Strength in Numbers: How Women's Groups Close India's Political Gender Gap

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October 5, 2017

Abstract

In India there persists a striking gender gap in political participation and representation, despite several decades of targeted policy interventions. Women's political participation is important not only on normative grounds of inclusion, but because we know that *when women do participate,* politics changes. I present a theoretical model of political behavior in rural India which argues that women's lack of political participation is the result of coordinated political behavior in the household. I then argue that women's access to economic networks of other women is one channel through which we can see a shift towards a gender-inclusive equilibrium, even when resource allocations, social norms, and household dynamics would suggest otherwise. I test this potential channel for women's political empowerment by leveraging a natural experiment which created as-if random variation in exposure to a program aimed at mobilizing women into small credit collectives. Original survey data from 7,770 women and men demonstrates that women who participated in this network intervention were significantly more active in local politics - women's attendance at local public meetings is estimated to double. I show evidence of three possible mechanisms underlying this network effect: (1) increased capacity for collective action, (2) information transfers, and (3) civic skills and confidence. I confirm with qualitative interview data. I further show income to be uncorrelated with political participation. These findings contribute to our understanding of how group dynamics affect individual political behavior and importantly help to fill the gap in our understanding of gendered political behavior.

*Nuffield College, University of Oxford, soledad.prillaman@nuffield.ox.ac.uk. The pre-analysis plan for this studay was filed on the AEA registry (AEARCTR-0001552). The study protocol has been approved by the Harvard Human Subjects Committee (Protocol # IRB15-1675) and the IFMR Human Subjects Committee (# IRB00007107). I would like to thank Jorge Domínguez, Torben Iversen, Sarah Khan, Gary King, Rakeen Mabud, John Marshall, Gwyneth McClendon, Rohini Pande, Jonathan Phillips, Dan Berliner, Thad Dunning, and participants at the Carnegie Endowment for International Peace India Political Economy Workshop, APSA 2016 annual meeting, MPSA 2017 annual meeting, Harvard's Comparative Politics workshop, Harvard's Political Economy Workshop, and NEWEPS-7 for insightful feedback on this paper. I am indebted to Jasleen Kaur and Navneet Kumar for exceptional research assistance. This research was gratefully supported by grants from the Abdul Latif Jameel Poverty Action Lab, the National Science Foundation, the Weatherhead Center for International Affairs, Harvard's South Asia Institute, and the Institute for Quantitative Social Science.

1 Introduction

Ghoda Dongri block of Madhya Pradesh exemplifies women's political behavior in India. Only 9% of women have ever contacted their local leader and an even fewer - 3% - have made a claim on that leader. Most women are uninformed about their rights as citizens and as a result believe politics to be the man's space. Women rarely run for election except when the seat is reserved for a woman, and even then most female leaders act as a facade for the real political leader, their husbands. However, in neighboring Kesla block women have become a political force to be reckoned with. In the most recent local elections in 2015, 22 of 28 elected positions were won by women, despite only one third of these seats being reserved for women. The women of Kesla have submitted over 1,900 applications for government services to Panchayat (local) and Janpad (block) officials and have succeeded in over 70% of these applications. Women not only attend Gram Sabha (local council) meetings but are active, coordinated, and engaged participants, often relegating their male counterparts to the back of the room. Further, Kesla looks the same as Ghoda Dongri in terms of demographic and economic indicators. Yet, politically Kesla looks strikingly different.

Even after de jure enfranchisement, the barriers to women's political participation seem insurmountable, particularly in places where gender-biased social norms persist. Women are underrepresented in positions of elected office (Fox and Lawless, 2004; Bhalotra, Clots-Figueras and Iyer, 2013), in the bureaucracy (Panizza and Qiang, 2005), women rally at lower rates (Burns, Schlozman and Verba, 2001; Chhibber, 2002), and make fewer demands on government than men (Kruks-Wisner, 2011; Karpowitz and Mendelberg, 2014). Today, women account for only 22% of members of parliament across the globe, up from 10% in 1995 (Inter-parliamentary Union, Women in National Parliaments, 2016). In India, this picture looks even bleaker. Only 12% of members of parliament are women. Figure 1 depicts this stark gender gap.[1] In this sample of men and women from rural Madhya Pradesh, on average men were 50 percentage points more likely to say that they had attended a local public assembly meeting (Gram Sabha) and 30 percentage points more likely to have contacted the local leader (Sarpanch). Even more, this gender gap in political behavior is orders of magnitude larger that the caste gap in political behavior, which has been the focus of much research. Public opinion data from all of India shows that the average attendance rates at public meetings range from 25-33% for men and 6-11% for women across five caste sub-categories (IHDS, 2005; 2015), revealing that participatory differences across caste are

[1]Data for this figure comes from an original survey of 5,371 women and 2,399 men in rural Madhya Pradesh in 2016. This survey is described in greater detail below.

much less distinct than differences across gender.

Yet in many countries, like the U.S., the descriptive gender gap in political participation has all but disappeared (Karpowitz and Mendelberg, 2014). While many models of women's political behavior have been developed (Burns, Schlozman and Verba, 2001; Chhibber, 2002; Barnes and Burchard, 2012; Karpowitz and Mendelberg, 2014), each focuses on a particular constraint to participation in isolation but fails to consider how these constraints interact to create a self-sustaining equilibrium where men engage in politics and women do not. As a result, we continue to see women not showing up or speaking up in politics even after particular constraints have been removed. We further see some women, like those in Kesla, showing up to participate despite poverty, low education, disempowerment in the household, and gender-biased social norms.

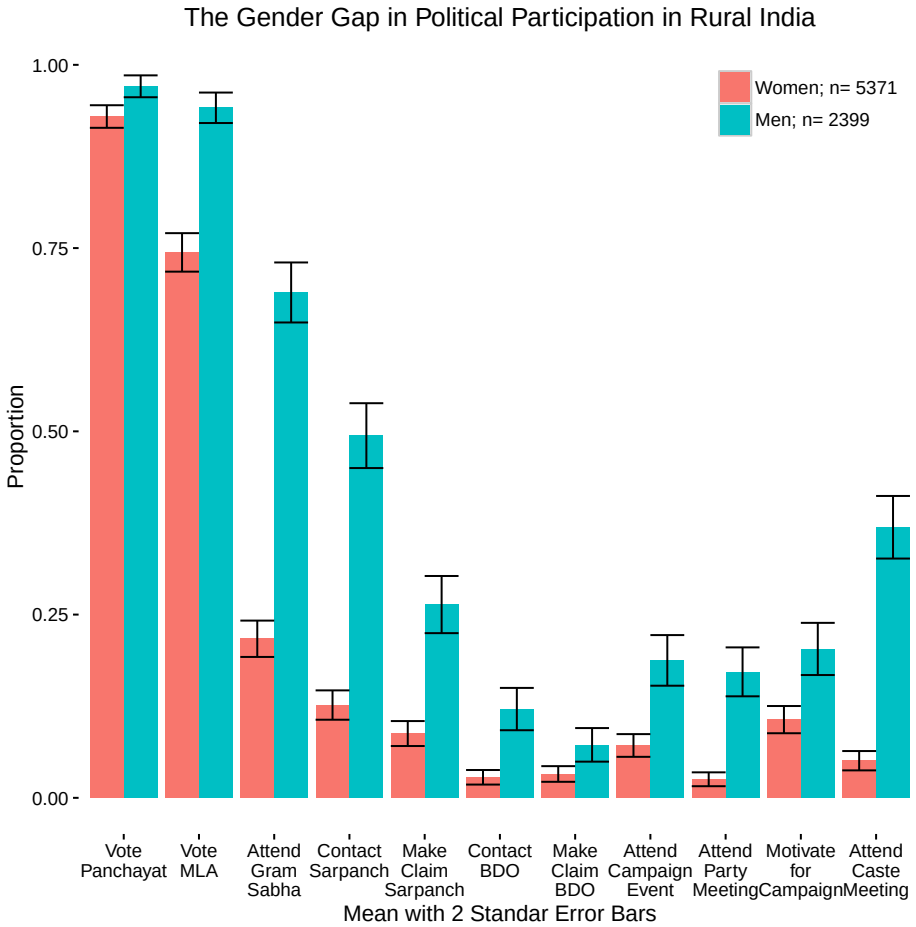


Figure 1: The Gender Gap in Political Participation (in Pure Control Villages)

Women's low representation in politics matters not only from the standpoint of inclusion but

because it has important policy and welfare consequences. As Leonard Wantchekon (2003) poignantly states "rural women might be systematically excluded from the most common forms of clientelist redistribution, and those groups might therefore be more responsive to a platform of public goods. This would imply that initiatives to promote women's participation in the political process at all levels of government are likely to help improve the provision of public goods." We know that when women are represented in politics, policy changes. In the U.S., women's representation increased the size of the state substantially (John R. Lott and Kenny, 1999) and in India, women have been shown to shift policy towards the provision of public goods (Chattopadhyay and Duflo, 2004). In other research, I demonstrate that women's *collective* engagement in local politics results in less clientelistic policies and implementation.

Below, I develop a theory of political behavior which sustains a gender-exclusionary equilibrium. In this equilibrium, households coordinate their behavior in order to maximize their political gains. As a result of the household division of labor and gender norms, men act as the representative for the household and therefore participate in politics. Politics is therefore organized around men's relevant identity cleavages (Chandra, 2007*a*). Additionally, over time, men's participation in politics facilitates their accumulation of political skills and information. I name this system of politics "family-centered clientelism." In this equilibrium, women coordinate their preferences with the household, which results in an under-provision of women's preferred policies. As a result, women have a lot to gain from a shift in the structure of local politics.

I then present one channel through which we may observe a shift towards a gender-inclusive equilibrium: access to economic networks of other women. I argue that participation in networks of other women presents women with the opportunity to coordinate outside the household and shift the structure of political organization. Participation in these networks leads women to realize a set of shared political preferences rooted in their position in the household and the division of labor. I argue that under certain circumstances, these economic networks can be activated into political networks, leading to a restructuring of politics away from male identity-based political networks and towards gender-based political networks. In this process, women's political networks collectively mobilize and women as a result become politically active. I show that this can happen even when social norms and household dynamics reinforce women's exclusion from local politics. Furthermore, I suggest that there are three possible mechanisms underlying this network effect: (1) increased capacity for gender-based collective action, (2) transfer of political information and skills within the net-

work, and (3) development of civic skills and confidence in network discussions and meetings.

I leverage a natural experiment to test the hypothesis that access to economic networks of other women can increase women's political participation. For the last 15 years, the NGO Pradan has worked in Madhya Pradesh to mobilize rural women into self-help groups (SHGs). SHGs are informal associations of 10 to 20 women from the same village that act as informal savings and credit institutions. SHGs meet frequently and non-members are not allowed at these meetings. As a result, SHGs give women access to economic networks of only other women - a first for many women in rural India. In its implementation Pradan used an arbitrary boundary to determine which villages were treated with this intervention - only villages within a set radius of Pradan field offices were eligible to receive the intervention. On one side of this boundary women have been mobilized into SHGs; on the other side women remain disconnected. I leverage this arbitrary boundary to pair-match and compare villages receiving the intervention with those just outside of the range of treatment to identify the impact of women's groups on political behavior. To quantitatively estimate this impact, I collected data from 5,371 women and 2,399 men in 376 villages in rural Madhya Pradesh on political behaviors, social connectedness, and other empowerment indicators. I further conducted more than 200 interviews with women in these villages to identify the underlying mechanisms.

Results from the geographic regression discontinuity design are clear and robust - when women have access to networks of other women they are more likely to participate in politics. Women that had participated in the SHG intervention were twice as likely to attend a local public meeting (Gram Sabha) or make a claim on the local leader (Sarpanch). Data, along with corroborating interview evidence, suggests that this positive effect is likely the result of women coordinating their political behavior and leveraging their collective strength to act as a political network. This is supported by evidence that the SHG intervention had limited effects on household and economic empowerment. There is also evidence that SHG participation helped to build women's confidence and civic skills by providing them with a space to experiment with their political voice. Participation in SHGs is also positively associated with women's political knowledge, which is likely the result of group information sharing. Further, data demonstrates that participation in the SHG intervention may change the way that women think about their role in society, suggesting that while economic networks may not empower women in the household they may begin the process of eroding gender-biased social norms and entrenching a new political equilibrium.

India is not only the largest democracy in the world but it has for the most part maintained democratic institutions for nearly 70 years. Yet we continue to see large swaths of the population excluded from politics. We have learned a lot from the study of the exclusion of lower caste citizens and ethnic minorities in India (Dunning and Nilekani, 2013; Jensenius, 2013), but as shown previously the gender gap in participation persists even when the caste gap has diminished. This paper seeks to draw attention to the role of gender in local politics in India and begin to unpack the underlying causes of the political gender gap. While there are many factors that have contributed over time to women's exclusion from politics, and many possible paths to political inclusion, this paper highlights one possible channel to political empowerment: gender-based economic networks. As a result, this paper contributes to our understanding of women's political participation in India (Chhibber, 2002), but may also present an opportunity to shed light on the future of political inclusion in newer developing democracies. This research questions individualistic models of political behavior and instead demonstrates the importance of social ties, social capital and civic networks in explaining political behavior and understanding local politics (Putnam, 1993; Krishna, 2002*a*; Varshney, 2003). Finally, this paper contributes to our understanding of women's role in moderating the relationship between the state and and economic development (John R. Lott and Kenny, 1999; Chattopadhyay and Duflo, 2004; Wantchekon, 2003).

2 Background

Indian democracy is fundamentally participatory. The cornerstone of political decision-making is the village assembly meeting, which institutionalizes citizen participation and input. While we often puzzle about why anyone would participate in politics at all given its high cost and low benefit, in India the benefits for citizens are direct and observable. It is therefore even more puzzling that women remain absent from these participatory institutions. Regions of India also exemplify a puzzling and yet common feature of women's political behavior: women turn out to vote at almost equal rates to men but are less present in other public spaces.

In 1992, India amended its Constitution to create a three tier structure of local governance. Within each State there would be governing bodies in the district (the Zilla Parishad), the block (Panchayat Samiti) and the village (Gram Panchayat). These local institutions bear the responsibility of allocating development and public works projects, establishing schools and health centers, and determining eligibility for government schemes. The Gram Panchayat is the lowest level of government in India, with each Gram Panchayat representing

a population between 1,000 and 25,000. In 2013, there were 238,617 Gram Panchayats throughout India. The Gram Panchayat is governed by a body of between 7 and 17 elected representatives, called Panches. One of these representatives is selected to be the Sarpanch, which is the head of the Gram Panchayat. All Gram Panchayat officials across the state are elected at the same time and serve five year terms of office. Additionally, several times a year, each Gram Panchayat holds a Gram Sabha (local public meeting) to make decisions on issues relating to local governance. These meetings were intended to represent self-rule and direct democracy and all eligible voters are permitted to attend and participate.

I should also note some of the characteristics which may differentiate India as a case from some but not all other low and middle-income democracies. First, India remains a largely rural country, with over 60% of the population living in rural areas and over 30% of the rural population living below the poverty line (National Sample Survey of India, Planning Commission of India). The issue of state-building and political participation is of heightened importance in this setting. State capacity is often much lower in rural areas (Herbst, 2000), generating weaker political institutions (Bates, 2009), and in particular women are less likely to participate in politics (World Bank, 2011). Additionally, gender norms in much of India remain deeply patriarchal and a strong household division of labor persists (Agarwal, 1994).

More specifically, this study is focused in the state of Madhya Pradesh. Madhya Pradesh is geographically the second largest state in India and is located in the central belt of the country. One-third of the state's population of 72 million lives in poverty. Women, like in the rest of India, are economically disadvantaged with an average female labor force participation rate of 25% and average female wages in 2012 of 825 Rs. or $15 per week, on par with national averages. Of its 230 state representatives, only 27 are women and female voter turnout is slightly lower than the national average at 57%. Furthermore, Madhya Pradesh is home to over forty different formally recognized Tribes and Caste groups. Its 51 districts exhibit significant variation in economic and social conditions related to women's empowerment. Hence, Madhya Pradesh encapsulates much of the diversity of India. Madhya Pradesh is both a manifestation of the broader social and economic processes of much of India but also poses a difficult and conservative case in which to find positive effects on women's political participation. This is not to say that the experiences of women in Madhya Pradesh are representative of all women in India.

India therefore provides a rich ground for investigation: with one-sixth of the worlds population, one-third of the world's extreme poor, and a multitude of co-existing economic and

social systems, India is particularly well suited to address questions of women's empowerment. In this sense, India both represents an important standalone case given its sheer size but may also serve as a beacon for newer democracies. Having democratized ahead of the third-wave, the patterns and processes observed now in India may be both an omen and an opportunity for many other countries.

3 A Network-based Theory of Women's Political Participation

There is consensus that local politics in much of rural India continues to operate as a patronage democracy (Wilkinson, 2007; Chandra, 2007*b*; Bussell, 2010; Schneider, 2015).[2] In this setting, political parties are weak and local politicians are opportunistic and use their discretionary authority to both increase their chance of re-election and extract rents (Besley, Pande and Rao, 2012). Particularly, local politicians use their control over the distribution of welfare benefits (subsidy cards and access to government schemes) and localized public goods (for example, water pumps or roads) to garner support. As a result, voters exchange their support for access to these public benefits (Chandra, 2007*a*).

Existing models of political behavior broadly and more specifically in patronage democracies focus on the incentives of individuals (Downs, 1957; Lazarsfeld, Berelson and Gaudet, 1968; Riker and Ordeshook, 1968; Wantchekon, 2003; Chandra, 2007*b*). But individuals are social beings embedded in complex social networks, comprised of different groups representing varying components of their individual identity (McAdam and Paulsen, 1993). I instead argue, as many others have before me, that political behavior is better understood by looking at group-level incentives and dynamics. In doing so, we are better able to rationalize the paradox of political participation: why people turn out despite high costs and low benefits. Individuals coordinate their political behavior with a subset of their social network to optimize their spoils from politics. This coordination is reinforced by strategic mobilization of groups by political elites (Uhlaner, 1989). This is in line with the growing body

[2]I take my definition of a patronage democracy from Chandra (2007*b*), which I use synonymously with clientelism. Patronage democracies are those "in which the state monopolizes access to jobs and services, and in which elected officials have discretion in the implementation of laws allocating the jobs and services at the disposal of the state." While India in general may be moving towards programmatic politics (Wilkinson, 2007), rural India remains heavily reliant on the public sector and local politics is still marked by patronage networks. Besley, Pande and Rao (2012) demonstrate that even after the 1991 reforms, politicians continue to behave opportunistically, using public resources to curry favor.

of evidence that social networks affect political participation (Leighley, 1990; Sinclair, 2012).

Social networks shape political behavior in a number of ways, not all of which necessitate political coordination amongst groups. Social networks can facilitate the acquisition of information about politics - how the political process works, what are the various political positions and candidates, and even how to participate in politics (Sinclair, 2012). Social networks can also impose social pressure to conform to group norms (Sinclair, 2012). This matters for political behavior in two ways. First, social networks may value political participation. Individuals may feel pressure to conform to this norm of participation in pursuit of social approval or in fear of social sanctioning (Abrams, Iversen and Soskice, 2011). Second, social networks may shape individuals' political preferences. Individuals may shift their preferences or activate latent preferences to conform to group norms. Social networks can also form the basis for political coordination. Given severe information constraints for both citizens and elites, group-based mobilization is both more efficient and useful in explaining participation. This type of political coordination is often used to explain ethnic voting (Chandra, 2007*a*). Social networks are the backbone for political coordination and set the constraints on who we are able to coordinate with.

Given the multitude of groups with which people engage, *which* do they politically coordinate with? First, coordination is only possibly with those with whom you are already connected. A political network therefore is a subset of the larger social network (Sinclair, 2012). It should also be noted that social networks are not a large cluster of one-to-one connections. Rather social networks are the coalescence of the various social groups and identities to which an individual belongs. Political networks often intersect with one of these group identities to ease the identification of group members, both for the sake of group members as well as strategic politicians.[3]

From the total set of social connections, individuals coordinate their political behavior with the sub-groups of their social network that share most closely their political interests *and* have the lowest costs of coordination (Huckfeldt and Sprague, 1991; Mutz, 2002). Huckfeldt and Sprague (1988, p.467) demonstrate that rational citizens choose with whom to discuss politics, and therefore include in their political network, based on a "compromise between individual political preference and socially structured discussion opportunity." Political pref-

[3]Chandra (2007*a*) provides a clear discussion of why identity groups often become political mobilized, rather than random groups of individuals. To minimize the costs of mobilization and coordination, group identities are easier to identify and therefore target.

erences are likely to be shaped by your social network. It is not that individuals evaluate their exogenous political preferences and then coordinate with the group that most closely aligns with these preferences. Rather, groups that coordinate politically, do so because they have a strong degree of preference similarity, whether from exogenous political preferences or socially induced conformity (and likely a bit of both). This is also not to say that individuals choose their *social* networks solely based on their political preferences (Kenny, 1992; Lazer et al., 2010), but that who in your social network becomes a part of your *political* network is a function of preference similarity and coordination costs (Huckfeldt and Sprague, 1987). Politicians then see this coordination and respond strategically with their mobilization, in turn effectuating a society-wide system of political organization (Huckfeldt and Sprague, 1992; Cox, Rosenbluth and Thies, 1998).

3.1 The Gender-Gap Equilibrium: Family-centered Clientelism

The case of rural India is then best understood as operating under a system of "family-centered clientelism." The relevant political decision-making unit is not the individual, but instead the household. Given proximity and regularity of interaction, the coordination costs for members of the same household are low. Household members also share political interests at a minimum because many political benefits are conferred directly on the household (as with ration cards) or within proximity of the household (as with water pumps). Household discussion will also focus on a particular set of preferences relevant to the household or to the common identity group of the household (such as Caste). It could be however that individual household members' preferences are more closely aligned with a different identity group, but limited social networks or high coordination costs with existing social networks may inhibit political coordination. Note also that this does not mean that all household members have the same political preferences (Manser and Brown, 1980; Iversen and Rosenbluth, 2006), just that the net benefits may be greater from household coordination or that alternatives may not be feasible. Foos and de Rooij (2017) show that political participation is higher and electoral mobilization more effective when households explicitly coordinate through discussion. As a result, even households with disparities in preferences can coordinate politically.

Women, in particular, are most likely to coordinate their political behavior with the household, due to steep constraints on mobility and networks. Women in rural India on average have smaller social networks than men. This is a function of patrilocal institutions of mar-

riage[4], constraints on mobility, and the gender division of labor, which are in turn reinforced by and reinforce gender-biased social norms. According to data from the Indian Human Development Survey (Desai, Vanneman and of Applied Economic Research New Delhi, 2005), 86% of rural women report that they must ask for permission to travel a short distance by train or bus and only 50% stated that they would be able to do so alone. As a result, the costs to coordinate outside the household are high for women with small social networks. While there may be other groups with whom women would more closely share political interests, the second-best option of household coordination is efficient under these conditions.

Households therefore coordinate their political participation and electoral support in order to maximize household welfare. Household members bargain over whom to support and which broader group/party to vote with. Given the high costs to participation, households also bargain over whom will represent the household's interests in political spaces and therefore participate politically. Bargaining power in the household is allocated based on the availability of "exit options" (Manser and Brown, 1980) - which is a function of access to employment outside of the household (Iversen and Rosenbluth, 2006), ownership and control of assets, and external support networks – and social norms (Agarwal, 1997). Social norms set the "stage for the form that bargaining can take" (Agarwal, 1997, p.17) and establish base levels of bargaining power. Social norms further affect bargaining power indirectly through their impact on "exit options". In an agriculturally-based economy, a strong division of labor has led to women's primary responsibilities lying in the home (Chhibber, 2002; Gochhayat, 2013). This division of labor reinforces and is further reinforced by patriarchal social norms.[5] As a result, men often have more bargaining power than women in the household and the preferences of men receive greater weight. Men also emerge as the political agent for the household.

While many political benefits may accrue to the household, they do not necessarily accrue equally to all household members. For example, given a strong division of labor, where men work outside the household and women care for household responsibilities, the benefits of public employment accrue disproportionately to male household members (Wantchekon, 2003). On the other hand, women have a greater stake in the provision of water or fuel given their role in its collection. When a man has greater political decision-making power in

[4]Many women migrate at the time of marriage to their husband's natal village (78% of women from the MP-PBS sample had migrated away from their natal village as compared to only 9% of men), at which point they face these steep mobility constraints.

[5]Gender norms are endogenous and self-reinforcing. Over time, they become internalized and the ways that they condition behavior then act to further reinforce gender divisions. It is beyond the scope of this study to explain the emergence of these social norms.

the household, their preferences are elevated over others in the household, in part because they enter political spaces to vocalize the demands of the household. As a result, women's political preferences are under-provided when households coordinate and men represent the household in politics.

In acting as the political agent of the household, men become embedded within broader political networks and accumulate important political skills and information (McClurg, 2003). This in turn, reaffirms their bargaining position in the household and entrenches them in their role as political agent. To make political demands and hold politicians accountable, men actively participate in politics by attending local meetings and making claims on politicians. However, given the lesser cost to voting[6], we would expect to see all household members vote to maximize support for preferred candidates (Giné and Mansuri, 2011). Only men however would participate in more time-intensive and public forms of political participation (Giné and Mansuri, 2011). Ultimately, this becomes a self-perpetuating equilibrium as men's continued political participation further leads to their entrenchment in political networks and development of political skills which reaffirms household dynamics and gendered social norms.

Politicians observe this coordination and respond strategically, first minimizing their mobilization costs by efficiently targeting critical nodes within these groups and second by mobilizing support across broader identities (Cox, Rosenbluth and Thies, 1998; Brady, Schlozman and Verba, 1999). Politicians prefer household coordination because it minimizes the costs to mobilization. Given that the household behaves as a unitary actor, politicians need only to mobilize the head of the household to ensure the support of the rest of the group, which is much less costly than targeting individual members directly (Fox and Lawless, 2004). As Huckfeldt and Sprague (1992) highlight, there is a ripple effect of mobilization and mobilizers are strategic in efficiently seeking out citizens that will lead to the greatest ripple. This further elucidates why we might see all household members vote even if only the man participates in politics otherwise.

[6]The cost to deciding whom to vote for will already have been sunk by the household as a whole. If the household is coordinating their behavior, it would not be that individual household members would have to incur a cost to information acquisition. The cost to voting in this scenario is then only the time required.

3.2 Towards a Gender-based Programmatic Equilibrium

I now consider what happens when one key constraints on women's participation is loosened - women's ability to coordinate outside of the household. Specifically, I ask: When women's social networks are expanded, do they shift their political coordination away from the household? And under what conditions does gender become a salient and mobilizing political identity?

Given the above arguments, women's political participation is expected to shift if they were to coordinate their political behavior outside of the household. When women disproportionately lack access to larger social networks, however, they are constrained to coordinate with the household. How is this coordination and social network constraint loosened? And when it is loosened, does women's political participation increase?

Loosening the coordination constraint by expanding women's social networks can lead to increases in women's political participation, even when women lack household bargaining power, political skills, and economic resources. This is especially likely when women's social networks are expanded to include *more women*. Increasing the density of women in women's social networks can create the opportunity for gender-based political coordination (Baybeck and Huckfeldt, 2002). When women become embedded within networks of other women they are provided with an alternative identity group with which they can politically coordinate. This lowers the cost of political coordination by creating greater capacity for collective action (Putnam, 1993; Krishna, 2002*b*; Huckfeldt, 2007; Fearon, Humphreys and Weinstein, 2015), as women will have both the networks to act and knowledge that other women will act at the same time (Yamagishi and Yamagishi, 1994).

Once the constraints to coordination outside the household are loosened, political coordination will shift from the household to coordination amongst women when gender-based interests dominate household interests. Gender-based interests can emerge either through (1) the convergence of political preferences or (2) a desire to contest gender-based inequalities and patriarchal social norms.

For some women, a gender-based identity, as opposed to household identity, better represents their political preferences (Wantchekon, 2003; Chattopadhyay and Duflo, 2004). For other women, political discussion with other women can elevate the salience of shared gender-based preferences. Research has demonstrated that women's political preferences often differ from those of men, particularly in settings where women are excluded from formal politics

(Gottlieb, Grossman and Robinson, 2016; Shapiro and Mahajan, 1986; Schlozman et al., 1995). Women have been shown to have a stronger preference for public goods (Schlozman et al., 1995; Wantchekon, 2003; Chattopadhyay and Duflo, 2004; Ban, Jha and Rao, 2012; Gochhayat, 2013). Women are also much more likely to support programs for the disadvantaged (Conover, 1988). Gender-based preferences are rooted in the division of labor and women's role in the household yielding common experiences amongst women (Gottlieb, Grossman and Robinson, 2016). From the division of labor, women bear the responsibility of caring for the house and collecting water and fuel. Women therefore disproportionately benefit from improved provision of goods such as water and fuel (Chattopadhyay and Duflo, 2004). Women may also share preferences regarding the prohibition of alcohol (John R. Lott and Kenny, 1999; McCammon et al., 2001). Domestic violence can often be linked to the consumption of alcohol (Katzenstein, 1989).[7] A desire to curb violence against women may yield shared preferences over alcohol consumption. Additionally, given the gendered nature and costs of consumption, women may have a financial stake in curbing alcohol consumption even when it is not directly tied to domestic violence. These preferences may be latent during household coordination and superseded by family-based political preferences but activate through discussion with other women.

Gender, however, is an intersectional identity. It cuts across most other identities and thus women as a group are fundamentally heterogeneous. Women's shared, gender-based preferences may not supersede their household-based or other identity-based preferences. Yet women can still share a common interest in mobilizing against gender-based inequalities (Teele, 2017). Women may seek social and political inclusion, status elevation, or increased bargaining power in the household and gender-based political coordination may be both an ends and a means to achieve these goals. For example, Teele (2017) demonstrates that for women's suffrage movements, the degree of gender-based inequality affected whether women politically mobilized. This suggests that even when household preferences align more closely than gendered preferences, women may benefit from gender-based political coordination.

In both cases, women will mobilize around under-represented issues to capitalize on their comparative advantage in the political space. Women's shared experience as political outsiders creates incentives for them to demand public goods since they lack access to clientelistic networks and lack the resources to compete with existing clientelistic networks. Under systems of patronage, public goods will be under-provided (Kitschelt and Wilkinson, 2007).

[7]Since 1992, consumption of alcohol in India rose at a higher rate than every other country except two and alcoholism, especially amongst men, is on the rise (OECD, 2015).

Thus, this new political network of women will have the comparative advantage in the provision of public goods. [8] While many other factors will determine whether this reorganization of political networks becomes a stable, long-run political equilibrium, this highlights the role of access to social networks in shaping women's political behavior and reducing the gender gap in political participation.

4 Experimental Design and Data

To examine the effect of increasing women's access to women-based network, I estimate the impact of Pradan's Self-Help Group (SHG) intervention on women's political behavior. Since the implementation of the SHG intervention was bounded geographically, I leverage this arbitrary boundary to identify the effect of this program using a geographic regression discontinuity approach. Control villages were selected using a pair-matching algorithm to further ensure continuity across the boundary. The details of this methodology are discussed below and further sensitivity analyses are presented in the final robustness section.

4.1 Treatment: Pradan's SHG Intervention

Villages are considered treated if they have received the Self-Help Group (SHG) intervention implemented by the NGO Pradan. An SHG is an association of 10 to 20 women belonging to

[8] Unlike with household political coordination where only a subset of group members participate in politics, gender-based coordination necessitates widespread political participation by women. Men's entrenchment in the political system will likely maintain high levels of their political participation (Gerber, Green and Shachar, 2003). Through their regular participation in politics, men become embedded in political networks outside of the household. I have suggested that these political networks are defined by a non-gender identity common across the household, such as Caste. However, they are comprised of mostly men. Men can respond to women's political coordination through resistance or acceptance. If men's political preferences align more closely with the interests promoted by women's networks or if they feel marginalized by the current structure of politics and unlikely to gain representation, they may join in support of women. If, as is more common, men see women's political coordination as a threat to their political interests, they will mobilize against women's participation. Men's resistance can be informal - outside of electoral politics - such as by attempting to exert control over wives or in public spaces. It can also be formal through the formation of a political coalition in opposition to the women's coalition.[9] In all cases, however, men's high political participation is expected to persist.

To optimize the likelihood of having their political preferences translated into policy and to credibly challenge male networks, women will respond by turning out in large numbers. To overcome the challenges of broad mobilization, women may impose social sanctions to guarantee political participation (Abrams, Iversen and Soskice, 2011; McClendon, 2014). Social pressure, however, may be enough to increase women's political participation (Gerber, Green and Larimer, 2008; Sinclair, 2012).

the same village that act as informal savings and credit institutions. SHGs are exclusively for women[10] and members of each SHG meet weekly, bi-weekly, or sometimes monthly. SHGs are seen as an approach to financial intermediation and help to provide women with informal financial services beginning with periodic, compulsory savings and then mainly loans. The SHG members take loans from the SHG finances for expenses related to personal enterprises, unexpected household expenses, or larger household purchases.[11]

Pradan has been working with rural women in India, through the mobilization of SHGs and the provision of livelihood trainings, since 1983. Pradan was also one of the NGOs that pioneered the SHG model of development in India. In its 32 years, Pradan has mobilized over 250,000 women to participate in SHGs. In Madhya Pradesh, Pradan began mobilizing women into SHGs roughly 15 years ago, which means that there is variation in when each village was treated with the average duration of treatment being 6 years. This also means that this is not a short-run intervention, but these are social networks which have been fostered over time. Pradan's role is only to mobilize these groups and establish procedures of informal savings and credit.

To begin, Pradan professionals enter a village and invite all women to take part in SHGs. According to survey data of SHG members, 94% of women stated that they joined SHGs because of a need for financial access. Their husband's allow them to join this group because they seek access to informal loans and hope to reap economic benefits from group participation. Over time, other women in the village join to gain access to finances. It is important to note that interviews suggest that the women who choose to be in SHGs are not more likely to participate in politics. If anything, the reverse holds true as these are the women from the poorest backgrounds with the least access to political networks. [12] In this study's sample of villages, SHG saturation is on average 41% of women in a village, with an average number of 66 SHG members per village spread across 5 SHGs. Since the treatment does not encompass all women in a village and instead is an elected choice of women, treatment is assigned at the village level (whether or not the village had the SHG intervention).

While the conception of SHGs focused on access to informal finance, SHGs are for many

[10]Except in the case of a hired male accountant for the book-keeping.

[11]In addition to informal finances and economic networks, some Pradan SHGs are provided with livelihoods training. Livelihoods training is the provision of education and information to rural women about farming and agricultural practices so as to promote micro-enterprises that can generate income. Its aims are to help women enhance productivity in agriculture, diversify into new crops, set up irrigation systems, and institute entirely new ways of managing the natural resource base.

[12]This is informed by interviews with more than 50 Pradan professionals and through direct observation.

women a first experience with a social network, particularly a social network of women. With regular and exclusive meetings, the women in SHGs become connected to each other. Given the lack of free mobility for women in rural India, SHGs are for many the only time in which they can leave their house without a man by their side. SHG meetings begin with a discussion of group finances where each SHG members either introduces new savings or requests to take a loan. Following this formal financial ritual, often these meetings turn into group discussions of personal and community concerns following the formal procedures. As a result, I argue that any effects observed from the SHG intervention are the result of the social network that comes from being a part of a collective of women.

Work in the US suggests that women may be more likely to participate in politics due to greater economic security and potentially due to higher income (Burns, Schlozman and Verba, 2001). It could be that any affect observed from participation in SHGs is actually due to income gains access to informal finance. I will evaluate this mechanism below and demonstrate that it is not greater economic security driving the observed treatment effect.

4.2 Identification Strategy

The aim of this project is to identify the impact of women's access to economic groups, particularly groups of other women, on women's political behavior. This poses an empirical challenge because it is nearly impossible to randomize groups and group selection is typically a function of income, education, family, and other socioeconomic indicators. As a result, it is difficult to identify the effect of the group from that of the underlying traits of groups (Abrams, Iversen and Soskice, 2011).

To get around this challenge, I exploit exogenous variation in women's access to economic groups resulting from a natural experiment which mobilized the women in some villages in the Indian state of Madhya Pradesh into SHGs. Specifically, I leverage an arbitrary boundary used to determine which villages received the Pradan SHG intervention, which I argue created as-if random assignment of economic groups (Dell, 2010). I then use both a geographic regression discontinuity design (GRD) along with pair matching of villages across the boundary to identify the causal effect of participation in economic groups (Keele, Titiunik and Zubizarreta, 2015; Ferraz and Finan, 2008).

Given that the implementation of the SHG intervention was bounded geographically, random

assignment of economic groups can be approximated using a border design, which leverages an arbitrary boundary used by Pradan to identify villages to receive the SHG intervention. This arbitrary boundary allows for the assumption of continuity and no unobserved bias across treated and control. The treatment is access to the Pradan SHG intervention. This intervention was implemented at the village-level. Villages were selected to be a part of this intervention based on their location to the Pradan field office - only villages within a set kilometer radius were eligible for the intervention due to daily travel constraints for the field implementers[13]. While the location of Pradan field offices is not arbitrary, the boundary of implementation is unlikely to be correlated with indicators of women's empowerment or with the density of networks and therefore can be considered as-if random.[14] This allows for the assumption that villages close to either side of this border were comparable pre-treatment and can be used as counterfactuals.

Given that the boundary of implementation was fuzzy and treatment did not cover 100% of villages in the implementation area, control villages were selected using pair-matching. This ensures balance across treated and control villages on observable covariates and provides additional support for the assumption that control villages were comparable to treated villages pre-treatment. The combination of matching strategies with border designs has been shown to improve balance while maintaining the assumptions necessary for causal inference (Keele, Titiunik and Zubizarreta, 2015). Pair matching occurred as follows:

1. For each Pradan team, all villages that had received the intervention were geo-located.

2. A circular boundary was drawn around these villages, with the radius equal to the distance to the furthest village.

3. All villages in the same district but outside of this boundary were identified, leaving a 1 km gap between the treated areas and the control areas.

[13]Eligible villages were all villages within a set radius of the field office. The specific distance varied by Pradan field office and was a function of the terrain and road quality. The average distance for the travel radius was 30 km.

[14]Not all villages within the catchment area of Pradan received this intervention, however, Pradan has sought to saturate all villages in the catchment areas over time prior to extending the intervention outside of this area. At present, over 60% of the villages in the catchment areas have received the intervention. Furthermore, the villages receiving the intervention are not substantively different than those that have not received the intervention (see Table 14 in Appendix). This further supports the claim that the selection of villages for the intervention was as-if random. However, pair matching of villages based on economic, social, and geographic indicators across the boundary is implemented to reduce concerns of selection and ensures balance across covariates. As a result, the villages selected as control units approximate the villages that Pradan would have selected for the intervention were they to have extended their operations outside of the boundary.

4. All treated villages were pair-matched to control villages using coarsened exact matching on district, population size, female population proportion, and tribal population proportion.

5. Geographic distance was then used to identify the 75 best matches.[15]

Figure 2 geographically plots the villages that were selected for the study.

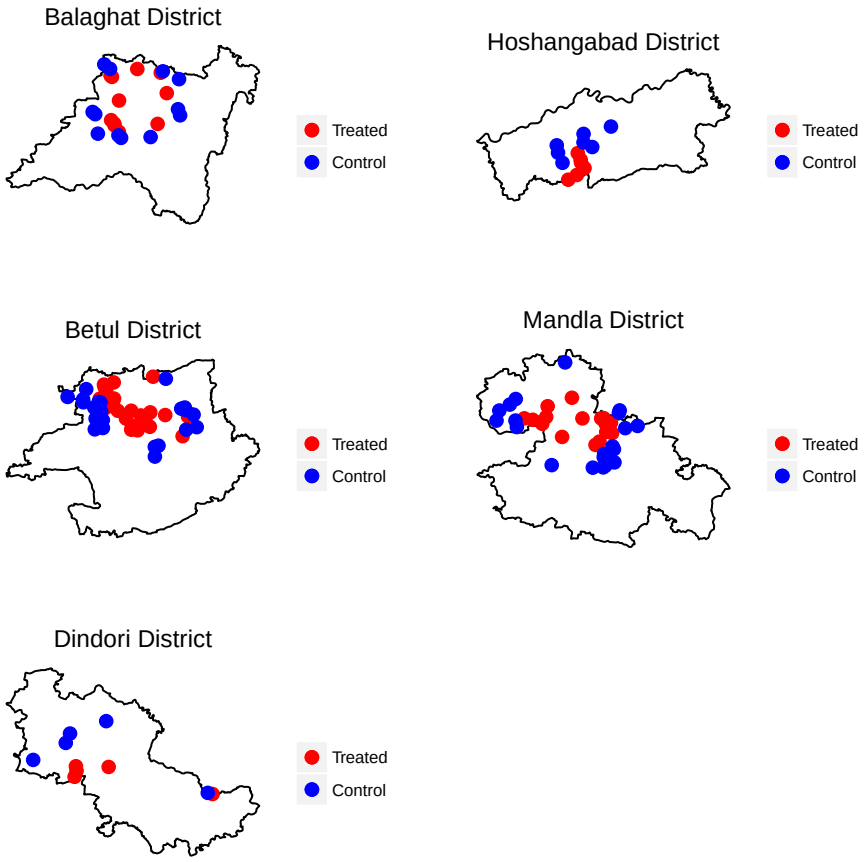


Figure 2: Treated and Control Study Villages by District

[15]Since data was collected through primary surveys, only a small sample of respondents could be included in the study. The survey used cluster sampling to survey 15 women per village in 75 villages per treatment arm. Power calculations support that this sampling strategy will allow for the detection of a 10% increase in the estimated baseline rate of attendance at Gram Sabha meetings between treatments, assuming a standard deviation of 55% and an intraclass correlation within GP of 0.04, which was calculated from pilot survey data.

4.3 Original Survey Data and Sampling

A principal reason behind our lack of understanding of women's political behavior in India is the lack of data, particularly for rural women. To overcome this gap in our knowledge, I conducted an original survey of 5,371 women and 2,399 men in 376 villages in rural Madhya Pradesh. This survey took place from May-July 2016. For the above empirical strategy, this paper subsets to only the 152 villages that were matched from those receiving the SHG intervention and those not receiving any intervention, which include 2,152 female respondents.[16] Of these 152 villages, 76 had received only the Pradan SHG intervention and 76 had not received any Pradan intervention.

In Pradan villages, female respondents were randomly sampled from lists of all Pradan SHG members in the village. As a result, the data covers only treated women in treated villages. In non-Pradan villages, all women within each village were identified using the Madhya Pradesh Samagra Portal[17], female respondents were then randomly sampled from the list of adult women who had previously been married, to ensure similarity to women in Pradan villages. Sampling of women in non-Pradan villages sought to replicate selection of Pradan women, with a focus on married adult women, therefore reducing selection bias concerns. The differing sampling procedures still raise some concerns with the design of this study and potential selection bias.

Qualitative interviews suggest that selection into the treatment is primarily a function of economic need: women want access to informal credit and their husband's allow them to join because they also want this credit access; this is also borne out in data (see Figure 5 in the Appendix). Furthermore, when asked about their political behavior prior to entering the SHG, women nearly exclusive stated that they were not politically active and had never engaged in politics in any way. This is further confirmed from interview evidence with untreated women in treated villages. Leveraging this qualitative insight, I matched treated and control observations to try to identify which control women would most likely have selected into treatment had they had the opportunity. To do this, I used genetic matching across observations and matched on the amount of land owned, age, education level, marital status,

[16]Sampled villages fall into three categories: (1) 75 villages that have never received any Pradan intervention (control villages), (2) 226 villages that have received only the Pradan SHG intervention (treated villages), and (3) 76 villages that have received both the Pradan SHG and additional gender interventions. First, the 226 villages where Pradan had only implemented SHGs were randomly sampled from all eligible villages. Second, the 75 villages without any Pradan intervention were sampled from all remaining villages in the districts in which Pradan works, using the previously mentioned matching strategy.

[17]This was a censusing of all households within Madhya Pradesh in 2011 and 2012.

scheduled tribe and scheduled caste status. The results, however, are robust to alternative matching strategies, including exact matching. The amount of land owned is used as a proxy for economic need as the purchase of land is bureaucratically difficult in rural India, and therefore this measure is likely to represent pre-treatment economic need. The results presented below use this matched sample, which discarded 367 control observations and 2 treated observations.[18]

To further address this selection concern, I resurveyed a sub-sample of 40% of treated villages to mimic the sampling strategy used in control villages. As a result, this resample includes both treated and untreated women in treated villages. I present the results from this subsample alongside the main findings, looking both at the intent to treat effects and complier average treatment effects.

Data was collected in-person by trained surveyors using android tablets to record responses. Given the sensitive nature of the questions and concerns of social desirability bias, all female respondents were surveyed by female surveyors and male respondents were surveyed by male surveyors. All surveys were conducted in complete privacy, so as to reduce concerns of social desirability bias. Data quality was insured through four mechanisms: (1) back-checks of 10% of surveys with a focus on non-changing information and questions with difficult response-coding, (2) audio-recording audits of in-field surveys, (3) random field-checks, and (4) daily testing of survey data for abnormalities.

4.3.1 Measures of Political Participation

I measure political participation by whether a respondent had ever attended a village assembly meeting, contacted a Panchayat official for help in getting a government benefit, submitted an application for services to a Panchayat official, contacted a Block official for help in getting a government benefit, submitted an application for services to a Block official, attended a campaign rally, attended a political party meeting, attended a protest, campaigned door-to-door, or attended a Caste Council meeting.The following analyses utilize the dichotomous measure of whether the respondent had participated in each of these activities in the past year. I also include an index of all non-voting political participation variables, which is measured as the number of activities in which a woman has participated. Additionally, to measure voting behavior, respondents were asked whether they had voted in the most recent local and state elections. These measures of political participation incor-

[18] Appendix tables verify that these results are robust without the use of individual matching as well as to alternative matching specifications.

porate the range of possible political behaviors for citizens, including voting, attendance at community meetings, claims-making, and protesting.

4.3.2 Other Outcome Measures

In addition to collecting data on women's political behaviors, a set of questions were included to understand women's relative position in the household. This was measured in two ways: (1) women's role in a set of household decisions and (2) reported levels of domestic violence.

Household decision-making has been widely used in economics as an empirical measure of bargaining power and female empowerment. Women were asked of their role in a series of common household decisions, including how much money to spend on food and clothing, what to do if they fell sick, their daily tasks, their children's education levels, their daughters' marital prospects, whom to vote for, whether to attend a village assembly meeting, and whether to buy land. These responses were then dichotomized into a measure of whether or not the female respondent participated in the making of each decision.

Second, I include measures of violence in the household. To reduce concerns of measurement bias due to the sensitive nature of these questions, privacy for the entire survey, but especially for these questions, was required. Additionally, these questions were placed at the end of the survey. Specifically, the respondent was asked whether their husband had ever humiliated them in public, threatened to hurt them, insulted them, slapped them, punched them, or forced sex on them.

4.3.3 Covariates

Despite matching on observed village-level covariates to ensure balance at the village level, it is important to include relevant covariates at the individual level to reduce concerns of confounding and more precisely estimate effect sizes. This is especially important to ensure that Pradan participants are compared to women in non-Pradan villages who would have been most likely to participate in Pradan programs were they available.

Education The analysis includes a measure of the respondent's years of formal education. The mean response for women in the sample is 2.5 years of education and 60% of respondents

reported they had no formal education/are illiterate.

Amount of Land Owned To capture potential income confounding, I include the amount of agricultural land owned by the household as a covariate. The amount of land owned by the household is unlikely to have changed as a result of treatment, which suggests that post-treatment bias should not be of significant concern.

Demographic Indicators Demographic indicators are included in the analysis: whether the respondent is part of a Scheduled Tribe, whether the respondent is Hindu, the respondent's age, whether the respondent is married, and how many children are living at home with the respondent.

Village Indicators Village-level covariates for the total population size in the village, the female proportion of the population, the proportion of the population belonging to a Scheduled Tribe, the literacy rate, and the female literacy rate are included in the analyses.

4.4 Empirical Specification

To estimate the effect of treatment, I employ two main empirical specifications. First, I use the village pair-matches to estimate the effect of treatment. This matched-pair specification utilizes a parametric model with matched-pair fixed effects, and does not include latitude or longitude or other geographic indicators.[19] However, the village pair-matching process matched villages across the border, so this still leverages the border design. Additionally, following Dell's (2010) empirical modeling strategy for multi-dimensional regression discontinuities, I model all dependent variables using a cubic functional form with latitude and longitude as the multi-dimensional forcing variables (see Appendix for nonparametic and naive specifications). Including both latitude and longitude accounts for both the villages distance to the boundary as well as its relative position in geographic space Keele, Titiunik

[19]The pair-matching estimating equation is therefore:

$$Y_{k,i} = \gamma D_{k,i} + \beta X + \alpha_p + \epsilon_{k,i},$$

where D is the treatment status of individual i in village k, X is the matrix of covariates, and α_p are matched-pair fixed effects. Given this specification, γ is the estimate of the impact of treatment on Y.

and Zubizarreta (2015).[20]

In the resample analysis, I utilize the pair-matched fixed effects model to report the intent to treat (ITT) effect - when both treated and untreated women in treated villages are included. I further estimate the complier average treatment effect by instrumenting for individual-level treatment take-up with village-level assignment to treatment. This provides the estimated treatment effect for those who chose to take-up the treatment.[21]

4.5 Falsification Tests

The key identifying assumption for the border design is continuity. Table 1 compares the balance in village-level *pre-treatment* measures from the 2001 census across treatment and control using the empirical specification described above (see Appendix Table 12 for basic t-test results). Table 1 village-level covariates are statistically identical across treated and control villages, with the exception of literacy rates. Control villages appear to have had higher pre-treatment literacy rates than treated villages. Since education is positively correlated with political participation, this would suggest the effect of treatment would be biased downwards, meaning that it would be harder to observe an effect of treatment. Additionally, Table 1 reveals little difference between treated and control villages in regards to terrain, as there are similar levels of road access and forest land. This further validates that while the boundary of treatment program implementation was set based on feasible travel distance, the boundary does not coincide with major geographic barriers that would create substantial differences between treated and control villages. Importantly, there is also no significant difference in the distance between treated and control villages to the nearest towns. This shows that while the location of Pradan headquarters may not have been arbitrary, the treated villages in the sample are no closer to towns than the control villages.

Table 2 compares the balance in person-level measures using the survey data and includes

[20]The RDD estimating equation is therefore:

$$Y_{k,i} = \gamma D_{k,i} + \alpha_1 A^3 + \alpha_2 A^2 + \alpha_3 A + \alpha_4 B^3 + \alpha_5 B^2 + \alpha_6 B + \alpha_7 A^2 B + A\alpha_8 B^2 + \beta X + \alpha_d + \epsilon_{k,i},$$

where D is the treatment status of individual i in village k, A represents latitude, B represents longitude, X is the matrix of covariates, and α_d are district fixed effects which couple as border fixed effects since the border varies by district. Given this specification, γ is the estimate of the impact of treatment on Y. The results are presented for three different bandwidths: the entire sample, villages within 10 km of the boundary, and villages within 5 km of the boundary. Additionally, the results are presented when the covariates are excluded.

[21]Individuals are not matched in the resample analysis.

only covariates which are unlikely to have changed substantially as a result of treatment (see Appendix Table 13 for basic t-test results). The set of individual-level tests shows that most individual-level covariates are statistically insignificant across treated and control villages. Women in the control villages are on average older than women in treated villages, however, this relationship is only significant in the matched pair specification. Women in treated villages may also be more likely to be from a Scheduled Tribe. Finally, women in treated villages are significantly more likely to report that they have a welfare card (BPL). First, while the sampling of women in control villages sought to replicate the sampling process for SHG members in treated villages, however, these statistical differences are suggestive of the types of women that would select into the SHG intervention. As mentioned previously, qualitative interviews affirm that poorer women from Scheduled Tribes are more likely to select into SHG participation in the hopes of access to informal credit, not because they are more socially or politically active. Second, it could be that the positive coefficient on BPL card status is actually evidence of a treatment effect, as women in treated villages are better able to demand their political rights to welfare subsidies. To further account for any observable variable bias, these covariates will be included in all analyses to further account for any possible confounding. I additionally conduct three sensitivity tests in the final robustness section, including one set of models which attempt to model the selection bias, to further argue against selection concerns.

When examining the resample data where selection into treatment is not as large a concern, there is greater imbalance across treated and control villages. This suggests that the relevant covariates may be correlates of selection into treatment.[22]

The assumption of no compound treatments is less of a concern in this study than in most other geographic regression discontinuity designs because the boundary does not correspond with any other administrative boundary. It is therefore unlikely that any other treatment would correspond to this same boundary. It is possible that the treatment indicator is picking up a Pradan effect rather than an SHG effect. This is tested below, but to foreshadow, the mechanism underlying the treatment effect centers more on networks, not income or savings and credit - the other aspects of Pradan's programs.

[22]In future iterations, I plan to model this selection process.

Table 1: Balance Test of Treatment Effects on Pre-Treatment Village Data

	Cubic RDD Specification			Matched
Dependent Variable:	Full Sample	< 10 km of Boundary	< 5 km of Boundary	Pair Specification
Population	-11.987	187.734	203.546	-34.947
	(117.944)	(161.103)	(317.332)	(57.223)
Female Population %	-0.001	-0.005	0.003	-0.001
	(0.003)	(0.005)	(0.008)	(0.003)
Scheduled Tribe Population %	0.002	-0.048	-0.043	0.012
	(0.038)	(0.059)	(0.092)	(0.013)
Literate Population %	-0.028	-0.007	-0.025	-0.037*
	(0.018)	(0.023)	(0.04)	(0.016)
Literate Female Population %	-0.043*	-0.016	-0.025	-0.05*
	(0.018)	(0.023)	(0.042)	(0.016)
Working Female Population %	0.03	-0.022	-0.015	0.01
	(0.023)	(0.031)	(0.037)	(0.025)
Distance to Town	8.52	4.797	5.385	10.171
	(5.921)	(3.168)	(4.787)	(5.764)
Area	30.56	43.419	-3.587	22.434
	(44.385)	(69.902)	(99.127)	(28.948)
Forest Land	6.233	19.646	43.83	7.908
	(19.956)	(30.501)	(47.101)	(18.644)
Non-cultivable Land	-7.786	-17.295	-16.124	-8.934
	(12.717)	(22.268)	(39.369)	(12.755)
Access via Paved Road	0.049	0.243*	0.181	0.026
	(0.08)	(0.114)	(0.178)	(0.07)
Access via Mud Road	-0.114	-0.294*	-0.334	-0.079
	(0.065)	(0.092)	(0.176)	(0.059)
Has Education Facility	0.027	0.101		0.026
	(0.041)	(0.057)		(0.032)
# Primary Health Center	-0.016	-0.037	-0.086	-0.013
	(0.016)	(0.032)	(0.069)	(0.023)
Has Drinking Water	-0.014			-0.013
	(0.014)			(0.013)
Has Power Supply	0.045	0.028	0.125	0.053
	(0.047)	(0.064)	(0.09)	(0.041)
N Villages	152	78	40	152

Note: Village clustered standard errors in parentheses.* significant at $p < .05$. Each row depicts a different dependent variable and each column depicts a different model specification. Each cell is the estimated coefficient on the treatment indicator for that model specification and dependent variable. All dependent variables measured from 2001 census data to ensure pre-treatment comparisons. No covariates included since they are measured post-treatment. All models were estimated using least squares regression analysis and include district (boundary) fixed effects, with the exception of the matched pair specification which includes match-pair fixed effects. Some coefficients are missing for boundary models due to perfect singularity/balance in the data.

Table 2: Balance Test of Treatment Effects on Pre-Treatment Respondent Data

	Original Sample			Selection Resample	
	RDD Specification		Matched Pair Fixed Effects	Matched Pair Fixed Effects	
Dependent Variable:	Full Sample	< 10 km of Boundary	Full Sample	Local ITT	Local CATE
Age	-0.837	-1.12	-1.113*	-0.503	-0.921
	(0.542)	(0.68)	(0.364)	(0.696)	(1.818)
Years of Education	0.397	0.583	0.32*	-0.529*	-0.969*
	(0.233)	(0.316)	(0.145)	(0.2)	(0.526)
Married	0.008	0.002	0.01	0.041*	0.076*
	(0.016)	(0.024)	(0.012)	(0.018)	(0.048)
Hindu	-0.006	0	-0.006	0.001	0.002
	(0.006)	(0.009)	(0.005)	(0.006)	(0.016)
Scheduled Tribe	0.023	0.021	0.053*	-0.061*	-0.112*
	(0.04)	(0.053)	(0.021)	(0.027)	(0.072)
Scheduled Caste	0.003	-0.023	-0.009	0.096*	0.176*
	(0.022)	(0.028)	(0.017)	(0.023)	(0.065)
Years Living in Village	-0.467	-1.567	-0.961	0.982	1.8
	(0.839)	(1.079)	(0.649)	(0.863)	(2.263)
Amount of Land	0.435	0.333	0.628	34.862	63.881
	(0.483)	(0.261)	(0.358)	(47.688)	(124.874)
BPL	0.069*	0.113*	0.074*	0.05	0.091
	(0.035)	(0.043)	(0.022)	(0.027)	(0.071)
Number of Children	0.169	0.075	0.166	0.214	0.4
	(0.11)	(0.132)	(0.088)	(0.139)	(0.372)
N Respondents	1794	956	1794	1332	1332
N Villages	152	78	152	62	62

Note: Village clustered standard errors in parentheses.* significant at $p < .05$. Each row depicts a different dependent variable and each column depicts a different model specification. Each cell is the estimated coefficient on the treatment indicator for that model specification and dependent variable. No covariates included. All models were estimated using least squares regression analysis and include district (boundary) fixed effects, with the exception of the matched pair specification which includes match-pair fixed effects.

5 First Stage Outcomes

5.1 Do SHGs increase women's social connectedness?

The proposed causal model implicitly assumes that SHGs increase women's social networks. Table 3 verifies that this assumption holds by comparing the social connections of treated and control women. Table 3 estimates the impact of the SHG intervention on six indicators of women's social connections, including the number of friends and female friends they have in the village, the number of people they discuss important matters with, the number of people they visit in their free time, whether they would go to friends when they need support, and whether they discuss politics with their friends at least semi-regularly. Each row represents a different dependent variable and each column represents a different empirical specification, with the first four using a cubic RDD model and the last column comparing within matched pairs but not accounting for latitude/longitude.

The results show that participating in the SHG intervention increases women's social connections. There is a significant and positive relationship between treatment and all six indicators. Women in treated villages reported significantly more friends, specifically female friends. They also report having significantly more people that they discuss important matters with and visit in their free time. Women in treated villages also report that they turn to their friends when in need significantly more often than women in control villages, suggesting that SHG participation not only creates more connections for women but also helps to deepen those connections. Last, women in treated villages were more likely to discuss politics with the friends they have on a semi-regular basis than women in control village.

I further test whether SHGs are actually bringing women out of the house by estimating the effect of treatment on seven indicators of women's mobility: whether they do the food shopping for the household, whether they have left the village in the last month, and whether they are allowed to visit the local health center, the home of relatives or friends, the local market, a local public meeting, or a short distance by train or bus on their own. I also compute the estimated effect on an additive index of these indicators. Table 3 reports the effect of treatment on the Mobility Index, but individual variable effects can be found in Appendix Table 15. There is a robust positive impact of the SHG intervention on women's mobility. Specifically, women in treated villages were 8 % points more likely that women in control villages to say that they can visit their relative, the market, or go on the bus alone.

These effects are robust to the resample specification where inidividual selection into treat-

ment is directly modeled, with the exception of the effect on how many people visit in their free time.

Table 3: Effect of Treatment on Social Connectedness and Mobility

	Original Sample			Selection Resample		Control
	RDD Specification		Matched Pair Fixed Effects	Matched Pair Fixed Effects		Mean
Dependent Variable:	Full Sample	< 10 km of Boundary	Full Sample	Local ITT	Local CATE	
# Friends in Village	0.517*	0.553*	0.646*	0.851*	2.175*	2.166
	(0.176)	(0.231)	(0.142)	(0.216)	(0.581)	
# Female Friends in Village	0.499*	0.522*	0.633*	0.798*	2.04*	2.133
	(0.169)	(0.222)	(0.136)	(0.205)	(0.548)	
Would go to Friends for Support	0.08*	0.05	0.074*	0.197*	0.504*	0.535
	(0.025)	(0.031)	(0.019)	(0.039)	(0.108)	
# Discuss Important Matters With	0.159*	0.194*	0.201*	0.565*	1.445*	1.352
	(0.07)	(0.081)	(0.052)	(0.144)	(0.392)	
# People Visit in Free Time	0.19*	0.232*	0.243*	-0.356*	-0.909*	1.19
	(0.069)	(0.093)	(0.047)	(0.075)	(0.216)	
Discuss Politics with Friends	0.051*	0.03	0.041*	0.092*	0.235*	0.226
	(0.026)	(0.033)	(0.017)	(0.032)	(0.084)	
Mobility Index	0.393*	0.457*	0.256*	0.507*	1.297*	3.853
	(0.116)	(0.17)	(0.078)	(0.169)	(0.439)	
N Respondents	1794	956	1794	1332	1332	
N Villages	152	78	152	62	62	

Note: Village clustered standard errors in parentheses.* significant at $p < .05$. Each row depicts a different dependent variable and each column depicts a different model specification. Each cell is the estimated coefficient on the treatment indicator for that model specification and dependent variable. All models were estimated using least squares regression analysis and include district (boundary) fixed effects, with the exception of the matched pair specification which includes match-pair fixed effects.

5.2 Do SHGs directly increase women's income or consumption?

Additionally, it could be that the SHG intervention is not impacting women's political behavior through networks at all, but instead that the access to savings and credit are *directly* raising women's income and financial security, which then provides them with the resources to participate in politics (Brady, Verba and Schlozman, 1995).

Table 4 provides robust evidence that any impact of the SHG intervention on political participation is unlikely to result from direct income effects. Table 4 estimates the impact of the SHG intervention on ten economic empowerment indicators, including monthly household expenditures, whether the household had enough income to meet their needs, whether anyone ever had to cut meals because of a lack of food, index of food consumption, past week

expenses on food, whether the respondent herself owns land, number of livestock owned, number of chickens owned, index of durable asset ownership, and whether the house has electricity. There is a positive effect of the SHG intervention on household expenditures in the full sample and 10km specifications, but this effect disappears in the matched pair specification. Additionally, there is no robust impact of the SHG intervention on all other indicators for income and economic security.

These effects again are robust to the resample specification and if anything are even more pronounced, with signigicant negative effects estimated on the consumption index and the amount spent on food.

While the main purpose behind SHG mobilization and participation is access to financial instruments, there is no clear, direct effect of SHG participation on economic empowerment. This does not mean that SHGs have no economically beneficial effect; SHGs still provide women with access to loans and savings which may help with consumption smoothing. What this does show is that there is no shift in the households economic equilibrium (long-term income growth) that has resulted from the SHG intervention. Given this, it is possible to assume that any increases to political participation are not the result of economic empowerment[23].

6 Main Outcomes

6.1 Does access to groups change women's political behavior?

Table 5 estimates the impact of the SHG intervention on the eleven measures of political participation across the five aforementioned model specifications along with the effect on an additive participation index. Table 5 estimates that the SHG intervention had a robust, positive impact on all measures of non-voting political participation but no effect on voting. Women who had received the SHG intervention were 16 percentage points more likely to attend a village assembly meeting, 11 percentage points more likely to make a claim on the Panchayat, and 4 percentage points more likely to make a claim on the Block. Both the size and significance of these effects hold across all model specifications (see Appendix for alternative specifications). These effect sizes are meaningful as they suggest almost a 100% increase in political activity for women in treated villages as compared to the baseline level

[23]I further demonstrate below that income is uncorrelated with political participation.

Table 4: Effect of Treatment on Economic Empowerment

	Original Sample			Selection Resample		Control
	RDD Specification		Matched Pair Fixed Effects	Matched Pair Fixed Effects		Mean
Dependent Variable:	Full Sample	< 10 km of Boundary	Full Sample	Local ITT	Local CATE	
Monthly Household Expenditure	384.97*	378.895*	231.692	-134.298	-343.387	3224.193
	(138.725)	(165.76)	(143.751)	(222.187)	(568.79)	
Income Sufficiency	0.004	0.002	-0.008	0.08*	0.205*	0.577
	(0.027)	(0.036)	(0.018)	(0.038)	(0.1)	
Food Security	-0.009	-0.016	0.004	0.037	0.095	0.248
	(0.023)	(0.03)	(0.019)	(0.035)	(0.091)	
Consumption Index	0.004	0.003	-0.034	-0.308*	-0.787*	3.976
	(0.105)	(0.144)	(0.075)	(0.134)	(0.347)	
Amount Spent on Food	12.137	7.038	-12.469	-118.789*	-303.732*	478.105
	(27.701)	(41.916)	(21.47)	(55.604)	(144.054)	
Respondent Owns Land	0	-0.023	-0.004	-0.038	-0.098	0.092
	(0.015)	(0.019)	(0.012)	(0.023)	(0.06)	
# Livestock Owned	0.335	-0.118	0.272	0.573	1.466	2.756
	(0.189)	(0.248)	(0.154)	(0.356)	(0.918)	
# Chickens Owned	1.898	-1.787	3.418*	19.004	48.591	0.9
	(1.777)	(3.008)	(1.495)	(22.367)	(57.369)	
Assets Index	-0.071	0.114	-0.036	-0.023	-0.058	1.578
	(0.083)	(0.098)	(0.05)	(0.104)	(0.267)	
House has Electricity	0.017	0.059	0.027	0.108*	0.276*	0.847
	(0.028)	(0.034)	(0.017)	(0.022)	(0.059)	
N Respondents	1794	956	1794	1332	1332	
N Villages	152	78	152	62	62	

Note: Village clustered standard errors in parentheses.* significant at $p < .05$. Each row depicts a different dependent variable and each column depicts a different model specification. Each cell is the estimated coefficient on the treatment indicator for that model specification and dependent variable. All models were estimated using least squares regression analysis and include district (boundary) fixed effects, with the exception of the matched pair specification which includes match-pair fixed effects.

of political activity in control villages. There is also a significantly positive relationship between treatment and the index of all participation measures.

There is no estimated effect of the SHG intervention on voting. As shown in Figure 1, voter turnout is high everywhere. This goes along with similarly high voter turnout across low and middle income democracies, and is unsurprising given the family-centered clientelistic nature of local politics. It is therefore unlikely then that networks would have a marginal impact on the small set of women who were not previously turning out to vote.

Table 5 further report the estimated intent to treat and complier average treatment effects when using the resample of women. While the effects are muted in the ITT estimates in comparison to the previously estimated average treatment effects on the treated, there is still evidence of an effect of the SHG intervention on political participation, particularly village assembly attendance. This demonstrates with greater confidence that women's groups increase for women's political participation.

6.2 Does access to women's groups affect other determinants of political behavior?

The above results confirm that the SHG intervention helps to bring women out of the home and into the political sphere. But is this effect the result of women gaining greater empowerment in the household or through shifts in social norms? First, do networks have any impact on women's empowerment in the household? Theoretically it is easy to conceptualize that women might not gain access to community institutions until they have the right to leave their own home freely. Previous scholarship has even suggested that this is the root constraint to women's political participation (Chhibber, 2002; Burns, Schlozman and Verba, 2001). Table 6 estimates the effect of treatment on Household Decision-making, domestic violence, and internalized gender biases.

Table 6 shows that there is a significant and positive relationship between treatment and some indicators of household decision-making. Specifically, the SHG intervention has a positive effect on women's role in decisions regarding consumption, daily tasks, and childrens' education. Strikingly there is no impact of the SHG intervention on women's role in political decision-making. This suggests that participation in the SHG intervention may incorporate women into daily decision-making in the household, potentially as a result of the perceived

Table 5: Effect of the SHG Intervention on Political Participation

	Original Sample			Selection Resample		Control
	RDD Specification		Matched Pair Fixed Effects	Matched Pair Fixed Effects		Mean
Dependent Variable:	Full Sample	< 10 km of Boundary	Full Sample	Local ITT	Local CATE	
Political Participation Index	0.64*	0.737*	0.611*	0.161*	0.42*	2.397
	(0.087)	(0.142)	(0.062)	(0.083)	(0.214)	
Vote Panchayat	-0.005	-0.019	-0.004	0.012	0.032	0.947
	(0.011)	(0.016)	(0.008)	(0.014)	(0.036)	
Vote MLA	0.03	0.000	0.018	0.058*	0.151*	0.748
	(0.026)	(0.032)	(0.019)	(0.023)	(0.06)	
Attend Village Assembly Meeting	0.161*	0.174*	0.144*	0.067*	0.174*	0.214
	(0.024)	(0.035)	(0.019)	(0.025)	(0.065)	
Contact Panchayat for Gov't Benefit	0.089*	0.105*	0.086*	0.043*	0.112*	0.114
	(0.018)	(0.026)	(0.013)	(0.019)	(0.05)	
Submit Application to Panchayat for Services	0.105*	0.117*	0.087*	0.04*	0.104*	0.092
	(0.019)	(0.029)	(0.015)	(0.017)	(0.045)	
Contact Block for Gov't Benefit	0.055*	0.06*	0.059*	0.008	0.021	0.022
	(0.011)	(0.014)	(0.006)	(0.01)	(0.027)	
Submit Application to Block for Services	0.043*	0.053*	0.042*	0.003	0.008	0.032
	(0.012)	(0.017)	(0.009)	(0.01)	(0.025)	
Attend Campaign Event	0.057*	0.103*	0.061*	-0.047*	-0.122*	0.064
	(0.016)	(0.025)	(0.01)	(0.012)	(0.034)	
Motivate for Campaign	0.062*	0.102*	0.068*	-0.031*	-0.082*	0.1
	(0.021)	(0.036)	(0.015)	(0.015)	(0.039)	
Attend Party Meeting	0.02*	0.017	0.022*	0.006	0.015	0.018
	(0.01)	(0.014)	(0.007)	(0.007)	(0.018)	
Attend Caste Council Meeting	0.023	0.026	0.028*	0.003	0.008	0.047
	(0.012)	(0.018)	(0.009)	(0.012)	(0.03)	
N Respondents	1794	956	1794	1332	1332	
N Villages	152	78	152	62	62	

Note: Village clustered standard errors in parentheses.* significant at $p < .05$. Each row depicts a different dependent variable and each column depicts a different model specification. Each cell is the estimated coefficient on the treatment indicator for that model specification and dependent variable. All models were estimated using least squares regression analysis and include district (boundary) fixed effects, with the exception of the matched pair specification which includes match-pair fixed effects.

economic benefit of women's participation, but may not have an effect on women's political empowerment in the household. It is also important to note that on average, most women report that they are included in household decisions in the entire sample (when given the option of choosing multiple decision-makers). These effects are more pronounced when looking at the resample specifications, suggesting that the effects are even stronger once selection is accounted for.

Additionally, Table 6 demonstrates that the SHG intervention did not have a robust effect on domestic violence (effects on index components in Appendix Table 16). Women in treated villages report nearly identical rates of domestic violence as women in control villages. While there is often concern of under-reporting of these statistics due to their sensitive nature and the shame that often accompanies these acts, nearly 20% of respondents across both samples reported that their husband had slapped them suggesting that the privacy demanded for the survey elicited sincere responses.

Additionally, in the proposed theory, social norms set the context for how politics operates and who acts as political agents. Gender-biased social norms do not generate the gender-exclusionary political equilibrium, but they do reinforce it. The proposed theory suggests that women's initial political empowerment can happen even in the presence of gender-biased social norms. To test this, I estimate the effect of treatment on nine indicators of gender bias, including whether the respondent believes that women should take care of household duties, men should help with chores when women are employed, men perform better in school, men are more entitled to employment, women's employment leads to independence, men are more entitled to education, men are better political leaders, women have the same rights as men, and women should be locally elected. Table 6 includes the treatment effect on the bias index for both men and women in the sample, with positive values indicating a shift towards more *gender-equal* beliefs (effects on index components in Appendix Tables 17 and 18).

There is no robust effect of treatment on women's or men's broad gender biases in the full sample models. There is, however, a strong positive correlation in the models using the resample data. In the original sample, women in treated villages were more 6-18 % points more likely than women in control villages to report that women have the same political rights as men and that women should be elected to office, suggesting some shift in women's gender biases in the political space. Men responded to treatment by shifting their views regarding women's role in the household, but not in politics. Men in treated villages were roughly 10% less likely than men in control villages to state that women should take care of

most of the household duties. First, these findings show that while there are some changes in gender biases for men and women, broad social norms appear to remain relatively unchanged. This suggests that economic networks can empower women in the political space, even when they face gender-biased social norms. Second, this suggests that the results shown previously of women's incorporation into politics may be indicative of a shift in the political equilibrium, which has started the process of shifting social norms. Changes in norms move slowly, however, so further study is needed to evaluate whether these changes had taken hold.

7 Why Networks Matter: Evaluating Underlying Mechanisms

I evaluate three primary mechanisms that could explain why participating in the SHG positively impacted political participation: (1) coordination, (2) information, and (3) civic skills.[24] While it is not possible with this design and data to identify the exact causal pathway linking network participation and political engagement, the findings presented below provide suggestive evidence that these three mechanisms contributed to women's greater political participation.

7.1 Coordination/Collective Action

Interviews with SHG members highlighted the importance of coordinated mobilization - women gained access to politics as a group.[25] Women shared that they were allowed out of their homes because they would travel as a group. SHGs would discuss upcoming village

[24]In reality an additional mechanism that might be concerning is selection into networks: particular types of people select into networks together and then create group incentives for political participation (Abrams, Iversen and Soskice, 2011). The design of this study, however, reduces the likelihood of these peer effects. While perfect randomization of networks is not possible, the SHG intervention mobilized some women into social networks in an as-if random manner. Furthermore, these networks were quite heterogeneous as a result of being imposed by a third part (Pradan) rather than being self-selected. Only 44% of women in treated villages reported that they held the same political views, only 7% reported that they were of the same education level, and only 47% reported that they were of the same Caste (jati) as most of their fellow SHG members. While understanding how networks are formed and how this affects behavior is of crucial importance, the heterogeneous nature and as-if random assignment of the networks provide this study leverage in understanding the mechanisms behind networks when separated from peer effects.

[25]Since August 2014, I have conducted qualitative data collection of the political behaviors and social environments of women in rural India. This qualitative study has included 20 focus groups with over 200 women and semi-structured in-depth interviews with several participants one-on-one. Many of these focus groups were conducted with participants of Pradan's programs.

Table 6: Effect of the SHG Intervention on Alternate Determinants

	Original Sample			Selection Resample		Control
	RDD Specification		Matched Pair Fixed Effects	Matched Pair Fixed Effects		Mean
Dependent Variable:	Full Sample	< 10 km of Boundary	Full Sample	Local ITT	Local CATE	
Decisions Index	0.381*	0.522*	0.315*	1.079*	2.821*	7.785
	(0.164)	(0.195)	(0.133)	(0.15)	(0.433)	
Decide: Daily Consumption	0.058*	0.042	0.054*	0.134*	0.35*	0.712
	(0.028)	(0.039)	(0.021)	(0.023)	(0.064)	
Decide: Personal Consumption	0.077*	0.113*	0.085*	0.119*	0.312*	0.696
	(0.024)	(0.03)	(0.02)	(0.024)	(0.064)	
Decide: Personal Sickness	-0.005	0.023	-0.031	0.121*	0.317*	0.614
	(0.029)	(0.042)	(0.023)	(0.027)	(0.074)	
Decide: Daily Tasks	0.049*	0.054*	0.042*	0.049*	0.128*	0.878
	(0.016)	(0.018)	(0.013)	(0.016)	(0.042)	
Decide: Sons' Education	0.068*	0.079*	0.061*	0.111*	0.291*	0.818
	(0.019)	(0.021)	(0.014)	(0.019)	(0.052)	
Decide: Daughters' Education	0.039*	0.065*	0.033*	0.115*	0.299*	0.835
	(0.019)	(0.02)	(0.013)	(0.019)	(0.053)	
Decide: Daughters' Marriage	0.02	0.03	0.021	0.084*	0.221*	0.856
	(0.019)	(0.024)	(0.015)	(0.018)	(0.051)	
Decide: Whom to Vote For	0.015	0.002	0.011	0.084*	0.22*	0.828
	(0.019)	(0.023)	(0.015)	(0.02)	(0.055)	
Decide: Gram Sabha Attendance	0.037	0.062*	0.025	0.13*	0.34*	0.775
	(0.022)	(0.027)	(0.017)	(0.022)	(0.061)	
Decide: Land Purchase	0.022	0.051	0.015	0.131*	0.343*	0.773
	(0.023)	(0.026)	(0.019)	(0.022)	(0.063)	
Index of Violence	-0.092	-0.204	-0.048	-0.072	-0.189	0.763
	(0.074)	(0.116)	(0.062)	(0.078)	(0.205)	
Women's Bias Index	0.141	-0.022	0.154*	0.465*	1.214*	4.707
	(0.102)	(0.161)	(0.078)	(0.093)	(0.258)	
Men's Bias Index	0.248	0.527*	0.175			5.119
	(0.151)	(0.197)	(0.109)			
N Respondents	1794	956	1794	1332	1332	
N Villages	152	78	152	62	62	

Note: Village clustered standard errors in parentheses.* significant at $p < .05$. Each row depicts a different dependent variable and each column depicts a different model specification. Each cell is the estimated coefficient on the treatment indicator for that model specification and dependent variable. All models were estimated using least squares regression analysis and include district (boundary) fixed effects, with the exception of the matched pair specification which includes match-pair fixed effects.

assembly meetings and then coordinate to attend the meetings together. In one interview a woman told a story about the power of acting as a group:

> "We have done many things in the village. We have solved issues for children in the village. We have also fought for the prohibition of alcohol. A new team from our SHG has been formed on the issue of intoxication. In our SHG, regarding the violence. If women are being beaten or harasses by men, then we help them. We go to the Panchayat *together*. Wherever is any issue *all we sisters go there collectively*."

This story highlights how the SHG leverages their collective strength to fight for political and social rights and to enter the community space. This shows how women have shifted their social network into a political network.

To test these qualitative claims that coordinated mobilization was critical for political participation, I model the correlates of political participation in *treated* villages. I include in these models the traditional correlates of participation - education, income and consumption, free time, and demographics - as well as measures of whether or not the SHG mobilized as a unit. Specifically, I include survey data on whether the SHG discussed village issues in SHG meetings, whether the SHG petitioned the Panchayat *as a collective*, whether the SHG members met outside of SHG meetings and if so whether these meetings were social or political. If collective mobilization is the underlying reason behind why economic networks led to political participation, then we would expect for their to be a positive correlation between collective acts by the SHG and a measure of political participation that is not directly related to the collective mobilization questions. For this I use attendance at Gram Sabha meetings as the key dependent variable as the collective mobilization questions do not directly ask about group attendance at these meetings. Models (1)-(3) in Table 7 present these results. Models (4) and (5) control for economic benefits that resulted from SHG membership.

Whether treated women discuss village issues in SHG meetings is positively correlated with attendance at village assembly meetings as is whether an SHG has collectively petitioned the Panchayat. These positive correlations persist even once the income benefits from SHG membership are accounted for (Model (4)). Women who meet with other SHG members outside of meetings are descriptively more likely to attend village assembly meetings. When narrowing in on the reason behind meeting outside of formal meetings, there is a positive correlation between meeting *with SHG members* for political reasons and attendance at Gram Sabha and no correlation between meeting with SHG members for social reasons. These

descriptive correlations provide quantifiable credence behind the qualitative data collected from interviews and further highlight the importance of collective mobilization for women's political participation.

Furthermore, it is important to note that all measures of income are uncorrelated with attendance at village assembly meetings *in treated villages*. Additionally, Models (4) and (5) in Table 7 include as covariates direct measures of the economic benefits from SHG membership - total amounts of loans borrowed from the SHG, total savings put into the SHG, and whether or not the respondent received an agricultural training through the SHG. Both the amount of loans and savings are uncorrelated with Gram Sabha attendance. There is a positive correlation between having received an agricultural training and Gram Sabha attendance suggesting that we cannot rule out a training effect, however, given the dichotomous nature of this variable it is not a precise measurement of the economic benefit reaped from these trainings. It could equally likely be that receiving agricultural trainings as a group helps to foster greater collective spirit and direct the collective's attention to issues beyond the direct savings and credit in the SHG.

7.2 Information

Additionally, networks may allow for the transfer of information and political skills amongst group members. When women do not participate in politics they are also unlikely to develop political skills. Political skills are necessary in lowering the cost to political mobilization (Brady, Verba and Schlozman, 1995). In heterogeneous groups, however, women can pool their political information to share with others in their group. Table 8 reports the effect of the SHG intervention on measures of women's political information. Women in treated villages reported more political information across the board. They were more likely to report subject political information, such as stating that they knew how to make a claim, but also reported more objective political information, such as correctly identifying the day limit for NREGA (a large welfare scheme). The only exception is regarding knowledge of the Panchayat reservation: women in treated villages were no more likely to know of the Panchayat reservation. Overall, this suggests that participation in SHGs may empower women politically through both a transfer of political information but also to women's greater perception of their personal political skills.

Table 7: Determinants of Political Participation in Treated Villages

	Attend Village Assembly Meeting				
	(1)	(2)	(3)	(4)	(5)
Discuss Village with SHG		0.49*	1.01*	0.52*	0.50*
		(0.23)	(0.37)	(0.25)	(0.25)
Petition Panchayat with SHG		0.89*	0.87*	1.00*	0.95*
		(0.18)	(0.27)	(0.20)	(0.20)
Meet SHG outside Meetings		0.39*		0.35	0.26
		(0.18)		(0.19)	(0.20)
Meet SHG: Social			0.03		
			(0.32)		
Meet SHG: Political			1.42*		
			(0.49)		
Totals Loans from SHG				0.00	0.00
				(0.00)	(0.00)
Total Savings from SHG				0.00	0.00
				(0.00)	(0.00)
Agricultural Training from SHG					0.55*
					(0.20)
Years of Education	0.13*	0.10*	0.10*	0.10*	0.09*
	(0.02)	(0.03)	(0.04)	(0.03)	(0.03)
Monthly Household Expenditure	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Acres Land Owned	-0.01	-0.01	0.04	-0.01	-0.01
	(0.01)	(0.01)	(0.05)	(0.02)	(0.02)
Flooring Quality in House	0.00	0.01	0.01	0.01	0.01
	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)
Employed	0.69*	0.77*	0.62*	0.92*	0.86*
	(0.14)	(0.18)	(0.27)	(0.20)	(0.20)
Scheduled Tribe	0.03	0.04	0.12	0.13	0.13
	(0.15)	(0.19)	(0.28)	(0.21)	(0.21)
# Children at Home	0.00	0.07	0.13	0.14	0.15
	(0.05)	(0.07)	(0.11)	(0.08)	(0.08)
Time Spent on Work/House	-0.02	-0.02	0.02	-0.03	-0.03
	(0.02)	(0.03)	(0.05)	(0.03)	(0.03)
Hindu	-0.19	-0.66	-0.70	-0.62	-0.51
	(0.50)	(0.57)	(1.03)	(0.59)	(0.59)
Age	0.04*	0.06*	0.07*	0.05*	0.05*
	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)
Married	-0.84*	-1.12*	-1.14*	-1.28*	-1.28*
	(0.23)	(0.32)	(0.53)	(0.37)	(0.37)
N Respondents	1060	669	340	573	573
N Villages	76	76	76	76	76

Note: Village clustered standard errors in parentheses.* significant at $p < .05$. All models were estimated using binary logistic regression analysis and include district (boundary) fixed effects.

Table 8: Effect of the SHG Intervention on Political Information

	Original Sample			Selection Resample		Control
	RDD Specification		Matched Pair Fixed Effects	Matched Pair Fixed Effects		Mean
Dependent Variable:	Full Sample	< 10 km of Boundary	Full Sample	Local ITT	Local CATE	
Political Information Index	0.428*	0.513*	0.382*	0.643*	1.681*	4.555
	(0.077)	(0.102)	(0.058)	(0.093)	(0.259)	
Knows who is the Sarpanch	0.024*	0.029* 0.025*	0.016	0.041	0.954	
	(0.011)	(0.013)	(0.009)	(0.014)	(0.037)	
Knows who are the Panches	0.071*	0.067*	0.05*	0.125*	0.325*	0.552
	(0.025)	(0.034)	(0.022)	(0.028)	(0.075)	
Knows who is the MLA	0.05*	0.096*	0.059*	0.119*	0.31*	0.204
	(0.023)	(0.034)	(0.016)	(0.024)	(0.067)	
Knows Women can be Panchayat Members	0.051*	0.049	0.036*	0.105*	0.275*	0.738
	(0.022)	(0.028)	(0.015)	(0.024)	(0.065)	
Knows Women can be Sarpanch	0.047*	0.064*	0.038*	0.085*	0.222*	0.845
	(0.018)	(0.023)	(0.012)	(0.02)	(0.053)	
Knows of Panchayat Reservation	0.007	0.018	-0.001	0.084*	0.219*	0.169
	(0.02)	(0.025)	(0.016)	(0.023)	(0.062)	
Knows how to make Claim	0.071*	0.09*	0.065*	0.068*	0.177*	0.186
	(0.023)	(0.032)	(0.018)	(0.024)	(0.063)	
Stated Vote is Private	-0.046	-0.024	-0.032	-0.137*	-0.358*	0.742
	(0.029)	(0.038)	(0.021)	(0.026)	(0.071)	
Correctly said NREGA day limit	0.154*	0.123*	0.141*	0.18*	0.469*	0.165
	(0.027)	(0.041)	(0.024)	(0.023)	(0.066)	
N Respondents	1794	956	1794	1332	1332	
N Villages	152	78	152	62	62	

Note: Village clustered standard errors in parentheses.* significant at $p < .05$. Each row depicts a different dependent variable and each column depicts a different model specification. Each cell is the estimated coefficient on the treatment indicator for that model specification and dependent variable. All models were estimated using least squares regression analysis and include district (boundary) fixed effects, with the exception of the matched pair specification which includes match-pair fixed effects.

7.3 Civic Skills

In interviews, the most commonly cited benefit to membership in the SHGs was women's increased confidence. This confidence is a manifestation of the civic skills detailed by (Verba, Schlozman and Brady, 1995). SHG members as well as Pradan professionals noted how the SHG provided a space and a first opportunity to experiment with political voice and civic engagement. For many of these women, this was their first experience sharing and evaluating their preferences, beliefs, and opinions. This was also the first space in which they had engaged with a group of people without their family present. As a result, women reported that they felt more confident speaking to strangers and in groups. One woman directly stated that her "confidence increased with sitting in the SHG meetings". The qualitative data highlights how SHG meetings allowed women to practice deliberation, to develop confidence and authority, and as a result to strengthen their civic skills.

Table 9 reports that treatment effect for seven indicators of confidence and civic skills, including whether the respondent had spoken up at a village assembly meeting, would feel comfortable speaking up, considers themselves qualified to participate in politics, feels they could do a good job as Sarpanch, is confident, could confidently speak to strangers, and could confidently speak in front of a group. Participation in the SHG increases women's confidence and civic skills generally. Women in treated villages were 10 % points more likely to state that they would speak up at the village assembly meeting, however, this does not appear to have actually changed whether they say they did speak up at a village assembly meeting. Furthermore, SHG participation may be instilling women with deliberative skills, since for example women in treated villages were significantly more likely to state that they felt confident speaking to a group. Confidence alone, however, can not explain women's political participation. This is evidenced by the fact that this inflated confidence did not result in high levels of household empowerment for women or a reduction in violence.

8 Robustness: Dealing with Selection Concerns

As a result of the fact that only treated women were sample in the treated villages, there are concerns of selection bias driving the above results. First, the main concern is that the women who select into treatment are more participatory than the comparable women in the control sample. I address concerns of selection bias in four ways. First, I estimate the intent to treat effect and the complier average treatment effect on political participation using a

Table 9: Effect of the SHG Intervention on Civic Skills

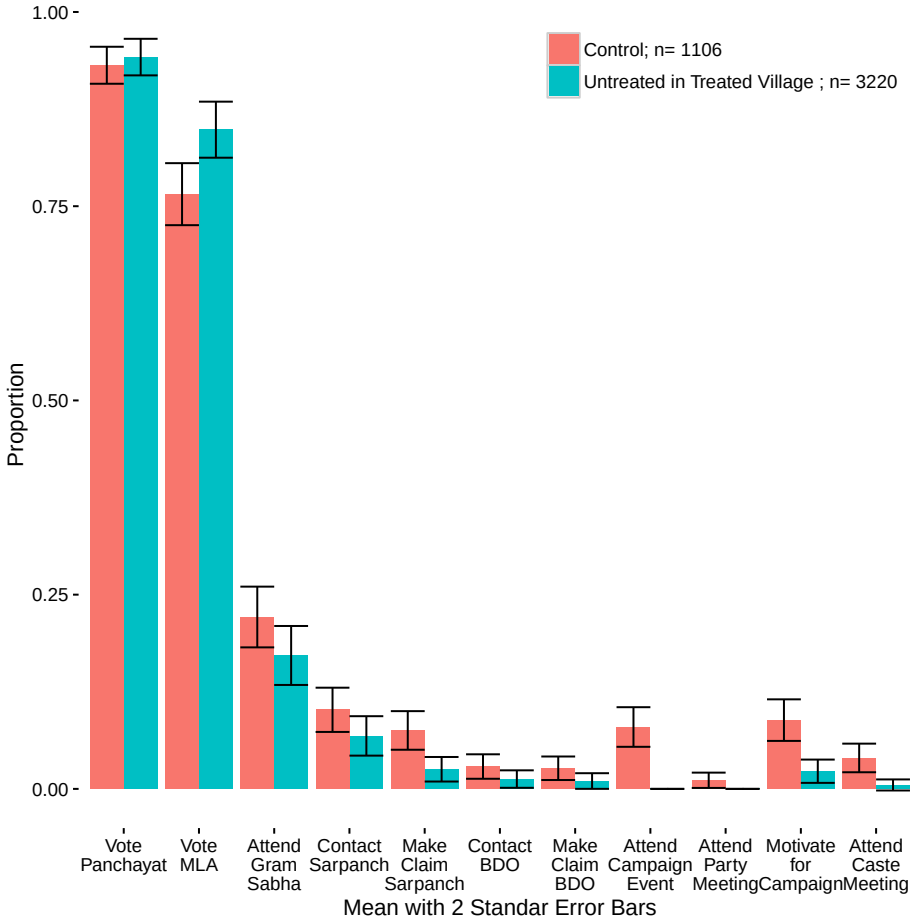
	Original Sample			Selection Resample		Control
	RDD Specification		Matched Pair Fixed Effects	Matched Pair Fixed Effects		Mean
Dependent Variable:	Full Sample	< 10 km of Boundary	Full Sample	Local ITT	Local CATE	
Confidence Index	0.316*	0.486*	0.253*	0.482*	1.258*	3.596
	(0.082)	(0.111)	(0.062)	(0.081)	(0.223)	
Spoke up at Gram Sabha	0.049	0.041	0.071	0.187*	0.357*	0.675
	(0.04)	(0.059)	(0.047)	(0.057)	(0.114)	
I would Speak up at Gram Sabha	0.105*	0.152*	0.09*	0.177*	0.464*	0.519
	(0.026)	(0.03)	(0.022)	(0.027)	(0.076)	
I am Qualified to Participate in Politics	0.034	0.015	0.003	0.072*	0.188*	0.323
	(0.027)	(0.038)	(0.022)	(0.028)	(0.073)	
I could do as good a Job as Sarpanch	0.042	0.084*	0.039*	0.024	0.063	0.363
	(0.024)	(0.03)	(0.018)	(0.028)	(0.074)	
I am Confident	0.062*	0.099*	0.049*	0.125*	0.328*	0.648
	(0.027)	(0.035)	(0.021)	(0.026)	(0.072)	
I am Confident to Speak to a Stranger	0.02	0.051*	0.026*	0.026	0.067	0.915
	(0.015)	(0.025)	(0.012)	(0.014)	(0.036)	
I am Confident to Speak to a Group	0.052*	0.084*	0.046*	0.057*	0.148*	0.828
	(0.022)	(0.03)	(0.017)	(0.018)	(0.048)	
N Respondents	1794	956	1794	1332	1332	
N Villages	152	78	152	62	62	

Note: Village clustered standard errors in parentheses.* significant at $p < .05$. Each row depicts a different dependent variable and each column depicts a different model specification. Each cell is the estimated coefficient on the treatment indicator for that model specification and dependent variable. All models were estimated using least squares regression analysis and include district (boundary) fixed effects, with the exception of the matched pair specification which includes match-pair fixed effects.

subset of villages where sampling procedures across treated and control were identical (as shown in the main text). I show the effects persist even when treatment was not a condition of sampling. Second, I conduct a placebo test to evaluate the effect of treatment on men and show no discernible impact of treatment on men. Third, I demonstrate the robustness of the findings for villages with high rates of saturation, and therefore less selection concern. Finally, I estimate the amount of unobserved confounding needed to obscure the reported effects.

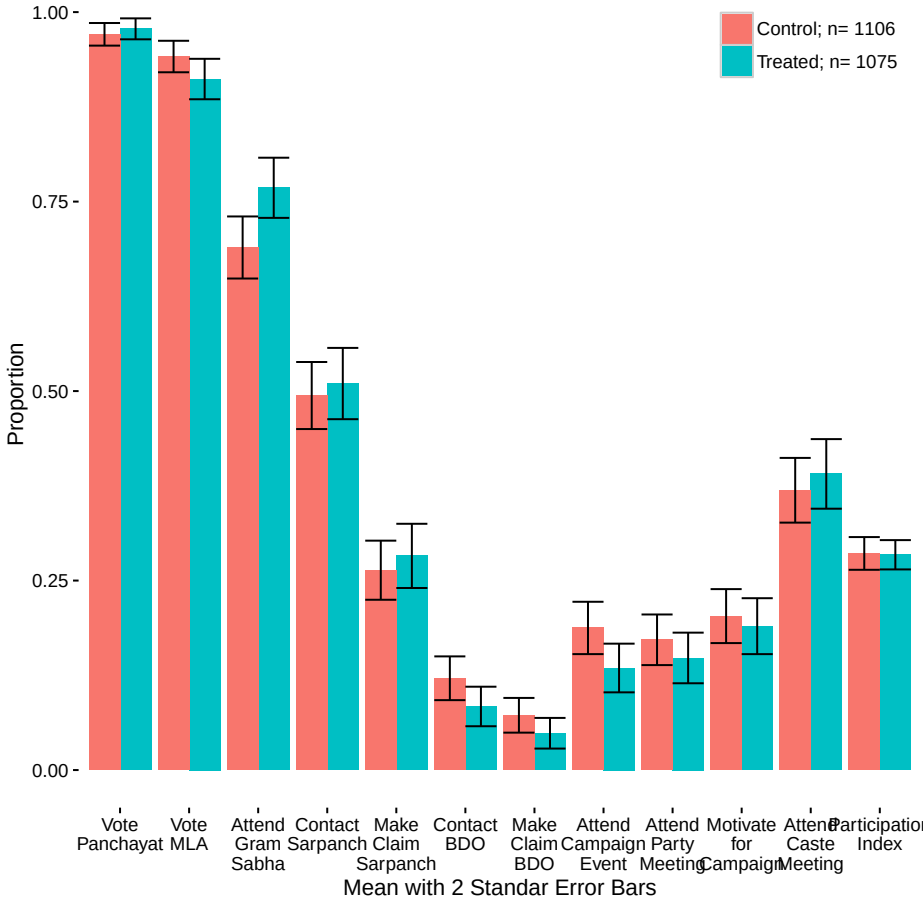
First, Figure 3 compares the average rates of political participation between untreated women in treated villages and control women. There is no significant difference for non-voting political participation, except with regards to campaigning. This first suggests that treated villages were not more participatory than control villages from the start. It also highlights that even within treated villages there are no spillover effects on political participation.

Figure 3: Placebo Test: Untreated Women



Second, I run a placebo test in Figure 4 and Table 10 to evaluate whether men in treated villages were more politically active than men in control villages. This shows that treatment has no robust effect on husband's political behavior. This potentially suggests that the households that opted into the intervention were no participatory than those that did not and that treated and control villages are similar in terms of baseline levels of participation. It also suggests that there is no spillover effect on men's political behavior.

Figure 4: Placebo Test: Men



Third, I test concerns of selection by subsetting the sample to only those villages and their matched pairs that had greater than the mean level of treatment program saturation (40% of women). These villages represent those where the most women have selected into the program. Table 11 presents these results and further reports that the positive effects of treatment on political participation hold up in the comparison of only those villages with the highest saturation rates.

Table 10: Effect of the SHG Intervention on **Men's** Political Participation

	Cubic RDD Specification				Matched	Control
Dependent Variable:	Full Sample	Full Sample	$<$ 10 km of Boundary	$<$ 5 km of Boundary	Pair Specification	Mean
Political Participation Index	-0.099	-0.03	-0.375	-0.2	-0.118	4.484
	(0.171)	(0.167)	(0.233)	(0.313)	(0.126)	
Vote Panchayat	0.011	0.009	0.016	0.004	0.012	0.971
	(0.01)	(0.009)	(0.015)	(0.017)	(0.007)	
Vote MLA	-0.016	-0.016	-0.01	0.058	-0.024	0.941
	(0.019)	(0.018)	(0.027)	(0.037)	(0.016)	
Attend Village Assembly Meeting	0.084*	0.084*	0.044	0.043	0.099*	0.689
	(0.031)	(0.029)	(0.045)	(0.069)	(0.021)	
Contact Panchayat for Gov't Benefit	-0.018	-0.013	-0.068	-0.035	0.014	0.494
	(0.04)	(0.038)	(0.056)	(0.075)	(0.034)	
Submit Application to Panchayat for Services	0.035	0.022	-0.007	0.032	0.013	0.264
	(0.037)	(0.039)	(0.051)	(0.058)	(0.027)	
Contact Block for Gov't Benefit	-0.047*	-0.031	-0.085*	-0.071*	-0.035*	0.121
	(0.022)	(0.021)	(0.032)	(0.032)	(0.015)	
Submit Application to Block for Services	-0.024	-0.026	-0.029	0.022	-0.017	0.072
	(0.017)	(0.017)	(0.024)	(0.033)	(0.013)	
Attend Campaign Event	-0.069*	-0.059	-0.097*	-0.038	-0.081*	0.188
	(0.033)	(0.031)	(0.045)	(0.064)	(0.025)	
Motivate for Campaign	-0.037	-0.01	-0.06	-0.102	-0.048*	0.203
	(0.029)	(0.028)	(0.033)	(0.055)	(0.024)	
Attend Party Meeting	-0.031	-0.02	-0.069	-0.078	-0.048	0.172
	(0.028)	(0.027)	(0.036)	(0.064)	(0.021)	
Attend Caste Council Meeting	0.012	0.031	-0.011	-0.034	-0.002	0.369
	(0.045)	(0.042)	(0.058)	(0.069)	(0.035)	
N Respondents	965	965	524	260	965	
N Villages	152	152	78	40	152	
Controls	Yes	No	Yes	Yes	Yes	

Note: Village clustered standard errors in parentheses.* significant at $p < .05$. Each row depicts a different dependent variable and each column depicts a different model specification. Each cell is the estimated coefficient on the treatment indicator for that model specification and dependent variable. All models were estimated using least squares regression analysis and include district (boundary) fixed effects, with the exception of the matched pair specification which includes match-pair fixed effects.

Table 11: Effect of the SHG Intervention on Political Participation in Villages with Above Average Saturation

Dependent Variable:	Cubic RDD Specification	Matched Pair Specification	Control Mean
Political Participation Index	0.586*	0.588*	2.32
	(0.154)	(0.114)	
Vote Panchayat	-0.007	0.007	0.939
	(0.014)	(0.01)	
Vote MLA	0.069	0.062*	0.729
	(0.042)	(0.031)	
Attend Village Assembly Meeting	0.105*	0.089*	0.163
	(0.039)	(0.03)	
Contact Panchayat for Gov't Benefit	0.047	0.047*	0.108
	(0.03)	(0.019)	
Submit Application to Panchayat for Services	0.103*	0.09*	0.072
	(0.025)	(0.021)	
Contact Block for Gov't Benefit	0.057*	0.066*	0.039
	(0.017)	(0.01)	
Submit Application to Block for Services	0.045*	0.054*	0.041
	(0.02)	(0.014)	
Attend Campaign Event	0.026	0.028*	0.066
	(0.024)	(0.014)	
Motivate for Campaign	0.086*	0.083*	0.099
	(0.029)	(0.02)	
Attend Party Meeting	0.023*	0.021*	0.017
	(0.01)	(0.01)	
Attend Caste Council Meeting	0.032*	0.041*	0.047
	(0.015)	(0.01)	
N Respondents	787	787	
N Villages	152	152	
Controls	Yes	Yes	

Note: Results are for sample with greater than mean saturation rate in village (40%). Village clustered standard errors in parentheses.* significant at $p < .05$. Each row depicts a different dependent variable and each column depicts a different model specification. Each cell is the estimated coefficient on the treatment indicator for that model specification and dependent variable. All models were estimated using least squares regression analysis and include district (boundary) fixed effects, with the exception of the matched pair specification which includes match-pair fixed effects.

9 Conclusion

While the gender gap in political participation is clear, the reasons behind women's persistently low levels of political participation in rural India remain murky. This chapter exploits exogenous variation in access to an NGO social mobilization intervention to test the impact of women's networks on women's political participation. I document that social mobilization leads to significantly more political participation - women's likelihood of attending the village assembly meeting nearly doubled. I additionally show that this intervention increased women's free mobility outside of the household but did not substantially improve women's empowerment in the household or reduce domestic violence. This suggests that women's political empowerment may not necessitate household empowerment. I instead provide suggestive evidence that networks may increase political participation by incentivizing gender-based coordination and mobilization, by imbuing political information, and by developing women's civic skills. In doing so, the SHG intervention is shown to significantly reduce women's own political gender-biases, suggesting that helping to connect women to other women may help to erode gender-biased social norms. Last, I show that the SHG intervention had no discernible direct income effects and that income is uncorrelated with political participation.

This suggests the age-old adage may be true: there is strength in numbers. These findings have major implications for the design and evaluation of development interventions targeted at women, particularly if an aim is to better incorporate women into political institutions (Kohli, 1987). In recent decades, there has been a continuing trend of targeting women as the beneficiaries of economic development programs and vast numbers of women have received economic transfers from state and non-government actors with the aim of economic empowerment. While this does not mean that these programs do not have important impacts on the lives of women, the results from this study do call to question whether income transfers alone will usher women into political spaces. Instead, women's political empowerment may occur when women become embedded within networks. Ultimately, these findings suggest that we should not take as given the link between economic growth and political participation for women in the developing world.

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Appendix

A Addressing Selection Concerns

Table 12: Balance across Treatment and Controls in Village-level Data

	Treatment Mean	Control Mean	Difference in Means	Standard Error	P-Value
Population	781.51	816.46	-34.95	100.23	0.73
Female Population %	0.50	0.50	-0.00	0.00	0.81
Scheduled Tribe Population %	0.68	0.67	0.01	0.05	0.80
Literate Population %	0.42	0.46	-0.04	0.02	0.08
Literate Female Population %	0.30	0.36	-0.05	0.02	0.02
Working Female Population %	0.50	0.49	0.01	0.03	0.72
Distance to Town	41.46	31.29	10.17	6.57	0.12
Area	466.72	444.29	22.43	45.37	0.62
Forest Land	87.24	79.33	7.91	20.61	0.70
Non-cultivable Land	59.59	68.53	-8.93	12.74	0.48
Access via Paved Road	0.41	0.38	0.03	0.08	0.74
Access via Mud Road	0.75	0.83	-0.08	0.07	0.24
Has Education Facility	0.97	0.95	0.03	0.03	0.41
# Primary Health Center	0.01	0.03	-0.01	0.02	0.56
Has Drinking Water	0.99	1.00	-0.01	0.01	0.32
Has Power Supply	0.92	0.87	0.05	0.05	0.29

Table 13: Balance across Treatment and Controls in Person-level Data

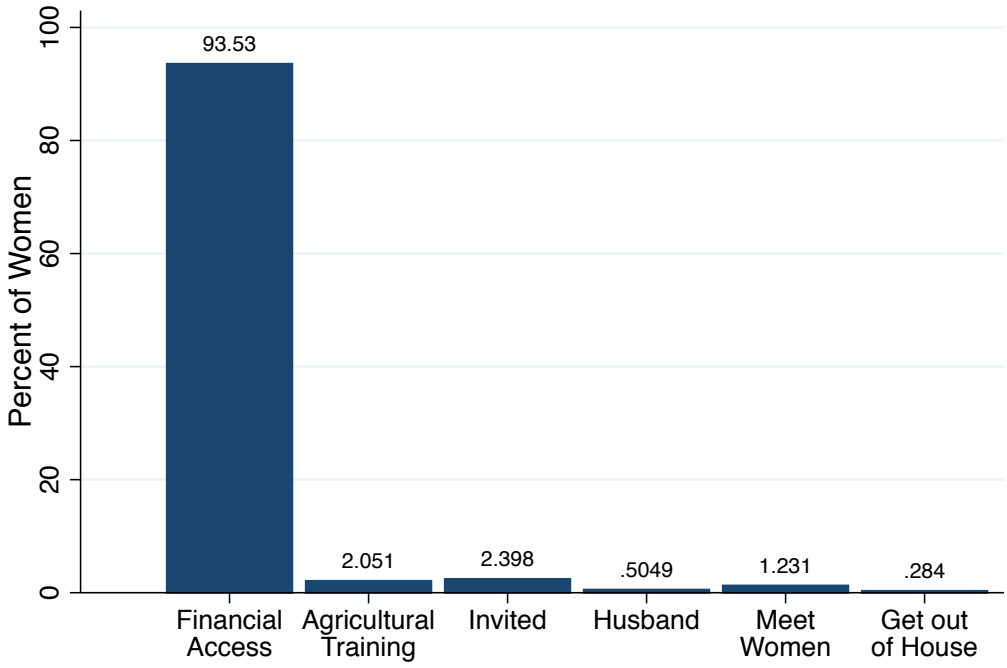
	Treatment Mean	Control Mean	Difference in Means	Standard Error	P-Value
Age	37.69	38.84	-1.15	0.51	0.02
Years of Education	2.56	2.12	0.44	0.17	0.01
Married	0.91	0.90	0.01	0.01	0.55
Hindu	0.98	0.99	-0.00	0.01	0.52
Scheduled Tribe	0.69	0.66	0.03	0.02	0.24
Scheduled Caste	0.12	0.13	-0.01	0.02	0.54
Years Living in Village	23.05	24.17	-1.12	0.69	0.10
Amount of Land	3.30	2.87	0.43	0.48	0.36
BPL	0.50	0.42	0.08	0.02	0.00
Number of Children	3.39	3.26	0.13	0.10	0.18

Table 14: Balance across Treated and Untreated Villages in Pradan's Catchment Boundary

	Sampled Mean	Not Sampled Mean	Difference in Means	P-Value
Population	877.92	697.30	180.62	0.00
Female Population %	0.50	0.50	0.00	0.69
Scheduled Tribe Population %	0.70	0.72	-0.02	0.38
Literate Population %	0.51	0.51	-0.00	0.79
Literate Female Population %	0.43	0.43	0.01	0.55
Working Female Population %	0.55	0.55	-0.00	0.83

B Understanding Selection

Figure 5: Reasons Cited for Joining an SHG



C Effects on Index Components

Table 15: Effect of Treatment on Mobility Measures

Dependent Variable:	Cubic RDD Specification				Matched Pair Specification	Control Mean
	Full Sample	Full Sample	< 10 km of Boundary	< 5 km of Boundary		
Mobility Index	0.393*	0.416*	0.457*	0.351	0.256*	3.853
	(0.116)	(0.122)	(0.17)	(0.227)	(0.078)	
Does Shopping	0.075*	0.078*	0.067	-0.02	0.068*	0.502
	(0.024)	(0.028)	(0.04)	(0.057)	(0.02)	
Left Village	0.021	0.028	-0.01	-0.008	0.024	0.462
	(0.026)	(0.027)	(0.037)	(0.047)	(0.019)	
Go to Health Center Alone	0.04	0.034	0.041	0.045	0.02	0.519
	(0.029)	(0.029)	(0.04)	(0.049)	(0.02)	
Go to Relatives Alone	0.063*	0.053*	0.074*	0.088*	0.038*	0.601
	(0.025)	(0.026)	(0.035)	(0.038)	(0.016)	
Go to Market Alone	0.079*	0.086*	0.115*	0.103	0.049*	0.585
	(0.028)	(0.028)	(0.04)	(0.057)	(0.02)	
Go to Public Meeting Alone	0.045	0.051*	0.069	0.085*	0.017	0.673
	(0.025)	(0.025)	(0.036)	(0.042)	(0.017)	
Go on Bus Alone	0.07*	0.086*	0.102*	0.058	0.04*	0.512
	(0.026)	(0.028)	(0.037)	(0.049)	(0.018)	
N Respondents	1794	1794	956	475	1794	
N Villages	152	152	78	40	152	
Controls	Yes	No	Yes	Yes	Yes	

Note: Village clustered standard errors in parentheses.* significant at $p < .05$. Each row depicts a different dependent variable and each column depicts a different model specification. Each cell is the estimated coefficient on the treatment indicator for that model specification and dependent variable. All models were estimated using least squares regression analysis and include district (boundary) fixed effects, with the exception of the matched pair specification which includes match-pair fixed effects.

Table 16: Effect of the SHG Intervention on Domestic Violence

	Cubic RDD Specification				Matched	Control
Dependent Variable:	Full Sample	Full Sample	< 10 km of Boundary	< 5 km of Boundary	Pair Specification	Mean
Index of Violence	-0.092	-0.068	-0.204	-0.388*	-0.048	0.763
	(0.074)	(0.068)	(0.116)	(0.115)	(0.062)	
Husband Humiliated	-0.007	-0.002	-0.019	-0.056*	0.000	0.122
	(0.015)	(0.015)	(0.021)	(0.022)	(0.013)	
Husband Threatened	-0.004	-0.002	-0.046*	-0.055*	0.000	0.075
	(0.014)	(0.013)	(0.018)	(0.023)	(0.012)	
Husband Insulted	-0.015	0	-0.04	-0.063	-0.005	0.146
	(0.019)	(0.018)	(0.029)	(0.034)	(0.016)	
Husband Slapped	-0.038	-0.035	-0.054	-0.136*	-0.026	0.208
	(0.022)	(0.02)	(0.035)	(0.043)	(0.017)	
Husband Punched	-0.031	-0.026	-0.048	-0.119*	-0.014	0.176
	(0.019)	(0.018)	(0.029)	(0.031)	(0.016)	
Husband Forced Sex	0.002	0	-0.019	-0.048*	0.003	0.065
	(0.013)	(0.012)	(0.019)	(0.023)	(0.01)	
N Respondents	1794	1794	956	475	1794	
N Villages	152	152	78	40	152	
Controls	Yes	No	Yes	Yes	Yes	

Note: Village clustered standard errors in parentheses.* significant at $p < .05$. Each row depicts a different dependent variable and each column depicts a different model specification. Each cell is the estimated coefficient on the treatment indicator for that model specification and dependent variable. All models were estimated using least squares regression analysis and include district (boundary) fixed effects, with the exception of the matched pair specification which includes match-pair fixed effects.

Table 17: Effect of the SHG Intervention on Women's Gender Biases

	Cubic RDD Specification				Matched	Control
Dependent Variable:	Full Sample	Full Sample	$<$ 10 km of Boundary	$<$ 5 km of Boundary	Pair Specification	Mean
Bias Index	0.141	0.195	-0.022	0.021	0.154*	4.707
	(0.102)	(0.106)	(0.161)	(0.231)	(0.078)	
Household Duties Bias	0.013	0.024	-0.022	-0.121	0.012	0.268
	(0.03)	(0.029)	(0.043)	(0.062)	(0.022)	
Men's Household Work Bias	0.02	0.025	0.029	0.087*	0.011	0.746
	(0.024)	(0.024)	(0.026)	(0.032)	(0.019)	
Men's School Performance Bias	-0.007	0.009	-0.04	-0.026	0.003	0.639
	(0.027)	(0.027)	(0.039)	(0.049)	(0.021)	
Men's Employment Bias	0.007	0.014	-0.032	-0.079	0.018	0.541
	(0.027)	(0.027)	(0.043)	(0.057)	(0.02)	
Education Bias	-0.029	-0.019	-0.057	-0.036	-0.028	0.648
	(0.025)	(0.024)	(0.039)	(0.064)	(0.018)	
Quality of Political Leader Bias	-0.031	-0.034	-0.077*	-0.069	-0.017	0.684
	(0.028)	(0.028)	(0.039)	(0.048)	(0.021)	
Political Rights Bias	0.083*	0.081*	0.104*	0.15*	0.086*	0.563
	(0.029)	(0.031)	(0.041)	(0.044)	(0.025)	
Political Representation Bias	0.083*	0.095*	0.072*	0.115*	0.069*	0.619
	(0.029)	(0.028)	(0.036)	(0.056)	(0.022)	
N Respondents	1794	1794	956	475	1794	
N Villages	152	152	78	40	152	
Controls	Yes	No	Yes	Yes	Yes	

Note: Village clustered standard errors in parentheses.* significant at $p < .05$. All variables coded so that a positive value indicates a more gender-equitable belief. Each row depicts a different dependent variable and each column depicts a different model specification. Each cell is the estimated coefficient on the treatment indicator for that model specification and dependent variable. All models were estimated using least squares regression analysis and include district (boundary) fixed effects, with the exception of the matched pair specification which includes match-pair fixed effects.

Table 18: Effect of the SHG Intervention on Men's Gender Biases

	Cubic RDD Specification				Matched	Control
Dependent Variable:	Full Sample	Full Sample	< 10 km of Boundary	< 5 km of Boundary	Pair Specification	Mean
Bias Index	0.248	0.212	0.527*	0.555	0.175	5.119
	(0.151)	(0.151)	(0.197)	(0.3)	(0.109)	
Household Duties Bias	0.092*	0.086*	0.088	0.076	0.055	0.492
	(0.043)	(0.042)	(0.063)	(0.09)	(0.032)	
Men's Household Work Bias	0.027	0.018	0.041	0.133*	0.005	0.857
	(0.029)	(0.029)	(0.036)	(0.053)	(0.022)	
Men's School Performance Bias	0.024	0.034	0.09	0.049	0.03	0.688
	(0.038)	(0.038)	(0.054)	(0.083)	(0.03)	
Men's Employment Bias	-0.017	-0.025	-0.018	-0.148	0.022	0.395
	(0.037)	(0.035)	(0.054)	(0.082)	(0.028)	
Education Bias	0.025	0.019	0.142	0.134	0.025	0.578
	(0.045)	(0.047)	(0.058)	(0.089)	(0.041)	
Quality of Political Leader Bias	0.034	0.035	0.076	0.076	0.028	0.574
	(0.038)	(0.037)	(0.045)	(0.05)	(0.025)	
Political Rights Bias	0.021	0.002	0.063	0.127	0.002	0.764
	(0.034)	(0.032)	(0.047)	(0.064)	(0.027)	
Political Representation Bias	0.04	0.043	0.046	0.107	0.007	0.771
	(0.033)	(0.034)	(0.043)	(0.06)	(0.025)	
N Respondents	965	965	524	250	965	
N Villages	152	152	78	40	152	
Controls	Yes	No	Yes	Yes	Yes	

Note: Village clustered standard errors in parentheses.* significant at $p < .05$. All variables coded so that a positive value indicates a more gender-equitable belief. Each row depicts a different dependent variable and each column depicts a different model specification. Each cell is the estimated coefficient on the treatment indicator for that model specification and dependent variable. All models were estimated using least squares regression analysis and include district (boundary) fixed effects, with the exception of the matched pair specification which includes match-pair fixed effects.

D Results from Full, Un-matched Sample

Table 19: Balance Test of Treatment Effects on Pre-Treatment Respondent Data in Unmatched Sample

	Cubic RDD Specification			Matched
Dependent Variable:	Full Sample	< 10 km of Boundary	< 5 km of Boundary	Pair Specification
Age	-1.626*	-1.734*	-1.541	-1.729*
	(0.577)	(0.73)	(1.046)	(0.374)
Years of Education	-0.087	0.286	0.222	-0.165
	(0.252)	(0.336)	(0.462)	(0.152)
Married	0.026	-0.002	-0.033	0.029*
	(0.015)	(0.022)	(0.028)	(0.012)
Hindu	-0.004	-0.002	0.009	-0.003
	(0.006)	(0.008)	(0.011)	(0.005)
Scheduled Tribe	0.089*	0.107	0.043	0.11*
	(0.041)	(0.058)	(0.095)	(0.021)
Scheduled Caste	-0.013	-0.047	-0.011	-0.022
	(0.022)	(0.029)	(0.035)	(0.016)
Years Living in Village	-1.103	-1.894	-2.029	-1.285*
	(0.853)	(1.053)	(1.594)	(0.604)
Amount of Land	5.399	7.542	13.313	4.573
	(4.529)	(7.9)	(13.843)	(2.727)
BPL	0.094*	0.122*	0.177*	0.098*
	(0.034)	(0.043)	(0.062)	(0.021)
Number of Children	0.221*	0.097	0.059	0.221*
	(0.103)	(0.108)	(0.175)	(0.08)
N Respondents	2151	1142	576	2151
N Villages	152	78	40	152

Note: Village clustered standard errors in parentheses.* significant at $p < .05$. Each row depicts a different dependent variable and each column depicts a different model specification. Each cell is the estimated coefficient on the treatment indicator for that model specification and dependent variable. No covariates included. All models were estimated using least squares regression analysis and include district (boundary) fixed effects, with the exception of the matched pair specification which includes match-pair fixed effects.

Table 20: Effect of Treatment on Social Networks in Unmatched Sample

	Cubic RDD Specification				Matched	Control
Dependent Variable:	Full Sample	Full Sample	< 10 km of Boundary	< 5 km of Boundary	Pair Specification	Mean
# Friends in Village	0.575*	0.576*	0.613*	0.696*	0.63*	2.187
	(0.169)	(0.156)	(0.228)	(0.326)	(0.142)	
# Female Friends in Village	0.564*	0.564*	0.591*	0.648*	0.615*	2.146
	(0.161)	(0.15)	(0.215)	(0.285)	(0.136)	
Would go to Friends for Support	0.091*	0.086*	0.084*	0.1*	0.089*	0.532
	(0.023)	(0.022)	(0.029)	(0.039)	(0.017)	
# Discuss Important Matters With	0.16*	0.199*	0.252*	0.355*	0.196*	1.363
	(0.066)	(0.062)	(0.071)	(0.081)	(0.051)	
# People Visit in Free Time	0.171*	0.181*	0.228*	0.249*	0.216*	1.225
	(0.061)	(0.06)	(0.084)	(0.117)	(0.048)	
Discuss Politics with Friends	0.053*	0.044	0.018	0.063	0.047*	0.22
	(0.025)	(0.024)	(0.033)	(0.043)	(0.017)	
Mobility Index	0.493*	0.493*	0.544*	0.571*	0.39*	3.791
	(0.106)	(0.114)	(0.154)	(0.202)	(0.078)	
N Respondents	2151	2167	1142	576	2151	
N Villages	152	152	78	40	152	
Controls	Yes	No	Yes	Yes	Yes	

Note: Village clustered standard errors in parentheses.* significant at $p < .05$. Each row depicts a different dependent variable and each column depicts a different model specification. Each cell is the estimated coefficient on the treatment indicator for that model specification and dependent variable. All models were estimated using least squares regression analysis and include district (boundary) fixed effects, with the exception of the matched pair specification which includes match-pair fixed effects.

Table 21: Effect of Treatment on Economic Empowerment in Unmatched Sample

	Cubic RDD Specification				Matched	Control
Dependent Variable:	Full Sample	Full Sample	$<$ 10 km of Boundary	$<$ 5 km of Boundary	Pair Specification	Mean
Monthly Household Expenditure	245.079	197.328	232.293	20.936	55.872	3444.415
	(139.992)	(139.955)	(175.62)	(226.285)	(127.598)	
Income Sufficiency	-0.01	0	0.008	-0.036	-0.021	0.596
	(0.023)	(0.024)	(0.03)	(0.046)	(0.016)	
Food Security	-0.01	-0.007	-0.018	-0.026	0.003	0.237
	(0.021)	(0.022)	(0.026)	(0.035)	(0.017)	
Consumption Index	-0.034	-0.024	-0.047	0.151	-0.055	4.066
	(0.094)	(0.096)	(0.138)	(0.166)	(0.066)	
Amount Spent on Food	-12.176	4.515	-33.52	55.975	-34.48	504.711
	(32.047)	(32.926)	(49.449)	(65.021)	(21.163)	
Respondent Owns Land	0.004	-0.004	-0.005	-0.023	0.003	0.096
	(0.014)	(0.015)	(0.018)	(0.019)	(0.011)	
# Livestock Owned	0.304	0.379*	-0.269	-0.361	0.228	2.811
	(0.186)	(0.185)	(0.246)	(0.425)	(0.154)	
# Chickens Owned	1.988	2.492	-0.971	-2.599	3.552*	0.788
	(1.558)	(1.49)	(2.575)	(3.83)	(1.439)	
Assets Index	-0.123	-0.174	0.049	0.122	-0.097*	1.735
	(0.074)	(0.092)	(0.097)	(0.129)	(0.047)	
House has Electricity	0.017	0.02	0.069*	0.072	0.026	0.86
	(0.026)	(0.026)	(0.03)	(0.047)	(0.017)	
N Respondents	2151	2167	1142	576	2151	
N Villages	152	152	78	40	152	
Controls	Yes	No	Yes	Yes	Yes	

Note: Village clustered standard errors in parentheses.* significant at $p < .05$. Each row depicts a different dependent variable and each column depicts a different model specification. Each cell is the estimated coefficient on the treatment indicator for that model specification and dependent variable. All models were estimated using least squares regression analysis and include district (boundary) fixed effects, with the exception of the matched pair specification which includes match-pair fixed effects.

Table 22: Effect of the SHG Intervention on Political Participation in Unmatched Sample

	Cubic RDD Specification				Matched	Control
Dependent Variable:	Full Sample	Full Sample	$<$ 10 km of Boundary	$<$ 5 km of Boundary	Pair Specification	Mean
Political Participation Index	0.643*	0.611*	0.775*	0.891*	0.64*	2.42
	(0.086)	(0.09)	(0.133)	(0.219)	(0.06)	
Vote Panchayat	0.01	0.008	0.003	-0.031	0.012	0.929
	(0.01)	(0.011)	(0.016)	(0.021)	(0.007)	
Vote MLA	0.046	0.028	0.013	-0.003	0.035	0.744
	(0.024)	(0.026)	(0.032)	(0.043)	(0.018)	
Attend Village Assembly Meeting	0.158*	0.145*	0.178*	0.213*	0.145*	0.217
	(0.023)	(0.024)	(0.034)	(0.051)	(0.018)	
Contact Panchayat for Gov't Benefit	0.083*	0.086*	0.094*	0.132*	0.084*	0.127
	(0.016)	(0.017)	(0.022)	(0.037)	(0.012)	
Submit Application to Panchayat for Services	0.106*	0.117*	0.127*	0.145*	0.093*	0.088
	(0.019)	(0.02)	(0.027)	(0.049)	(0.014)	
Contact Block for Gov't Benefit	0.048*	0.048*	0.055*	0.07*	0.05*5	0.028
	(0.011)	(0.011)	(0.012)	(0.019)	(0.006)	
Submit Application to Block for Services	0.047*	0.042*	0.055*	0.057	0.045*	0.033
	(0.011)	(0.012)	(0.016)	(0.033)	(0.009)	
Attend Campaign Event	0.047*	0.047*	0.099*	0.138*	0.056*	0.071
	(0.015)	(0.015)	(0.022)	(0.027)	(0.01)	
Motivate for Campaign	0.058*	0.052*	0.109*	0.167*	0.07*	0.107
	(0.02)	(0.02)	(0.033)	(0.049)	(0.015)	
Attend Party Meeting	0.016	0.015	0.016	0.012	0.019*	0.025
	(0.01)	(0.009)	(0.013)	(0.011)	(0.007)	
Attend Caste Council Meeting	0.023*	0.023*	0.026	-0.008	0.026*	0.051
	(0.011)	(0.011)	(0.016)	(0.022)	(0.008)	
N Respondents	2151	2167	1142	576	2151	
N Villages	152	152	78	40	152	
Controls	Yes	No	Yes	Yes	Yes	

Note: Village clustered standard errors in parentheses.* significant at $p < .05$. Each row depicts a different dependent variable and each column depicts a different model specification. Each cell is the estimated coefficient on the treatment indicator for that model specification and dependent variable. All models were estimated using least squares regression analysis and include district (boundary) fixed effects, with the exception of the matched pair specification which includes match-pair fixed effects.

Table 23: Effect of the SHG Intervention on Alternate Determinants in Unmatched Sample

	Cubic RDD Specification				Matched	Control
Dependent Variable:	Full Sample	Full Sample	< 10 km of Boundary	< 5 km of Boundary	Pair Specification	Mean
Decisions Index	0.418*	0.409*	0.536*	0.117	0.33*	7.738
	(0.157)	(0.16)	(0.174)	(0.29)	(0.119)	
Decide: Daily Consumption	0.075*	0.073*	0.06	0.024	0.061*	0.689
	(0.025)	(0.026)	(0.033)	(0.045)	(0.019)	
Decide: Personal Consumption	0.08*	0.072*	0.112*	0.09	0.082*	0.689
	(0.023)	(0.023)	(0.027)	(0.049)	(0.018)	
Decide: Personal Sickness	0.01	0.012	0.029	-0.056	-0.015	0.594
	(0.027)	(0.027)	(0.035)	(0.055)	(0.021)	
Decide: Daily Tasks	0.044*	0.047*	0.049*	0.019	0.037*	0.883
	(0.014)	(0.013)	(0.015)	(0.024)	(0.01)	
Decide: Sons' Education	0.061*	0.055*	0.07*	0.052	0.051*	0.825
	(0.018)	(0.019)	(0.02)	(0.032)	(0.013)	
Decide: Daughters' Education	0.04*	0.04*	0.065*	0.024	0.035*	0.835
	(0.017)	(0.018)	(0.019)	(0.034)	(0.011)	
Decide: Daughters' Marriage	0.02	0.021	0.034	-0.005	0.019	0.855
	(0.018)	(0.018)	(0.022)	(0.033)	(0.013)	
Decide: Whom to Vote For	0.019	0.019	0.014	-0.009	0.02	0.827
	(0.018)	(0.018)	(0.023)	(0.03)	(0.013)	
Decide: Gram Sabha Attendance	0.043	0.042	0.055*	-0.01	0.025	0.771
	(0.022)	(0.022)	(0.026)	(0.032)	(0.017)	
Decide: Land Purchase	0.025	0.03	0.048	-0.011	0.015	0.769
	(0.022)	(0.022)	(0.025)	(0.041)	(0.017)	
Index of Violence	-0.056	-0.003	-0.125	-0.364*	-0.038	0.714
	(0.067)	(0.064)	(0.107)	(0.107)	(0.058)	
Women's Bias Index	0.135	0.143	-0.05	0.094	0.128	4.778
	(0.094)	(0.097)	(0.136)	(0.225)	(0.067)	
N Respondents	2151	2167	1142	576	2151	
N Villages	152	152	78	40	152	
Controls	Yes	No	Yes	Yes	Yes	

Note: Village clustered standard errors in parentheses.* significant at $p < .05$. Each row depicts a different dependent variable and each column depicts a different model specification. Each cell is the estimated coefficient on the treatment indicator for that model specification and dependent variable. All models were estimated using least squares regression analysis and include district (boundary) fixed effects, with the exception of the matched pair specification which includes match-pair fixed effects.

E Results using Exact Matching

Table 24: Balance Test of Treatment Effects on Pre-Treatment Respondent Data in Exact-matched Sample

	Cubic RDD Specification			Matched
Dependent Variable:	Full Sample	< 10 km of Boundary	< 5 km of Boundary	Pair Specification
Age	-0.16	0.264	0.829	-0.814
	(0.653)	(0.897)	(1.152)	(0.544)
Years of Education	-0.106	-0.29	-0.36	-0.083
	(0.165)	(0.26)	(0.389)	(0.114)
Married	0.002	-0.018	-0.091*	0.007
	(0.017)	(0.027)	(0.037)	(0.012)
Hindu	-0.001	0.006	0	0
	(0.004)	(0.006)	(0)	(0.003)
Scheduled Tribe	0.031	-0.006	0.033	0.051*
	(0.041)	(0.055)	(0.083)	(0.024)
Scheduled Caste	-0.014	-0.007	-0.037	-0.024
	(0.022)	(0.027)	(0.027)	(0.017)
Years Living in Village	-0.709	-1.138	-1.15	-1.548
	(1.103)	(1.651)	(2.651)	(0.95)
Amount of Land	0.118	0.085	-0.435*	0.226
	(0.156)	(0.176)	(0.22)	(0.117)
BPL	0.027	0.1*	0.085	0.042
	(0.041)	(0.05)	(0.074)	(0.029)
Number of Children	0.175	0.158	-0.255	0.174
	(0.158)	(0.204)	(0.218)	(0.142)
N Respondents	808	397	189	808
N Villages	152	78	40	152

Note: Village clustered standard errors in parentheses.* significant at $p < .05$. Each row depicts a different dependent variable and each column depicts a different model specification. Each cell is the estimated coefficient on the treatment indicator for that model specification and dependent variable. No covariates included. All models were estimated using least squares regression analysis and include district (boundary) fixed effects, with the exception of the matched pair specification which includes match-pair fixed effects.

Table 25: Effect of Treatment on Social Networks in Exact-matched Sample

	Cubic RDD Specification				Matched	Control
Dependent Variable:	Full Sample	Full Sample	< 10 km of Boundary	< 5 km of Boundary	Pair Specification	Mean
# Friends in Village	0.285	0.336	0.299	-0.423	0.32	2.147
	(0.26)	(0.248)	(0.317)	(0.349)	(0.217)	
# Female Friends in Village	0.291	0.329	0.372	-0.309	0.296	2.107
	(0.251)	(0.236)	(0.306)	(0.344)	(0.208)	
Would go to Friends for Support	0.076*	0.08*	0.059	0.129	0.072*	0.522
	(0.036)	(0.035)	(0.043)	(0.07)	(0.03)	
# Discuss Important Matters With	0.236*	0.259*	0.413*	0.562*	0.256*	1.27
	(0.11)	(0.099)	(0.135)	(0.207)	(0.095)	
# People Visit in Free Time	0.201*	0.206*	0.368*	0.441*	0.202*	1.113
	(0.085)	(0.082)	(0.112)	(0.2)	(0.063)	
Discuss Politics with Friends	0.032	0.024	-0.01	0.08	0.026	0.215
	(0.035)	(0.033)	(0.049)	(0.072)	(0.032)	
Mobility Index	0.476*	0.472*	0.393	0.719*	0.344*	3.697
	(0.163)	(0.159)	(0.216)	(0.298)	(0.107)	
N Respondents	808	808	397	189	808	
N Villages	152	152	78	40	152	
Controls	Yes	No	Yes	Yes	Yes	

Note: Village clustered standard errors in parentheses.* significant at $p < .05$. Each row depicts a different dependent variable and each column depicts a different model specification. Each cell is the estimated coefficient on the treatment indicator for that model specification and dependent variable. All models were estimated using least squares regression analysis and include district (boundary) fixed effects, with the exception of the matched pair specification which includes match-pair fixed effects.

Table 26: Effect of Treatment on Economic Empowerment in Exact-Matched Sample

	Cubic RDD Specification				Matched	Control
Dependent Variable:	Full Sample	Full Sample	$<$ 10 km of Boundary	$<$ 5 km of Boundary	Pair Specification	Mean
Monthly Household Expenditure	366.475*	304.268	495.823*	724.005	246.291	3010.54
	(169.107)	(163.091)	(225.313)	(459.797)	(140.977)	
Income Sufficiency	0.02	0.024	0.008	-0.046	0.015	0.568
	(0.037)	(0.039)	(0.05)	(0.074)	(0.032)	
Food Security	0.024	0.032	0.076	0.028	0.047	0.25
	(0.032)	(0.031)	(0.043)	(0.073)	(0.027)	
Consumption Index	-0.18	-0.12	-0.245	0.233	-0.244*	3.882
	(0.119)	(0.116)	(0.185)	(0.285)	(0.1)	
Amount Spent on Food	4.471	20.589	-21.585	-15.828	5.41	475.1
	(30.7)	(31.348)	(40.777)	(96.582)	(23.879)	
Respondent Owns Land	-0.025	-0.013	-0.059*	-0.041	-0.031*	0.072
	(0.019)	(0.018)	(0.025)	(0.021)	(0.014)	
# Livestock Owned	0.36	0.361	0.21	0.649	0.204	2.708
	(0.258)	(0.227)	(0.357)	(0.634)	(0.213)	
# Chickens Owned	1.481	1.59	1.232	-0.961	1.598	0.96
	(1.032)	(1.109)	(1.798)	(2.444)	(1.203)	
Assets Index	0.002	-0.004	0.351*	0.671*	0.135*	1.308
	(0.107)	(0.107)	(0.149)	(0.211)	(0.067)	
House has Electricity	0.033	0.039	0.098*	0.097	0.056*	0.822
	(0.036)	(0.035)	(0.04)	(0.058)	(0.018)	
N Respondents	808	808	397	189	808	
N Villages	152	152	78	40	152	
Controls	Yes	No	Yes	Yes	Yes	

Note: Village clustered standard errors in parentheses.* significant at $p < .05$. Each row depicts a different dependent variable and each column depicts a different model specification. Each cell is the estimated coefficient on the treatment indicator for that model specification and dependent variable. All models were estimated using least squares regression analysis and include district (boundary) fixed effects, with the exception of the matched pair specification which includes match-pair fixed effects.

Table 27: Effect of the SHG Intervention on Political Participation in Exact-matched Sample

	Cubic RDD Specification				Matched	Control
Dependent Variable:	Full Sample	Full Sample	< 10 km of Boundary	< 5 km of Boundary	Pair Specification	Mean
Political Participation Index	0.55*	0.574*	0.567*	0.602	0.419*	2.25
	(0.102)	(0.114)	(0.191)	(0.349)	(0.082)	
Vote Panchayat	0.024	0.018	0.001	-0.027	0.026	0.95
	(0.014)	(0.016)	(0.022)	(0.038)	(0.011)	
Vote MLA	0.004	0.011	-0.06	-0.125	-0.02	0.745
	(0.032)	(0.033)	(0.045)	(0.049)	(0.026)	
Attend Village Assembly Meeting	0.126*	0.126*	0.13*	0.139	0.071*	0.198
	(0.034)	(0.034)	(0.053)	(0.081)	(0.028)	
Contact Panchayat for Gov't Benefit	0.073*	0.088*	0.084*	0.081	0.056*	0.08
	(0.023)	(0.025)	(0.036)	(0.051)	(0.019)	
Submit Application to Panchayat for Services	0.1*	0.108*	0.096*	0.074	0.073*	0.075
	(0.022)	(0.024)	(0.038)	(0.049)	(0.016)	
Contact Block for Gov't Benefit	0.057*	0.058*	0.059*	0.026	0.041*	0.01
	(0.011)	(0.01)	(0.015)	(0.022)	(0.009)	
Submit Application to Block for Services	0.038*	0.037*	0.051*	0.071	0.028*	0.022
	(0.014)	(0.014)	(0.025)	(0.053)	(0.012)	
Attend Campaign Event	0.032	0.034	0.05	0.111*	0.039*	0.05
	(0.019)	(0.018)	(0.027)	(0.034)	(0.014)	
Motivate for Campaign	0.059*	0.064*	0.104*	0.176*	0.063*	0.075
	(0.028)	(0.03)	(0.048)	(0.078)	(0.022)	
Attend Party Meeting	0.014	0.011	0.004	0.033	0.022	0.012
	(0.011)	(0.01)	(0.02)	(0.029)	(0.009)	
Attend Caste Council Meeting	0.023	0.019	0.049*	0.041	0.02	0.032
	(0.014)	(0.013)	(0.022)	(0.032)	(0.011)	
N Respondents	808	808	397	189	808	
N Villages	152	152	78	40	152	
Controls	Yes	No	Yes	Yes	Yes	

Note: Village clustered standard errors in parentheses.* significant at $p < .05$. Each row depicts a different dependent variable and each column depicts a different model specification. Each cell is the estimated coefficient on the treatment indicator for that model specification and dependent variable. All models were estimated using least squares regression analysis and include district (boundary) fixed effects, with the exception of the matched pair specification which includes match-pair fixed effects.

Table 28: Effect of the SHG Intervention on Alternate Determinants in Exact-matched Sample

	Cubic RDD Specification				Matched	Control
Dependent Variable:	Full Sample	Full Sample	< 10 km of Boundary	< 5 km of Boundary	Pair Specification	Mean
Decisions Index	0.42	0.396	0.578*	-0.093	0.227	7.825
	(0.229)	(0.22)	(0.292)	(0.431)	(0.216)	
Decide: Daily Consumption	0.067	0.058	0.064	0.003	0.043	0.748
	(0.037)	(0.035)	(0.049)	(0.066)	(0.032)	
Decide: Personal Consumption	0.084*	0.057	0.126*	0.092	0.072*	0.715
	(0.033)	(0.033)	(0.042)	(0.064)	(0.03)	
Decide: Personal Sickness	-0.045	-0.042	-0.078	-0.172	-0.058	0.652
	(0.038)	(0.036)	(0.053)	(0.088)	(0.034)	
Decide: Daily Tasks	0.056*	0.064*	0.078*	0.021	0.049*	0.865
	(0.023)	(0.022)	(0.032)	(0.04)	(0.021)	
Decide: Sons' Education	0.097*	0.086*	0.14*	0.068	0.071*	0.808
	(0.03)	(0.028)	(0.036)	(0.046)	(0.027)	
Decide: Daughters' Education	0.064*	0.062*	0.116*	0.009	0.042*	0.815
	(0.029)	(0.027)	(0.036)	(0.053)	(0.024)	
Decide: Daughters' Marriage	0.05	0.048	0.08*	-0.028	0.031	0.84
	(0.027)	(0.027)	(0.031)	(0.046)	(0.021)	
Decide: Whom to Vote For	0.048	0.05	0.058	0.012	0.031	0.808
	(0.029)	(0.029)	(0.04)	(0.053)	(0.024)	
Decide: Gram Sabha Attendance	0.014	0.019	0.002	-0.071	-0.008	0.778
	(0.031)	(0.031)	(0.048)	(0.052)	(0.029)	
Decide: Land Purchase	-0.016	-0.006	-0.008	-0.027	-0.047	0.798
	(0.03)	(0.03)	(0.038)	(0.064)	(0.028)	
Index of Violence	-0.055	0.023	-0.019	-0.245	-0.01	0.795
	(0.101)	(0.097)	(0.178)	(0.255)	(0.085)	
Women's Bias Index	0.167	0.22	-0.053	-0.14	0.125	4.555
	(0.134)	(0.133)	(0.185)	(0.268)	(0.097)	
N Respondents	808	808	397	189	808	
N Villages	152	152	78	40	152	
Controls	Yes	No	Yes	Yes	Yes	

Note: Village clustered standard errors in parentheses.* significant at $p < .05$. Each row depicts a different dependent variable and each column depicts a different model specification. Each cell is the estimated coefficient on the treatment indicator for that model specification and dependent variable. All models were estimated using least squares regression analysis and include district (boundary) fixed effects, with the exception of the matched pair specification which includes match-pair fixed effects.

F Complete Models of Political Participation

Table 29: Full Model Results for Full Sample Cubic RDD Specification of Political Participation

	Vote Panchayat	Vote MLA	Attend Gram Sabha Sabha	Contact Sarpanch	Make Claim Sarpanch	Contact BDO
Treatment	0.08	0.22*	0.83*	0.62*	0.93*	1.17*
	(0.20)	(0.11)	(0.11)	(0.14)	(0.15)	(0.24)
Years of Education	-0.01	0.01	0.12*	0.13*	0.08*	0.11*
	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)
Monthly Household Expenditure	0.00	0.00*	0.00	0.00	0.00*	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Acres Land Owned	0.00	-0.00	-0.00	-0.01	0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.01)
Flooring Quality in House	-0.07	0.00	-0.00	-0.00	-0.00	0.17*
	(0.08)	(0.00)	(0.00)	(0.00)	(0.00)	(0.08)
Employed	0.39*	0.19	0.72*	0.71*	0.35*	0.26
	(0.19)	(0.11)	(0.11)	(0.13)	(0.13)	(0.20)
Scheduled Tribe	0.08	-0.38*	0.22	-0.02	-0.22	0.34
	(0.22)	(0.13)	(0.12)	(0.14)	(0.15)	(0.24)
# Children at Home	0.28*	0.09*	0.06	0.04	0.09	0.08
	(0.08)	(0.04)	(0.04)	(0.05)	(0.05)	(0.08)
Time Spent on Work/House	0.00	-0.00	0.00	0.00	0.01	0.00
	(0.00)	(0.00)	(0.01)	(0.01)	(0.02)	(0.01)
Hindu	0.58	-0.04	-0.55	-0.41	-0.32	0.88
	(0.53)	(0.40)	(0.36)	(0.41)	(0.43)	(1.04)
Age	0.07*	0.02*	0.03*	0.02*	0.01	0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Married	0.93*	0.28	-0.82*	-0.44*	-0.39	-0.08
	(0.28)	(0.17)	(0.16)	(0.19)	(0.21)	(0.35)
Village Population	-0.00	-0.00*	-0.00	-0.00	0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Village Female Population	-1.05	0.75	-1.28	-4.59	-7.16	3.33
	(5.52)	(3.06)	(3.05)	(3.69)	(3.89)	(6.04)
Village Scheduled Tribe Population	-0.61	-0.88*	0.78*	-0.00	0.67	-0.04
	(0.60)	(0.33)	(0.33)	(0.38)	(0.41)	(0.63)
Village Literacy Rate	-4.45	-3.10	1.67	3.51	5.26*	1.37
	(3.52)	(1.95)	(1.93)	(2.29)	(2.42)	(3.74)
Village Female Literacy Rate	3.96	3.21	-0.47	-3.93	-6.19*	-0.21
	(3.35)	(1.87)	(1.87)	(2.25)	(2.43)	(3.69)
N Respondents	2164	2164	2164	2164	2164	2164
N Villages	152	152	152	152	152	152

Note: Standard errors in parentheses.* significant at $p < .05$. All models were estimated using binary logistic regression analysis and include latitude and longitude as the geographic forcing variables in cubic form as well as district (boundary) fixed effects.

Table 30: Full Model Results for Full Sample Cubic RDD Specification of Political Participation (continued)

	Make Claim BDO	Attend Campaign Event	Attend Party Meeting	Motivate for Campaign	Attend Caste Meeting	Participation Index
Treatment	1.06*	0.63*	0.71*	0.62*	0.51*	0.06*
	(0.24)	(0.17)	(0.28)	(0.15)	(0.21)	(0.01)
Years of Education	0.12*	0.04	0.06	0.06*	0.08*	0.01*
	(0.03)	(0.02)	(0.03)	(0.02)	(0.03)	(0.00)
Monthly Household Expenditure	0.00	0.00	0.00*	0.00	0.00	0.00*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Acres Land Owned	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
	(0.00)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)
Flooring Quality in House	-0.00	0.14*	0.22*	0.10	0.14	-0.00
	(0.00)	(0.06)	(0.09)	(0.06)	(0.07)	(0.00)
Employed	0.18	0.51*	0.18	0.46*	0.51*	0.05*
	(0.21)	(0.16)	(0.25)	(0.14)	(0.19)	(0.01)
Scheduled Tribe	-0.37	0.06	0.17	-0.05	0.20	0.00
	(0.23)	(0.18)	(0.29)	(0.16)	(0.22)	(0.01)
# Childlren at Home	0.04	-0.08	0.08	0.01	-0.05	0.00
	(0.08)	(0.06)	(0.10)	(0.05)	(0.07)	(0.00)
Time Spent on Work/House	-0.00	0.00	0.00	0.02	0.00	0.00
	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.00)
Hindu	14.94	-0.43	-1.15	-0.09	-0.66	-0.03
	(620.48)	(0.51)	(0.59)	(0.48)	(0.51)	(0.03)
Age	0.01	0.01	0.02	0.01*	0.01	0.00*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)
Married	0.40	0.17	-0.15	0.06	0.03	-0.03*
	(0.40)	(0.26)	(0.42)	(0.23)	(0.32)	(0.01)
Village Population	-0.00	0.00	-0.00	0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Village Female Population	-0.71	-1.35	8.99	5.81	0.42	-0.14
	(6.27)	(4.77)	(7.79)	(4.15)	(5.64)	(0.22)
Village Scheduled Tribe Population	0.67	-0.11	-0.89	0.12	-0.31	0.03
	(0.64)	(0.49)	(0.79)	(0.42)	(0.60)	(0.02)
Village Literacy Rate	-0.48	4.48	3.23	4.22	4.15	0.27
	(3.92)	(2.97)	(4.75)	(2.59)	(3.51)	(0.14)
Village Female Literacy Rate	1.82	-4.38	-2.70	-2.40	-3.23	-0.22
	(3.86)	(2.94)	(4.58)	(2.48)	(3.34)	(0.13)
N Respondents	2164	2164	2164	2164	2164	2164
N Villages	152	152	152	152	152	152

Note: Standard errors in parentheses.* significant at $p < .05$. All models were estimated using binary logistic regression analysis, except for the index model which is estimated using least squares regression, and include latitude and longitude as the geographic forcing variables in cubic form as well as district (boundary) fixed effects.