Group Decision-Making:

Evidence from a framed field experiment with community organisations in Pakistan[Γ]

Hamna Ahmed[*]

University of Kent

October 2017

Abstract

The aim of this paper is to understand the process of collective decision-making within community development organisations in rural Pakistan. We investigate how individual preferences of members running community organisations aggregate into group preferences. We examine the role of intrinsic characteristics in determining whether member's individual preferences are represented or ignored in group preferences. We conducted a framed field experiment with members of community organisations in which members made organisational budget choices first individually, and then collectively after a process of face-to-face deliberation. We find that group preferences are predicted by individual preferences of the median member, and that this relationship is not sensitive to intrinsic characteristics of the median. While median member's individual preferences exert a dominant influence on the group decision, this effect is not exclusive; presence in a group setting and the process of deliberation amongst members shifts the group decision in the direction of conservatism in both experiments, so that groups, collectively make less risky and less patient choices compared to individuals. Finally, over and above member's relative position in the preference distribution, intrinsic characteristics, (like gender, age, wealth, education, occupation, experience, religious background etc.) hardly explain how well individual preferences are represented in group choices. In sum, we find that group decision-making within community organisations in rural Pakistan, follows a simple majority voting rule with a shift towards conservatism and that these organisations provide an inclusive mechanism for giving voice to disadvantaged groups in rural settings.

Keywords: community-based organisations, group, individual, preferences, Pakistan
JEL Classification: D71, O12

---

[*] Address: School of Economics, Keynes College, University of Kent, Canterbury CT2 7NP, United Kingdom. Email: hamnaa@gmail.com

1   Introduction

Market failures occur when enforcement of contracts is weak (Karlan, 2005). Governments can intervene to address market failures, for instance, through public provision of goods and services, but this has met limited success in developing countries (Bardhan, 2002; World Bank; 2004). The work of Sen and Ostrom critiqued large-scale public investments in agriculture and industry for being 'top down' and insensitive to local needs. Instead, they called for a more inclusive and 'bottom up' approach towards development. Since then, the focus of policy has shifted towards promoting 'social capital' and inducing 'local participation' through two main channels; community development and decentralization (Mansuri and Rao, 2013). Community development has involved engaging the local community to identify needs, design policies and manage common resources. Decentralization has included both political and fiscal decentralization, involving devolution of power and resources to elected local governments. The move towards local participatory development has taken place in various forms across many parts of the world including Asia, Africa and Latin America. For example, it is entailed devolution of political, fiscal and administrative power to locally elected governments, community-led initiatives, provision of resources through local NGOs, and implementation of cash and (or) in-kind transfer programs with direct targeting of beneficiaries (Bardhan and Mookherjee, 2006). Since 2000, the World Bank alone has spent around 85 billion dollars on 'local participatory development' (Mansuri and Rao, 2013). Such massive injections of donor and government funds are motivated by the belief that local participatory development can improve accountability, efficiency and equity (Bardhan and Mookherjee, 2005). Due to electoral pressures and direct monitoring from their own community, local governments and community leaders can be held accountable for their performance. Moreover, they can serve efficiently and equitably because, they have better knowledge of the community, which can be used to tailor programs to local needs and target beneficiaries accurately and equitably.

At the grassroots level, participatory development and decentralization involves a group of local actors working collectively towards a mutual interest. It is common for such groups to make collective decisions like how to raise local funds, what projects to pursue in order to benefit the community, which individuals to target for receiving services. Yet, very little is known about how collective decision-making takes place within participatory groups. Existing literature speaks about formation of participatory groups at the local level (Arcand and Fafchamps, 2012; Barr, Dekker and Fafchamps, 2012a, 2012b, 2015), whether decentralized service delivery benefits the poor and marginalized groups (e.g. Foster and Rosenzweig, 2001; J.P. Faguet, 2004) and how public expenditure changes once the poor and marginalized receive mandated representation in local participatory groups (e.g. Duflo, 2003; Chattopadhyay and Duflo, 2004). But, there is virtually no other paper in the literature on local participatory development which informs us about whether the poor and marginalized are represented in collective decision-making of participatory groups? The present study addresses this gap in the literature.

The aim of this paper is to understand the dynamics of collective decision-making within community based groups, in rural areas of Pakistan. It analysis how local participatory groups make decisions and how background of individual group members affects their representation in collective decisions. In particular, it sheds light on the relationship between individual preferences and group preferences and on the role of member characteristics in explaining whether their individual preferences are represented or ignored in group preferences? In order to explore these questions, we conducted a framed field experiment (observed real participants in a natural setting, through a set of hypothetical questions with no real gains), in which managers of community organisations (COs hereafter) made risk and time choices, individually, and then collectively through a process of an active face-to-face deliberation.

The focus of analysis in this paper is on COs that operate at the Union Council level (also referred to as Third Tier Community Organisations – hereafter TTOs, the terms COs and TTOs will be used interchangeably in the paper). In Pakistan, a Union Council is an area with an average population of 30000 individuals. It constitutes the lowest tier of service delivery within the government's administrative hierarchy. Conceptually, Union councils are similar to councils in UK. The experiments were conducted across the entire population of third tier community organisations at the Union Council level, equivalent to approximately 851 COs, geographically spread across all parts of Pakistan. Data used in this study is unique because it comes from the first ever survey of COs in Pakistan and is representative of the whole population of COs as it is based on a nation-wide census of all COs across the country. The organisations being studied are roughly similar because they all are mature apex organisations at the Union Council level, are run by elected volunteers and operate under the same organisational and operational rules. Field work for the study was conducted between September and November 2014 through face-to-face interviews of executive body members in each CO.

The executive body (hereafter EB) of COs frequently makes collective decisions about how to raise additional funds, what projects to pursue, which beneficiaries to target, how much of the organisational funds to save and how many to invest in community projects or in the running of the organisation? The nature of decisions and the fact that they take place in small group settings, motivates our focus on studying individual and group risk and time preferences of EB members. Risk preferences are elicited using a modified version of the risk aversion experiments of Brick, Visser and Burns (2012) inspired by the multiple price list design of Holt and Laury (2002). Time preferences are elicited using the discount rate experiments of Voors et. al. (2012) which is based on the approach of Harrison, Lau and Williams (2002). Both experiments are administered twice, first to elicit individual and then group preferences of all EB members within COs. The experiments did not involve real gains because EB members were asked to make decisions on behalf of their organisations. EB members normally deal with a large amount of organisational funds. For instance, between 2013 and 2014, i.e. during the year preceding the survey, average annual income reported by these organisations was approximately equivalent to 1300 GBP (or 1600 USD). Thus for real incentives, it was important to propose large enough gains in order to be considered seriously by EB members, which was not a financially feasible proposition.

We find that individual preferences of the median member are the most important predictor of collective decisions. These results remain robust to inclusion of a wide range of individual and organisational characteristics, as well as region fixed effects. While some personal characteristics of members have a significant effect on collective decisions, their impact disappears once we control for member's relative position within the group, implying that personal characteristics do not play a major role in determining how well individual preferences are represented in collective decisions. These findings suggest that collective decision-making in these organisations is not biased against the preferences of marginalized groups in the community. Furthermore, we also find that collective decisions experience a cautious shift relative to individual decisions, so that once members are in a group setting, they collectively behave in a less risky and less patient manner compared to their individual choices.

Two main strands emerge from a review of existing literature on local participatory development. The first discusses formation of community-based groups in rural settings (Arcand and Fafchamps, 2012; Barr, Dekker and Fafchamps, 2012a; 2012b; 2015), while the second explores how local participatory development affects outcomes, elite capture and the civil society (Mansuri and Rao, 2013). For instance, studies within the first strand show that formation of participatory groups at the local level is characterised by assortative matching along the lines of gender, wealth, and ethnicity (Arcand and Fafchamps, 2012; Barr, Dekker and Fafchamps, 2012a; 2012b; 2015). On the other hand, studies within the second strand provide mixed evidence regarding the effectiveness of local participatory development initiatives. On the positive side, studies have shown that expenditure on public goods increases under decentralization, and that it favours the poor, and the marginalized groups in the community. In India, village councils have increased pro-poor investments in public goods like road infrastructure rather than irrigation infrastructure which is expected to reinforce power of the landed elite in the village (Foster and Rosenzweig, 2001). In China, village committees have increased public expenditure at the local level (Meng and Zhang, 2011; Zhang et. al., 2004). Decentralization of authority and resources to local municipalities in Bolivia increased public spending on sectors which were deemed as highest priority by the local community (J.P. Faguet, 2004).

Further, studies within the second strand have shown that efficiency of decentralized service delivery and community management of common pool resources will crucially depend on prevalent institutions and accountability mechanisms in the community[1]. In the absence of such mechanisms, local participation may be subject to 'elite capture' and may not always be inclusive of the poorest and the most marginalized groups in the community. This is particularly true in communities, which are characterized by a high level of inequality, remoteness, illiteracy, poverty, ethnic heterogeneity and gender disparity (Mansuri and Rao, 2013). Evidence on 'elite capture' in decentralized settings has motivated a policy of mandated

---

[1] A related strand of literature focuses particularly on the dynamics of aid to NGOs. For instance, work by Bano (2008, 2012) looks at the impact of development aid on performance of NGOs viz a viz the performance of voluntary Organisations in Pakistan, whereas Aldashev and Verdier (2010) provide a theoretical model of competition in fund raising activities amongst horizontally differentiated NGOs.

representation of women and minority groups in locally elected councils and community-led organisations. Duflo (2003) has shown that when females are made recipients of cash transfer payments in South Africa, they are more likely to spend on children's human capital, but this is not true when cash transfers are directed towards males of the household. In India, female-headed village councils, formed in response to a policy of mandated representation, are more likely to invest in pro-women resources compared to male-headed village councils (Chattopadhyay and Duflo, 2004). Thus a review of current literature shows that individual and collective behaviour of managers running community based organisations has not previously been studied in the literature on local participatory development.

However, the field of behavioural and experimental economics sheds light on individual preferences[2]. An important motivation for studying time and risk preferences of individuals in developing countries has been to analyse whether or not their preferences are consistent with growth, savings and capital accumulation. Studies have shown that individuals in developing countries are not significantly more risk averse than those in the developed world, while there is mixed evidence on individuals in developing countries being more impatient than those in the developed world (Cardenas and Carpenter, 2008). Further, many studies have shown that preferences tend to vary by individual characteristics of subjects. For instance, women tend to be more risk averse than men (Dave et. al. 2010, Eckel and Grossman 2008). Holt and Laury (2002) demonstrate that women exhibit higher risk aversion than men when payoffs are small but this effect disappears over larger payoffs. Subjects with low levels of mathematical literacy tend to be more risk averse (Eckel and Grossman, 2002). For time preferences, there is evidence to show that younger individuals and those with a higher level of income, and education are more patient relative to the elderly and those with a lower level of income and education (Kirby et al., 2002). Further, Dohmen et. al. (2010) show that risk and time preferences vary with cognitive ability.

More recently, a small but growing body of work has emerged which looks at decision-making within groups (Levine and Moreland, 1998; Charness and Sutter 2012). In economics, group behaviour has been studied along various dimensions including *risk* (Stoner, 1961; Shupp and Williams, 2008; Baker et al., 2008; and Mascletetal., 2009), *cooperation, trust* and *reciprocity* (Rabbie, 1982; Insko et al., 1990; Schopler and Insko, 1992; Cason and Mui, 1997; Luhan, Kocherand Sutter, 2009) as well as *fairness* and *altruism* (Bornstein and Yaniv, 1998). Some main lessons which can be drawn from the literature on group behaviour are that groups are more rational decision makers and behave in a manner which is closer to standard theory compared to individuals (Charness, Karni and Levin, 2007; Kocher, Strauss and Sutter, 2006). Groups provide an effective mechanism for dealing with self-control problems (Falk and Ichino, 2006). The impact of group decision making on social welfare as measured by total material payoff may vary; being favourable in some settings but may be unfavourable in others (Feri, Irlenbusch, and Sutter, 2010; Kugler et. al., 2007). Within this body of work, a small

---

[2] see Cardenas and Carpenter 2008 for lessons on individual preferences from behavioural experiments conducted in developing countries, see Frederick et. al. 2002 for a review on time preferences, see Cox and Sadiraj 2008, Wilcox 2008, Harrison and Rutstrom 2008 for a review of theoretical, econometric and empirical issues in the elicitation of risk preferences.

subset of lab experimental studies have analysed the relationship between individual and group risk preferences (Ambrus et. al. 2015; Morone and Temerario 2015; Harrison et. al. 2012; Zhang and Casari 2012)[3]. All these are lab experimental studies that have been conducted on university students. This is the first evidence from the field on the relationship between individual and group decision-making over time and risk in a developing country context.

The rest of the paper is organised as follows. Section 2 provides a background to the study. Section 3 describes the design of the experiments and how they were conducted. Section 4 outlines the analytical and empirical framework used for investigating the relationship between individual and group preferences. Summary statistics are also given in Section 4. Section 5 presents the empirical results, while Section 6 provides concluding remarks for the paper.

2   Background

2.1   The Setting

In Pakistan, local participatory development through social mobilization was initiated in the 1980s. Since 2000, with the inception of Pakistan Poverty Alleviation Fund (PPAF), the emphasis on rural participatory development has gained momentum. PPAF is an apex institution, sponsored by the Government of Pakistan and the World Bank, and is the largest supplier of funds for private sector development organisations in the country. Community driven development initiatives form a core ingredient of all interventions conducted by PPAF and its Partner Organisations. In 2010 alone, the World Bank disbursed USD 75 million through PPAF and its Partner Organisations to increase the coverage and outreach of social mobilization in poorest areas of Pakistan[4].

An intrinsic feature of social mobilization is formation of grassroot level community organisations. In Pakistan, PPAF and its Partner Organisations have followed a three tiered model of social mobilization. At the bottom tier, groups of 15 to 20 individuals are mobilized into Community Organisations at the neighbourhood level. The second tier constitutes village organisations (VOs or Second tier organisations; STOs) which are formed of representatives from Community Organisations. Finally, the third tier is made up of Union council level organisations (UCDOs or Third tier organisations; TTOs), consisting of representatives of VOs, who have gained UCDO membership either through election or nomination by other members of their respective village organisation. Thus UCDOs are apex institutions with roots in the community and formed of representatives from COs and VOs. Pakistan has seen

---

[3] Zhang and Casari (2012) studied three member group decisions that were based on the 'unanimity rule' and found that groups were more likely to exhibit risk neutrality than individuals. Harrison et. al. (2012) also studied three member group decisions, but they were based on the 'majority rule' and found no significant difference between individual and group risk preferences. These results are further supported by Morone and Temerario (2015) who studied group decisions under both rules (i.e. majority rule and unanimity rule) and found that there is no significant difference between individual and group risk preferences.

[4] Annual Report (2009), Pakistan Poverty Alleviation Fund.

tremendous growth in the number of community based organisations over the past decade and a half. Today, there are approximately 214,121 organisations at the neighbourhood level, 29,217 at the village level and 900 at the union council level in rural areas of Pakistan[5]. These organisations have mobilized approximately 3.2 million households across the country[6].

In this study, we focus on TTOs (aka COs or UCDOs). These organisations form a unique set of institutions to study because they are all roughly similar on the following accounts; all of them are mature apex organisations at the Union Council level, are run by elected volunteers and operate under the same organisational and operational rules set out by PPAF and its Partner Organisations.

2.2 Third Tier Community Organisations

Figure 1 shows the geographical spread of districts in which TTOs are present. The figure shows that TTOs span all regions of Pakistan. However, they are more concentrated in poor and marginalized areas of the country. This can be attributed to a shift in donor policy which took place in 2011. Under the new policy framework, PPAF identified a set of 1020 priority union councils on the basis of a threefold criteria; district's ranking on the Human Development Index, Food Insecurity and the extent of social mobilization was already carried out in the district. Since 2011, all grant-based interventions and credit disbursements by PPAF and its Partner Organisations have only been targeted in priority union councils. Simultaneously, financial support in non-priority union councils has been steadily going down. Of the TTOs under study, 64 percent are in priority union councils[7] while the rest in non-priority union councils.

Financial capacity of TTOs has increased significantly, and current financial assets, at the time of survey, were almost 3 times higher compared to start-up funds[8]. Average income of TTOs between 2013 and 2014, the year preceding our data collection exercise, was approximately 1300 GBP (or 1600 USD). This income primarily came through external sources of money, predominantly from PPAF and its Partner Organisations (70 percent) and to a lesser extent from international donors as well as the government (13 percent) and donations by non-members (4.5 percent). The remaining income was mobilized through internal sources such as membership fees, donations from members, service fees on loans and interest on bank balance. TTOs are active in a wide range of sectors[9]. More than 50 percent of all surveyed TTOs were active in *Health*, *Education* and *Human Rights/Documents and Procedures*. Major health initiatives undertaken directly by TTOs or with support from the government included free medical camps, first aid training, awareness raising on health issues (polio, dengue,

---

[5] Local Village Official Survey conducted as part of the TTO Survey (2014).

[6] This estimate is based on the assumption that each neighbourhood level community organisation covers an average of 15 households.

[7] There is 1 TTO per union council.

[8] The information in the rest of this section is based on data from the reports of TTO managers / presidents and treasurers during the field survey.

[9] A TTO is classified as active in a sector if it worked on at least one project/activity within that sector between August 2013 and August 2014.

tuberculosis, cleanliness and hygiene etc.), provision of food items and (or) supplements to women and children to reduce malnutrition, with a particular focus on reducing prevalence of iron deficiency among young children. Some main activities within the *Education* sector entailed provision of financial and non-financial resources such as school uniforms, books and stationary to encourage school enrolment, organizing education awareness campaigns in the local community, facilitating free admission of children in schools and in some cases assisting in the provision of infrastructure facilities such as a boundary wall, or computers for local schools. TTOs active in *Human Rights/Documents and Procedures* mainly acted as facilitators for helping local community members acquire legal documents such as national identity cards, marriage certificates as well as birth and death certificates from the government.

The second set of sectors in which TTOs were most active during 2013 and 2014 were *Livelihoods* and *Infrastructure*, with around 40 percent of all TTOs reported as working in each of these sectors, while approximately 30 percent reported working in *Agriculture* and *Microcredit*. *Livelihood* activities included vocational training to impart skills for increasing employability of workers or for facilitating them in setting up their own enterprises. Within *Infrastructure*, TTOs facilitated in provision of new or repair of existing infrastructure facilities. These initiatives involved construction of roads and (or) bridges for improving intra-village connectivity or access to markets and improving access to clean drinking water through installation of hand pumps, water filtration plants, water tanks etc. Activities frequently reported by TTOs active in Agriculture include training campaigns on various aspects such as kitchen gardening, fruit processing and marketing, provision of hybrid seeds to farmers, and free vaccinations for livestock.

2.3   The Survey

Figure 1: Geographical Spread of Third Tier Community Organisations
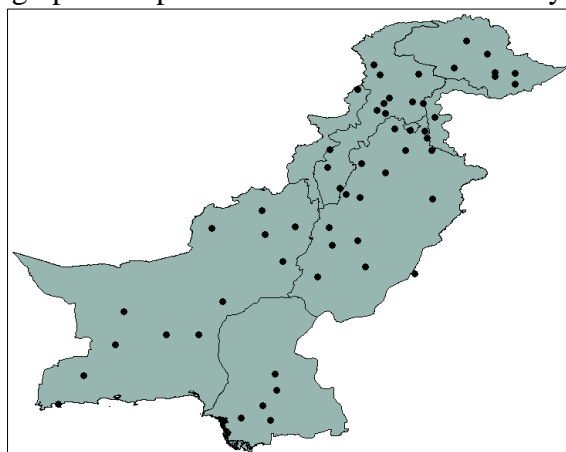
Note: This figure shows districts in which TTOs (aka COs, UCDOs) are located.

A nation-wide census of 851 Third Tier Community Organisations (TTOs or COs), was conducted in Pakistan between September and November, 2014. The data was collected through individual and group interviews with the Executive Body (EB) members of each CO on the organisation's governance, activities, future plans, and characteristics of EB members.

A team of three enumerators visited each of the 851 COs to meet with its executive body. Before the visit, enumerators would call a member of the executive body to ask for a day when all EB members could show up for a joint meeting with the enumerator team. After that, the enumerator team would visit the CO on the pre-agreed day in order to conduct individual and group interviews of EB members. These meetings were held in the CO office. A village survey was also administered by interviewing a local resident in each village of every Union Council in order to collect data on village characteristics and CO work in that village. Finally in a randomly selected sub-sample of 150 Union Councils, a representative household survey was conducted to collect data on beneficiaries of COs and perceptions about CO work in the local community.

3   Experimental Design

The objective of the experiments was to elicit individual and group preferences over risk and time. Studying time and risk preferences of managers running COs can reveal important insights for public policy makers and donor agencies. Do these organisations have preferences, which will allow them to grow and expand their outreach? Are they willing to save in order to remain sustainable in their communities even after donor funding has dried out? Are they willing to invest in projects, which may be risky, but are needed for financial and human capital accumulation in their respective communities?

The design of the risk experiment was inspired by Holt and Laury (2002) and closely follows the design used by Brick et. al. (2012). It combines the MPL design of Holt and Laury risk experiments while keeping the simplicity of the elicitation method used by Binswanger (1980) and Eckel and Grossman (2002, 2008) with an equal probability of receiving the high or the low pay-off. For conducting the risk experiments, participants were presented with a list of nine pair-wise funding applications (Table 1). In case of each pair, one funding application would certainly give money (the safe funding application), while the other funding application entailed an equal chance of either getting approved, and receiving money, or being rejected, and receiving nothing at all (the risky funding application). For each pair, participants had to accept one funding application while reject the other. In this set-up, risk aversion is given by each subject's switching point from the risky to the safe funding application. The sooner a participant switched from the risky to the safe funding application, greater was his risk aversion.

The time experiment is a modified version of the experiments used by Voors et. al. (2012), which are inspired by the approach followed by Harrison, Lau and Williams (2002). This approach has been extensively used in the literature on time preferences (Frederick et. al., 2002). Following a MPL design, participants were presented with a list of 8 binary monetary rewards to be given to the CO in recognition of its work for the community. Participants had to choose between one of two donor agencies to receive the reward, where one donor agency would give a smaller reward after 1 year while the other donor agency would give a larger reward after 2 years (Table 2). In order to avoid present bias, we employ a front-end delay in receipt of the reward from both donor agencies. In this setup, the switching point from the Light Green donor agency giving a smaller amount of money in the near future to the Dark Green donor agency giving a larger amount of money in the distant future measures the degree of

impatience. The later a participant switched from the Light Green to the Dark Green Donor, greater would be his level of impatience.

Table 1: Risk Experiment

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Task	Application A (Safe)	Application X (Risky)	EV(A)	EV(B)	Difference	CRRA interval if subject switches to A
1	500	0.5 of 200000; 0.5 of 0	500	100000	-99500	0.9<r
2	20000	0.5 of 200000; 0.5 of 0	20000	100000	-80000	0.7<r<0.9
3	40000	0.5 of 200000; 0.5 of 0	40000	100000	-60000	0.6<r<0.7
4	60000	0.5 of 200000; 0.5 of 0	60000	100000	-40000	0.4<r<0.6
5	80000	0.5 of 200000; 0.5 of 0	80000	100000	-20000	0.2<r<0.4
6	100000	0.5 of 200000; 0.5 of 0	100000	100000	0	0<r<0.2
7	120000	0.5 of 200000; 0.5 of 0	120000	100000	20000	-0.4<r<0
8	150000	0.5 of 200000; 0.5 of 0	150000	100000	50000	-1.4<r<-0.4
9	200000	0.5 of 200000; 0.5 of 0	200000	100000	100000	r<-1.4

Notes: This table shows pairs of grant application choices presented to executive body members. In this Multiple Price List (MPL) instrument, each pair comprises of a safe grant application which would provide money for sure (Application A, with payoffs shown in PKR, in column 2) and a risky grant application which entails a 50 percent chance of providing a return and an equal chance of not providing anything at all (Application X, payoffs shown in PKR, in column 3). USD 1 = 108 PKR (December 18, 2016), so the payoffs range between 5 and 1850 USD. We assume an Expected Utility Theory (EUT) representation of the utility function, denoted by $U(x) = \frac{x^{(1-r)}}{(1-r)}$, where x is the payoff from the grant application and r is the coefficient of constant relative risk aversion (CRRA) where $r \neq 1$. A value of $r > 0$ represents risk aversion, $r = 0$ denotes risk neutrality while $r < 0$ indicates risk loving behaviour. We expect that a risk neutral subject would choose Application X in the first five rows, will be indifferent between Application A and Application X in row 6, and would choose Application A in the last three rows. So, as we move down the table, we would expect a subject to switch from Application X to Application A. The switching point from Application X to Application A measures the degree of risk aversion. The expected value of Application A and X, as well as their difference is shown in columns 4 to 6, while the range of CRRA over which a subject switches from Application X to Application A is shown in column 7. Information in the last 4 columns of this table was not presented to the subjects.

Table 2: Time Experiment

(1)	(2)	(3)	(4)
Task	Light Green Donor (1 year)	Dark Green Donor (2 years)	Discount Rate
1	200000	200000	0%
2	200000	230000	15%
3	200000	250000	25%
4	200000	280000	40%
5	200000	310000	55%
6	200000	340000	70%
7	200000	400000	100%
8	200000	600000	200%

This table shows pairwise time choices presented to the subjects in the context of two donor agencies which are considering to recognize the work of their organisation through a monetary reward. Each pair is formed of a Light Green donor agency which would provide the reward after 1 year (shown in PKR, in column 2) and a Dark Green donor agency which would provide a higher reward (shown in PKR, in column 3), relative to the Light Green donor, but it would be received after 2 years. USD 1 = 108 PKR (December 18, 2016) so the monetary reward ranges between 1850 to 5555 USD. For each pair, the subject has to choose one Donor Agency. The pair of choices in row 1 were presented in order to gauge the understanding of subjects, but these choices are irrelevant for inferring time preferences of the subjects. In row 1, we would expect subjects to choose the Light Green Donor. As we move down the table, we expect subjects to switch to the Dark Green Donor. The switching point from the Light to the Dark Green Donor measures the degree of patience. For each pair, the discount rate (shown in column 4, but not presented to the respondents during the experiment) was calculated by equating the present value of the monetary reward to be provided by the Light and Dark Green donor agency.

The experiments were conducted in two parts. The first part entailed eliciting individual choices while group choices were recorded in the second part. In the first instance, each task was visually shown to EB members individually (for instance visual aids for Task 1 in the risk and time experiment are shown in Figures 2 and 3). They were given a few minutes to think about their decision. Each EB member was instructed to make a decision on his or her own without discussing it with anyone. Once the EB member had made a decision, it was non-verbally communicated to the enumerator with a show of fingers, who recorded it on a paper form. Since COs are volunteer-run organisations, there is a great deal of heterogeneity in their access to resources and infrastructure across the country. So, wherever possible, EB members were made to sit separately in order to record their individual choices. But in COs which had a one-room office, EB members could only be separated by taking them to a corner of the room. Keeping such scenarios in mind, and in order to minimize the influence of other member's presence on individual choices, EB members were instructed to follow a standard protocol of conveying their choices non-verbally through a show of fingers. This process was repeated for each of the nine tasks within the risk experiment and then for each of the eight tasks in the time experiment.

In the second part, all the EB members were made to sit together as a group. Like before, the enumerator showed EB members each task through a visual aid. EB members were given a few minutes to discuss their decision amongst each other. During this time, the enumerators were required to silently observe the number of times each EB member participated in the discussion. Once EB members reached a consensus, they nominated one member from within the executive body to communicate the group's decision to the enumerator, who recorded it on a paper form. The enumerators were instructed not to impose any external rules like the majority rule or the unanimity rule for group decisions. This implied that the nature and manner of face-to-face communication before reaching a group decision varied across COs and was dependent upon the dynamics amongst EB members in each organisation. For each experiment, enumerators were provided a detailed script in order to minimize heterogeneity in the manner enumerators asked the question.

The experiments did not involve real gains. Unlike other experiments where participants make choices in their private domain, in these experiments, EB members were required to make decisions on behalf of their organisations. Given the average annual budget of TTOs, for real gains to have any meaningful impact on behaviour, they had to be large enough to be considered seriously by EB members. But, this was not possible within the budgetary scope of this research.

The design of the experiments was finalized after a series of pilot tests, conducted before the roll-out of the actual survey. Given the education level of respondents was low, a natural instinct was to adopt a simple elicitation method of the sort used by Binswanger (1980) or Eckel and Grossman (2002, 2008). Dave et. al. (2010), have shown that a simpler elicitation method as used by Eckel and Grossman (2002, 2008) gives a less noisy and a more accurate measure of risk preferences in settings where respondents have a limited mathematical ability.

Figure 2: Graphical Illustration of the Risk Task

Card U1

Enumerator: Ask the respondent which application would you choose to make?
- **Application A**: You will get Rs. 500 for sure.
- **Application X**: There is an equal chance that you get a high payoff i.e. Rs. 200000 or you get nothing i.e. Rs. 0.

Application A	Application X
Rs. Five Hundred (500) for sure	**High** Rs.200000 / **Low** Rs. 0

Notes: This figure shows an example of how each pair of grant applications was shown to subjects during the risk experiment. Each pair was formed of a safe grant application which had a guaranteed payoff (Application A) and a risky grant application with a 50-50 chance of providing a high pay off or nothing at all. The subject had to choose one of the two applications. The payoffs are shown in PKR, and are approximately equal to 4 GBP (or 5 USD) for Application A, and an equal chance of either 1500 GBP (i.e. 1850 USD) or nothing for Application X.

Figure 3: Graphical Illustration of the Time Task

Card T2

Light Green Donor	Dark Green Donor
• Rs. Two Hundred Thousand (**Rs. 200,000**) after 1 year	• Rs. Two Hundred and Thirty Thousand (**Rs. 230,000**) after 2 years
Rs. 100,000	**Rs. 100,000**
+	+
Rs. 100,000	**Rs. 100,000**
	+
	Rs. 30,000

Notes: This figure shows an example of the pairwise choices presented to subjects during the time experiment. For each pair, subjects had to make a choice between a Light Green Donor agency, awarding money after 1 year and a Dark Green donor agency offering a higher sum of money to be received after 2 years. The monetary reward is in PKR, and is approximately equal to 1500 GBP (i.e. 1852 USD from the Light Green donor) and 1750 GBP (i.e. 2130 USD from the Dark Green donor).

However, pilot testing of this elicitation method revealed two main drawbacks of using such an approach. By using Eckel and Grossman's approach, we were forcing respondents to behave consistently whereas in reality, some individuals exhibited non-monotonic or inconsistent preferences through other elicitation approaches. The second drawback of using Eckel and Grossman's approach was difficulty in understanding all the lotteries, which were presented before the respondent simultaneously. It became cumbersome for the respondents to process so much information at one time and to comprehend the difference across the set of lotteries. Instead, respondents found it easier to comprehend questions when presented with a set of two binary choices at a time, as done in the Holt and Laury design. The pilot tests provided two further insights. First, that illustrating the list of binary choices through visual aids substantially facilitated respondent's understanding in each experiment. Second, framing each task in the

local context helped the respondents in understanding and relating to the situation at hand. In view of the lessons learned from pilot tests, respondents were presented with visual aids in each experiment (as shown in Figures 2 and 3). Moreover both experiments were framed in the context of CO's budget choices. For instance, in the risk experiment, instead of using lotteries, respondents were asked to imagine a situation in which they had to apply for grant funding. In the time experiment, respondents were asked to choose between one of two donor agencies that were planning to give money to their organisation in recognition of their work.

4 Analytical Framework and Summary Statistics

4.1 Conceptual Framework

Social choice theory, first founded in the eighteenth century by Nicolas de Condorcet, and later extended by influential work of Arrow (1951), can provide insights for thinking about how individual preferences of EB members aggregate into group preferences. Consider a set of EB members $N = \{1, 2, \ldots n\}$, with single peaked preferences, where $5 \leq n \leq 18$. EB members have to choose between two grant applications, in case of the risk experiment or between two donor agencies, in case of the time experiment. Each EB member, $i \in N$, makes a choice individually, as denoted by v_i where $v_i = 1$ if the EB member opts for a safe grant application in the risk experiment (or chooses a donor agency providing money after 1 year for the time experiment). Alternatively, $v_i = 2$ if the EB member chooses to apply for the risky grant application in the risk experiment (or decides for the donor agency giving money after 2 years in the time experiment). The profile of individual preferences can be represented as $<v_1, v_2, \ldots . v_n>$. For a given profile of individual preferences, the executive body collectively decides on a group choice, denoted by v where $v = 1$ if the executive body chooses the safe grant application (donor agency providing money after 1 year) in the risk (time) experiment while $v = 2$ if the executive body opts for the risky grant application (donor providing money after 2 years) in the risk (time) experiment. The group choice v can be expressed as in (1) below.

$$v = f(v_1, v_2, \ldots . v_n) \qquad (1)$$

Thus, the collective decision v depends on the profile of individual preferences $<v_1, v_2, \ldots . v_n>$ and the aggregation rule f through which individual preferences map into the group choice. We study different mechanisms through which individual preferences may aggregate into group preferences.

Simple Majority Rule

In the first instance, we consider f to denote a simple majority rule. With this rule in place, each member would has an equal weight, and the collective decision would be equal to the median member's individual preferences (Downs, 1957), denoted by v^M as shown in equation (2).

$$v = f(v_1, v_2, \dots v_n) = v^M \qquad (2)$$

Weighted Majority Rule

Some dynamic spatial bargaining models provide predictions about the influence of non-median members on collective decisions under various voting rules. Banks and Duggan (2000) show that the group decision is a linear convex combination of individual decisions, and is expected to range between the mean and median member's individual decision. Compte and Jehiel (2010) predict that under a majority-voting rule, only the median member will be able to influence the group's decision, On the other hand, under a unanimity decision rule (in which passing of a proposal requires that all members agree with it unanimously), the collective decision would be influenced by members located on both extremes of the preference distribution. Under other decision rules, non-median individuals located close to the median are considered influential for the collective decision.

So, as a next step, we explore how preferences of non-median members influence the group choice (equation 3). Following Banks and Duggan (2000) and Ambrus at. al. (2015), we explore whether the group choice is a linear convex combination of individual choices, in which case, we would expect the sum of weights on individual preferences (w_1,w_2…) to sum to 1. This allows us to investigate whether collective decision making follows a crude majoritarian voting rule, in which case the group choice would only be influenced by individual preferences of the median member or whether the influence of median's preferences is limited by preferences of members at other points in the preference distribution.

$$v = f(v_1, v_2, \dots v_n) = w_1 v_1 + w_2 v_2 + \cdots w_n v_n \quad (3)$$

Dictatorship based on Social Status

In this section, we explore how individual preferences may map into the group preferences if they are dominated by preferences of a dictator in the group. We expect that the dictator's influence on the group choice will be derived from intrinsic characteristics (such as gender, caste, wealth, education etc.), which may give the individual a higher social status in a rural community. Under this aggregation rule we would expect that, apart from the dictator's preferences (v_i), individual preferences of other members within the group would not have any influence on the group choice.

$$v = f(v_1, v_2, \dots v_n) = v_i \qquad (4)$$

So far we have not discussed about the role of deliberation during collective decision-making. Existing work on group decision-making has shown that interaction amongst members in a group setting may have an impact on the group choice, which is independent of member's individual preferences. For instance, experimental evidence on cooperation and reciprocity shows that groups behave selfishly compared to individuals (Brandts and Schram, 2001; Fischbacher et al., 2001; Ambrus and Pathak, 2012). Stoner (1961) found that groups make

riskier choices. Later studies have supported this finding (e.g. Zhang and Casari, 2012). Other studies have shown that groups behave more cautiously than individuals and exhibit greater risk aversion than individuals (Masclet et. al. 2009; Baker et. al. 2008; Shupp, and Williams, 2008). Contrary to these two opposing view, Harrison et. al. (2012) find that there is no statistically significant difference between individual and group attitudes towards risk. The field of psychology provides two explanations for why a choice shift may occur: Social comparison theory (Levinger and Schneider, 1969) postulates that individuals like to present themselves according to the perceived social norm. Therefore they may be motivated to behave in a different manner in a group relative to an isolated setting. Persuasive argument theory (Burnstein et al., 1973; Brown, 1974) on the other hand postulates that group decisions may shift in a particular direction because arguments in favour of that direction may be more convincing or more aggressive compared to arguments in other directions. In light of this literature, we will also explore whether deliberation leads to a choice shift during group decision-making in our experiments. This will allow us to comment on whether group decisions are only influenced by the profile of individual preferences or whether they are also affected by factors that are independent of individual preferences.

4.2   Empirical Framework

In this section, we present the empirical framework used to study how community organisations make collective decisions in rural Pakistan. We begin our analysis of the relationship between individual and group preferences with the model specified in equation (5). All the specifications presented in this section are estimated twice, with Ordinary Least Squares (OLS), once with data from the risk experiment and then with data from the time experiment.

$$y_g = \alpha + \beta_M x_g^{(M)} + \mu_g \quad (5)$$

Using the same approach as Holt and Laury (2002) and Ambrus et. al. (2015), we measure risk preferences by the number of times each individual (group) chose the risky funding application. We measure time preferences by the number of times each individual (group) chose to receive money after 2 years rather than after 1 year. The dependent variable, y_g is the group preference and it refers to the collective choice of the executive body in each community organisation g. For the risk experiment, y_g measures total risky funding application choices per group while for the time experiment, y_g denotes total distant future choices per group. $x_g^{(M)}$ denotes preferences of the member on the 50th percentile of the preference distribution and is measured by number of times each member chose the risky funding application (in the risk experiment) and number of times each member opted to receive money in the distant future (in the time experiment). We test the null hypothesis that $\beta_M = 1$. Failing to reject the null hypothesis would imply the presence of a majoritarian rule, under which group choices are only influenced by individual preferences of the median member.

Next, to study whether preferences of non-median members have any influence on the group

choice, we follow the methodology used by Ambrus et.al. (2015), in a laboratory based sample of five member groups. Contrary to Ambrus et. al. (2015), we observe risk and time preferences in a natural setting, with executive bodies varying in size. Some are as small as five members, while a few have as many as eighteen members. Given this heterogeneity in group size, and the fact that we have no control over size of executive bodies, we focus on investigating the relationship between the *distribution* of individual choices and the group choice. To do so, we estimate the model shown in equation (6) with Ordinary Least Squares (OLS).

$$y_g = \alpha + \beta_1 x_g^{(1)} + \beta_2 x_g^{(2)} + \beta_3 x_g^{(3)} + \beta_4 x_g^{(4)} + \beta_5 x_g^{(5)} + \mu_g \quad (6)$$

The dependent variable, y_g is the same as before, and refers to the collective choice of the executive body in each community organisation g. For the risk experiment, y_g measures total risky funding application choices per group while for the time experiment, y_g denotes total distant future choices per group.

The right hand side variables represent ordered individual choices of executive body members at different points of the preference distribution. Executive body members are first arranged according to their preference ordering; from least to most number of risky (delayed future) choices in the risk (time) experiment. Thereafter, we look at individual choices of EB members at the minimum $x_g^{(1)}$, maximum $x_g^{(5)}$, 25th percentile ($x_g^{(2)}$), 50th percentile ($x_g^{(3)}$) and 75th percentile ($x_g^{(4)}$) of the preference distribution. $x_g^{(1)}$ denotes preferences of the most risk averse and impatient member in the group. On the other hand, $x_g^{(5)}$ represents preferences of the most risk-loving and patient member in the group. After estimating equation (6), we test a series of hypotheses, which are given in Table 3.

<table>
<tr><td colspan="3" align="center">Table 3: Hypothesis Tests</td></tr>
<tr><td></td><td>*Test*</td><td>*Null Hypothesis*</td></tr>
<tr><td>1</td><td>Group decision is a linear convex combination of individual decisions.</td><td>$H_0: \beta_1 + \beta_2 + \beta_3 + \beta_4 + \beta_5 = 1$</td></tr>
<tr><td>2</td><td>Weak Median Hypothesis</td><td>$H_0: \beta_1 = \beta_2 = \beta_4 = \beta_5 = 0$</td></tr>
<tr><td>3</td><td>Strong Median Hypothesis</td><td>$H_0^1: \beta_1 = \beta_2 = \beta_4 = \beta_5 = 0$
$H_0^2: \beta_3 = 1$</td></tr>
<tr><td>4</td><td>Extreme Irrelevance</td><td>$H_0: \beta_1 = \beta_5 = 0$</td></tr>
</table>

Next, we explore whether the collective choice is influenced by individual preferences of a dictator in the group ($x_g^{(D)}$). For this purpose we augment (4.6) with choices of the member who may behave as a dictator on the basis of his intrinsic characteristics. Considering an

extreme case, where the collective choice is solely predicted by preferences of the dictator, we test the null hypothesis $\beta_D = 1$.

$$y_g = \alpha + \beta_1 x_g^{(1)} + \beta_2 x_g^{(2)} + \beta_3 x_g^{(3)} + \beta_4 x_g^{(4)} + \beta_5 x_g^{(5)} + \beta_D x_g^{(D)} + \mu_g \quad (7)$$

Apart from β parameters, the intercept α is also of direct interest in all the specifications considered so far (5, 6 and 7). α sheds light on whether the group choice is subject to a choice shift relative to individual preferences. A significant intercept term (α) would imply that group dynamics have an impact on the collective decision, and that this effect is independent of individual preferences. We cluster standard errors at the community level.

The final part of the empirical framework investigates the effect of individual characteristics on how well individual preferences are represented in collective decisions while controlling for member's relative position within the executive body according to the preference ordering. Following Ambrus et. al. (2015), we specify the model shown in equation (8). The dependent variable is the absolute difference between the group choice (y_g) and the individual choice ($x_g^{(i)}$, where i denotes member's percentile in the preference distribution). The right hand side variables capture the tie-weighted relative position of members at every 25th percentile of the preference distribution and range between 0 and 1. If the choice of EB member at the minimum of the preference distribution is unique, then $p_g^{(1)}$ will be equal to 1 while all other position variables will be equal to 0. On the other hand, if the individual choices of the member at the minimum and 25th percentile are identical, then $p_g^{(1)} = p_g^{(2)} = 0.5$ while all other position variables will take a value of 0. Similarly, if individual choices of members at the minimum, 25th percentile and 50th percentile are identical, then each of these three positions would be assigned a weight of one-third while the other position variables are weighted as zero. In order to avoid perfect multi-collinearity, position variable of the median member i.e. $p_g^{(3)}$ is excluded from the specification. In the absence of median member's position variable, the constant term measures the average distance between group choice and the median member's individual choice.

$$|y_g - x_g^i| = \alpha + \beta_1 p_g^{(1)} + \beta_2 p_g^{(2)} + \beta_4 p_g^{(4)} + \beta_5 p_g^{(5)} + \mu_g \quad (8)$$

As a second step, equation (8) is augmented with a vector of individual characteristics (X_i). The set of personal characteristics (X_i), include the individual's gender, age, condition of the member's house, years of schooling, whether the member is the biggest landowner in the group, the president or treasurer of the organisation, suffers from any disability, belongs to a religious minority, has past experience of contesting for or serving in the local or district government, duration since the member has been serving on the executive body and the extent to which the member communicated while collective decisions were being made in the group. Additionally, we include each member's occupational status; whether the individual is retired, unemployed or a student. The omitted category for occupational status variables is the set of employed EB

members, who work in the agricultural sector, have a private or public job or are self-employed. This augmented specification (as shown by equation 9) helps to investigate whether individual characteristics of EB members, over and above their relative position in the group, explain how well their individual decisions are represented in the group decision.

$$|y_g - x_g^i| = \alpha + \beta_1 p_g^{(1)} + \beta_2 p_g^{(2)} + \beta_4 p_g^{(4)} + \beta_5 p_g^{(5)} + X_i \gamma + \mu_g \quad (9)$$

4.3　Summary Statistics

In this section, we present a first look at the data on preferences and characteristics of EB members and Community Organisations.

While eliciting individual risk preferences of EB members, we find that approximately 58 percent of them always opted for the safe funding application that did not involve any risk (Figure 4). Observing individual time preferences of EB members revealed that approximately 32 percent of members always chose the Light Green Donor over the Dark Green Donor, which would give money after 1 year instead of 2 years (Figure 4). Thus a large majority of EB members exhibited a high degree of risk aversion and also behaved impatiently.

Figure 4: Distribution of Individual Preferences
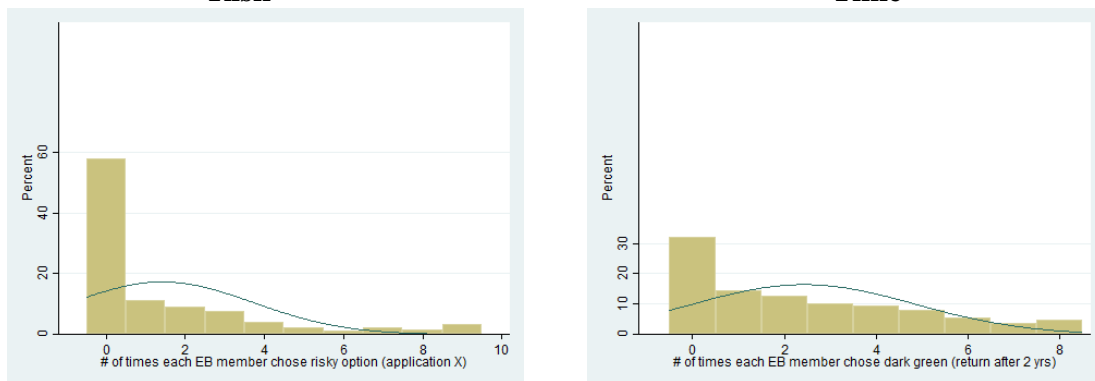
The distribution of group preferences, which were elicited when EB members made decisions collectively shows that approximately 65 percent of groups always chose to apply for the safe funding application and 42 percent of all groups always preferred to received money in the near rather than the distant future, after 1 instead of 2 years (Figure 5). Compared to ratio of EB members who were risk averse and impatient each time, a higher percentage of groups were always risk averse and impatient in their behaviour.

Summary statistics for individual and group preferences are shown in Table 4. The data shows that groups are more risk averse and impatient than individuals. In both experiments, the variance of group choices is smaller compared to the individual choices. We also observe that median decisions are more risk averse and impatient than compared to the mean individual

decision. In the risk experiment, average group decision lies between the mean individual choice and median choice. While this is not true for the time data, but we still observe that the average group decision is closer to the median choice compared to the mean individual choice.

Figure 5: Distribution of Group Preferences

Risk **Time**
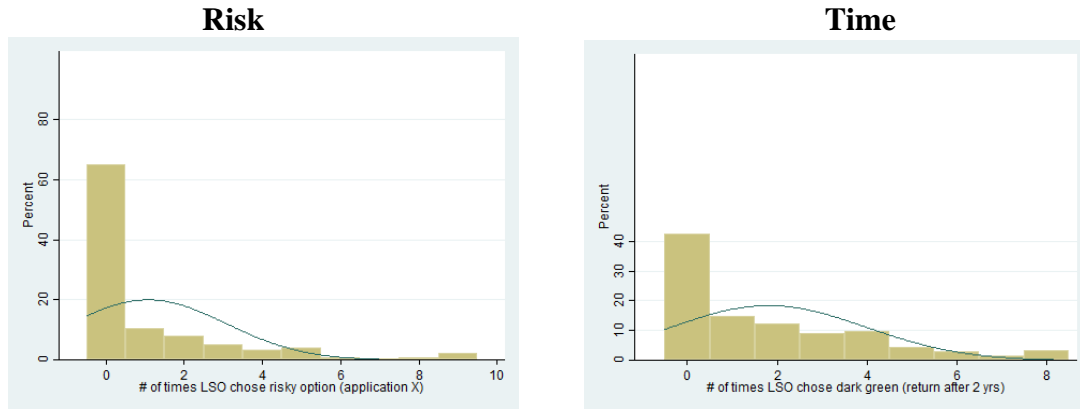
Table 4: Summary Statistics (Individual and Group Preferences)

Risk Experiment

Variable	Obs.	Mean	Std. Dev.	Min	Max
Group	652	1.07	1.99	0	9
Individual	4974	1.61	2.30	0	9
Group Median	652	1.06	1.72	0	9
Time Experiment					
Group	652	1.81	2.16	0	7
Individual	4,974	2.42	2.43	0	7
Group Median	652	2.19	1.99	0	7

Notes: This table shows summary statistics for group preferences, individual preferences and median member's preferences. Group (individual) risk preferences capture number of times each group (member) chose the risk funding application, while group (individual) time preferences measure number of times each group (member) opted for the donor organisation giving money in the distant future, i.e. after 2 years instead of after 1 year.

Mean group characteristics are presented in Table 5, while mean characteristics of EB members are presented in Table 6. COs vary in size, between 5 and 18 members, with an average size of 8 members (Table 5). There is significant variation in the gender composition of these groups. A quarter of the organisations are all female, while one third are formed of male members only. The rest of the organisations contain both male and female EB members. Within these mixed gender organisations, about 64 percent of members are males while the rest are females (Table 5). There is also heterogeneity along other dimensions such as past experience, wealth, education, occupational status etc. A predominant majority of EB members have been serving

on the executive body for more than a year (Table 5). The average duration for which EB members have served on the executive body is 2.5 years (Table 6).

Table 6 shows that EB members have varying levels of wealth. Almost one third of EB members live in un-cemented houses, while the rest live in semi-cemented or fully-cemented houses (Table 6). A high proportion of members own land; 82 percent of EB members belong to landed households that possess either residential and (or) agricultural land (Table 6). On average, EB members have completed a minimum of 10 years of education (Table 6) with female members having 7 while male members 12 years of schooling on average. A little over one third of members have experience of either serving or contesting for a seat in the local or district government, on average (Table 6). Approximately 30 percent of the EB members are unemployed or only engage in domestic work, 4 percent have retired from the labour market, 2 percent are students while the rest are either self-employed, or work in the agricultural sector or in a salaried job (Table 6)[10]. Finally a small portion of EB members suffer from disabilities (approximately 1 percent) and belong to a religious minority group (2 percent), as illustrated in Table 6.

Table 5: Organisational Characteristics

Variable	Obs.	Mean	Std. Dev.	Min.	Max
All Female COs	652	0.24	0.43	0	1
All Male COs	652	0.32	0.47	0	1
Mixed Gender COs	652	0.44	0.50	0	1
Ratio of Males (in Mixed Gender COs)	284	0.64	0.24	0.08	0.94
Ratio living in Un-cemented Houses	652	0.28	0.33	0	1
Ratio of EB members owning land	652	0.83	0.30	0	1
Ratio with High School Edu. or more	652	0.69	0.30	0	1
Ratio who have served for 1 year or more	652	0.87	0.26	0	1
Ratio of Disabled	652	0.01	0.03	0	0.3
Ratio from Religious Minority Groups	652	0.02	0.11	0	1
Ratio who have served in govt.	652	0.33	0.30	0	1
Ratio of retired	652	0.04	0.10	0	0.8
Ratio of unemployed	652	0.30	0.30	0	1
Ratio of students	652	0.02	0.06	0	0.6
EB size	652	7.57	2.55	5	18
Punjab	652	0.42	0.49	0	1
Sind	652	0.16	0.37	0	1
KP and Northern Areas	652	0.36	0.48	0	1
Baluchistan	652	0.06	0.23	0	1

Notes: This table shows summary statistics on organisational characteristics of TTOs which were surveyed.

---

[10] The occupational status dummy variables are student, retired and unemployed, where the unemployed variable also includes EB members who only engage in house work. The base category for this set of variables is if the EB
Member is self-employed in own business, or works in the agricultural sector or is a salaried employee for a private or public sector job.

Table 6: Characteristics of Executive Body Members

Characteristics of Executive Body Members					
Variable	Obs.	Mean	Std. Dev.	Min	Max
Male	4,974	0.60	0.49	0	1
Un-cemented House	4,974	0.29	0.45	0	1
Owns Land	4,974	0.82	0.38	0	1
Biggest Landowner	4,974	0.14	0.35	0	1
Years of Schooling	4,974	10.10	5.50	0	18
President	4,974	0.13	0.33	0	1
Treasurer	4,974	0.11	0.31	0	1
Age (years)	4,949	38.64	11.22	18	89
Duration in EB	4,931	2.56	1.82	0.08	9.5
Participation	4,965	3.75	1.03	1	5
Disabled	4,974	0.01	0.08	0	1
Minority Religion	4,974	0.02	0.16	0	1
Contested or Served in Govt.	4,974	0.33	0.47	0	1
Retired	4,974	0.04	0.20	0	1
Unemployed/House Work	4,974	0.30	0.46	0	1
Student	4,974	0.02	0.14	0	1

Notes: This table shows mean characteristics of the sample of individuals who form third tier community organisations.

5   Empirical Results

5.1   How individual preferences aggregate into group preferences?

In this section we present results on how individual preferences aggregate into group preferences. These results are obtained after estimating specifications (5) and (6) and are shown in Table 7. The results for specification (5), in which we assume a majoritarian voting rule are presented in columns 1 and 3 of Table 7. Results for specification (6) are presented in columns 2 and 4 of Table 7, where, apart from median member's preferences, we also include preferences of members at other points in the preference distribution. Five main observations can be made on the basis of these results.

Firstly, we find that group decisions experience a 'choice shift' relative to individual decisions in both domains. This is shown by a statistically significant intercept term in both risk and time regressions (columns 1 to 4, Table 7). A significant intercept term indicates that there is a systematic shift in the group's decision, which is independent of individual member's choices. This is not surprising given the extensive literature which recognizes choice shifts in group decisions relative to individual decisions. Based on this literature, evidence of choice shifts in group decisions of community organisations may be attributed to the fact that EB members changed their behaviour while sitting in a group setting in order to conform to the prevalent social norm, as can be posited by the Social Comparison Theory (Levinger and Schneider, 1969). Alternatively, the shift may be the result of some EB members aggressively convincing other members of the group to align their preferences with their own, as can be predicted by

the Persuasive Argument theory (Burnstein et al., 1973; Brown, 1974). In order to determine the direction of the choice shift, we estimated predicted group choices for risk and time decisions at the average number of individual choices for the risky funding application and the donor providing money in the delayed future. The average of individual choices is approximately 2 in both experiments. At this average, the predicted group choice is equal to 1.55 and 1.59 in the risk experiment and 1.71 and 1.82 in the time experiment (as shown in the last row of Table 7). Thus, the predicted group choice in both experiments is less than the average of individual choices. This reveals that groups made less risky and less patient decisions compared to individuals, on average. It seems that being in a group setting forced members to behave more cautiously; they were less likely to take risks and more likely to opt for receiving a smaller sum of money in the near future rather than a larger sum at a later date. To sum up, group decisions exhibited a cautious shift in both domains.

Table 7: Group Preferences and Individual Preferences

Dependent Variable: Group Preferences				
	(1)	(2)	(3)	(4)
	Risk	Risk	Time	Time
$x1$ (0 percentile)		0.0166		0.115
		[0.24]		[0.13]
$x2$ (25th percentile)		0.151		0.159
		[0.20]		[0.12]
$x3$ (50th percentile)	0.510***	0.335***	0.471***	0.202**
	[0.07]	[0.11]	[0.05]	[0.09]
$x4$ (75th percentile)		0.0633		0.123*
		[0.07]		[0.06]
$x5$ (100th percentile)		0.0304		0.0153
		[0.04]		[0.04]
Constant	0.534***	0.398***	0.772***	0.598***
	[0.09]	[0.08]	[0.12]	[0.15]
N	652	652	652	652
R-sq.	0.194	0.205	0.187	0.207
F statistic	51.79***	11.36***	84.95***	22.30***
Predicted Group Choice (at mean)	1.55	1.59	1.71	1.83

Notes: *, **,*** denotes significance at 10%, 5% and 1% respectively. Regressions have been estimated through OLS. Standard errors are shown in parenthesis and clustered at the community (i.e. Tehsil) level. In columns 1 and 2, the dependent variable is group risk preferences, measured by number of times each TTO chose the risky funding application. In columns 3 and 4, the dependent variable is group time preferences, measured by number of times each TTO chose to receive a larger sum of money in the distant future. $x1$, $x2$, $x3$, $x4$, and $x5$ denote individual preferences of members at 0, 25th, 50th, 75th and 100th percentile of the

A post estimation t-test to investigate whether all the β parameter estimates aggregate to 1, reveals that the null hypothesis is rejected at 5 percent in the risk experiment and at 1 percent in the time experiment (Table 8). This shows that group choices are not a linear convex combination of individual choices in both domains. This simply reinforces the earlier finding of a systematic difference between group and individual choices and suggests that groups follow an implicit decision rule while making collective decisions. This implicit decision rule causes the group decision to be different from a simple linear aggregation of individual decisions.

Table 8: Post Estimation Hypothesis Tests

	Test	Null Hypothesis	Risk P values	Time P values
1	Group decision is a linear convex combination of individual decisions.	$H_0: \beta_1 + \beta_2 + \beta_3 + \beta_4 + \beta_5 = 1$	0.0057***	0.000***
2	Weak Median Hypothesis	$H_0: \beta_1 = \beta_2 = \beta_4 = \beta_5 = 0$	0.0983*	0.0151**
3	Strong Median Hypothesis	$H_0^1: \beta_1 = \beta_2 = \beta_4 = \beta_5 = 0$ $H_0^2: \beta_3 = 1$	0.000***	0.000***
4	Extreme Irrelevance	$H_0: \beta_1 = \beta_5 = 0$	0.783	0.479

Notes: This table shows p-values for post estimation tests conducted on regression results reported in columns 2 and 4 of Table 7. *, **, *** denotes significance at 10%, 5% and 1% respectively.

A second observation that can be made on the basis of results in Table 7 is that the group decision is predicted by individual preferences of the EB member who lies at the middle of the preference distribution. In both experiments, the median member exerts a dominant influence on the group decision, as shown by significant coefficients on individual preferences of the member located on the 50th percentile (i.e. $x_g^{(3)}$ in columns 1 to 4 of Table 7). A glance at raw data shows that group risk and inter-temporal preferences match with individual preferences of the median member in 50 and 31 % of the organisations respectively. For another 36 and 48 % of the organisations, group risk and inter-temporal preferences lie within 1 standard deviation of the mean difference between the group and median member's choices. This indicates that the significant role of median member's preferences on collective group preferences is a dominant trend in the organisations under study. In order to investigate the median hypothesis more formally we conduct a series of post estimation hypothesis tests. In the model assuming a crude majoritarian voting rule (i.e. the one presented in columns 1 and 3 of Table 7), we test the null hypothesis that the coefficient on median member's preferences is equal to 1. For both the risk and the time regression, we reject the null hypothesis at 1 percent level of significance, implying that while the group choice is significantly influence by median member's preferences, but they do not determine the group choice perfectly. For the regressions including preferences of non-median EB members (i.e. columns 2 and 4, Table 7), we test whether the coefficients on non-median members are jointly 0. The null hypothesis is rejected at 10% and

5% respectively for the risk and time regression (row 2, Table 8). We further test a stronger version of the median hypothesis; in which the null hypothesis comprises of two conditions, that coefficients on preferences of non-median members are jointly 0 and that the coefficient on median member's preferences is equal to 1. Like before, coefficients on preferences of non-median members are not jointly equal to 0. Additionally, coefficient on the median member is significantly different from 1, suggesting that while preferences of the median member are influential in determining the group decision, they do not predict the group choice completely (row 3, Table 8). This is probably attributable to group decisions experiencing a 'cautious shift'; i.e. being in a group setting has an impact on collective decisions, which is independent of individual member preferences.

Lastly, the insignificant coefficients on choices of members at zero and hundred percentile in both regressions (columns 2 and 4, Table 7) reveal that choices of members on either extreme of the preference distribution are not reflected in the group's choice. A formal test that checks whether coefficients on preferences of members located at both ends of the preference distribution (i.e. at 0 and 100 percentile) are jointly 0 reinforces this finding (row 4, Table 8). While preferences of members on either extreme of the preference distribution are not represented in group choices, members who made more patient choices than the median member had an influence on group inter-temporal preferences, as shown by the statistically significant coefficient on preferences of members at the 75th percentile (column 4, Table 7).

5.2   Influential members and group decisions

The literature on local participatory development has shown that personal characteristics matter in traditional societies. For instance, gender has been shown to play an important role in determining effectiveness of decentralized development initiatives. In India, female headed village councils are more likely to favour public spending towards projects which favour disadvantaged groups within the local community compared to village councils headed by males (Chattopadhay and Duflo, 2004). In South Africa, female recipients of a direct cash transfer program are more likely to invest in children's human capital but a similar pattern has not been observed when male members within the household receive similar transfers (Duflo, 2003). The literature on microfinance has documented that female recipients of microfinance loans are more likely to pay back (D'espallier, Guerin and Mersland, 2011), adhere to social sanctions (Murdoch, 1999; Johnson, 2004) and have a smaller probability of indulging in moral hazard.

Given intrinsic characteristics may lead to social status in a traditional society, it is possible that apart from the median member, preferences of privileged members within the executive body have an impact on the group decision. To address this question, we investigate whether preferences of certain members, other than the median member, also have an impact on the group decision. Secondly, we also want to examine whether the influence of median member's preferences on the group decision remains robust after augmenting the model with preferences of executive body members who may be influential on the basis of their characteristics. For these purposes, we augment equation (6) with preferences of, the biggest landowner, the most educated member, the president, the treasurer, the eldest member (in terms of age), the longest

serving EB member, as well as with preferences of EB members who were most active during the group discussion and re-estimate the model. Results show that even after including preferences of members who may be influential on the basis of their personal characteristics, the median member's preferences continue to play a significant role in determining the collective decision in both experiments (columns 1 to 8, Table 9 and columns 1 to 7, Table 10).

Table 9: Group Preferences and Individual Preferences of Privileged Members (Risk Data)

Dependent Variable: Group Risk Preferences								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$x1$ (0 percentile)	0.0283	0.0138	0.0197	0.0185	0.0177	0.0160	-0.0263	-0.002
	(0.238)	(0.240)	(0.241)	(0.240)	(0.242)	(0.244)	(0.244)	(0.239)
$x2$ (25th percentile)	0.169	0.142	0.152	0.151	0.156	0.150	0.0959	0.112
	(0.203)	(0.206)	(0.202)	(0.202)	(0.205)	(0.203)	(0.200)	(0.205)
$x3$ (50th percentile)	0.345***	0.327***	0.337***	0.340***	0.338***	0.333***	0.280**	0.292***
	(0.107)	(0.110)	(0.108)	(0.114)	(0.108)	(0.103)	(0.112)	(0.112)
$x4$ (75th percentile)	0.0862	0.0579	0.0642	0.0672	0.0649	0.0623	0.0178	0.0462
	(0.075)	(0.070)	(0.068)	(0.072)	(0.068)	(0.067)	(0.062)	(0.0685)
$x5$ (100th percentile)	0.0383	0.0253	0.0315	0.0313	0.0323	0.0294	-0.0063	0.001
	(0.042)	(0.044)	(0.046)	(0.043)	(0.046)	(0.051)	(0.044)	(0.052)
x (Biggest landlord)	-0.0703							-0.0929
	(0.060)							(0.062)
x (Most educated)		0.0303						0.0238
		(0.067)						(0.067)
x (President)			-0.00682					-0.0301
			(0.046)					(0.044)
x (Treasurer)				-0.0148				-0.0190
				(0.073)				(0.073)
x (Eldest member)					-0.0121			-0.0193
					(0.047)			(0.048)
x (Longest serving)						0.0054		0.0188
						(0.086)		(0.089)
x (Most active)							0.214	0.212
							(0.151)	(0.192)
Constant	0.404***	0.398***	0.399***	0.397***	0.399***	0.398***	0.386***	0.394***
	(0.085)	(0.085)	(0.083)	(0.084)	(0.084)	(0.085)	(0.082)	(0.082)
Observations	652	652	652	652	652	652	652	652
R-squared	0.209	0.206	0.205	0.206	0.206	0.205	0.226	0.235
Predicted group choice(w/o pref. of other members)								1.291
Predicted group choice(with pref. of other members)								1.43

Notes: *, **, *** denotes significance at 10%, 5% and 1% respectively. Regressions have been estimated through OLS. Standard errors are shown in parenthesis and clustered at the community (i.e. Tehsil) level. The dependent variable in all these regressions is group risk preferences, while x represents individual preferences. Group and individual risk preferences are measured by number of times each TTO (EB member) chose the risky funding application. $x1$, $x2$, $x3$, $x4$, and $x5$ denote individual preferences of members at 0, 25th, 50th, 75th and 100th percentile of the preference distribution. In addition, the regressions include individual preferences of privileged members within the executive body; the biggest landlord, the most educated member (in terms of completed years of schooling), the president, the treasurer, the eldest (in terms of age), the longest serving member on the EB, and the most active member of the discussion during collective decision-making.

Table 10: Group Preferences and Individual Preferences of Privileged Members (Time Data)

Dependent Variable: Group Time Preferences								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$x1$ (0 percentile)	0.118	0.104	0.086	0.124	0.107	0.110	0.080	0.058
	(0.130)	(0.127)	(0.130)	(0.129)	(0.128)	(0.128)	(0.130)	(0.136)
$x2$ (25th percentile)	0.163	0.142	0.164	0.137	0.155	0.155	0.128	0.101
	(0.119)	(0.117)	(0.120)	(0.119)	(0.118)	(0.118)	(0.124)	(0.121)
$x3$ (50th percentile)	0.210**	0.164	0.166*	0.185**	0.190**	0.194**	0.168*	0.087
	(0.095)	(0.101)	(0.093)	(0.091)	(0.093)	(0.095)	(0.092)	(0.095)
$x4$ (75th percentile)	0.125*	0.103*	0.116*	0.104	0.120*	0.117*	0.110*	0.064
	(0.064)	(0.062)	(0.063)	(0.065)	(0.064)	(0.066)	(0.065)	(0.065)
$x5$ (100th percentile)	0.020	0.002	-0.001	0.007	0.009	0.006	-0.017	-0.048
	(0.042)	(0.039)	(0.040)	(0.040)	(0.042)	(0.044)	(0.046)	(0.051)
x (Biggest landlord)	-0.023							-0.036
	(0.049)							(0.048)
x (Most educated)		0.100						0.090
		(0.061)						(0.063)
x (President)			0.0906*					0.081
			(0.051)					(0.051)
x (Treasurer)				0.084*				0.091**
				(0.044)				(0.046)
x (Eldest member)					0.032			0.028
					(0.047)			(0.044)
x (Longest serving)						0.035		0.026
						(0.061)		(0.060)
x (Most active)							0.135	0.098
							(0.084)	(0.084)
Constant	0.600***	0.594***	0.596***	0.593***	0.594***	0.598***	0.611***	0.597***
	(0.149)	(0.149)	(0.150)	(0.149)	(0.150)	(0.149)	(0.149)	(0.150)
Observations	652	652	652	652	652	652	652	652
R-squared	0.207	0.211	0.213	0.214	0.208	0.207	0.213	0.229
Predicted group choice(w/o pref of other members)			1.66	1.71				1.12
Predicted group choice(with pref of other members)			1.85	1.74				1.82

Notes: *, **,*** denotes significance at 10%, 5% and 1% respectively. Regressions have been estimated through OLS. Standard errors are shown in parenthesis and clustered at the community (i.e. Tehsil) level. The dependent variable in all these regressions is group time preferences, while x represents individual preferences. Group and individual time preferences are measured by number of times each TTO (EB member) chose the donor paying a larger sum of money at a later date. $x1$, $x2$, $x3$, $x4$, and $x5$ denote individual preferences of members at 0, 25th, 50th, 75th and 100th percentile of the preference distribution. In addition, the regressions include individual preferences of privileged members within the executive body; the biggest landlord, the most educated member (in terms of completed years of schooling), the president, the treasurer, the eldest (in terms of age), the longest serving member on the EB, and the most active member of the discussion during collective decision-making.

In the risk experiment, apart from individual risk preferences of the median member, preferences of none of the other influential members (such as the biggest landowner, the most educated EB member, the president and treasurer of the organisation, the oldest member in terms of age, the longest serving member on the executive body, or the most active participant during the group discussion) matter for the group decision. In the time experiment, other than median member's preferences, there is some weak evidence to show that preferences of the president influence the group decision, evident from the marginally significant (at 10 percent) coefficient in the time regression (columns 3, Table 10). Apart from individual time preferences

of the CO President, preferences of the Treasurer also emerge as significant predictors of the group inter-temporal decision (columns 4 and 8, Table 10). We still find that groups make less risky and less patient choices than individuals, as the predicted group risk and time preferences are less than mean individual risk and time preferences. This remains true even after individual time preferences of office bearers - like the CO President or Treasurer – are incorporated in the model (columns 3, 4 and 8, Table 10). This is shown by a comparison of group time choices predicted with and without mean individual time preferences of office bearers like the president and the treasurer (columns 3 and 4, Table 10).

5.3   Robustness

Alternative Estimation Strategy

The dependent variable in equation (6) takes on non-negative integer values, which range between 0 and 9 in the risk experiment, (between 0 and 8 in the time experiment). Since the dependent variable is not normally distributed, OLS may yield biased parameter estimates. Therefore, we obtain Poisson maximum likelihood estimates of βs in equation (6). These results are shown in column 1, Table A.1 for the risk experiment and column 3, Table A.1 for the time experiment and they reinforce the earlier findings obtained through OLS estimation (shown in Table 7). The coefficient on the intercept term is significant in both regressions. The predicted group risk and time preferences (equal to 1.2 and 0.9 respectively) are less than mean individual preferences (approximately equal to 2 in both experiments) implying that groups made less risky and less patient choices compared to individuals. Moreover, group preferences are significantly affected by individual preferences of the median member in both experiments. As a second robustness check, we obtain negative binomial estimates for equation (6), shown in column 2 (for risk data) and column 4 (for time data) of Table A.1. The earlier findings of group choices experiencing a 'cautious' shift relative to individual choices and preferences of the median member predicting the collective decision continue to hold under a negative binomial model.

Groups with Inconsistent Behaviour

16 percent of groups in the risk experiment and 15 percent of groups in the time experiment behave inconsistently; they either switch back and forth (between the risky and safe funding application in the risk experiment and between the two donor agencies in the time experiment) or switch backwards in the wrong direction[11]. Non-monotonic preferences or inconsistent behaviour has often been observed in studies that adopt a multiple price list design to elicit preferences. Such behaviour has been attributed to either a feeling of indifference amongst subjects for the tasks presented to them (Anderson et. al. 2006), or to lack of understanding and subsequent mistakes by subjects (Morone and Temerario 2015) or to the presence of genuinely irrational behaviour as illustrated by non-monotonic preferences amongst subjects (Zhang and Casari; 2012). Subjects with inconsistent preferences, exhibit a wider range of the CRRA

---

[11] 16 percent (24 percent) of EB members behaved inconsistently; either switched back and forth or switched backwards in the opposite direction in the risk (time) experiment.

coefficient compared to respondents who switch only once (Harrison and Rutstrom, 2008). For multiple switching respondents, the bound of the CRRA coefficient will start from the first switch (for example from application X to A in our case), after which the subject may be switch back to application X. The other bound would be the point where the respondent will switch to application A again, followed by choosing application A in all subsequent tasks. So the bounds of the CRRA are likely to be estimated less accurately for respondents who switch multiple times.

A survey of existing literature on decision-making shows that the ratio of subjects who have exhibited inconsistent choices during experiments varies a great deal according to context. On average, this ratio ranges between 3-13 percent in experimental studies conducted in developed countries. For instance, Holt and Lorry (2002) show that at least 13 percent of subjects switched at least twice, Dave et. al. found 8.5 percent of the subjects behaved inconsistently, Zhang and Casari (2012) report that 12.5% of subjects and 5 percent of groups exhibited non-monotonicity in lottery choices while Ambrus et. al. (2015) found inconsistent behaviour amongst 3 percent of subjects. Relative to developed country settings, prevalence of inconsistent behaviour is generally higher in studies conducted on respondents with a low level of education in developing countries. For instance, Jacobson and Petrie (2009) report 55% of the respondents made at least one inconsistent choice in the context of Rwanda, Galarza (2009) report 51% of the subjects switched at least twice in Peru while Brick et. al. (2012), report that 41% of the sample switched more than once across the lotteries in South Africa.

Researchers have dealt with the issue of subjects with inconsistent choices in different ways. They are either excluded from the analysis completely (Ambrus et. al. 2015), or included in the analysis, with the subject's first and the last switch denoting bounds of the CRRA coefficient (as proposed by Harrison and Rutstrom, 2008), or they are partially included in the sample. For instance, Morone and Temerario (2015) corrected and included subjects who switched twice, but excluded those who switched more two times from the analysis.

The results we have presented so far are based on the sample of organisations, which exhibited consistent group choices. We investigate whether our results are sensitive to the inclusion of groups with inconsistent choices. For this, we re-estimate equation (6) for the overall sample of organisations, including TTOs that switched multiple times between the risky and safe funding application as well as between donor agencies giving money after 1 versus 2 years. Building on Harrison and Rutstrom (2008), we deal with inconsistent group choices in two ways. Initially, for the sub-sample of TTOs with inconsistent group choices, we consider their first switch as the final switch (i.e. from the risky to the safe funding application for risk preferences and from the donor agency providing money in the near future to one giving money at a later date for inter-temporal preferences). Next, we include inconsistent group choices by treating their last switch as the final switch. Regression results for the overall sample, including organisations with consistent group choices, as well as those which behaved inconsistently, are shown in Table A.2. In columns 1 and 3, group risk and time preferences for organisations with inconsistent preferences are given by the first time they switched to the safe funding application and to the dark green donor giving money in the distant future. In columns 2 and 4, group risk and time choices for organisations with inconsistent choices are given by the last time they

switched to the safe funding application and to receiving money in the delayed future. All the regressions reported in Table A.2 have a significant intercept term, showing that inclusion of organisations with inconsistent choices does not change the earlier finding (deduced from results in Table 8) that group preferences are not a linear convex combination of individual preferences. The choice shift in group preferences is in the same direction as found earlier (shown in columns 2 and 4 of Table 7); collectively, groups make less risky and less patient choices as compared to mean choices of individuals at various percentiles of the preference distribution. Finally, individual preferences of the median member continue to play an influential role in explaining group preferences in the pooled sample that includes organisations, which behaved inconsistently (Table A.2).

Sample Selection

Does exclusion of groups which behaved inconsistently lead to a sample selection bias in our main results presented in Table 7? We address this question by estimating the following specification twice, first with risk choices and then with inter-temporal choices:

$$I_{gsr} = \alpha + \beta_1 x_g^{(1)} + \beta_2 x_g^{(2)} + \beta_3 x_g^{(3)} + \beta_4 x_g^{(4)} + \beta_5 x_g^{(5)} + Z_g \delta + \rho_s + \sigma_r + \mu_{gsr} \ (10)$$

We regress a dummy variable (I_{gsr}) equal to 1 for all community organisations that behaved inconsistently and 0 for those which behaved consistently on ordered preferences of EB members at each quintile of the preference distribution ($x_g^{(i)}$ where i ranges from 1 to 5), a vector of group characteristics (Z_g), group size and region fixed effects (ρ_s and σ_r). Subscripts g, s and r denote group, group size and region respectively while μ_{gsr} is the error term. Group characteristics include spread of individual preferences, ratio of members who are males, live in un-cemented houses, have completed at least 10 years, have served on the executive body for a duration of 1 year or longer, spoke continuously during the process of collective decision-making, suffer from disabilities, belong to religious minority groups, have contested for a seat or served in the government as well as a set of variables capturing occupational status of EB members. The results are shown in Table A.3. Almost all the right hand side variables are insignificant in both the risk and the time regression. These results suggest that there is no systematic pattern in the incidence of inconsistent behaviour amongst community organisations and that our main results may not be subject to selection bias.

Who are the median members?

Given the significant role of median member's preferences in determining group decisions, it is natural to think about median executive body members and their characteristics. It is possible that the relationship between median member's preferences and group preferences is being driven by certain characteristics of the median member that may give him or her an advantage over other members. For instance, if the median member is a male, more educated than other members, holds an important office within the organisation, belongs to a higher socio-economic status, is the eldest within the executive body in terms of age, has served the longest in the executive body or participated most actively during the group discussion before making

28

the collective choice was finalized, then it will be easier for the median member to influence the group decision. In such cases, it will be difficult to isolate the effect of the median's individual preferences from the impact of his personal characteristics. In order to explore this issue further, we first look at raw data and compare the average characteristics of median members with the characteristics of non-median members i.e. those who are located at the zero, twenty fifth, seventy fifth and hundredth percentile of the preference distribution. We do not find any clear pattern that suggests that median members are more advantaged than other members in the executive body. For instance, there are no significant differences in mean characteristics of median members (such as age, education, landholding, experience in serving the organisation, participation in the group discussion etc.) relative to other EB members (Table A.4). Moreover, in a predominant majority of organisations (almost 87 percent), the median member does not hold an important post like that of a president or a treasurer. Apart from the president, we specifically look at treasurers because they play a pivotal role in running the organisation. Since they are responsible for looking after financial matters of the organisation, they tend to be more educated, with a greater bargaining power compared to the rest of the executive body.

Next, in order to test this more formally, we augment (4.6) with personal characteristics of the median member as well as with interaction terms between personal characteristics and individual preferences of the median member. The main objective of these augmented estimations is to examine parameter estimates on the interaction terms. If they are insignificant, then we can argue that the relationship between median member's individual preferences and group decisions is robust to personal characteristics of the median member. Results for augmented specifications on risk data are presented in Table A.5, while those for time data are shown in Table A.6. In both tables, we interact preferences of the median member with a dummy variable equal to 1 if, the median member lives in an un-cemented house (column 1), is the biggest landowner in the EB (column 2), is the most educated EB member (column 3), is the president of the CO (column 4), is a treasurer and responsible for organisation's financial matters and book keeping (column 5), is the eldest member in the EB in terms of age (column 6), is the longest serving member on the EB (column 7) participated most actively in the group discussion before the collective decision was finalized (column 8). Finally, in column 9, the model is augmented with all the interactions terms simultaneously.

Preferences of the median member remain significant in the augmented estimations (Tables A.5 and A.6). Moreover, the impact of median member's individual preferences on the group decision is not sensitive to the member's socio-economic status, education level, office, seniority relative to others in terms of age and participation during collective decision-making. This is evident from the insignificant interaction terms between median member's individual preferences and personal characteristics in Table A.5, and in columns 1 to 6 and 8, Table A.6.

The only exception to this is the significant interaction term between median member's time preferences and the dummy variable equal to 1 if he or she is also the longest serving member on the EB (column 7 and column 9, Table A.6). In organisations where the median is also the longest serving EB member, individual time preferences of the median member are more

strongly represented in the group inter-temporal decision relative to organisations in which this is not the case. This is evident from a larger coefficient on median member's individual time preferences, equal to 0.384, in organisations where the median is the longest serving EB member, compared to 0.195, when the median is not the senior most member (column 7, Table A.6).

While the interaction terms are generally insignificant, some personal characteristics, on their own, emerge as significant predictors of group risk and inter-temporal preferences (column 1, 2, 8 and 9, Table A.5, column 1 and column 9, Table A.6). Compared to individual choices, group choices are less risky and less patient in organisations where the median member belonged to a poor family, living in an un-cemented house (column 1 and column 9 in both tables; A.5 and A.6). The executive body also made less risky collective choices compared to individual choices, in organisations where the median member participated most actively during the group discussion (column 8 and column 9, Table A.5). On the contrary, organisations in which the median person was also the biggest landowner in the EB, group choices were riskier than individual choices relative to when the median was the not wealthiest member of the group (column 2 and column 9, Table A.5).

In mixed gender TTOs, which comprise of both male and female members, it is possible that the impact of median member's preferences on the group decision is sensitive to whether the median member is a male or a female. To investigate this further, we restrict the sample to mixed gender TTOs, and test whether an interaction term between median member's preferences and a dummy variable equal to 1 if the median member is a male (0 if female) has a significant effect on the group decision. We find that this is not the case (Table A.8, Appendix A).

In sum, we do not find that the impact of median member's individual preferences on the collective decision varies by his background, socio-economic status, educational level or his status within the executive body.

Unobservable Factors and Observable Group Characteristics

The analysis so far has shown that individual preferences of the median and the member on the 75th percentile of the preference distribution are important for collective decisions in small groups. TTOs are distinct from each other along many observable dimensions. They differ in size, the skill-set they possess as given by EB member's education and past experience, their composition as given by the share of women, the poor, disabled and religious minority groups on the executive body. In addition, there might be unobservable individual characteristics as well as unobservable group dynamics, which may emerge as EB members get together to make collective decisions. For example, individuals who are introvert by nature may find it difficult to express their opinion in the presence of a large number of people. Likewise, members from marginalized groups of the community may perceive themselves as outsiders, and therefore may shy away from sharing their views openly, particularly if these views differ from the mainstream point of view.

If such factors are present and correlated with individual preferences, then the results we have obtained so far, on the relationship between individual and group preferences will only be correlational rather than causal in nature. In view of this, it is important to investigate the relationship between individual and group preferences while keeping these factors constant, in order to establish that the estimates we obtain in this regression are not an artefact of group characteristics. Furthermore, observable group characteristics can in some cases serve as a proxy for unobservable factors. So, controlling for observables characteristics can help towards mitigating the issue of unobservable factors, though it cannot be resolved completely.

We regress group preferences on individual preferences of EB members at different percentiles of the preferences distribution, while controlling for spread of individual preferences, group characteristics which include ratio of members who are males, ratio of members living in un-cemented houses, ratio of members who have completed high school or more, ratio of members who have been serving on the executive body for a duration of 1 year or longer, ratio of members who spoke continuously while collective decisions were being made, ratio of members who suffer from disabilities, ratio of members who belong to religious minority groups, ratio of members who have past experience of either contesting for a seat or of serving in the local or district government and finally ratio of members who have retired, who are unemployed and who are students. We also control for group size and region fixed effects. The results are shown in Table A.7 (column 1 shows risk while column 2 contains time regression results). The significance of individual risk preferences of the median member (column 1, Table A.7) and individual time preferences of the median and the member on the next quintile (column 2, Table A.7) in determining collective risk and inter-temporal decisions remains robust even after controlling for a wide range of organisational characteristics. Furthermore, none of these characteristics explain how group decisions are made in these organisations, except for the degree to which members communicate with each other during the process of collective decision-making.

5.4   Personal Characteristics and Representation in Group Decisions

In this section, we present results to show how personal characteristics affect representation of EB member's individual choices in collective decisions. We do this, after controlling for EB member's relative position within the group as given by whether his individual preferences are unique or shared with other members in the preference distribution. This analysis is motivated by the same consideration as the one underlying our work in section 5.2. Power structures prevalent in rural settings may grant a higher social status to some members on the basis of their personal characteristics, irrespective of their position in the preference distribution. For instance, rural societies tend to be patriarchal in nature elevating males to a higher position compared to females. Social exclusion of females is widely acknowledged and has called for initiatives such as mandated representation and quotas for females in local governments, female-targeted lending in the microfinance sector, cash transfer programs conditional on recipients being females etc. Apart from gender, other characteristics, such as a person's socio-

31

economic status (given by wealth, education and occupation), past experience, caste and ethnicity may also elevate status in the group, thus making the person influential during collective decision-making. For example, in rural India, dominant caste and land ownership status gives democratically elected local village leaders the power to maintain deep rooted patron-client relationships which divert development resources from the poor majority to minority elite groups (Anderson, Francois and Kotwal, 2015).

We estimate equations (8) and (9) for risk and time data, with results shown in Table 11. For both experiments, we find that the relationship between relative position and distance of individual preferences from the group choice is not symmetric. This is shown by the fact that coefficients on position variables, $p_g^{(4)}$ and $p_g^{(5)}$, of members at the 75th and 100th percentiles, i.e. those who made more risky and more patient choices than the median member are significant, while position variables, $p_g^{(1)}$ and $p_g^{(2)}$, of their counterparts at 0 and 25th percentile are mostly insignificant (Table 11).

Moreover, members with more risky and more patient choices than the median member, have lower representation in collective decisions, as shown by a larger predicted distance between their individual preferences and the group choice, relative to their counterparts with less risky and less patient individual choices than the median (Table 12).

Characteristics of executive body members hardly explain how far their individual choices are from the group decision. This is evident from the marginal increase in R square in the risk and time regression, 2.7 and 3 percent respectively when personal characteristics are included in the model (columns 2 and 4, Table 11). This can also be inferred from the insignificant coefficients on almost all variables capturing personal characteristics (columns 2 and 4, Table 11). Some exceptions to this are EB member's gender and degree of communication during the group discussion in the risk regression (column 2, Table 11) and whether the member serves as the treasurer or has any past experience of contesting or serving in the local government in the time regression (column 4, Table 11). While the gender dummy variable is significant in the risk regression, it does not seem like being male substantially increases a member's chances of being better represented in collective risk decisions. This is evident from the almost equal magnitude of the predicted distance between group and individual preferences for a male and a female median member in mixed gender organisations (column 1, Table 13). Individual preferences of members who communicated actively while collective risk choices were being made by the executive body are better represented in the final group decision, as shown by a smaller predicted distance of median member's individual choices from the group choice (column 1, Table 13). Similarly, individual time preferences of the treasurer are closer to collective inter-temporal decisions relative to the rest of the executive body (column 2, Table 13). Finally members who have past experience of either contesting for serving in the government or have actually served in the local or district government seem to be in greater disagreement with their group's collective inter-temporal choices relative to their counterparts who do not have such an experience (column 2, Table 13).

Table 11: Impact of Personal Characteristics

Dep Var: Absolute diff. b/w group & ind. choice	Risk	Risk	Time	Time
	(1)	(2)	(3)	(4)
p1(0 percentile)	-0.0273	-0.0566	0.153	0.168
	(0.202)	(0.207)	(0.126)	(0.128)
p2 (25th percentile)	-0.152	-0.146	-0.155	-0.178*
	(0.184)	(0.178)	(0.102)	(0.101)
p4 (75th percentile)	0.912***	0.895***	0.763***	0.769***
	(0.149)	(0.152)	(0.0939)	(0.0934)
p5 (100th percentile)	2.765***	2.702***	2.333***	2.313***
	(0.184)	(0.179)	(0.113)	(0.117)
Male		0.443**		-0.0742
		(0.171)		(0.227)
Mixed TTO		-0.0171		0.105
		(0.140)		(0.185)
Male*Mixed TTO		-0.390**		0.0477
		(0.192)		(0.238)
Un-cemented house		-0.00449		-0.113
		(0.114)		(0.0947)
Richest Member (in terms of landholding)		0.106		-0.0466
		(0.101)		(0.0809)
Education of EB members in years		0.00984		0.00298
		(0.00982)		(0.00953)
President		0.0122		-0.124
		(0.0881)		(0.0975)
Treasurer		-0.0648		-0.267***
		(0.0844)		(0.0943)
Age (years)		0.00592		0.000683
		(0.00424)		(0.00449)
Time in EB (years)		0.0360		0.0263
		(0.0286)		(0.0300)
Frequency of participation		-0.143***		-0.0548
		(0.0451)		(0.0384)
Disabled		-0.286		-0.116
		(0.393)		(0.459)
Religious minority		0.287		0.215
		(0.264)		(0.214)
Past government experience		-0.0567		0.224**
		(0.0987)		(0.0974)
Retired		-0.0347		-0.0689
		(0.182)		(0.191)
Unemployed		0.135		-0.0365
		(0.115)		(0.124)
Student		0.207		0.227
		(0.330)		(0.231)
Constant	0.814***	0.959**	1.334***	1.614***
	(0.132)	(0.400)	(0.103)	(0.398)
Observations	3,273	3,227	3,273	3,227
R-squared	0.166	0.193	0.144	0.174

Notes: *, **,*** denotes significance at 10%, 5% and 1% respectively. Regressions have been estimated through OLS, and those reported in columns 2 and 4 also include group size and region fixed effects. Standard errors are shown in parenthesis and clustered at the community (i.e. Tehsil) level. The dependent variable in these regressions is the absolute difference between group and individual preferences. In columns 1 and 2, the difference is between group and individual risk preferences; measured by number of times each TTO (EB member) chose the risky funding application. In columns 3 and 4, the difference is between group and individual time preferences; measured by number of times each TTO chose the risky funding application. In columns 3 and 4, the dependent variable is group time preferences; measured by number of times each TTO (EB member) chose a larger sum of money at a later date. $p1$, $p2$, $p4$ and $p5$ denote tie-weighted position variables of EB members at 0, 25th, 75th and 100th percentile of the preference distribution. In columns 1 and 3, we only include tie-weighted position variables. In columns 2 and 4, apart from position variables, we also include intrinsic characteristics of EB members as well as size and region fixed effects. The base category for occupational status dummy variables (i.e. retired, unemployed and student) is self-employed EB members or those who work in the agricultural sector or have a private or public job. Our results remain robust, when we use landownership status of the EB member's household or the size of landholding owned by the EB member instead of a dummy variable equal to 1 is the EB member has the largest landholding within the executive body.

Table 12: Predicted Distance between Group and Individual Preferences

	Risk	Time
Member at 0 percentile: $p_g^{(1)}$	0.787	1.487
Member at 25th percentile: $p_g^{(2)}$	0.662	1.179
Median member: $p_g^{(3)}$	0.814	1.334
Member at 75th percentile: $p_g^{(4)}$	1.726	2.097
Member at 100th percentile: $p_g^{(5)}$	3.579	3.667

Notes: This table shows predicted values of the dependent variable shown in specification (8). These have been calculated on the basis of results in columns 1 and 3 of Table 11. The predicted distance between the group decision and individual preference of member at each of the 5 positions has been estimated on the assumption that the individual choice of member at that position was distinct from choices made by members at other positions in the group. For instance, a distinct choice of member at $p_g^{(1)}$ implies that this position will be assigned a weight of 1 while all other position variables will be weighted as 0.

Table 13: Predicted Distance of Median's Individual Preference from the Group Choice

	Risk	Time
Female median member in all female organisations	0.959	1.614
Male median member in all male organisations	1.402	1.539
Male median member in mixed gender organisations	0.994	1.692
Female median member in mixed gender organisations	0.941	1.719
Median member spoke nothing	0.816	
Median member spoke continuously	0.244	
Median member is not a treasurer		1.614
Median member is treasurer		1.347
Median member did not serve in local govt.		1.614
Median member served in local govt.		1.838

Notes: This table shows predicted values of the dependent variable shown in specification (9). These have been calculated on the basis of regressions results reported in columns 2 and 4 of Table 11. The predicted distance between the group decision and individual preference of the median member has only be estimated for characteristics which emerge as significant in the risk and time regression reported in columns 2 and 4 of Table 11.

These results show that after controlling for position in the preference distribution, how well individual choices of members are represented in group choices is not dependent on the member's social status in the community. We do not find group decisions to be biased against the individual preferences of members who are female, are poor, disabled, or belong to a minority religious/ethnic groups. In our setting, being part of the landed elite does not improve representation in group choices. In fact, members with connections with the local political elite, due to their past experience of serving in the government or contesting for a seat in the government have lower representation in group choices compared to EB members who do not share such connections.

5.5   Relating empirical results to extant literature

Section 5.1 revealed insights about the relationship between individual and group preferences. We found that group decisions followed individual preferences of the median member (Table 7) and that this relationship was not sensitive to the median's personal characteristics (Tables A.5 and A.6). We also found that group decisions shifted in the direction of conservatism. In other words, compared to member's individual preferences, groups were more risk averse and impatient in behaviour. While individual preferences of other EB members do not feed into the group decision directly, but they determine the median person on the basis of how their individual preferences are distributed and according to the size of their group. These results are robust to alternative estimation strategies, expansion of the sample to incorporate groups that behaved inconsistently and inclusion of various group characteristics as well as group size and region fixed effects (as shown in section 5.3). How do our results relate with existing literature? We believe that this is the first piece of work that examines how individual preferences aggregate into group preferences in local participatory groups. So, we do not have a point of comparison from the field. However, we can compare our results obtained from a framed field experiment in a natural setting with those obtained through lab experiments. Ambrus et. al. (2015) looked at individual and group lottery choices and found that individual preferences of the most risk averse member and the median member had a significant influence on the group choice. Further, they did not find evidence of a level shift in group decisions, concluding that group decisions are a linear convex combination of individual decisions. In comparison with Ambrus et. al.'s experimental results, we find that group decisions are largely determined by individual choices of the median member, that preferences of members on either extreme of the preference distribution do not matter, and that interaction in a group setting has an impact on collective decisions which is independent of member's individual preferences.

To sum up the results on the importance of personal characteristics during collective decision-making at the local level, we find that (i) after controlling for individual preferences of the median member and some members close to the median, preferences of influential members who may enjoy a higher social status in the community due to their background are not significant in determining the group decision (Tables 9 and 10), and (ii) after controlling for a member's position in the preference distribution, personal characteristics do not explain how well individual choices are represented in group choices (Table 11). Taken together these findings suggest that personal characteristics do not play a major role in collective decision-making within community-based groups at the local level. Particularly, results for specifications (2) and (3) (presented in Table 11) indicate that collective decision-making within local participatory groups operating at the union council level represents preferences of disadvantaged groups in the community (like women, the poor, the landless, the disabled, or those from minority religious groups etc.). Females are said to have different policy preferences compared to males (Edlund and Pande; 2001). In our context, if members from disadvantaged groups have different preferences compared to the advantaged, then union council level community organisations provide a means to such groups to voice their preferences, to sensitize local state institutions towards their needs, and to reduce social distance between members from different backgrounds by interacting with each other on a regular basis. In addition, by

having representation in collective decisions, members from disadvantaged groups may have the opportunity to influence project decisions, promote pro-poor investments and divert public goods and services towards marginalized groups in the community.

These results are encouraging, yet surprising. Existing work on local participatory development in the context of developing countries, has documented that social exclusion is prevalent in traditional settings along the lines of gender, wealth, class, ethnicity, religion etc. For instance, the extent to which participatory community groups are efficient and equitable is expected to depend on their composition and their geographical location (Arcand and Fafchamps, 2012). If participatory groups are based in relatively better off communities or are predominantly formed of members from the elite, a specific gender or ethnic class, then the benefits of local participatory development will be restricted to that community or group instead of permeating to those which are backward and marginalized (Platteau and Gaspart 2003). For example Arcand and Fafchamps (2012) have shown assortative matching along wealth and ethnicity in membership of community based organisations in Senegal and Burkina Faso. They find that wealthy are likely to group with the wealthy and people from the same ethnicity are likely to group together. Evidence of assortative matching in group formation has also been documented along other dimensions such as gender, age, education, occupation and religion etc. (Bar, Dekker, Fafchamps, 2012b, 2015). Mansuri (2014) found that members of village organisations in Pakistan are predominantly male, and have a higher level of education, wealth and political connections compared to non-members. Her results also support assortative matching in membership of village organisations along the lines of wealth, caste, education and political connections.

In our context if EB members are not representative of marginalized groups in the community, then it would be wrong to conclude that group decision making is inclusive within TTOs in Pakistan. It may be that this contrasting finding, relative to the available literature, may simply be an artefact of the mix of people who formed these groups. To investigate this further, we compare average characteristics of members who form community organisations with average characteristics of the community they serve (Table 14). Data for the latter comes from a representative household survey, covering approximately 7680 households, conducted in 384 villages, within 128 union councils, spanning across 18 districts. This household survey was carried out simultaneously with the TTO Survey in autumn 2014. We find that ratio of females amongst members (42 percent) is slightly smaller compared to non-members (48 percent)[12]. We think that this difference is not substantial compared to Mansuri (2014), who showed 15 percent of village organisations were mixed gender, whereas in our sample, 44 percent of organisations have both genders. On the basis of Table 14, it is not clear whether members are wealthier than non-members. On the one hand, there is a smaller ratio of members who live in un-cemented houses, but at the same time a smaller proportion of members own land compared to non-members. Also, the average size of landholding amongst EB members is approximately 1 acre smaller than that of non-members. Finally, relative to non-members, we find much lower representation of individuals with special needs and those belonging to minority religious

---

[12] Estimated by subtracting ratio of males given in Table 14 from 100.

groups but a much higher representation of educated individuals (with at least 10 years of education or more) amongst the sample of EB members.

In sum, we find that after controlling for relative position of members in the preference distribution, personal characteristics do not play a major role in determining whether individual choices are represented in group choices. Interestingly, these results are in line with Ambrus et. al. (2015) lab experimental results who found that relative position of members in the group was the most important determinant of group choices even after controlling for subject-specific fixed effects. Even though we would have expected that member's background and social status, derived from their personal characteristics would matter in a traditional setting like ours, we find that this is not the case. We do not think that these results are because union council community organisations are formed of people who do not represent marginalized segments of the community. Comparison of mean member and community characteristics showed that there

Table 14: Mean Characteristics: EB Members & Non-members from the community

| Variable | EB Members | | | | Non-members from the community | | | | |
	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max	N
Males	0.58	0.41	0	1	0.52	0.03	0.44	0.7	128
Un-cemented houses	0.31	0.34	0	1	0.46	0.29	0	1	128
Own Land	0.78	0.36	0	1	0.85	0.24	0.07	1	128
Landholding (Acres)	2.90	5.37	0	40.1	3.98	4.07	0.07	25.2	128
10 or more yrs. of Education	0.67	0.32	0	1	0.25	0.16	0	0.7	128
Disabled	0.00	0.03	0	0.3	0.10	0.07	0	0.3	128
From Minority Religion	0.02	0.12	0	1	0.09	0.17	0	1	128

is heterogeneity in their composition and that these organisations do a reasonably good job of representing some disadvantaged groups like women, poor, landless individuals but are not very representative of individuals with special needs or those from minority religious groups. These findings add to the small pool of evidence which shows that community driven initiatives may not always be subject to elite capture; that community organisations can be non-elitist in nature; with female-headed households joining with male-headed households and rich grouping with the poor (Bar, Dekker and Fafchamps, 2015), that local governments can give a voice to disadvantaged groups in society (Iyer et. al. 2012) and that community based targeting of beneficiaries can be efficient and equitable (Alatas et. al. 2012). Inclusive decision-making within community organisations is encouraging but whether it can lead to inclusive targeting and diversion of resources to pro-poor investments that would benefit disadvantaged groups in the community is a question, which requires further research.

6 Conclusion

The aim of this paper was to understand the dynamics of collective decision-making within community based groups, in rural areas of Pakistan. In particular, this study addressed two main research questions. First, how do individual preferences aggregate into group preferences? Second, is collective decision making within small groups, which operate in a traditional setting, sensitive to the background and personal characteristics of group members? In order to explore these questions, we conducted a framed field experiment, involving no real gains, with the entire population of community organisations across the country. The

experiments required members of community based groups to make organisational budget choices along two dimensions, risk and time, first individually and then then collectively through face-to-face communication.

To examine how group choices are formed, the empirical strategy entailed regressing group preferences on individual preferences of members at each quintile of the preference distribution. To study whether collective decisions are sensitive to background of members, group preferences are regressed on member's individual choices and their personal characteristics. The final part of the empirical analysis looked at how well group choices represent individual choices. This involved regressing distance of each quintile member's individual preferences from the group decision on relative position of members within the group, their personal characteristics, group size and region fixed effects. All the regressions were estimated through ordinary least squares estimation technique, with standard errors clustered at the community level.

We find that individual preferences of the median member are the sole predictor of collective choices in the risk experiment. In the time experiment, collective choices are determined by individual preferences of the median and the member on the next quintile, who made more patient individual choices than the median. These results remain robust to inclusion of a wide range of individual and organisational characteristics, group size as well as region fixed effects. Some personal characteristics of members have a significant effect on collective decisions; whether the member is male, holds an important office in the organisation, lives in an un-cemented house, has past experience in contesting or serving in the government and the extent to which the member communicated during the discussion. However, once we control for member's relative position within the group, according to whether their individual preferences are unique or shared with other group members, personal characteristics, do not play a major role in determining how well individual preferences are represented in collective decisions. These findings suggest that collective decision-making in these organisations is not biased against the preferences of marginalized groups in the community i.e. women, religious minorities, poor, youth, or those with special needs. In other words, we find that representation of individual preferences in collective decisions of community based groups in a traditional, rural setting is not sensitive to the status and background of members in the community.

These findings have an important policy implication. In developing countries, where ensuring adequate access, quantity and quality of public goods and services to the poor remains a major challenge, community based organisations, in which a small group of individuals make collective decisions for their community, can be important agents in the process of decentralized development. Since decision-making in these organisations is inclusive of preferences of poor and marginalized groups in the community, political and fiscal decentralization of resources and authority to local community groups that engage in collective decision-making, rather than a village or community leader who makes decisions individually, may reduce elite capture, enable better access to social safety schemes, and improve equality within rural communities.

Appendix A

A.1 Robustness Checks

Table A.1: Poisson and Negative Binomial Regression Estimates

Dependent Variable: Group Preferences				
	Risk	Risk	Time	Time
	(1)	(2)	(3)	(4)
		Negative		Negative
	Poisson	Binomial	Poisson	Binomial
VARIABLES	Regression	Regression	Regression	Regression
$x1$ (0 percentile)	0.0119	0.0105	0.0289	0.0365
	(0.0555)	(0.106)	(0.0353)	(0.0396)
$x2$ (25th percentile)	0.0143	0.0975	0.0584	0.0441
	(0.0517)	(0.0964)	(0.0396)	(0.0410)
$x3$ (50th percentile)	0.162***	0.196***	0.0902**	0.115***
	(0.0487)	(0.0498)	(0.0421)	(0.0443)
$x4$ (75th percentile)	0.0634	0.0544	0.0718*	0.0809*
	(0.0560)	(0.0536)	(0.0376)	(0.0425)
$x5$ (100th percentile)	0.0483	0.0459	0.0307	0.0262
	(0.0443)	(0.0460)	(0.0303)	(0.0337)
Constant	0.608***	0.815***	0.309*	0.277*
	(0.138)	(0.149)	(0.161)	(0.157)
Alpha(Dispersion Parameter)		0.891***		-0.168
		(0.127)		(0.149)
Observations	652	652	652	652
Predicted Group Choice	1.208	1.683	0.824	0.938

Notes: *, **, *** denotes significance at 10%, 5% and 1% respectively. Standard errors are shown in parenthesis and clustered at the community (i.e. Tehsil) level. In columns 1 and 2, the dependent variable is group risk preferences; measured by number of times each TTO chose the risky funding application. In columns 3 and 4, the dependent variable is group time preferences; measured by number of times each TTO chose to receive a larger sum of money in the distant future. $x1$, $x2$, $x3$, $x4$, and $x5$ denote individual preferences of members at 0, 25th, 50th, 75th and 100th percentile of the preference distribution. Individual preferences are measured in the same manner as group preferences; number of times each member chose the risky funding application in the risk experiment and number of times each member opted for a larger sum of money in the distant future in the time experiment. Predicted group preferences have been estimated using parameter estimates from the regression and mean individual preferences, which are approximately equal to 2 in both experiments.

Table A.2: Incorporating Inconsistent Preferences

Dependent Variable: Group Preferences

	Risk		Time	
	(1)	(2)	(3)	(4)
	With First	With Last	With First	With Last
VARIABLES	Switch	Switch	Switch	Switch
$x1$ (0 percentile)	0.0941	0.0195	0.0339	0.0687
	(0.227)	(0.224)	(0.120)	(0.124)
$x2$ (25th percentile)	0.0613	0.176	0.111	0.120
	(0.192)	(0.184)	(0.108)	(0.115)
$x3$ (50th percentile)	0.290***	0.348***	0.213**	0.225***
	(0.101)	(0.109)	(0.0906)	(0.0850)
$x4$ (75th percentile)	0.0345	0.0903	0.187**	0.123**
	(0.0610)	(0.0810)	(0.0723)	(0.0568)
$x5$ (100th percentile)	0.0378	0.0207	0.0123	0.0165
	(0.0395)	(0.0516)	(0.0513)	(0.120)
Constant	0.365***	0.503***	0.814***	0.830***
	(0.0776)	(0.082)	(0.13)	(0.141)
Observations	767	767	767	767
R-squared	0.159	0.148	0.166	0.175
Predicted Group Choice	1.40	1.81	1.93	1.94

Notes: *, **, *** denotes significance at 10%, 5% and 1% respectively. Regressions have been estimated through OLS. Standard errors are shown in parenthesis and clustered at the community (i.e. Tehsil) level. In columns 1 and 2, the dependent variable is group risk preferences; measured by number of times each TTO chose the risky funding application. In columns 3 and 4, the dependent variable is group time preferences, measured by number of times each TTO chose to receive a larger sum of money in the distant future. $x1$, $x2$, $x3$, $x4$, and $x5$ denote individual preferences of members at 0, 25th, 50th, 75th and 100th percentile of the preference distribution. Individual preferences are measured in the same manner as group preferences; number of times each member chose the risky funding application in the risk experiment and number of times each member opted for a larger sum of money in the distant future in the time experiment. These results include sample of TTOs that switched multiple times while making group decisions. In columns 1 and 3, group preferences of organisations, which behaved inconsistently, have been corrected by considering their first switch from the risky to safe funding application (in the risk experiment) and from money after 1 year to money after 2 years (in the time experiment) as the final switch. In columns 2 and 4, preferences of organisations with inconsistent choices have been corrected by considering their last switch as the final switch. Predicted group preferences have been estimated using OLS regression estimates and mean individual preferences, which are approximately equal to 2 in both experiments.

Table A.3: Testing for Selection Bias

Dependent variable: Dummy =1 if group behaved inconsistently, 0 otherwise	Risk Data	Time Data
	(1)	(2)
$x1$ (0 percentile)	-0.0191	-0.0211
	(0.0351)	(0.0285)
$x2$ (25th percentile)	0.0128	0.0108
	(0.0254)	(0.0222)
$x3$ (50th percentile)	0.0173	0.00785
	(0.0185)	(0.0130)
$x4$ (75th percentile)	0.0145	0.0171
	(0.0151)	(0.0182)
$x5$ (100th percentile)	-0.00972	-0.00915
	(0.0227)	(0.0249)
Std. dev of individual preferences	0.00514	0.0105
	(0.0657)	(0.0790)
Ratio of males	0.00930	-0.00545
	(0.0566)	(0.0636)
Ratio of members in un-cemented houses	-0.0699	0.0138
	(0.0566)	(0.0569)
Std. dev of landholding	-0.00141	0.00104
	(0.00201)	(0.00175)
Ratio of members with 10 years of education or more	-0.0861	-0.124
	(0.0668)	(0.0824)
Served 1 year or more on the executive body	0.105**	0.105*
	(0.0490)	(0.0535)
Ratio of members spoke continuously during discussion	-0.101*	-0.109**
	(0.0606)	(0.0480)
Ratio of EB members with disabilities	0.850**	0.792
	(0.367)	(0.496)
Ratio of EB members from religious minority groups	-0.182	-0.160
	(0.118)	(0.110)
Ratio of EB members who contested for/served in government	0.0461	-0.0747
	(0.0488)	(0.0513)
Ratio of EB members; retired	-0.0536	-0.00544
	(0.125)	(0.110)
Ratio of EB members; unemployed or house work	0.0300	0.0194
	(0.0645)	(0.0740)
Ratio of EB members; students	0.145	0.0902
	(0.206)	(0.204)
Constant	0.141	0.210*
	(0.0911)	(0.126)
Observations	767	767
R-squared	0.107	0.101

Notes: *,**,*** denotes significance at 10%, 5% & 1%. Clustered standard errors at community level are in brackets. All regressions also include group size and region fixed effect dummy variables.

Table A.4: Comparison of mean characteristics: (median members versus those at other percentiles of the preference distribution)

	Risk	Time
Education		
Average years of education (Median)	10.4	10.1
Average years of education (Other Quintile members)	10.2	10.4
t test to check equality of means	0.114	0.851
Average Landholding		
Average Landholding (Median Member) acres	4.5	4.3
Average Landholding (Other Quintile members) acres	4.2	4.4
t test	0.632	0.515
Age		
Average Age (Median Member) - years	38.5	38.3
Average Age (Other Quintile members) - years	38.9	38.7
t test	0.837	0.957
Time in Executive Body		
Average Time since in EB (Median Member) - years	2.59	2.59
Average Time in EB(Other Quintile members) - years	2.57	2.62
t test	0.912	0.912
Participation during the group discussion*		
Average Frequency of Participation (Median Member)	3.77	3.76
Average Frequency of Participation (Other Quintile members)	3.82	3.81
t test	0.465	0.790

*Participation was observed and ranked on a scale of 1 to 5, where 1 denotes EB member staying quiet throughout the discussion while 5 denotes EB member talking continuously during the discussion.

	Risk Data		Time Data	
	Number	Percent	Number	Percent
Median member is male	194	64	201	66
Median member is the president	64	12	84	12
Median member is the treasurer	53	10	83	12
Median member lives in un-cemented house	208	29.2	202	28.6

Table A.5: Individual Preferences versus Characteristics of Median Members
(Risk Choices)

Dependent Variable: Group Risk preferences									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
$x1$ (0 percentile)	0.0375	0.0284	0.0081	0.0253	-0.0286	0.0117	0.0294	0.0242	-0.0116
	(0.230)	(0.238)	(0.241)	(0.243)	(0.248)	(0.247)	(0.236)	(0.239)	(0.250)
$x2$ (25th percentile)	0.132	0.140	0.158	0.153	0.186	0.156	0.131	0.156	0.185
	(0.203)	(0.197)	(0.203)	(0.201)	(0.199)	(0.201)	(0.204)	(0.201)	(0.199)
$x3$ (50th percentile)	0.335***	0.319***	0.329***	0.317***	0.304***	0.322***	0.360***	0.293**	0.214
	(0.117)	(0.114)	(0.117)	(0.110)	(0.103)	(0.109)	(0.130)	(0.114)	(0.151)
$x4$ (75th percentile)	0.0609	0.0671	0.0628	0.0649	0.0621	0.0699	0.0596	0.0655	0.0699
	(0.0678)	(0.0686)	(0.0678)	(0.0683)	(0.0689)	(0.0691)	(0.0694)	(0.0676)	(0.0679)
$x5$ (100th percentile)	0.0364	0.0262	0.0308	0.0286	0.0304	0.0258	0.0291	0.0252	0.0198
	(0.0438)	(0.0437)	(0.0434)	(0.0430)	(0.0435)	(0.0433)	(0.0432)	(0.0424)	(0.0428)
$x3$*Un-cemented House	-0.0138								0.0426
	(0.172)								(0.184)
Un-cemented House	-0.289*								-0.344**
	(0.149)								(0.156)
$x3$*Biggest Landowner		0.129							0.0822
		(0.185)							(0.198)
Biggest Landowner		0.365**							0.313*
		(0.160)							(0.159)
$x3$*Most Educated			0.0342						0.0404
			(0.160)						(0.171)
Most Educated			0.170						0.143
			(0.174)						(0.181)
$x3$*President				0.129					0.0915
				(0.160)					(0.173)
President				-0.272					-0.142
				(0.175)					(0.199)
$x3$*Treasurer					0.258				0.281
					(0.184)				(0.209)
Treasurer					-0.102				-0.143
					(0.267)				(0.266)
$x3$*Eldest Member						0.0893			0.0616
						(0.219)			(0.233)
Eldest in age						-0.346			-0.370*
						(0.212)			(0.213)
$x3$*Longest Serving							-0.0374		0.00731
							(0.140)		(0.141)
Longest serving							-0.107		-0.155
							(0.134)		(0.130)
$x3$*Most active								0.132	0.120
								(0.136)	(0.142)
Most active member								-0.300**	-0.282*
								(0.134)	(0.144)
Constant	0.473***	0.457***	0.348***	0.439***	0.410***	0.452***	0.428***	0.528***	0.759***
	(0.0994)	(0.0928)	(0.106)	(0.0919)	(0.0844)	(0.0955)	(0.0899)	(0.0986)	(0.150)
Observations	652	652	652	652	652	652	652	652	652
R-squared	0.210	0.209	0.208	0.207	0.210	0.208	0.207	0.210	0.229
Predicted Group Choices (w/o characteristics)	1.68	1.62						1.63	1.71
Predicted Group Choices (with characteristics)	1.37	2.12						1.47	0.73

Notes: *, **, *** denotes significance at 10%, 5% and 1% respectively. Regressions have been estimated through OLS. Standard errors are shown in parenthesis and clustered at the community (i.e. Tehsil) level. The dependent variable in all these regressions is group risk preferences, while x represents individual risk preferences. Group and individual risk preferences are measured by number of times each TTO (EB member) chose the risky funding application. $x1$, $x2$, $x3$, $x4$, and $x5$ denote individual preferences of members at 0, 25th, 50th, 75th and 100th percentile of the preference distribution. In addition, the regressions include personal characteristics of the median member and interaction terms between median's characteristics and individual preferences ($x3$). Predicted group choices have been calculated for regressions in which characteristics of median member or their interaction with individual preferences is significant.

Table A.6: Individual Preferences versus Characteristics of Median Members (Time)

Dependent Variable: Group Time Preferences

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
$x1$ (0 percentile)	0.107	0.133	0.118	0.115	0.119	0.114	0.0866	0.108	0.0853
	(0.128)	(0.120)	(0.126)	(0.127)	(0.121)	(0.125)	(0.130)	(0.128)	(0.113)
$x2$ (25th percentile)	0.161	0.139	0.155	0.160	0.147	0.158	0.138	0.170	0.135
	(0.120)	(0.112)	(0.117)	(0.119)	(0.115)	(0.118)	(0.097)	(0.117)	(0.106)
$x3$ (50th percentile)	0.157*	0.195**	0.227**	0.201**	0.229**	0.206**	0.195*	0.221**	0.181*
	(0.0950)	(0.0953)	(0.0987)	(0.0960)	(0.0935)	(0.0940)	(0.117)	(0.103)	(0.103)
$x4$ (75th percentile)	0.130**	0.121*	0.121*	0.119*	0.128**	0.125*	0.130**	0.121*	0.137**
	(0.0654)	(0.0657)	(0.0654)	(0.0639)	(0.0645)	(0.0646)	(0.0650)	(0.0646)	(0.0688)
$x5$ (100th percentile)	0.00998	0.0168	0.0146	0.0185	0.00909	0.0150	0.0181	0.0166	0.00901
	(0.0398)	(0.0407)	(0.0410)	(0.0402)	(0.0404)	(0.0403)	(0.0408)	(0.0402)	(0.0410)
$x3$*Un-cemented	0.146								0.155
	(0.102)								(0.103)
Un-cemented	-0.518**								-0.556**
	(0.206)								(0.215)
$x3$*Biggest Landowner		0.109							0.0972
		(0.152)							(0.140)
Biggest Landowner		0.0878							0.107
		(0.282)							(0.284)
$x3$*Most Educated			-0.103						-0.0513
			(0.102)						(0.103)
Most Educated			0.0580						0.0308
			(0.210)						(0.215)
$x3$*President				0.0196					-0.0133
				(0.135)					(0.135)
President				0.208					0.229
				(0.391)					(0.408)
$x3$*Treasurer					-0.158				-0.126
					(0.134)				(0.142)
Treasurer					-0.221				-0.262
					(0.251)				(0.247)
$x3$*Eldest member						-0.0226			0.0144
						(0.115)			(0.110)
Eldest member						0.145			0.0903
						(0.248)			(0.247)
$x3$*Longest serving							0.189**		0.182**
							(0.0907)		(0.0891)
Longest serving							-0.221		-0.207
							(0.220)		(0.221)
$x3$*Most Active								-0.0688	-0.0629
								(0.0913)	(0.0917)
Most Active								-0.0231	-0.121
								(0.198)	(0.205)
Constant	0.764***	0.608***	0.593***	0.569***	0.626***	0.573***	0.635***	0.611***	0.862***
	(0.175)	(0.153)	(0.158)	(0.146)	(0.151)	(0.161)	(0.159)	(0.167)	(0.227)
Observations	652	652	652	652	652	652	652	652	652
R-squared	0.213	0.209	0.209	0.208	0.216	0.207	0.214	0.209	0.234
Predicted Group Choices (w/o characteristics)	1.89	1.82					1.77		1.96
Predicted Group Choices (with characteristics)	1.69	2.14					1.96		1.92

Notes: *, **,*** denotes significance at 10%, 5% and 1% respectively. Regressions have been estimated through OLS. Standard errors are shown in parenthesis and clustered at the community (i.e. Tehsil) level. The dependent variable in all these regressions is group time preferences, while x represents individual preferences. Group and individual time preferences are measured by number of times each TTO (EB member) chose the donor paying a larger sum of money at a later date. $x1$, $x2$, $x3$, $x4$, and $x5$ denote individual preferences of members at 0, 25th, 50th, 75th and 100th percentile of the preference distribution. In addition, the regressions include personal characteristics of the median member and interaction terms between median's characteristics and individual preferences ($x3$). Predicted group choices have been calculated for regressions in which characteristics of median member or their interaction with individual preferences is significant.

Table A.7: Controlling for Group Characteristics, Dispersion of Individual Preferences, Group Size and Region Fixed Effects

Dependent Variable: Group Preferences	Risk	Time
	(1)	(2)
$x1$ (0 percentile)	0.172	0.0427
	(0.298)	(0.180)
$x2$ (25th percentile)	0.233	0.0646
	(0.221)	(0.167)
$x3$ (50th percentile)	0.289***	0.172*
	(0.103)	(0.0900)
$x4$ (75th percentile)	-0.00958	0.185*
	(0.114)	(0.0966)
$x5$ (100th percentile)	-0.168	0.0990
	(0.175)	(0.173)
Standard deviation of individual preferences in each TTO	0.600	-0.272
	(0.570)	(0.514)
Ratio of males in TTO	0.347	0.119
	(0.254)	(0.370)
Ratio of members living in un-cemented houses	0.0575	-0.183
	(0.272)	(0.267)
SD of landholdings of EB in each TTO	0.0258*	-0.00857
	(0.0151)	(0.0143)
Ratio of EB members with high school education or more	-0.262	-0.446
	(0.346)	(0.360)
Ratio of EB members who have served 1 year or more on EB	0.400*	-0.205
	(0.222)	(0.309)
Ratio of EB members who spoke continuously during discussion	-0.750***	-0.792**
	(0.264)	(0.356)
Ratio of EB members who have disabilities	-0.818	3.390
	(1.618)	(2.701)
Ratio of EB members from religious minority groups	-0.401	0.0927
	(0.353)	(0.631)
Ratio of EB members who have contested/served in govt.	-0.164	0.424
	(0.281)	(0.265)
Ratio of EB members who have retired	-0.638	0.453
	(0.783)	(0.644)
Ratio of EB members who are unemployed or do house work	-0.00301	-0.102
	(0.338)	(0.457)
Ratio of EB members who are students	-1.355	0.330
	(1.047)	(1.044)
Constant	0.502	0.882
	(0.425)	(0.685)
Observations	652	652
R-squared	0.277	0.257

Notes: *, **,*** denotes significance at 10%, 5% & 1%. All regressions have been estimated through OLS and include group size and region fixed effect dummy variables. The dependent variable in column 1 (column 2) is group risk (time) preferences. Clustered standard errors at community level are in brackets.

A.2 Heterogeneous Effects

Table A.8: Heterogeneous effect by gender of the median member

Dependent Variable: Group Preferences		
	Risk	Time
	(1)	(2)
$x1$ (0 percentile)	0.146	0.0146
	(0.349)	(0.158)
$x2$ (25th percentile)	0.321	0.00620
	(0.318)	(0.0851)
$x3$ (50th percentile)	0.224**	0.299**
	(0.110)	(0.120)
$x4$ (75th percentile)	0.224	0.270*
	(0.194)	(0.142)
$x5$ (100th percentile)	-0.0147	-0.00656
	(0.0440)	(0.0571)
$x3$*Male	0.00872	-0.00482
	(0.182)	(0.119)
Median member is male	0.212	0.106
	(0.192)	(0.322)
Constant	0.154	0.681**
	(0.155)	(0.316)
Observations	285	285
R-squared	0.317	0.199

Notes: *, **, *** denotes significance at 10%, 5% and 1% respectively. The regressions have been estimated through OLS only for the sub-sample of mixed gender TTOs. Standard errors are shown in parenthesis and clustered at the community (i.e. Tehsil) level. In columns 1, the dependent variable is group risk preferences; measured by number of times each TTO chose the risky funding application. In column 2, the dependent variable is group time preferences; measured by number of times each TTO chose to receive a larger sum of money in the distant future. $x1$, $x2$, $x3$, $x4$, and $x5$ denote individual preferences of members at 0, 25th, 50th, 75th and 100th percentile of the preference distribution. Individual preferences are measured in the same manner as group preferences; number of times each member chose the risky funding application in the risk experiment and number of times each member opted for a larger sum of money in the distant future in the time experiment. In addition the model includes a dummy variable equal to 1 if the median member is a male and its interaction with median's individual preferences.

Bibliography

ALATAS, V., BANERJEE, A., HANNA, R., OLKEN, B.A. and TOBIAS, J., 2012. Targeting the poor: Evidence from a field experiment in Indonesia. *The American Economic Review,* **102**(4), pp. 1206-1240.

ALDASHEV, G. and VERDIER, T., 2010. Goodwill bazaar: NGO competition and giving to development. *Journal of Development Economics,* **91**(1), pp. 48-63.

ALDERMAN, H., 2002. Do local officials know something we don't? Decentralization of targeted transfers in Albania. *Journal of public Economics,* **83**(3), pp. 375-404.

AMBRUS, A., GREINER, B. and PATHAK, P., 2009. Group versus individual decision-making: Is there a shift. *Institute for Advanced Study, School of Social Science Economics Working Paper,* **91**.

AMBRUS, A. and PATHAK, P.A., 2011. Cooperation over finite horizons: A theory and experiments. *Journal of Public Economics,* **95**(7), pp. 500-512.

AMBRUS, A., GREINER, B. and PATHAK, P.A., 2015. How individual preferences are aggregated in groups: An experimental study. *Journal of Public Economics,* **129**, pp. 1-13.

ANDERSEN, S., HARRISON, G.W., LAU, M.I. and RUTSTRÖM, E.E., 2006. Elicitation using multiple price list formats. *Experimental Economics,* **9**(4), pp. 383-405.

ANDERSON, S., FRANCOIS, P. and KOTWAL, A., 2015. Clientelism in Indian villages. *The American Economic Review,* **105**(6), pp. 1780-1816.

ARCAND, J. and FAFCHAMPS, M., 2012. Matching in community-based organizations. *Journal of Development Economics,* **98**(2), pp. 203-219.

ARROW, K.J., 1951. Social choice and individual values.(Cowles Commission Mongr. No. 12.). .

BAKER, R.J., LAURY, S.K. and WILLIAMS, A.W., 2008. Comparing Small-Group and Individual Behavior in Lottery-Choice Experiments. *Southern Economic Journal,* **75**(2), pp. 367-382.

BANO, M., 2012. *Breakdown in Pakistan: How aid is eroding institutions for collective action.* Stanford University Press.

BANO, M., 2008. Dangerous correlations: Aid's impact on NGOs' performance and ability to mobilize members in Pakistan. *World Development,* **36**(11), pp. 2297-2313.

BARDHAN, P., 2002. Decentralization of governance and development. *The journal of economic perspectives,* **16**(4), pp. 185-205.

BARDHAN, P. and MOOKHERJEE, D., 2006. Decentralisation and accountability in infrastructure delivery in developing countries. *The Economic Journal,* **116**(508), pp. 101-127.

BARDHAN, P. and MOOKHERJEE, D., 2005. Decentralizing antipoverty program delivery in developing countries. *Journal of public economics,* **89**(4), pp. 675-704.

BARR, A., DEKKER, M. and FAFCHAMPS, M., 2015. The formation of community-based organizations: an analysis of a quasi-experiment in Zimbabwe. *World Development,* **66**, pp. 131-153.

BARR, A., DEKKER, M. and FAFCHAMPS, M., 2012. Bridging the gender divide: an experimental analysis of group formation in African villages. *World Development,* **40**(10), pp. 2063-2077.

BARR, A., DEKKER, M. and FAFCHAMPS, M., 2012. Who shares risk with whom under different enforcement mechanisms? *Economic Development and Cultural Change,* **60**(4), pp. 677-706.

BINSWANGER, H.P., 1980. Attitudes toward risk: Experimental measurement in rural India. *American Journal of Agricultural Economics,* **62**(3), pp. 395-407.

BORNSTEIN, G. and YANIV, I., 1998. Individual and group behavior in the ultimatum game: Are groups more "rational" players? *Experimental Economics,* **1**(1), pp. 101-108.

BRANDTS, J. and SCHRAM, A., 2001. Cooperation and noise in public goods experiments: applying the contribution function approach. *Journal of Public Economics,* **79**(2), pp. 399-427.

BRICK, K., VISSER, M. and BURNS, J., 2012. Risk aversion: experimental evidence from South African fishing communities. *American Journal of Agricultural Economics,* **94**(1), pp. 133-152.

BROWN, R., 1974. Further comment on the risky shift. .

BURNSTEIN, E., 1982. Persuasion as argument processing. *Group decision making,* , pp. 103-124.

CARDENAS, J.C. and CARPENTER, J., 2008. Behavioural development economics: Lessons from field labs in the developing world. *The Journal of Development Studies,* **44**(3), pp. 311-338.

CASON, T.N. and MUI, V., 1997. A laboratory study of group polarisation in the team dictator game. *The Economic Journal,* **107**(444), pp. 1465-1483.

CHARNESS, G., KARNI, E. and LEVIN, D., 2007. Individual and group decision making under risk: An experimental study of Bayesian updating and violations of first-order stochastic dominance. *Journal of Risk and Uncertainty,* **35**(2), pp. 129-148.

CHARNESS, G. and SUTTER, M., 2012. Groups make better self-interested decisions. *The Journal of Economic Perspectives,* **26**(3), pp. 157-176.

CHATTOPADHYAY, R. and DUFLO, E., 2004. Women as policy makers: Evidence from a randomized policy experiment in India. *Econometrica,* **72**(5), pp. 1409-1443.

COMPTE, O. and JEHIEL, P., 2010. Bargaining and majority rules: A collective search perspective. *Journal of Political Economy,* **118**(2), pp. 189-221.

D'ESPALLIER, B., GUÉRIN, I. and MERSLAND, R., 2011. Women and repayment in microfinance: A global analysis. *World Development,* **39**(5), pp. 758-772.

DAVE, C., ECKEL, C.C., JOHNSON, C.A. and ROJAS, C., 2010. Eliciting risk preferences: When is simple better? *Journal of Risk and Uncertainty,* **41**(3), pp. 219-243.

DOWNS, A., 1957. An economic theory of political action in a democracy. *The journal of political economy,* , pp. 135-150.

DUFLO, E., 2003. Grandmothers and granddaughters: old-age pensions and intrahousehold allocation in South Africa. *The World Bank Economic Review,* **17**(1), pp. 1-25.

DUGGAN, J., 2000. A bargaining model of collective choice. *American Political Science Review,* **94**(01), pp. 73-88.

ECKEL, C.C. and GROSSMAN, P.J., 2002. Sex differences and statistical stereotyping in attitudes toward financial risk. *Evolution and Human Behavior,* **23**(4), pp. 281-295.

EDLUND, L. and PANDE, R., 2002. Why have women become left-wing? The political gender gap and the decline in marriage. *Quarterly Journal of Economics,* , pp. 917-961.

FAGUET, J., 2004. Does decentralization increase government responsiveness to local needs?: Evidence from Bolivia. *Journal of public economics,* **88**(3), pp. 867-893.

FALK, A. and ICHINO, A., 2006. Clean evidence on peer effects. *Journal of Labor Economics,* **24**(1), pp. 39-57.

FERI, F., IRLENBUSCH, B. and SUTTER, M., 2010. Efficiency Gains from Team-Based Coordination—Large-Scale Experimental Evidence. *American Economic Review,* **100**(4), pp. 1892-1912.

FISCHBACHER, U., GÄCHTER, S. and FEHR, E., 2001. Are people conditionally cooperative? Evidence from a public goods experiment. *Economics letters,* **71**(3), pp. 397-404.

FOSTER, A.D. and ROSENZWEIG, M.R., 2001. Democratization, decentralization and the distribution of local public goods in a poor rural economy.

FREDERICK, S., LOEWENSTEIN, G. and O'DONOGHUE, T., 2002. Time discounting and time preference: A critical review. *Journal of economic literature,* **40**(2), pp. 351-401.

GALARZA, F., 2009. Choices under risk in rural Peru.

HARRISON, G.W., LAU, M.I. and WILLIAMS, M.B., 2002. Estimating individual discount rates in Denmark: A field experiment. *The American Economic Review,* **92**(5), pp. 1606-1617.

HARRISON, G.W. and RUTSTROM, E.E., 2008. RISK AVERSION IN THE LABORATORY.

HARRISON, G.W., LAU, M.I., RUTSTRÖM, E.E. and TARAZONA-GÓMEZ, M., 2013. Preferences over social risk. *Oxford Economic Papers,* **65**(1), pp. 25-46.

HOLT, C.A. and LAURY, S.K., 2002. Risk aversion and incentive effects. *American economic review,* **92**(5), pp. 1644-1655.

IYER, L., MANI, A., MISHRA, P. and TOPALOVA, P., 2012. The power of political voice: women's political representation and crime in India. *American Economic Journal: Applied Economics,* **4**(4), pp. 165-193.

JACOBSON, S. and PETRIE, R., 2009. Learning from mistakes: What do inconsistent choices over risk tell us? *Journal of Risk and Uncertainty,* **38**(2), pp. 143-158.

JOHNSON, S., 2004. Gender norms in financial markets: Evidence from Kenya. *World Development,* **32**(8), pp. 1355-1374.

KARLAN, D.S., 2005. Using experimental economics to measure social capital and predict financial decisions. *The American Economic Review,* **95**(5), pp. 1688-1699.

KIRBY, K.N., GODOY, R., REYES-GARCÍA, V., BYRON, E., APAZA, L., LEONARD, W., PÉREZ, E., VADEZ, V. and WILKIE, D., 2002. Correlates of delay-discount rates: Evidence from Tsimane' Amerindians of the Bolivian rain forest. *Journal of Economic Psychology,* **23**(3), pp. 291-316.

KOCHER, M., STRAUß, S. and SUTTER, M., 2006. Individual or team decision-making—Causes and consequences of self-selection. *Games and Economic Behavior,* **56**(2), pp. 259-270.

KUGLER, T., BORNSTEIN, G., KOCHER, M.G. and SUTTER, M., 2007. Trust between individuals and groups: Groups are less trusting than individuals but just as trustworthy. *Journal of Economic psychology,* **28**(6), pp. 646-657.

LEVINE, J.M. and MORELAND, R.L., 2008. *Small groups: key readings.* Psychology Press.

LEVINGER, G. and SCHNEIDER, D.J., 1969. Test of the" risk is a value" hypothesis. *Journal of personality and social psychology,* **11**(2), pp. 165.

LUHAN, W.J., KOCHER, M.G. and SUTTER, M., 2009. Group polarization in the team dictator game reconsidered. *Experimental Economics,* **12**(1), pp. 26-41.

MANSURI, G. and RAO, V., 2004. Community-based and-driven development: A critical review. *The World Bank Research Observer,* **19**(1), pp. 1-39.

MASCLET, D., COLOMBIER, N., DENANT-BOEMONT, L. and LOHEAC, Y., 2009. Group and individual risk preferences: A lottery-choice experiment with self-employed and salaried workers. *Journal of Economic Behavior & Organization,* **70**(3), pp. 470-484.

MENG, X. and ZHANG, L., 2011. Democratic participation, fiscal reform and local governance: Empirical evidence on Chinese villages. *China Economic Review,* **22**(1), pp. 88-97.

MORDUCH, J., 1999. The microfinance promise. *Journal of economic literature,* **37**(4), pp. 1569-1614.

MORONE, A. and TEMERARIO, T., 2015. Eliciting Preferences Over Risk: An Experiment.

PLATTEAU, J. and GASPART, F., 2003. The risk of resource misappropriation in community-driven development. *World Development,* **31**(10), pp. 1687-1703.

PLATTEAU, J. and GASPART, F., 2003. The risk of resource misappropriation in community-driven development. *World Development,* **31**(10), pp. 1687-1703.

RABIE, J., 1982. The effects of intergroup competition and cooperation on intragroup and intergroup relations. *Cooperation and helping behavior: Theories and research,* , pp. 123-149.

SCHOPLER, J. and INSKO, C.A., 1992. The discontinuity effect in interpersonal and intergroup relations: Generality and mediation. *European review of social psychology,* **3**(1), pp. 121-151.

SHUPP, R.S. and WILLIAMS, A.W., 2008. Risk preference differentials of small groups and individuals. *The Economic Journal,* **118**(525), pp. 258-283.

STONER, J., 1961. A comparison of individual and group decisions under risk. *Unpublished Master's Thesis, Massachusetts Institute of Technology, School of Management,* .

VOORS, M.J., NILLESEN, E.E., VERWIMP, P., BULTE, E.H., LENSINK, R. and VAN SOEST, D.P., 2012. Violent conflict and behavior: a field experiment in Burundi. *The American Economic Review,* **102**(2), pp. 941-964.

WILCOX, N.T., 2008. Stochastic models for binary discrete choice under risk: A critical primer and econometric comparison. *Risk aversion in experiments,* **12**, pp. 197-292.

ZHANG, J. and CASARI, M., 2012. How groups reach agreement in risky choices: an experiment. *Economic inquiry,* **50**(2), pp. 502-515.

ZHANG, X., FAN, S., ZHANG, L. and HUANG, J., 2004. Local governance and public goods provision in rural China. *Journal of Public Economics,* **88**(12), pp. 2857-2871.