The Behavioural Response to Women's Empowerment Programs

Experimental Evidence from JEEViKA in Bihar

Lata Gangadharan
Tarun Jain
Pushkar Maitra
Joseph Vecci

IGC
International Growth Centre

The behavioral response to women's empowerment programs: Experimental evidence from JEEViKA in Bihar

Lata Gangadharan   Tarun Jain   Pushkar Maitra   Joseph Vecci[*]

Monash University   Indian School of Business   Monash University   Monash University

Report to IGC-Bihar: December 2014

Abstract

The Bihar Rural Livelihoods Project (or "JEEViKA") is a community driven poverty reduction program with the key aim of improving the social and economic empowerment of the rural poor. However, the community participatory design can also allow local leaders to use their influence to expropriate resources to the detriment of the rest of the community, a phenomenon often called *elite capture*. To investigate the dynamics of elite capture, we examine the differences in behaviour of male and female leaders in JEEViKA and non-JEEViKA villages using an artefactual field experiment. We find that female leaders are more deceptive in JEEViKA villages as compared to non-JEEViKA villages. We also find that participants from JEEViKA villages are more trusting, especially women who are specifically targeted by the program. In addition, we collect data on attitudinal variables and find that participants in JEEViKA villages have different attitudes towards women compared to non-JEEViKA villages. By measuring differences in behaviour in JEEViKA and non-JEEViKA villages, our research project offers an important dimension on which to evaluate and improve the program.

Contents

List of Tables

List of Figures

1 Introduction

Community participation has long been thought of as an effective method of service delivery and provision of public goods including foreign aid to developing countries. Between 2002 and 2012, for example, the World Bank allocated over $85 billion to local participatory development (Mansuri and Rao, 2013). Development practitioners have argued that engaging the community in development projects will create a closer connection between those who distribute aid and its intended beneficiaries. An engaged community will not only make the government accountable, they will also be able to influence decisions that directly affect their lives.

However, as with markets and governments, civil society - a broad term that denotes community participation, is not without its weaknesses. Civil society failure can occur when a subgroup of the community, is able to mobilise to further their self-interest, to the detriment of the rest of the community. These subgroups may have greater information and power over decision-making, leading to potential theft and corruption thereby significantly affecting the provision of public goods. This appropriation is often termed *elite capture*. This form of capture is fast becoming an issue of considerable concern in most developing countries, including India, especially since an increasing proportion of government and foreign aid is distributed through community driven development.

Previous research on elite capture in developing countries is scarce and the results are limited. The majority of evidence comes from non-experimental case studies or empirical data sets and there is very little consensus on the outcomes. Acemoglu et al. (2013) find that communities with a higher prevalence of elite capture are likely to have lower levels of literacy, school attainment and non-agricultural employment. Bardhan and Mookherjee (2006) and Olken (2007) find similar results, concluding that elite capture reduces social welfare. On the other hand, Dasgupta (2009) and Rao and Ibanez (2005) find that elite capture within community development councils leads to better resource allocation, particularly to the poor, who are more than satisfied with the community development projects. This contradiction within the literature indicates the need for further research to examine the complex nature of the mechanisms and the environment under which elite capture functions.

Our project contributes to the understanding of the success (or otherwise) of such community driven development projects. Specifically, we examine the behavioral response to a particular project in the Indian state of Bihar – the Bihar Rural Livelihoods Project (henceforth, *JEEViKA*), which is a poverty reduction program undertaken by the Government of Bihar and the World Bank. The key aims of the program are to improve the social and economic empowerment of the rural poor, with a particular focus on women, by creating sustainable livelihoods through self-managed community institutions, greater access to social protection (including food security) and greater community voice. To the best

of our knowledge there is no analysis of the behavioral response to such programs. We aim to answer these questions using field experiments conducted in Bihar. Field experiments allow subjects to be randomised into groups hence reducing selection bias and enabling causal inferences.

This project contributes to the academic literature in a number of ways. First, the World Bank reports that there is mixed evidence as to whether a shift towards participatory community programs increases capture on balance (Mansuri and Rao, 2013). We use field experiments to compare JEEViKA versus non-JEEViKA villages in terms of both behaviour and attitudes. In particular, we compare if women are more dishonest or trusted in JEEViKA villages. This comparison allows us to see if elite capture is more prevalent in JEEViKA villages than others. Second, measuring changes in trust helps us understand the likelihood long-term success of the program. If participating in JEEViKA self-help groups leads to greater mistrust between men and women, then long-term economic and social relationships may be destroyed, with adverse consequences for social welfare. Conversely, increase in trust arising for JEEViKA may be important for ensuring that women continue to participate in the program. In addition, greater trust might have important economic and social spillovers that significantly boost social welfare. Finally, greater trust between men and women might be valuable in itself.

Despite India's rapid growth over the last two decades, the benefits of this growth is yet to be seen in many of the rural areas, which account for over 70% of India's population. According to the World Bank, the lack of rural development in India stems from weak delivery of basic services to rural areas. Despite large expenditures in rural development, a highly centralized bureaucracy with low accountability and inefficient use of public funds limits the impact on poverty and growth. After a 1992 change to the Constitution that created a three-tier democratically elected local government structure, India has attempted to bring power to rural communities. However, this process has been deterred in part due to vested interests in the political arena.

To help India's growth and to ameliorate poverty, a community based approach is required where development programs must enable the decision making power of those in the rural areas of the country. By fostering a capacity for collective action and by promoting a voice, the rural poor will be empowered to direct the allocation of resources, and thus influence the direction of sustainable development and growth. While community driven development projects such as JEEViKA are promising, there is a need to understand how it is potentially affected by elite capture. Further knowledge in this area will provide us with tools to reduce corrupt behaviour of leaders resulting in an empowered community voice, better resource allocation and, ultimately, growth.

Using a measure of dishonesty taken from the experiment as a proxy for elite capture, we find that the females leaders in JEEViKA villagers are more deceptive. This finding suggests that programs that empower certain groups can in some cases lead to increases in anti social behaviour of these groups.

We then show that JEEViKA villages are more trusting, especially among women who are specifically targeted by the program. Subsequently, this trust has important spillovers among men, who portray themselves to be trustworthy in response to women's actions. This experimental finding indicates that the JEEViKA program is not significantly threatened by lower mutual trust, and even increases trust and trustworthiness.

The responses from the individual survey indicate that JEEViKA villagers have a substantially different attitudes towards daughter's education and occupational possibilities. Residents in JEEViKA villages were more likely to support women completing tertiary education and moving away from traditionally female occupations. Finally, these residents also see women as effective political leaders at the village level. These findings are encouraging indications for the long term success of the JEEViKA program but also indicate areas for improvement.

2   The JEEViKA Program

The Bihar Rural Livelihoods Project (or "JEEViKA") is a poverty reduction program undertaken by the Government of Bihar and the World Bank. The key aims of the program are to improve the social and economic empowerment of the rural poor. It focuses on women and aims to create sustainable livelihoods through self-managed community institutions, greater access to social protection (including food security) and greater community voice.

The main instrument to achieve these aims are women's community-based self-help groups (SHG) that provide a mechanism for savings and borrowing. Over time, the objective is that regular repayment will allow the groups to become self sustaining organizations. Each village contains a number of SHG's which are federated at the village or hamlet level to form a Village Organisation (VO). The VO operates as a forum or voice of the poor in the village and provides resources to their member SHGs through the Community Investment Fund. VOs are also responsible for development projects that aim to reduce poverty. Each VO comprises of all SHG members and an Executive Committee that consists of two representatives from each member SHG. VOs are further federated at the block level to form Community Level Federations that act as a lender to VOs.

In addition to community institutional development, the JEEViKA program comprises of three other components.

1. *Community Investment Fund (CIF)*. Over half of the programs funds are channelled through the CIF which is responsible for the initial capitalisation of the Community Level Federations,

funding village food security programs, skill building and village social services such as funding education and health programs.

2. *Special Technical Assistance and Development Funds.* This component is responsible for establishing a technical assistance facility which supports the community institution (including SHGs and VOs) by improving access to financial services. A Bihar Innovation Fund funds innovations to improve livelihoods.

3. *Project Management.* This component comprises human resources training, communication and monitoring and evaluation services.

The JEEViKA project commenced in 2007 and, as of May 2014, mobilized 11,30,000 households into 93,000 self-help groups and federations. These households contributed USD 9.5 million in the form of savings and received USD 56 million of financing from commercial banks. Financial literacy and counselling interventions have also been implemented in 18 blocks. In addition, 18 grassroots innovators have been identified and helped (Parmesh, 2014).

The blocks targeted under the JEEViKA program were not randomly selected. Specifically, the program provided targeted assistance to about 1,220,000 households in 42 Blocks in 6 districts (Nalanda, Gaya, Khagaria, Muzaffarpur, Madhubani, Purnea) in the state. Within each of the blocks the beneficiaries were the poor, especially the poorest of the poor socially and economically deprived class scheduled castes, marginalised backward classes, people with no productive resources, daily wage labour, bonded labour, unskilled marginal farmers, unskilled migrants disabled and child labour. The relevant districts and blocks were selected using a poverty and social assessment of the state conducted by the Bihar Rural Livelihoods Promotion Society (BRLPS). The assessment looked at four aspects viz. poverty, social vulnerability, livelihood potential and social capital. The blocks were selected so that they satisfied the following criteria: had a high incidence of disadvantaged groups as reflected in the percentage of SC and ST population; were characterized by adverse status of women as reflected in adverse sex ratio and female literacy; and characterized by low basic infrastructure availability. This means that villages that were included in the program are generally poorer across a number of domains and may not be representative of the average village in the state.[1]

Our focus is on the effect of the JEEViKA program on behaviour and on whether the introduction of the program resulted in any systematic change in the behaviour of both males and females? In particular are leaders more deceptive in JEEViKA villages compared to non-JEEViKA villages and does this differ across genders. This is an important question because we know dishonest and deceptive behaviour can lead to a breakdown in; cooperative relationships and contracts and can be an indicator

---

[1]See BRLPS (2009) and Dutta (2011) for more discussion on this issue.

of corrupt behaviour and elite capture. We then examine the impact of the program on trust between individuals. In the context of JEEViKA and other similar programs that encourage women's empowerment, this is an important issue because it has been argued that increased women's empowerment may be associated with lower trust of and backlash targeted against women. For instance, financial transactions may be seen as a "male" domain and therefore participation in JEEViKA activities could be viewed as violating social norms, precipitating a backlash (Goldin, 2013). This may further strengthen gender-based discrimination (Rudman and Fairchild, 2004), leading to a vicious cycle that threatens women's participation in all empowerment schemes.

3 Methodology

To examine if the JEEViKA program is associated with changes in deceptive and trusting behaviour, we conduct two experiments in 40 villages in three districts of Bihar. Twenty of these villages are JEEViKA and the remaining 20 are non-JEEViKA villages. In addition to the experiments, we collected rich individual and community-level survey data to understand experiences with JEEViKA and other development programs.

The rest of this section briefly describes the details of the experimental design, the setting, the methods used to select villages for our study and the recruitment of participants from these villages. Finally, we describe the procedures for surveying individuals and the local community. See Gangadharan et al. (2014) for more details on the methodology.

3.1 Experimental design

3.1.1 Trust task

The task in the artefactual field experiment is based on the trust (or investment) game (Berg et al., 1995). We implement a one-shot version of the game to avoid reputation and learning effects and to avoid subject fatigue.

The Trust game is a two-player game in which players can play one of two roles: that of a Trustor or a Trustee. Each Trustor is given an endowment, E and asked to decide to transfer any part of this endowment, x to an anonymous Trustee. The experimenter triples this x and gives it to the matched Trustee, who in turn is asked to choose whether to transfer any money out of $3x$ back to the Trustor. So the payoff for the Trustor is $E - x + R$ where R is the amount returned by the Trustee; the corresponding

payoff for the Trustee is $E + 3x - R$. The resolution of this game using backward induction is simple. In a one-shot version of the game, the Trustee should not send any money back knowing that the game ends immediately thereafter. The Trustor, anticipating the Trustees decision, should send no money to the Trustee in the first place. However, actual behavior is often quite different from the one predicted by theory. In this task, any transfer made by the Trustor to the anonymous Trustee can be interpreted as a measure of trust and any amount returned by the Trustee is a measure of trustworthiness.

In this study, the decisions of the Trustee are obtained using the strategy method. To do this, the Trustee is asked to specify an amount to return $R(x)$ for every possible amount of x chosen by the Trustor. We restrict x to specific integer amounts. Specifically, the endowment E is Rs. 200, so Trustors could choose to send an amount x from the endowment to his/her anonymous partner where $x \in \{0, 25, 50, 75, 100, 125, 150, 175, 200\}$. The experimenter triples this amount and the Trustee receives $\{0, 75, 150, 225, 300, 375, 450, 525, 600\}$. The Trustee therefore provided conditional responses, i.e., how much to return for each of eight possible choices made by the Trustor. For $x = 0$, there is no decision to be made.

The key variation across sessions was that the gender of the partner was either revealed (*full information* treatment) or not revealed (*own information* treatment). This leads to four scenarios (*i*) Gender not revealed for male partners; (*ii*) Gender not revealed for female partners; (*iii*) Gender revealed for male partners; and (*iv*) Gender revealed for female partners.

From the perspective of a player, scenarios *i* and *ii* can be merged, and decisions are analyzed under three scenarios (*i*) Gender not revealed; (*ii*) Gender revealed for male partners; and (*iii*) Gender revealed for female partners.

We compare players' behavior when they are informed of their partner's gender to when they are not provided this information. No difference in participant's behavior across treatments implies that information on the gender of the partner has no effect on decisions. Conversely, a systematic difference, either positive or negative, across treatments (i.e., when gender is revealed versus when it is not) implies that attitudes associated with gender can be important for decision-making.

3.1.2 Public Goods task

In the second task, we implement a one-shot version of the linear voluntary contribution mechanism (VCM) game – a public goods game – with four person groups. Each participant receives an initial endowment of Rs. 200 and has to decide how much of this endowment to contribute to a group account, with the remaining in a private account. Participants earn Rs. 1 for themselves for each rupee

placed in the private account. Contributions to the group account by the group members is aggregated, multiplied by an efficiency factor $\beta > 1$ and then divided equally among all group members. The payoff function is

$$P_i = e - g_i + \frac{\beta}{n} \sum_i g_i \tag{1}$$

where g_i is the contribution of subject i to the group account; $\sum_i g_i$ is the sum of the individual contributions to the group account and n is the size of the group. Here $n = 4$. The Nash equilibrium is for each subject to invest their entire endowment in the individual account. However, the socially efficient outcome is to contribute everything to the group account.

Each group comprises of two males and two females. All participants are informed of this group composition. One member of the group is randomly selected as leader so that each group consists of one leader and three citizens. Females and males are leaders each for half the groups, which are balanced on observable characteristics.

In the first stage of the experiment the leader proposes a non-binding contribution between Rs. 0 and 200 towards the group account. Group members are then informed of the leader's proposed contribution to the group account. In the second stage, all group members including the leader simultaneously choose their contribution to the group account.[2] Since the proposed contribution by the leader is non-binding, akin to cheap talk (Levy et al., 2011), standard theory suggests that the proposal stage should not impact citizens' contributions. The leader also knows that the group members may not follow the proposal, and therefore has little incentive to follow as well. We therefore expect low contributions to the group account and expect that the provision of public goods would be below the socially optimal level. However, Levy et al. (2011) suggest that leaders' non-binding suggestions can also help increase group contributions. All citizens receive the same information and this common signal can indicate the value of cooperation, thus providing an upper bound to their contributions. Hence, citizens might be more likely to contribute high amounts, leading to greater contribution by the leader and higher public good provision

The experiment consists of the following treatments: *own information* treatment and *full information* treatment. In the own information treatment, gender is made salient by reminding all subjects of their own gender, prior to the leader making his or her proposal.[3]

---

[2] Several recent papers have used experimental methods to analyse different aspects of leadership. These have typically involved a single centrally observed player sending a signal to (generally) a group of citizens. This type of design is commonly called leading by example as the leaders effort (contribution) is commonly observed prior to citizens effort (Güth et al., 2007, Levy et al., 2011, Meidinger and Villeval, 2002).

[3] A number of papers show that priming identity can cause changes in the behaviour of participants (Benjamin et al.,

In the full information treatment, the leader's gender is announced to citizens and subjects are reminded of their own gender before the leader makes his or her proposal. From the perspective of the leader this leads to four scenarios. (*i*) Gender not revealed for male leaders; (*ii*) Gender not revealed for female leaders; (*iii*) Gender revealed for male leaders; and (*iv*) Gender revealed for female leaders. Citizens are unaware of the leaders gender in the *own information* treatment. Hence in this case, scenarios (*i*) and (*ii*) can be merged. The citizens decisions are analyzed under three scenarios: (*i*) No information about leader's gender; (*ii*) Informed leader is male; and (*iii*) Informed leader is female.

3.1.3 Risk Game

A risk task similar to Gneezy and Potters (1997) was embedded in the survey. In the risk task, each player was given the option of investing any part of an initial endowment of Rs 20 in a hypothetical risky project that had a 50% chance of tripling the amount invested; alternatively the amount invested could be lost with a 50% probability. The individual could keep any amount he/she chose not to invest.The amount invested provides a measure of risk preference, the riskier a subject the more they are willing to invest in the riskier option. All subjects were paid for this task.

3.2 Setting and village selection

The artefactual field experiment was conducted in the villages of Bihar, India. Specifically, our data was collected from 40 villages in the districts of Gaya, Madhubani and Khagaria, which are approximately equidistant from the capital city of Patna. Figure 1 presents more information on the location of the experimental sessions. Almost 10% of India's population resides in Bihar, which is characterised by substantial gender inequality. The 2011 Census reports that the state's literacy rate for women is 53.3% compared to 73.4% for men. The sex ratio in Bihar is 0.916 women per man compared to 0.943 for India as a whole. At the same time however, Bihar is one of the fastest growing states in India with an average GDP growth of 10% between 2010 and 2014.

Using the 2011 Census of India and a list of villages provided by the Bihar Rural Livelihoods Project (BRLP), we randomly chose 40 villages in Gaya, Khagaria and Madhubani districts. Only one session was conducted in each village. This was done in order to prevent information spillover across sessions, which could result in considerable loss of experimental control and preciseness. Figure 2 shows an experiment in progress, with the experimenter announcing instructions.

Column 1 in Table 1 presents the average village level characteristics for the full sample. The villages,

2010, Burns, 2012, Chen et al., 2014).

on average, consist of 566 households, with an average of 5 members per household. 33% of the households in these villages belong to Scheduled Castes. The average literacy rate is around 44%, though men are substantially more likely to be literate than women. Around 38% of the villagers are currently working. Columns 2 and 3 present the sample averages and column 4 the corresponding differences across the JEEViKA and non-JEEViKA villages. There are no statistically significant difference in terms of village level averages between the JEEViKA and the non-JEEViKA villages. Finally Columns 5 – 7 show that in terms of average village level characteristics, those assigned to the *full* information treatment are no different to those assigned to the *own* information treatment.

Our analysis does not attempt to make inferences based on the average village rather strictly compares JEEViKA and non-JEEViKA villages. We use an identical method and criteria to select the JEEViKA and non-JEEViKA villages that are included in the experimental sample. We randomly selected 20 villages from (5 blocks) in 3 districts Gaya, Madhubani and Khagaria where the JEEViKA project had been implemented. We call these the JEEViKA villages. Next these villages were matched with 20 villages in (12 blocks) that were similar in terms of observable characteristics to the JEEViKA villages selected, except the program was not implemented in these villages. We call these Non-JEEViKA villages. This matching exercise was conducted using the 2011 census data. It needs to be specified that the Non-JEEViKA villages are therefore not a random subset of the universe of villages where the JEEVIKA program was not implemented. Rather they were chosen from the same or similar blocks in the 3 districts where the JEEViKA program was implemented. As we show in columns 2 – 4 of Table 1, in terms of village level observables, the JEEViKA villages are not statistically different from the Non-JEEViKA villages.

There was no restriction on who could participate in the experiment (subject to being literate and being more than 18 years of age) and in particular the participants in the JEEViKA villages were not restricted to those who had directly benefited from the program. While there are some statistically significant differences between participants in the JEEViKA and the Non-JEEViKA villages (see Table 2), a joint test rejects the null hypothesis that participants in the JEEViKA villages are systematically different from those in the Non-JEEViKA villages.

3.3   Participant recruiting

To recruit participants for the experiment, two members of the research team (one male and one female) visited each village the day before the session was scheduled in that village. Each visit included informing villagers of the event and distributing flyers containing information about participation requirements including eligibility (18 or older and literate), remuneration, time and location of the experimental session. Flyers were also posted at prominent village landmarks such as community

centers, bus stops, tea shops, temples and mosques.

3.4   Procedure

Each village had approximately 24 participants.[4] Upon arrival, participants were screened for eligibility, then their names were recorded on a participant list. Once seated, they were given stationary and, at random, a number tag representing their ID. The experimenter read aloud instructions to establish common knowledge. To determine whether subjects understood the instructions, each participant answered a set of control questions in private before the experiment commenced. The experimenter cross-checked answers and started the experiment once satisfied that all subjects understood the task.

Subjects were paid for only one task, randomly chosen at the end of the experiment. Finally, an incentivized risk task was embedded in the post-experiment survey (Gneezy and Potters, 1997). The average payout to participants was Rs. 420, or approximately two days wage for a semi-skilled laborer. Including the post-experiment surveys, each session lasted on average for four hours. Data was entered twice and subsequently checked and reconciled by two different research assistants. The results were compared against hard copies in case of inconsistencies.

3.5   Survey data

In addition to the experiment, we also collected data using three surveys. A Community Survey collected information from the village chief (or another influential person in the village if the village chief was not available) on village characteristics such as population, Gram Panchayat schemes, sources of village income etc. An Infrastructure Survey was completed by the research team and included coordinates of the key village infrastructure landmarks. In the post-experiment survey, each participant answered questions on attitudes towards governance, corruption, political competition and on individual and household level demographic and socio-economic characteristics. The data from the surveys were directly entered into tablets, reducing data entry errors.

---

[4]One village had 20 participants. Additionally, the survey data for one participant could not be used, though experimental data is available for this subject.

4 Data

Column 1 in Table 2 presents the means for a number of participant characteristics. On average, 39% of participants are currently in paid employment. A large proportion (63%) of participants did not earn any income in the month before the experimental session. The average participant is 27 years old, from a household with 7.8 members and predominantly Hindu (90%), with a mix of upper caste (26%), SC (24%) and OBC (42.5%). More than half the sample has completed high school, with evidence of significant intergenerational mobility in educational attainment.

Columns 2, 3 and 4 present the average characteristics of the sample in the JEEViKA and non-JEEViKA villages and the corresponding differences, respectively. The sample characteristics between the JEEViKA and the non-JEEViKA villages are not systematically different. Specifically the sample from the non-JEEViKA villages is significantly more likely to be Hindu, belong to Upper Caste, are more likely to have completed primary schooling. Conversely, the sample residing in JEE-ViKA villages are more likely to belong to Other Backward Castes, completed tertiary education and have parents who have completed primary schooling.

To examine whether the random assignment of participants to treatments was effectively implemented, Columns 5, 6 and 7 report differences in participant characteristics by treatment. For most characteristics, there are only minor differences across individuals assigned to the two treatments. Individuals assigned to the *own information* treatment were significantly more likely to belong to larger households, are more likely to be Hindu, more likely to belong to a Scheduled Caste and less likely to have attained some tertiary education, though more likely to have completed high school. However, the F-statistic (0.39) cannot reject the joint hypothesis that these observable characteristics are similar on average across the two treatment arms.

5 Results

5.1 Public Goods Game Results

We investigate the extent to which the behaviour of participants are influenced by perceptions or experience with the JEEViKA program. Harrison and List (2004) argue that one of the advantages of an artefactual field experiment is that by conducting experiments with an appropriate subject pool it allows participants to bring their prior ideas and experiences in their every day life into the experimental sessions and this may in turn shape their behaviour. Further, because of the random allocation

of leaders to groups our results are not driven by differences in characteristics or experiences of being a leader as individuals are randomly allocated to be a leader.

Table 3 presents the choices made by leaders. Deception is defined as a binary variable that is 1 if (Actual contribution to the group account *minus* Proposed contribution to the group account < 0, and 0 otherwise). We define deviation from proposed as (Actual contribution to the group account *minus* Proposed contribution to the group account)/(Proposed contribution to the group account) (×100). We use these measures as a proxy for elite capture. Elite capture occurs when an elite uses their power to expropriate resources to the determinant of the rest of the community. Similarly, when a leader is deceptive, they use their position to gain financially from group members decisions.

The following results are noteworthy: Firstly, we find that group leaders are significantly more deceptive in the JEEViKA villages (56% of the time compared to 43% in the non-JEEViKA villages ($p < 0.05$)). Secondly, these results are predominately driven by female leaders who deceive 64% of the time in JEEViKA villages compared to 49% in non-JEEViKA villages ($p < 0.10$). Thirdly, we find that female leaders deviate by 25% from the amount proposed in JEEViKA villages compared to 20% in non-JEEViKA villages, however this difference is not statistically significant ($p = 0.27$).

The aim of JEEViKA is to empower women both in the community and within the household. These results suggest that increased power is associated with greater levels of dishonesty in female leaders, a worrying change in behaviour. Understanding the causes of this behavioural change is left for future research.

5.2 Trust Game Results

The central finding from Task 1 is that JEEViKA villages are associated with more trust, as measured by the trust games we describe in previous sections. This is driven by the fact that women in JEE-ViKA villages exhibit more trust (in their role are Trustors) and men in JEEViKA villages exhibit significantly higher trustworthiness (in their role as Trustees).

The detailed results are reported in Table 4. Panel A shows that the total amount sent by the Trustors is slightly greater (+2.51) in JEEViKA villages. Women are more trusting in JEEViKA villages, sending Rs. 101.88 to their partner compared to women in non-JEEViKA villages who send Rs. 91.66, a difference that is statistically significant at the 10% level. Men do not display this key difference, which suggests that the JEEViKA program results in greater trust by women in their role as Trustors.

Panel B examines trustworthiness of males and females in JEEViKA and non-JEEViKA villages. As in Panel A, trustworthiness is greater in JEEViKA villages (+4.02). Interestingly, this difference is

13

greater for men than for women (+6.21) in JEEViKA, suggesting that although men are not willing to trust, they reciprocate trust placed in them.[5] A way to interpret the findings in Panel A and B is that JEEViKA boosts trust among women who directly participated in the program, rather than men who do not participate in the SHGs. Once men experience greater trust by women, they are more willing to be trustworthy.

5.3 Risk Preferences

People in JEEViKA villages may have different risk preferences to non JEEViKA subjects, affecting their behaviour in the trust and public goods task. Results from the risk task, reported in 5 show that on average participants in JEEViKA villages invest Rs. 13.53 (or 68% of their endowment) in the risky asset while those in non-JEEViKA villages invest Rs. 12.65 (or 63% of their endowment) in the risky asset ($p < 0.05$). While both men and women in JEEViKA villages invest more and hence are more risk loving, this difference is only statistically different for males. This suggests that participants from JEEViKA villages have a greater preference for risk.[6]

6   Are attitudes different in JEEViKA villages?

Are attiutudes different in JEEViKA villages compared to non-JEEViKA villages? The post experiment survey on attitudes, answered by all experimental participants across the 40 villages, helps examine this question. The results are presented in Table 5.

The data from survey responses suggests that attitudes towards the next generation are different in JEEViKA villages. Parents in JEEViKA villages are significantly more likely to report that they would like their daughters to have tertiary education and less likely to report that they would like their daughters to be employed in a traditional female occupation. Parents are more likely to be willing to allow their daughters to choose their own occupation, though this difference is not statistically significant.

Survey evidence suggests that JEEViKA villagers have different attitudes towards women and, more

---

[5] An important aspect of the coefficients in Panel B is that they are not statistically significant. As a result while we cannot conclusively argue that JEEViKA increased trustworthiness, we can at least conclude that the JEEViKA program is not associated with *decrease* in trustworthiness.

[6] Participants were also asked to make a hypothetical (non-incentivised) choice between receiving Rs. 100 in one month or receiving Rs. 150 in 3 months. Using this measure, 30% of participants in both JEEViKA and non-JEEViKA villages are categorized as impatient

importantly, towards women as leaders. Villagers in JEEViKA villages are less likely to report that barriers exist for women to become leaders and that women are more likely to be respected these days (though in neither case is the difference statistically significant). Villagers in JEEViKA villages are significantly more likely to report that villages where women have more power are likely to perform better. However, residents of JEEViKA villages are also significantly more likely to report that *in this village women have too much political influence*. This paradox – that residents in JEEViKA village see women as effective leaders but do not like women in traditionally male political leadership roles – could indicate backlash against women resulting from the violation of social norms.

7   Conclusions

Programs such as JEEViKA have significant potential to empower women and lead to long term community development. However, policy makers need to ensure in addition to goals such as financial sustainability that community programs are not susceptible to elite capture or a deterioration in community trust. If women's empowerment is associated with greater deceptive behaviour and deteriorating trust, then backlash against women and leaders might threaten the long-term success of JEEViKA. By measuring differences in deception and trust in JEEViKA and non-JEEViKA villages, our research project offers an important dimension on which to evaluate the program.

We conduct experiments to measure deception and trust among 960 residents of 40 villages, evenly distributed between those participating and not participating in the program. We find that the program is associated with: greater deception by female leaders; an improvement in trust, first among women and subsequently reciprocated by men they interact with.

These findings should be read with a few caveats. Given that the original JEEViKA blocks were not randomly selected, it is possible that despite our method of selection the villages are not matched in terms of unobservables. There are a number of possible examples how this might be manifested. First, we might have unobserved selection on political variables. Villages selected for JEEViKA could either be safely held by the ruling party or a place where the ruling party had marginal victories (and thus needs to shore up its support). This might bias our results if there is greater trust in leaders in the sample villages (because everyone agrees that they should vote for the ruling party) or greater distrust in leaders in the sample villages (due to political polarization) than non-JEEViKA villages. Second, we might have unobserved selection on women's empowerment. Villages selected for JEEViKA could either have a relatively high baseline level of women's empowerment (makes program implementation easier), or a relatively low baseline level of women's empowerment (greater urgency for such a program). Finally we could have unobserved selection on bureaucratic quality. Villages

15

selected for JEEViKA might be allocated better, more experienced and more motivated bureaucrats who facilitate and encourage program implementation, and these bureaucrats could also separately impact trust/leadership outcome variables. So bureaucratic quality might be a potentially omitted variable that can simultaneously effect both program quality and the behavioural response. Each of these unobserved differences, resulting from the fact that the JEEViKA villages were not randomly selected, could result in an omitted variable bias which could potentially affect the external validity of our results. The matching of JEEViKA and non-JEEViKA villages on observables however implies that our analysis accounts for internal validity of the results pertaining to differences between the JEEViKA and non-JEEViKA villages.

These findings have important policy implications, both for JEEViKA as well as other similar projects. It is argued that increased representation of women in villages can potentially improve both gender equality as well as the quality of governance and community outcomes. However, our results show that female empowerment programs do not necessitate better outcomes for villagers or females, in fact female leaders can exert more deceptive behaviour in these programs. Further research is needed to understand if this is a common phenomenon and if so why and in what situations? The next interesting finding is that breakdown in trust between men and women does not threaten the success of the JEEViKA program. More significant is the potential for increases in trust to have large economic and social effects in the JEEViKA villages. These effects may last well after the formal program ends, adding to the long term value accruing from the JEEViKA program.

A key aspect of community driven development programs is that they give the community ownership of projects and a voice in decision making. This requires joint cooperation between all community members. Trust in fellow community members is a key driver of community cooperation, without trust community driven programs may be less effective. On the other hand deceptive behaviour can harm village cooperation which can be detrimental to a communities social fabric. Future research evaluating the effectiveness of community driven development programs could institutionalise procedures for measuring and evaluating trust and other behavioural traits both at baseline and the endline to identify the behavioural impacts of community driven projects.

References

Acemoglu, D., T. Reed, and J. Robinson (2013). Chiefs: Elite control of civil society and economic development in Sierra Leone. NBER Working Paper No. 18691.

Bardhan, P. and D. Mookherjee (2006). The rise of local governments: An overview. In P. Bardhan and D. Mookherjee (Eds.), *Decentralization and governance in developing countries*, pp. 1 – 52. MIT Press, Cambridge, MA.

Benjamin, D., J. Choi, and A. Strickland (2010). Social identity and preferences. *American Economic Review 100*(4), 1913–1928.

Berg, J., J. Dickhaut, and K. McCabe (1995). Trust, reciprocity, and social history. *Games and Economic Behavior 10*(1), 122–142.

BRLPS (2009). Project implementation plan: Jeevika. Technical report, Government of Bihar.

Burns, J. (2012). Race, diversity and pro-social behavior in a segmented society. *Journal of Economic Behavior and Organization 81*(2), 366 – 378.

Chen, Y., S. Li, T. Liu, and M. Shih (2014). Which hat to wear? Impact of natural identities on coordination and cooperation. *Games and Economic Behavior Forthcoming*.

Dasgupta, P. (2009). Trust and cooperation among economic agents. *Philosophical Transactions of the Royal Society 364*(1533), 3301 – 3309.

Dutta, U. (2011). Socio-Economic Impacts of JEEViKA, a project by the BRLPS. Technical report, World Bank.

Gangadharan, L., T. Jain, P. Maitra, and J. Vecci (2014). Social norms and governance: The behavioral response to female leadership. Working paper, Monash University and Indian School of Business.

Gneezy, U. and J. Potters (1997). An experiment on risk taking and evaluation periods. *Quarterly Journal of Economics 112*(2), 631 – 645.

Goldin, C. (2013). A pollution theory of discrimination: Male and female differences in occupations and earnings. In L. Boustan, C. Frydman, and R. Margo (Eds.), *Human Capital in History: The American Record*. University of Chicago Press.

Güth, W., V. Levati, M. Sutter, and E. van der Heijden (2007). Leading by example with and without exclusion power in voluntary contribution experiments. *Journal of Public Economics 91*(5-6), 1023 – 1042.

Levy, D., K. Padgitt, S. Peart, D. Houser, and E. Xiao (2011). Leadership, cheap talk, real cheap talk. *Journal of Economic Behavior and Organization 77*, 40 – 52.

Mansuri, G. and V. Rao (2013). Localizing development: Does participation work? Technical report, Washington, DC: World Bank.

Meidinger, C. and M.-C. Villeval (2002). Leadership in teams: Signaling or reciprocating? Technical report, Working Paper 02-13, GATE, University of Lyon.

Olken, B. (2007). Monitoring corruption: Evidence from a field experiment in Indonesia. *Journal of Political Economy 115*(2), 200 – 249.

Parmesh, S. (2014). India - Bihar Rural Livelihoods Project - "JEEViKA" - Implementation Status Results Report :Sequence 14. World Bank, P090764.

Rao, V. and A. Ibanez (2005). The social impact of social funds in Jamaica: A 'Participatory Econometric' analysis of targeting, collective action, and participation in community-driven development. *Journal of Development Studies 41*(5), 788 – 838.

Rudman, L. and K. Fairchild (2004). Reactions to counterstereotypic behavior: The role of backlash in cultural stereotype maintenance. *Journal of Personality and Social Psychology 87*, 157 – 176.
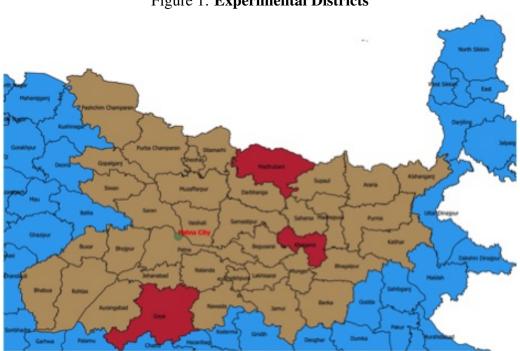
Figure 1: **Experimental Districts**

Note: Brown highlights the state of Bihar. The districts where the surveys and experiments were undertaken are highlighted in red. Patna is the capital of Bihar.

Table 1: **Village characteristics**

| | Pooled Sample | JEEViKA vs Non-JEEViKA | | | Treatment | | |
| | | JEEViKA | Non-JEEViKA | Difference | Full Information | Own Information | Difference |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Number of households	566.07	670.50	461.65	208.85	580.55	551.6	28.95
Total population	2923.55	3487.75	2359.35	1128.40	3133.9	2713.2	420.7
Male to female ratio	1.05	1.06	1.05	-0.01	1.06	1.04	0.02
Fraction SC	0.33	0.34	0.31	0.03	0.33	0.32	0.01
Fraction ST	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fraction literate	0.44	0.42	0.45	-0.02	0.44	0.43	0.00
Fraction male literate	0.52	0.55	0.49	0.06	0.52	0.51	-0.01
Fraction female literate	0.35	0.35	0.35	0.01	0.35	0.35	0.00
Fraction workers	0.38	0.36	0.40	-0.04	0.38	0.38	0.00

Notes: This table shows the *ex ante* balance in the characteristics of villages chosen for experiments. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.10$.

Figure 2: **Experiment**

Table 2: **Participant characteristics**

| | Pooled Sample | JEEViKA vs Non-JEEViKA | | | Treatment | | |
| | | JEEViKA | Non-JEEViKA | Difference | Full Information | Own Information | Difference |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Are you currently working	0.39	0.387	0.388	-0.001	0.41	0.37	0.04
No income in the past 30 days	0.63	0.636	0.625	0.011	0.60	0.66	-0.06*
Age in years	27.02	27.30	26.70	0.60	27.30	26.74	0.56
Household size	7.77	7.81	7.72	0.09	7.49	8.27	-0.78***
Hindu	0.91	0.844	0.960	-0.116***	0.89	0.93	-0.03**
Upper Caste	0.26	0.204	0.310	-0.106***	0.24	0.27	-0.03
Scheduled Caste	0.24	0.248	0.231	0.017	0.22	0.27	-0.05*
OBC	0.43	0.476	0.373	0.103***	0.45	0.40	0.05
Own schooling							
No Schooling	0.05	0.054	0.044	0.010	0.04	0.06	-0.01
Primary schooling	0.30	0.248	0.342	-0.094***	0.31	0.28	0.03
Secondary School	0.23	0.246	0.210	0.036	0.23	0.23	-0.01
Higher Secondary School	0.28	0.28	0.275	0.005	0.25	0.31	-0.06***
Tertiary Education	0.15	0.170	0.130	0.040*	0.17	0.13	0.04***
Father's schooling							
No schooling	0.38	0.38	0.38	0.000	0.36	0.40	-0.04
Primary Schooling	0.24	0.270	0.206	0.064**	0.25	0.22	0.03

Notes: This table shows the *ex post* balance in the characteristics of participants in the experiments. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.10$.

Table 3: **Public Goods Game Decisions by Group Leaders**

	JEEViKA (1)	Non-JEEViKA (2)	Difference (3)
Amount Proposed	118.235	112.316	-5.9186
Amount proposed by Females	113.8983	109.508	-4.3898
Amount proposed by Males	122.5	115.032	-7.467
Amount sent to the group	107.1	104.683	-2.417
Amount sent to the group by Females	101.101	105.169	4.0677
Amount sent to the group by Males	113	104.213	-8.7868
Deception	0.56302	0.43333	-0.1296**
Deception if Female	0.644	0.4915	-0.1525*
Deception if Male	0.4833	0.377	-0.1062
Deviation Percent	-22.223	-19.149	3.074
Deviation percent if Female	-24.802	-19.866	4.935
Deviation percent if Male	-19.687	-18.467	-19.072

Notes: $^{***}p < 0.01,^{**}p < 0.05,^{*}p < 0.10$.

Table 4: **Trust Game Decisions**

	JEEViKA (1)	Non-JEEViKA (2)	Difference (3)
Panel A: Trustors			
Amount sent	101.47	98.96	+2.51
Amount sent by Women	101.88	91.67	+10.21*
Amount sent by Men	101.05	105.89	-4.83
Panel B: Trustees			
Amount returned	162.76	158.74	+4.02
Amount returned by Women	159.15	157.40	+1.75
Amount returned by Men	166.31	160.10	+6.21

Notes: $^{***}p < 0.01,^{**}p < 0.05,^{*}p < 0.10$.

Table 5: **JEEViKA and attitudes**

	JEEViKA (1)	Non-JEEViKA (2)	Difference (3 = 2 − 1)
Education aspiration for female children-			
What the child wants	0.3263	0.3104	-0.0158
Tertiary Education	0.381	0.3333	-0.047*
Education aspiration for male children			
What the child wants	0.3894	0.3645	-0.0248
Tertiary Education	0.4652	0.4312	-0.034
Occupation aspirations for female children			
Traditional Female occupation	0.1768	0.2166	0.0398*
What the child wants	0.2568	0.2312	-0.0255
Occupation aspirations for male children			
What the child wants	0.318	0.3333	0.015
Barriers exist for women to become leaders within this village	0.322	0.360	0.038
Women are respected more these days	0.455	0.417	-0.038
Villages where women have more power perform better	0.488	0.415	-0.074**
In this village, women have too much political influence	0.215	0.173	-0.042*
Amount Invested in Risky Asset	13.457	12.107	1.35***
Amount Invested in Risky Asset by Females	12.32	11.84	0.48
Amount Invested in Risky Asset by Males	14.75	13.45	1.30***
Impatient	0.30	0.30	0.00

Notes: $^{***}p < 0.01,^{**}p < 0.05,^{*}p < 0.10.$

The International Growth Centre
(IGC) aims to promote sustainable
growth in developing countries
by providing demand-led policy
advice based on frontier research.

Find out more about
our work on our website
www.theigc.org

For media or communications
enquiries, please contact
mail@theigc.org

Subscribe to our newsletter
and topic updates
www.theigc.org/newsletter

Follow us on Twitter
@the_igc

Contact us
International Growth Centre,
London School of Economic
and Political Science,
Houghton Street,
London WC2A 2AE

IGC

**International
Growth Centre**