters than their sons
3. For the most part, it is better to be a man than to be a woman
4. It would be a good idea to elect a woman as the President of India
5. A wife shouldn't contradict her husband in public
6. Preschool children suffer if their mother works
7. In a disaster, women ought to be rescued before men
8. Women should be cherished and protected by men
9. Women, compared to men, tend to have a superior moral sensibility
10. Men should be willing to sacrifice their own well-being in order to provide financially for the women in their lives

We explore differences in responses by gender. To present the results in a similar manner as Tables 2 and 8, we create a score that equals 1 (2) for those (strongly) agreeing with the statement, and -1 (-2) for those (strongly) disagreeing. Respondents may also register as indifferent (0). We follow Beaman et al. (2009) and use block fixed effects and cluster standard errors at the GP level. Table 22 presents the results.

Table 22: Attitudes in Birbhum District, India

	Hitting	Kids	Better	President	Public	Preschool	Disaster	Protect	Moral	Sacrifice
Women	0.033**	0.150***	0.102***	0.153***	0.133***	0.073***	-0.058**	0.004	0.139***	0.04*
(se)	(0.015)	(0.027)	(0.023)	(0.028)	(0.020)	(0.018)	(0.027)	(0.016)	(0.025)	(0.023)
Men	1.550	0.313	-0.207	0.544	1.265	1.351	0.456	1.419	0.706	1.264
N	13497	13497	13497	13497	13497	13497	13497	13497	13497	13497

Notes: Attitudes towards women's empowerment in Birbhum district. Data from Beaman et al. (2009). Regressions use block fixed effects. Standard errors clustered at GP level. $*p \leq 0.10, **p \leq 0.05, ***p \leq 0.01$.

[48] Data can be found at `https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/PXV79W&version=1.0`.

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I Determinants of VDC Committee Membership

During Step D, we also conducted interviews with two members of the *Tuungane* VDC committee. We compare their characteristics with those of five randomly selected individuals from the community. We do this analysis based on data from women only, and only in areas that participated in the CDD program and the gender parity lottery. As noted in the main text, we collected Step D data in only 200 of the 298 targeted villages (103 RAPID villages and 97 survey-only villages). Because VDC members were difficult to trace, we were able to collect data on 247 VDC members, of which 105 were women. We obtain data from 909 community members, of which 446 are women. In Table 23 we make use of 510 instead of 551 observations because of item non-response, particularly related to age. The magnitudes presented are marginal effects from a probit regression, evaluated at the mean of the independent variables.

Table 23: Women's Membership in *Tuungane* VDC Committee

	Beta	(se)
Wealth	0.0599*	(0.0336)
Age (in decades)	0.0338***	(0.0071)
Age^2 (in decades)	-0.0003***	(0.0001)
Born in the village	0.0569*	(0.0306)
Education (in years)	0.0416***	(0.0060)
Parity	0.0254	(0.0492)
Parity * Education (in years)	-0.0104	(0.0085)

Notes: Determinants of membership to *Tuungane* VDC committee. N=510. Based on questions: QF8, QF13, QE2, QF9, SP1. Probit regression where the dependent variable is a woman's CDV membership, evaluated at the mean of the independent variables. We report sample average treatment effects. Standard errors clustered at village level. $*p \leq 0.10, **p \leq 0.05, ***p \leq 0.01$.

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- A study based on a field experiment in 661 rural communities in the Congo.
- Gender quotas were imposed by development actors.
- There is no evidence that these gender quotas empower women.
- The null result is not due to bad implementation or the same preferences by gender.
- Institutional fixes for gender inequality do not travel easily across cases

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