Religious identity and altruistic giving: A field experiment with children in India

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Abstract

We use a charitable experiment to study altruistic motivations among children living in Mumbai, India. Using structural estimation of the utility function, we disentangle warm-glow and pure altruism motives. In light of historical clashes between Hindu and Muslim religious groups, we further study whether those motivations change when the beneficiary is of the same or different religious identity. We find that warm-glow is the most important motivation. However, this motive is less important for teenagers who display a relatively higher degree of pure altruistic preferences than younger children. Participants show a higher degree of warm-glow and total altruism towards out-group than in-group members. Other factors such as religiosity and father's altruistic giving are positively correlated with the relative degree of warm-glow giving.

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1 Introduction

There is substantial generosity across the world (CAF, 2018). About 50 percent of the population offer help to strangers, almost 30 percent donated money, and 20 percent volunteered their time. According to the World Bank, in 2018, remittances accounted for US$689 billion, while US$27 billion was invested in humanitarian assistance. Therefore to design policies that encourage increased charitable behavior, it is important to understand why people voluntarily contribute and engage in charitable behavior.

Two prominent explanations for charitable behavior are provided. On the one hand, the theory of pure altruism assumes that individual donations are motivated solely by the interest in the welfare of the recipient (Becker, 1976). This theory implies that third-party contributions generate a one-to-one crowding out in donations (Warr, 1982). On the other hand, Andreoni (1990) proposed that donations are also motivated by warm-glow or the utility that the donor experiences from contributing. Hence, as donations are motivated by an egoistic motive, there is no perfect crowding out of third-party donations.

This paper makes two contributions to existing research. First, we examine how pure altruism and warm-glow motivations vary with the cognitive development of children. Second, we investigate how those motivations are affected by the identity of the recipient. Ample empirical evidence has identified that individuals display parochial altruism, discriminating in favor of in-groups and against out-groups (Bernhard et al., 2006; Corr et al., 2015; Willard, 2017; Chiang and Wu, 2015; Fehr et al., 2013). We trace the origins of identity based discrimination by investigating the motivations for giving to different groups and how those motivations change with age.

The context of our study is Mumbai, India. During the last decade, Mumbai, among other cities, has experienced extensive communal violence between two main religious groups- Hindus and Muslims. In addition to mass rioting, there is evidence of systematic institutional discrimination toward Muslim minorities in economic and social spheres (e.g., access to public goods (Banerjee et al., 2005), exclusion in education and labor markets (Deshpande and Sharma, 2016; Sachar, 2006), and lack of economic mobility (Asher et al., 2018)). Therefore, this context provides a backdrop to study the role of deeply rooted and salient identities in social preferences. Particularly, we study its impact among school age children between 7 and 17 years.

To disentangle the role of pure altruism and warm-glow, we invite children to complete a survey on educational aspirations and pay them in the form of school materials. We then ask them if they would be willing to donate part of the materials they received to support a charity that works with disadvantaged children. Following Ottoni-Wilhelm et al. (2017), we present to each participant six scenarios that vary in the value received by the donor and the value that we as researchers donate to the charity. This allows us to disentangle the role of pure altruism and warm-glow using a structural estimation of the utility function.

To study the role of parochialism on altruistic preferences, we use a between subjects design that

varies the frame used to present the charity. In the control treatment, donors receive a flyer of the charity that contains pictures of the beneficiary organization's library. The other two treatments present pictures of school-age beneficiary children who are either Hindu or Muslim. To compare the effect of in-group and out-group discrimination, we conduct the experiment in schools with a majority Hindu or Muslim population.

We find that warm-glow preference is the most important motivation of giving among younger children. However, the relative importance of warm-glow decreases with age while the importance of pure altruism increases. For the older cohort, and parents, pure altruism and warm-glow are equally important. We find that the motivations for giving depend on the identity of the beneficiary and participants display higher degree of altruism towards out-group than the in-group. This is mainly explained by higher warm-glow towards the out-group. Children younger than 13 years display significantly higher degree of warm-glow towards the out-group than the in-group. In addition to children's altruistic preferences, we also measure the warm-glow and pure altruistic motivations of their parents. We find a high degree of correlation between the altruistic preferences of parents and their children. However, parents display lower degree of altruism than their children both in terms of pure altruism and warm-glow.

We contribute to the empirical literature that investigates the motivations of voluntary giving. Previous papers tested theories of pure altruism (Ribar and Wilhelm, 2002; Eckel and Grossman, 2005; Bolton and Katok, 1998), warm-glow (Crumpler and Grossman, 2008), or a combination of both (Tonin and Vlassopoulos, 2014; Konow, 2010). The closest paper to ours is Ottoni-Wilhelm et al. (2017), who uses a lab experiment and a structural estimation of the utility function to not only disentangle different motivations of giving but also provide evidence of interdependence in social preferences. We contribute to this literature by investigating how both warm-glow and pure altruism vary toward recipients of different identities, and also how those motivations vary for children of different age groups.

A relatively large body of literature has documented in-group favoritism and out-group discrimination (Kranton, 2016; Dotterer and Lowe, 2015). Similar to Bauer et al. (2014) and Fehr et al. (2013), we consider how norms of discrimination develop in children. We complement this research by investigating whether discrimination is associated with different norms of altruism. The emphasis of our study is religious discrimination and identity in India.

2 Literature Review

The notion that norms of altruism affect behavior can be traced back to Adam Smith, who wrote in the *Theory of Moral Sentiments (1976)*: "However selfish man may be supposed, there are evidently some principles in his nature, which interest him in the fortune of others, and render their happiness necessary to him, though they derive nothing from it except the pleasure of seeing it." Such a sympathy-driven

motivation for voluntary acts was also propounded by Arrow (1977) and Sen (1977; 1985).

Becker (1976) formalized this idea as a pure altruistic motive in which the utility of giving increases with the increase in the social income i.e., the total income of both the donor and the recipient.[2] Bergstrom et al. (1986), and Warr (1983) show that this motivation for giving generates a one-to-one crowding out when donations of a third party increase. However, contradicting this proposition, empirical data revealed that any government grant did not result in the complete crowding out of private transfers, but instead, people continued to donate (De Wit et al., 2017; De Wit and Bekkers, 2017; Kingma, 1989).

An explanation on why complete crowding out did not occur was provided in Andreoni (1990)'s impure altruism model. He proposed that voluntary giving was associated with both a pure altruistic motivation and a warm-glow motivation. The latter was related to the utility that individuals derive from the act of giving. One implication of warm-glow giving is that individuals would donate irrespective of government grants, or any other third-party. A series of studies followed Andreoni proving the non-existence of the complete crowding out hypothesis. An earlier study by Ribar and Wilhelm (2002) reviewed this theory using experiments in the lab and actual donations by people to real charities. They found that despite a large membership base of charities, people continued to donate. Thus, an increase in the number of members and donations to the charity increased individual contributions, supporting a warm-glow motivation of giving.

Eckel and Grossman (2005) – EGJ – introduced a novel method to disentangle this warm-glow motivation. They varied the degree of fiscal illusion by making one group aware that a tax had been deducted from their earnings to benefit the charity, while the other treatment group was unaware of the tax deductions for a charity. EGJ find when participants are unaware of the tax deductions, there was incomplete crowding out, rejecting the null hypothesis of pure altruism. However, when there was no fiscal illusion regarding the tax, the results were close to a complete crowding out. Crumpler and Grossman (2008) – CG – implemented another method to isolate and measure warm-glow giving. Participants donated to a charity of their choice; however, the amount that the charity received was fixed ex-ante. The researcher would complement any amount donated by the participant to fulfill the criteria of the fixed amount. A pure altruistic individual would not donate any amount (since donating would not impact the total amount of the charity good and further reduce the social income i.e, the sum of its income and the charity's income). A pure warm-glow individual would donate despite the crowding effect that this would generate on the research team's donations. The results showed extensive warm-glow motivations, wherein 57 percent of the participants donated and, on average, the donations amounted to 20 percent of their endowment. Similarly, Tonin and Vlassopoulos (2014) found support for the warm-glow motivation. The study included an additional treatment to disentangle the experimenter demand effect by including one treatment considering recipients to be the researchers, the second treatment replicated the CG study,

[2] Therefore, if the recipient receives a transfer from a third party, the donor is expected to reduce own transfer to retain the social income, the total income of the donor and recipient.

and the third treatment tested for baseline altruistic preferences.

While the above studies test the pure altruism model, i.e., the crowding out hypothesis, following the work by Andreoni (1990) and Ottoni-Wilhelm et al. (2017), this study situates the impure altruistic model as the null hypothesis. Keeping in mind preference interdependence, our contribution to this literature is to measure the relative importance of pure altruism and warm-glow preferences in individuals. Furthermore, we observe these motivations of giving for children across different age groups. Two papers close to our study are by Liebe and Tutic (2010) and List and Samak (2013) who disentangle motivations for altruistic giving in children. Liebe and Tutic (2010) conduct an artefactual field experiment in primary schools in Germany to study the effect of social status (determined by the type of schooling – Hauptschule, Realschule, Gymnasium and private Gymnasium in increasing order of social status) on the voluntary contribution of children. They implemented dictator games and hypothesized that pure altruism is prevalent when high-status schools donate more than low-status school children and receive less than the latter. Warm-glow will persist if donations remain constant, irrespective of the income status of the recipient. The results showed support for a warm-glow preference of giving, whereby particularly students from high-status schools gave consistent amounts to both high-status and low-status recipients. Unlike them, in our study, the recipient's deservingness (socioeconomic conditions of recipient) remains constant. List and Samak (2013) measure warm-glow giving among very young children (aged three to five). They rejected warm-glow motivations of giving as children donated less to teddy bears than to other children. In our study, we are able to observe these motivations over a longer age range (7 to 17 year-olds). Unlike these two studies, we are also able to estimate the relative importance of both warm-glow and pure altruism by the structural estimation of the utility function.

Our study adds to the burgeoning literature on the development of social preferences in children which has been studied in both psychology (Fabes and Eisenberg, 1998) and economics (Fehr and Hoff, 2011). Most of the studies unanimously agree that social preferences such as inequality aversion, generosity, altruism, and fairness preferences increase with age (Gummerum et al., 2008; Harbaugh et al., 2003; Fehr et al., 2013; Angerer et al., 2015a,b; Almas et al., 2010). A recent literature review on the development of pro-sociality can be found in Fehr and Hoff (2011) and Angerer et al. (2015a). We add to this line of research by comparing the motivations for giving for children of different age groups and studying the drivers of parochialism preferences.

Apart from the importance of age, we are keen on studying how contextual factors such as recipients' identity impact the relative strength of warm-glow and altruistic giving among children. Previous studies have shown that an increase in the social distance of the recipient (from the donor) is negatively correlated with charitable giving (Roth, 1995; Hoffman et al., 1996; Bohnet and Frey, 1999; Rotemberg, 2014). The familiarity hypothesis (Konow, 2010) and the social identity theory (Tajfel and Turner, 1979) is used to explain more generous donations toward recipients who are closer in terms of identities such as race,

ethnicity or citizenship (Gangadharan et al., 2014). Apart from the importance of age, we are keen on studying how contextual factors such as recipients' identity impact the relative strength of warm-glow and altruistic giving among children. Previous studies have shown that an increase in the recipient's social distance (from the donor) is negatively correlated with charitable giving (Roth, 1995; Hoffman et al., 1996; Bohnet and Frey, 1999; Rotemberg, 2014). The familiarity hypothesis (Konow, 2010) and the social identity theory (Tajfel and Turner, 1979) is used to explain more generous donations toward recipients who are closer in terms of identities such as race, ethnicity, or citizenship (Gangadharan et al., 2014). These theories have been operationalized in lab or lab in the field experiments using either induced identities (Kranton et al., 2013; Chen and Li, 2009; Costard and Bolle, 2011; Corr et al., 2015; Ahmed, 2008; Pan and Houser, 2013) or making pre-existing identities salient (Chai et al., 2011; Goette et al., 2006; Chakravarty et al., 2016; Hoff and Walsh, 2017; Friesen et al., 2012). The studies find strong in-group favoritism or out-group discrimination among adults when the recipient's identity is revealed.[3] By making existing identities salient, Chakravarty et al. (2016) found that homogeneous religious villages have greater cooperation and Selten and Ockenfels (1998) observed more altruism and reciprocal intentions toward in-group members in various solidarity games.

The familiarity bias and social identity (Tajfel and Turner, 1979, 2019) has been observed among children from the age of five years (Banerjee et al., 2005). It was found that as children grow, they increase altruism and decrease envy/spite toward recipients who belonged to the in-groups (Friesen et al., 2012; Angerer et al., 2015a). The in-group bias is seen to be higher in regions where individuals experienced conflict. This was observed by Bauer et al. (2014) who identified children exposed to conflict and found significantly higher donations to the in-group than the out-group among those who had the most exposure to the conflict. However, none of the studies observe whether the recipient's identity impacts pure altruistic or warm-glow giving. Our study contributes to this literature as it observes how saliency of religious identities in cultural contexts where these identities are prominent can motivate pure altruism and the warm-glow preferences of giving, respectively.

In summary, our contribution to the existing research is as follows; first, we measure the relative importance of pure altruism and warm-glow as motivations for voluntary giving across three cohorts of school children aged 7 to 10, 11 to 13, and 14 to 17. Second, we study how motivations for giving change according to the identity of the recipient. Finally, we study how the children's social background and other demographic factors could affect overall altruistic giving.

[3]Kranton et al. (2013) find that participants willing to destroy the social welfare of a member from the out-group at their own cost.

3 Conceptual Model

The conceptual framework follows the empirical strategy of Andreoni (1990) and Ottoni-Wilhelm et al. (2017). Consider an economy in which individuals are endowed with wealth, w_i, that they can allocate between the consumption of a private good, x_i, and a contribution to a charity good, g_i. Let n be the total number of individuals in the economy and $G = \sum_{i=1}^{n} g_i$ the total amount of charity goods generated. Following the model of impure altruism by Andreoni (1990), the utility function can be written as:

$$U_i = U(x_i, G, g_i); \quad \forall \quad i = 1, ...n \tag{1}$$

where U is assumed to be a continuous and strictly quasi-concave function of its components. This model of impure altruism implies that the utility depends on the consumption of the private good, the total charity goods generated, and the own contribution to the charity good. Assuming a homogeneous Cobb-Douglas utility function of degree 1, Equation 1 can be written as:

$$U(x_i, G, g_i) = (1 - \alpha - \beta) \ln x_i + \alpha(\ln G) + \beta(\ln g_i) \tag{2}$$

where α $(0 < \alpha < 1)$ is the measure of pure altruism obtained from the total value of the charitable good; β $(0 < \beta < 1)$ represents the degree of warm-glow from own contribution to the charity. For a pure altruist $\alpha > 0$ and $\beta = 0$, whereas for a pure warm-glow individual $\alpha = 0$ and $\beta > 0$.

Equation 2 is subject to the budget constraint:

$$x_i = w_i - g_i; \quad \forall \quad g_i = G - G_{-i} \tag{3}$$

$$Z_i = w_i + G_{-i} \tag{4}$$

Z_i is the donor's social income (i.e combination of own income w_i and giving by others G_{-i}). Based on the utility framework of Becker (1976), Andreoni (1990), and Ottoni-Wilhelm et al. (2017), the charity good in this model has the properties of a public good, namely both non-excludability and the generation of positive externalities.[4]

Substituting the budget constraint 3 in Equation 2, the donor's maximization problem can be written as:

$$max \quad U = (1 - \alpha - \beta) \ln[Z_i - G] + \alpha \ln G + \beta \ln[G - G_{-i}] \tag{5}$$

The first order conditions can be solved for the implicit demand functions for the total amount of public

[4]We assume that a third-party contribution to the charity good creates a positive externality on the donor who gains utility even when they do not contribute on their own for the same good.

good:

$$G^* = (-1)\frac{1-\alpha-\beta}{Z_i - G} + \frac{\alpha}{G} + \frac{\beta}{G - G_{-i}} = 0 \tag{6}$$

In terms of the individual's giving, the predictions of warm-glow and pure altruism within an impure altruism model can be rewritten as:

$$g_i^* = -G_{-i} + 0.5[(1-\beta)G_{-i} + (\alpha+\beta)Z_i + \{[(1-\beta)G_{-i} + (\alpha+\beta)Z_i]^2 - 4\alpha G_{-i}Z_i\}^{1/2}] \tag{7}$$

Assuming a Cobb-Douglas utility function, the model tests the null hypothesis of impure altruism such that a) $\alpha+\beta \to 1$ and an increase in giving by others increases own optimal giving. b) the warm-glow parameter β is greater than 0 and increasing, showing evidence of no complete crowd-out.

To test for the impure altruism model, we use Ottoni-Wilhelm et al. (2017)'s experiment design as explained with detail in the next section.

4 Experiment Design and Hypothesis

In this section, we will discuss the experiment design, hypothesis and the procedures used to implement the experiment.

4.1 Experiment Design

We implement a between-within subject design, which allows us to disentangle different altruistic giving motivations such as warm-glow and pure altruism. We implement a modified version of the within-subject design by Ottoni-Wilhelm et al. (2017) where each individual has to make six decisions as presented in Table 1. In each situation, participants receive a fixed endowment, either 40 or 46 rupees. They can donate part of their endowment to an NGO with a presence across different states in India and whose objective is to help Indian children in need. Information about the NGO was given in the form of a flyer.

As both the participant and the NGO received an endowment from the experimenters, we can analyze three main effects – subsidy, tax, and income effect at two different levels of donations from the third-party (researchers) to the charity. The subsidy effect measures the change in a participant's donation when the participant's initial endowment remains the same, but the foundation's initial donation increases by 6 units. Budgets 1 and 2 and Budgets 4 and 5 represent this case. If participants are motivated by warm-glow preferences, donations should be the same in both budget scenarios. Comparing the donation decisions in budgets 2 and 3 (5 and 6), we can examine a lump-sum tax effect. From Budget 3 to Budget 2, and Budget 6 to Budget 5, 6 units are deducted from the participant's endowment and are directly transferred to the foundation's initial donation. If participants are purely altruistic, they would reduce their transfer by 6 units, resulting in a one-to-one crowd out. Finally, we analyze an income effect

comparing budgets 1 and 3 (also budgets 4 and 6) wherein the foundation's initial donation does not change but the participant's endowment increases by 6 units.

Table 1: Experimental Budgets.

Budget	**Participant's endowment (w_i)**	**Foundation's fixed donation (G_{-i})**	**Participant's social income ($G_{-i} + w_i$)**
1	40	4	44
2	40	10	50
3	46	4	50
4	40	28	68
5	40	34	74
6	46	28	74

We modified Ottoni-Wilhelm et al. (2017) design to test the strength of warm-glow and pure altruism for different age groups and when the social identity of the recipient changes. In order to study how altruistic giving varies for different age groups, we implement the experiment with children of three age groups or cohorts; 7-10 years (youngest cohort), 11-13 years (middle cohort), and 14-17 years (oldest cohort). Using the experiment design with 6 donation decisions, we can obtain a warm-glow and pure altruism measure for each participant and compare the motivations of altruistic giving for the different cohorts.

Second, we investigate whether motivations for giving change for beneficiaries of different identities. We used a between-subjects design that varies the visual cues regarding the identity of the recipients. The selected NGO helped children across different religiously populated regions within India, allowing us to vary the identity of potential beneficiaries. In the first treatment, called 'abstract treatment,' children saw photos of a school building and a library. In the other two treatments, children saw photos of only Hindu recipients or photos of only the Muslim recipients of the NGO. We called the treatment 'in-group' if they received flyers with photos of children from their same religious group or 'out-group' if they received the flyer with pictures of children belonging to the other religious group. By inducing this experimental variation, we can assess whether participants discriminate positively or negatively towards beneficiaries of different identities relative to the abstract framework.

4.2 Hypothesis

This modified version of the Ottoni-Wilhelm et al. (2017) experiment enables us to test two hypothesis, which we discuss in this section.

Pro-sociality and altruism generally increase and occurs through sympathy for other individuals (Sen, 1977; Smith and Adam, 1759). Harbaugh et al. (2007) reveals that as children grow, they are more aware of fairness, distributive concerns, and the presence of multiple donors (Rochat et al., 2009; Fehr et al., 2013; Blake et al., 2015). Therefore, we expect that older children will be less individualistic and

more altruist. While there is sufficient empirical evidence of increasing altruism with age (Angerer et al., 2015a; Kosse et al., 2019), we go one step further and propose that older children display higher levels of warm-glow and pure altruism. On the one hand, pure altruism is concerned with evaluating the efficiency of the public good production. Hence, as evaluating the cost and benefits of giving requires high cognitive capacity, we postulate that the pure altruism parameter will be higher for older cohorts. On the other hand, warm-glow is considered a consequence of repeated socialization and is closely associated with social image concerns and preferences for following social norms. Since those capacities more prominent among adults (Banerjee, 2002; Engelmann et al., 2013, 2018), we expect that the warm-glow parameter will be non-decreasing in age.

Hypothesis 1: Pure Altruism (α) and warm-glow (β) motivations increase with age.

There is considerable theoretical (Konow, 2010; Tajfel and Turner, 1979) and empirical evidence showing a high degree of in-group favoritism in social preferences (Gangadharan et al., 2014; Kranton et al., 2013; Chakravarty et al., 2016; Chen and Li, 2009). Therefore, we expect altruistic motives will be higher towards recipients from the in-group. However, our study focuses on how warm-glow and pure altruism are affected by the recipient's identity. A warm-glow giver gains utility from her contribution to the charity good. Considering that this warm-glow is associated with status and reputational concerns, which are more relevant for the close social network, we expect individuals to have a higher degree of warm-glow towards in-group than out-group members (Vesterlund, 2003; Hungerman, 2009; Banerjee, 2002; Engelmann et al., 2018). We expect this hypothesis to hold even when warm-glow giving has non-egoistical motivations (e.g., giving is motivated by sympathy(Arrow, 1977), or a sense of commitment to the society (Sen, 1977)), as empathy decreases when the recipient is from an out-group (Konow, 2010; de Vignemont and Singer, 2006; Meyer et al., 2013; Xu et al., 2009).

Hypothesis 2: We expect both warm-glow and pure altruism to be higher toward the in-group than toward the out-group. The relative degree of warm-glow will be higher when the recipient is from the in-group compared to the out-group.

In addition to observing the age and recipient's identity effect, we consider the association of other factors with altruistic giving motivations. Factors considered are peer expectations and willingness to follow the social norm (Engelmann et al., 2013; Kosse et al., 2019; Simpson et al., 2017), religiosity Andreoni (2006); Bekkers and Schuyt (2008); Li (2017) and intergenerational transmission of altruistic giving Ben-Ner et al. (2017); Wilhelm et al. (2008); Brown et al. (2014).

4.3 Experimental Procedures

We conducted the experimental sessions in eight public schools in Mumbai.[5] To identify biased social preferences towards the in-group and out-group, we selected half of the schools with a high proportion of Hindu population. The other half was highly Muslim-dominated. We aimed to capture an extreme form of discrimination if any. As a result, we ensured that our sample came from segregated localities, particularly from areas that had experienced the riots in 1992-93. Mumbai has multiple administrative wards that are under the purview of the local municipality (BMC). Each ward has localities that are extensively segregated by religion and income. Within each ward, we selected areas that are either highly Hindu or Muslim dominant. Since we do not have information on the population composition by religion at the ward level, we selected the localities based on detailed focus group discussions with various stakeholders living in these areas.

Children from grades 4 to 10 participated in one session that lasted approximately one hour. All the sessions were conducted during regular school hours to avoid self-selection in the experiment. The children's participation was voluntary. Particularly in many Indian public schools, each class had at least three divisions due to a large number of students. We randomized the identity treatments at the division level, but the altruism elicitation was undertaken for all the students.

In each session, children completed a 30-minute survey on educational aspirations. We informed participants that all their answers and decisions would be treated and analyzed anonymously. The survey included some socio-demographic questions, a cognitive test (8 matrices of the original set of Raven's progressive matrices (Raven et al., 1998)), and some questions on expectations and aspirations from education. These questions were used for another study on expected educational returns.

After completing the survey, as a means of thanking children for their time, it was announced that each child would get some payment that could be redeemed in the form of school items such as pens, pencils, and notebooks, among others. At this point, participants were informed that they could donate part of the endowment to the NGO. The flyer informed: "The NGO helps children and gives them good schooling. They give books, pens, and pencils to the children. The children come from low-income families. Some of the children do not have homes. The NGO is in Delhi. However, they work in other parts of the country". The flyer including the pictures and the information is provided in the Appendix (7, 6 and 8).

As explained above, in each flyer, we presented different photos of the beneficiaries according to the treatment assignment. Treatment assignment was at the class level. We asked participants to complete the six donation decision shown in Table 1 directly in the flyer. In order to avoid spillover effects across classes, we collected the flyers at the end of the session. Other classed could therefore not see the different

[5] In total we have 8 schools - Maroli church (Muslim), Anjuman Islam (Muslim), Jaffri (Muslim), SIES (Hindu), Mori road(Muslim), Sewri (Hindu) and Mahalaxmi (Hindu), Amarnath (Hindu).

type of flyers.

In each situation, children knew their endowment received from completing the education survey and the initial amount that the NGO received. They had to decide on the amount (from their earnings) that they would like to give to the NGO recipients. All decisions are payment consequential as one was randomly selected to calculate payments.

At the end of this activity, each child randomly picked a colored ball from a bag with six balls that represented the six situations from Table 1. Payments were calculated in a separate room, and each child received a package with school items that corresponded to the amount they kept for themselves. To attenuate the experimenter demand effects, we implemented a double-blind format. We ensured that the enumerators handing out the gift packages were no present in the classroom and did not know which decision was selected for payment. The students received a small voucher that stated which one of the six decisions was randomly selected for payment. The student took this voucher to the enumerators outside the classroom to receive their payment. This drill was made clear to the students from the beginning of the session. One week after the sessions, surveyors returned to the schools and randomly selected around 60 percent of the children to conduct a post-experimental survey. The survey included questions regarding their religiosity and hypothetical questions such as willingness to follow a social norm and expectations regarding their peers (post-experiment survey).

We also elicit parents' pure altruistic and warm-glow preferences using a survey based experiment similar to that in Table 1). To avoid spillover effects, if they have multiple children in the school, we did not provide copies of the flyers. In addition to the parent's consent, the project received approval from the principals in each school. Moreover, we informed parents and teachers about the project's general objectives and the payments to the children. Parents could withhold their child's participation, but we did not receive any denials.

5 Results

5.1 Descriptive Statistics

Socio-demographics

In this section, we provide an insight into the socio-demographic characteristics of our sample and their decisions in the experiment. Table 2 displays the mean values for the characteristics of our sample across the three treatment groups; namely abstract, in-group and out-group. Across all three treatment groups, girls comprise of 48 percent of the sample. Children in our sample are on average 12 years-old, 50 percent of them are from the Hindu religion, and the remaining are Muslims. On average, the children have three to four siblings and travel for 12 to 13 minutes to their school. The cognition variable denotes the number of correct answers entered in the Raven's matrices test. On average, the children answered

three to four questions correctly and there is a positive correlation on performance on this test and age. The variable religiosity measures the frequency of visiting a religious shrine where 0 means never and 6 denotes every day. On average, children visited a religious shrine such as a temple or mosque a few times a month. All of the characteristics in our sample are balanced across the treatment groups. The second panel of Table 2 shows the information on the post-experiment survey where we asked the children some questions after the experiment regarding their decisions. Children allocated to the in-group treatment, on average, perceived charity to be fair and believed that the NGO might be biased toward their own in-group (variable 'NGO favors in group'). Columns 4, 5 and 6 in Table 2 display the orthogonality test and show the p-values testing whether the baseline characteristics across the treatment groups are significantly different. The columns show on average (77%) of the children in the in-group treatment believe that the NGO favors their in-group compared to 58% of the children in the out-group treatment (p=0.000). We consider this to be a sign of confirmation that our priming treatments for in-group and out-group identity worked. It should be made clear that the questions regarding the NGO and role of charity, i.e., from the variables 'Known NGO' onward, were asked in a post-experiment survey only once the children had completed their decisions and received the gifts. As a result, these questions did not frame the students before they made their donation decisions. It is worthy to note that most students across the three treatments declared that they would increase their contributions when there is a third party funding (variable: After subsidy) and when a tax is imposed on them (variable: After tax) hinting at the children's tendency to be more influenced by warm-glow giving. Finally, we asked the children for the reason why they had donated. Children said they donated across the three treatments because the recipients were poor (the options included Poor, Poor and own religion, Own religion). However, slightly more students who were in the in-group treatment said they donated because the recipients belonged to their religion, and this is significantly different across the treatment groups (see Table 2).

In addition to the main survey and the post-experiment survey, we also interviewed the children's parents and asked them a few questions. This household survey was conducted over the phone and included questions such as parents' education, monthly income, risk and time preferences (non-incentivized), subjective opinions of the parents regarding equal opportunities for all social identity groups in India. We asked parents questions on their charitable giving patterns and whether their children were aware of these donations. Finally, we conducted the same experiment on donation decisions with the parents. Descriptive statistics of parents socioeconomic characteristics and randomization tests.

Appendix Table 7, provides information on the parents' work status, the class distribution of the children across treatments, and the mode of transport used to travel to school. Considering the entire sample, 41 percent of fathers have permanent employment in offices, 24 percent are daily wage earners, 16 and 8 percent of the respondents' fathers owned a small or large business, respectively, and 71 percent of the mothers in the sample were housewives. Table 8 provides information on certain subjective beliefs of

the fathers and mothers. On average, 20 percent of fathers and mothers have experienced discrimination. Although 90 percent of our sample say they undertake charity, only 20 percent discuss their charitable giving with their children. When asked if all religious and caste groups should have equal access to education and work, only 30 percent of the sample agreed with this statement. About 60 percent of them agreed with the statement that minority religious and caste groups face discrimination at work and in education.

Table 2: Summary Statistics - Children

	(1) Control	(2) Ingroup	(3) Outgroup	(4) (1) vs. (2), p-value	(5) (1) vs. (3), p-value	(6) (2) vs. (3), p-value
Socio Demographics						
Female	0.489	0.486	0.474	0.918	0.617	0.678
	(0.021)	(0.020)	(0.020)			
Age	12.002	11.892	11.842	0.317	0.160	0.635
	(0.084)	(0.072)	(0.077)			
Hindus	0.517	0.498	0.553	0.498	0.226	0.049
	(0.021)	(0.020)	(0.020)			
Siblings	3.444	3.341	3.623	0.403	0.346	0.108
	(0.095)	(0.081)	(0.157)			
Distance to school	12.458	13.444	12.620	0.180	0.822	0.105
	(0.658)	(0.378)	(0.335)			
Nearest school	13.274	12.717	8.345	0.931	0.402	0.438
	(4.803)	(4.342)	(3.556)			
Cognition	3.486	3.403	3.431	0.384	0.565	0.771
	(0.069)	(0.065)	(0.067)			
Religiousity	3.738	3.799	3.586	0.606	0.237	0.053
	(0.095)	(0.071)	(0.084)			
Flyer	3.460	3.545	3.426	0.388	0.752	0.236
	(0.073)	(0.067)	(0.075)			
Post experimental survey						
Expectation	21.133	21.835	21.234	0.389	0.904	0.432
	(0.621)	(0.528)	(0.554)			
Familiar NGO	0.437	0.506	0.518	0.062	0.030	0.722
	(0.028)	(0.024)	(0.024)			
Charity is good	0.855	0.920	0.857	0.005	0.956	0.003
	(0.020)	(0.013)	(0.017)			
NGO favors	0.662	0.768	0.585	0.001	0.032	0.000
Ingroup	(0.027)	(0.020)	(0.024)			
Subsidy	0.075	0.113	0.112	0.104	0.110	0.993
	(0.015)	(0.016)	(0.017)			
Taxes	0.118	0.140	0.168	0.413	0.074	0.283
	(0.019)	(0.018)	(0.019)			
Follow social norm	0.153	0.139	0.155	0.620	0.935	0.538
	(0.021)	(0.018)	(0.019)			
N	547	647	626			

Mean values; Standard deviations in parenthesis. Expectation-continuous variable of own expectation regarding other's contribution; Female (0=Male) is a dummy for gender, Age- continuous variable for age; Hindu (0=Muslim) is a dummy for religion; Siblings - continuous variable as number of siblings for the respondent; Distance to school - continuous variable measured in minutes; Nearest school (1=Yes); Cognition (scale 1-6); Religiousity (scale 0 Everyday-6 Never); Familiar NGO (1=Yes) - Is the NGO known to you?; Charity is good (1=Yes); NGO favors ingroup (1=Yes); Subsidy (1=Crowdout) - Reduce giving under third party subsidy; Taxes (1=Crowdout) - Reduce giving under compulsory tax; Follow Social norm (1=Yes).

5.1.1 Charitable behavior

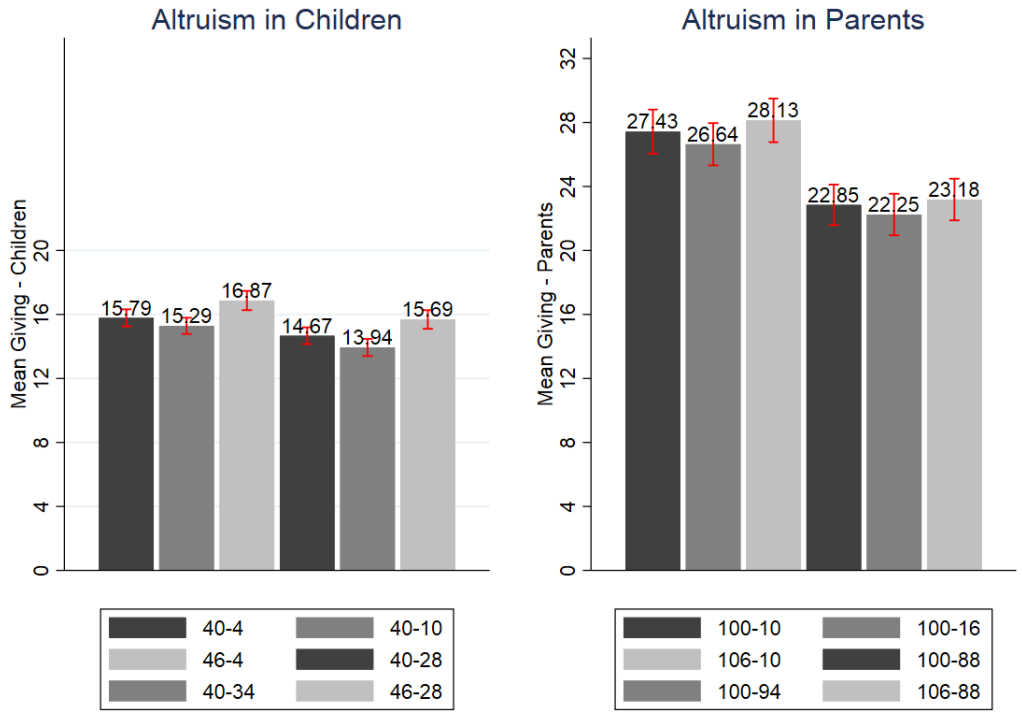
Next, we discuss the giving behavior across decisions in the game. Figure 1 presents the mean donated by children and their parents. The children's initial endowments were Rs.40 or Rs.46, while for the parents, it was either Rs.100 or Rs.106. We expect a compulsory tax to crowd out one to one private donations for a pure altruism model to hold. Comparing Budgets 3 and 2 (6 and 5), we find that a compulsory tax of 6 units decreases giving by 1.58 units and 1.75 units for low and high donations, respectively. Thus a tax in our sample results in a less than one to one crowding-out effect (Student's t-test $p<0.001$). Similarly, for the parents, a compulsory tax of 6 units reduces giving by 1.49 units and 0.93 units respectively for low and high-level donations. Contrary to Ottoni-Wilhelm et al. (2017), we find no significant difference in crowding-out between low and high levels of giving (Student's t-test $p>0.1$) for children and adults. We can reject the null hypothesis of complete crowding out (or a pure altruism model) for the parents (Student's t-test $p<0.001$).[6]

We can assess the impact of the third party 'subsidy' on donations by comparing budgets 1 and 2 (4 and 5). Under such subsidy (without changing the donor's income), the donation is expected to decrease under pure warm-glow. For children, giving decreases by 0.50 rupees and 0.73 rupees for the low and high giving by others (comparing Budget 1 and 2 and Budget 4 and 5). The difference is significantly different from zero, leading us to reject "pure" warm-glow motivations (Student's t-test $p=0.018$ and 0.0009). For the parents, an increase in one rupee from the third party significantly decreases giving by 0.78 rupees for low levels (Student's t-test $p=0.021$) and by 0.6 for high levels ($p=0.061$). From these preliminary non-parametric tests, we can already attribute the impure altruism model to reflect charitable giving motivations.[7]

[6] Ottoni-Wilhelm et al. (2017) find very high crowding out at 97% and 82% for low and high levels of giving compared to our study, which is 30% and 14%. While levels of crowding-out are different, both reject the pure altruism model for adults. Konow (2010) observes crowding out of 24% of endowment under tax treatment, Eckel and Grossman (2005) observe complete crowd out when there is no fiscal illusion about the tax - a tax of 3$ decreases giving by 2.84$ i.e 94% crowd out, fiscal illusion sees a crowding in of 78%.

[7] Figures 4 and 5 in the Appendix are Kernel densities for the children and their parents. It depicts the difference in the distribution of giving before and after a subsidy or tax. For the children, the left side of the figure reveals the tax effect. The two distributions are not significantly different based on the Kolmogorov-Smirnov test for the equality of distributions. The right side of the panel shows the change in distributions under the indirect subsidy effect. The KS test is significantly different under an indirect subsidy, and the giving after the subsidy skewed the distribution to the left.

Figure 1: Average Giving



5.2 Empirical Strategy

In this section, we present the procedures used to estimate the parameters of the Cobb-Douglas impure altruism utility function from Equation 2. The optimal gift, g^*_{ib}, derived from implicit demand function (Equation 6) is written as follows:

$$g^*_{ib} = -G_{jb} + 0.5[(1-\beta)G_{jb} + (\alpha+\beta)Z_{ib} + \{[(1-\beta)G_{jb} + (\alpha+\beta)Z_{ib}]^2 - 4\alpha G_{jb}Z_{ib}\}^{1/2}] + e_i + u_{ib} \quad (8)$$

Based on the theoretical model of Ottoni-Wilhelm et al. (2017) where $i = 1, ...N$ is the total sample size, $b = 1, ..6$ indexes the six decisions made by each participant. The first order condition given by Equation 9 implies that the optimal gift g^*_{ib} is a function of the amount given by others G_{jb}, and the social income in the economy Z_{ib}. The parameter u_{ib} is the randomness in each participants giving that is not correlated across their six decisions, and e_i is the individual specific random effect. We utilize the above first order condition to structurally estimate the coefficient of pure altruism α, and the coefficient of warm-glow β.

We undertake three types of analysis: First, using a non-linear random effect Tobit estimation, we calculate the average pure altruism α and warm-glow β estimate for the entire sample based on Equation 8. Additionally, we are able to calculate the pure altruism, α, and warm-glow, β, estimates for each participant in the sample based on the 6 individual decisions. We refer to this analysis as the

individual Cobb-Douglas estimation. The parameter u_{ib} is the randomness in each participant's giving that is not correlated across their six decisions and is assumed to be normally distributed (Cappellari and Jenkins, 2006). Similar to Ottoni-Wilhelm et al. (2017), we are able to calculate the likelihood of optimal giving accounting for corner solutions when $g_{ib} = 0$ or $g_{ib} = w_{ib}$. The Equation for the individual Cobb Douglas estimation is given as follows:

$$g^*_{ib} = -G_{jb} + 0.5[(1-\beta)G_{jb} + (\alpha+\beta)Z_{ib} + \{[(1-\beta)G_{jb} + (\alpha+\beta)Z_{ib}]^2 - 4\alpha G_{jb}Z_{ib}\}^{1/2}] + u_{ib} \quad (9)$$

Finally, as a robustness check, we implement a linear maximum likelihood estimation without accounting for the corner solutions. Here we consider the sample's average effects and refer to this analysis as robustness check. The results are available on the Appendix.

Table 3 presents the average estimates for the entire sample of all children who participated. We find that the estimated coefficient of pure altruism is 0.10, which is smaller than the coefficient of warm-glow component (β) of 0.289. Since the warm-glow coefficient is significantly greater than zero, the pure altruism model can be rejected. The correlation coefficient, ρ, is 0.63 (p=0.008), indicating substantial heterogeneity in the error term for within-participants decisions.

Table 3: Altruistic Preferences- Non-linear random effect Tobit estimation

	Coefficient	**Standard Error**	**p -value**
α	0.10	0.0102	0.000
β	0.289	0.008	0.000
ρ	0.63	0.008	0.000

Non-linear random effect Tobit model is estimated using the entire sample of 1820 children who partipated in the study. The estimation is based on Equation 8.

The following subsection provides a detailed analysis of the individual estimations for pure altruism and warm-glow. The between-subjects design enables us to compare the proportion of warm-glow and pure altruism for all children in the age group. Keeping the deservingness of recipients constant, we observe how their religious identity might affect the children's altruistic preferences. The recipient's identity varies across three treatment arms: abstract (no identity salient), in-group and out-group. Finally, we observe how the individual estimations of altruistic giving for each age group vary when the recipient's identity changes, i.e., the interaction between identity and age.

5.2.1 Altruistic Preferences and Age

We first study giving motivations in the Abstract treatment when the flyer displayed the photo of a library. Table 4 presents an average for the individual estimations of pure altruism and warm-glow for different age groups. The total number of observations is 527 individuals. The last columns of the table display the average of the individual estimations for all the parents. We group participants in three age

categories – Group 1 comprises children between 7 and 10 years, group 2 includes children between 11 and 13 years and group 3 children between 14 and 17 years.[8] Column 1 in Table 4 includes the mean individual estimations for all children that participated between age 7 and 17 years. The warm-glow (β) component is 0.22, and pure altruism (α) is 0.17, indicating warm-glow to be the main motivation of giving. The difference is significant at the 5% level for the pooled sample. This result is in line with previous findings from Liebe and Tutic (2010) that found warm-glow to be the stronger motivation to give.

The subsequent columns show the average of the individual estimations for each subgroup. While warm-glow motivation is stronger in magnitude for the younger and middle cohorts (P-value=0.043 and P=0.004), this is not the case for the oldest cohort and parents. For the latter groups, relative degree of pure altruism is as important motivation as warm-glow (P-value>0.1). This results hold once we consider Anderson (2008) False Discovery Rate Adjustment -FDR-.

Our hypothesis is that altruism increases with age. To examine this hypothesis we constructed an aggregated measure of altruism as the sum of the estimated coefficients of pure altruism and warm-glow. As depicted in Table 4, contrary to our expectations, we find that there is a decay in altruistic motivations with up-bringing. While there is a positive correlation between children and their parent's aggregated coefficient of altruism,[9] the coefficient of altruism is higher for children than their parents. This difference is significantly at the 1% level. Compared with the older cohorts, the aggregated coefficient of altruism is higher for children between 7 and 10 years. The effect is significant only at the 10% level for the one-side Student's t-test (p-value is 0.0798 and 0.0724). The observed decay in altruism is consistent with relatively low levels of charitable giving in India compared with other developing countries (CAF, 2018).

When we examine the correlation of pure altruism and warm-glow we find that they are negatively correlated (Spearman's rho coefficient is -0.6533 with a p-value lower that 0.01.). The oldest age group displays higher degree of pure altruism and a degree of warm-glow giving compared with the other two cohorts. Thus, the result partly confirm Hypothesis 1 stating that pure altruistic preferences are positively correlated with age but reject the conjecture that warm-glow increases with age. We find a similar pattern when we consider the average of the 6 decisions without accounting for the corner solutions in our robustness checks (See Appendix Table 10).

[8] The groups are divided based on the class categories. The lowest group includes children in primary, the second group has secondary students, and the oldest cohort comprises high secondary students.

[9] Spearman's rho coefficient for children and their fathers is 0.0927 with a p-value equal to 0.0447 while that for mothers is 0.0447 with a p-value equal to 0.0029

Table 4: Altruistic Preferences - Age (Discrete)

	Children	7-10ys	11-13yrs	14-17yrs	Parents
	(1)	(2)	(3)	(4)	(5)
	b/se	b/se	b/se	b/se	b/se
Pure altruism(α)					
Constant	0.175	0.178	0.155	0.203	0.146
	(0.256)	(0.265)	(0.242)	(0.267)	(0.211)
Warm glow(β)					
Constant	0.224	0.247	0.234	0.181	0.123
	(0.22)	(0.215)	(0.235)	(0.195)	(0.159)
Altruism($\alpha + \beta$)					
Constant	0.399	0.425	0.390	0.384	0.270
	(.242)	(0.237)	(0.243)	(0.244)	(0.216)
H0: α=β	0.007	0.043	0.004	0.5183	0.1278
	[0.022]	[0.069]	[0.021]	[0.289]	[0.13]
Hypothesis testing		(2) vs (3)	(2) vs (4)	(3) vs (4)	(1) vs (5)
H0: α		0.396	0.418	0.077	0.033
		[0.278]	[0.278]	[0.094]	[0.06]
H0: β		0.584	0.006	0.025	0.000
		[0.289]	[0.022]	[0.053]	[0.001]
H0: Altruism		0.160	0.145	0.8300	0.000
		[0.137]	[0.135]	[0.323]	[0.001]
Observations	527	152	232	143	489

The table shows the average of the individual estimations for both children and parents. Based on Equation 9, non-linear Tobit method is used to estimate the pure altruism and warm-glow for each individual in the sample. This method takes into account the corner solutions. In order to observe differences across age we only consider the sample in the Abstract treatment. Standard deviations in parentheses. Means comparison two-sided Student t-test is conducted to test the differences in the coefficients. The estimated p-values are reported and the sharpened False Discovery Rate (FDR) q-values are displayed in brackets. *p<.1, ** p<.05, *** p<.01

5.2.2 Altruistic preferences and identity of the recipient

This section examines how the recipient's religious identity could influence different altruistic motivations for all the children in the sample. Keeping the deservingness of beneficiaries constant, we observe how their religious identity might affect the donor's altruistic preferences. The between-subjects design enables us to compare the proportion of warm-glow and pure altruism for all children independently on the age group, across three treatment arms: abstract (no identity salient), in-group and out-group.

Table 5 presents an average of the individual α and β and total altruism estimates for each treatment; namely, abstract, in-group and out-group. The hypothesis testing at the bottom of the table is mean-comparison tests (t-tests) of the across treatment groups for pure altruism and warm-glow, respectively. The p-values correcting for multiple hypothesis testing using the procedures in Anderson'(2008) are presented in brackets.

The total coefficient of altruism is significantly larger for the out-group than the in-group (at the 1% and 5% level), indicating that contrary to finding in previous studies (Bauer et al., 2014), there is favoritism towards the out-group. Interestingly, such difference is mainly due to a significantly larger degree of warm-glow towards the out-group than the in-group, although the difference is not statistically significant once that we control for multiple hypothesis testing. The estimated coefficient of pure altruism is not significantly different across treatment groups, hence we can reject Hypothesis 2 that warm-glow and pure altruism will be higher towards the in-group. This finding is corroborated in the robustness checks where we estimate the pure altruism and warm-glow coefficients without accounting for corner solutions (See Appendix Table 11).

5.2.3 Altruistic Preferences by Age and Identity

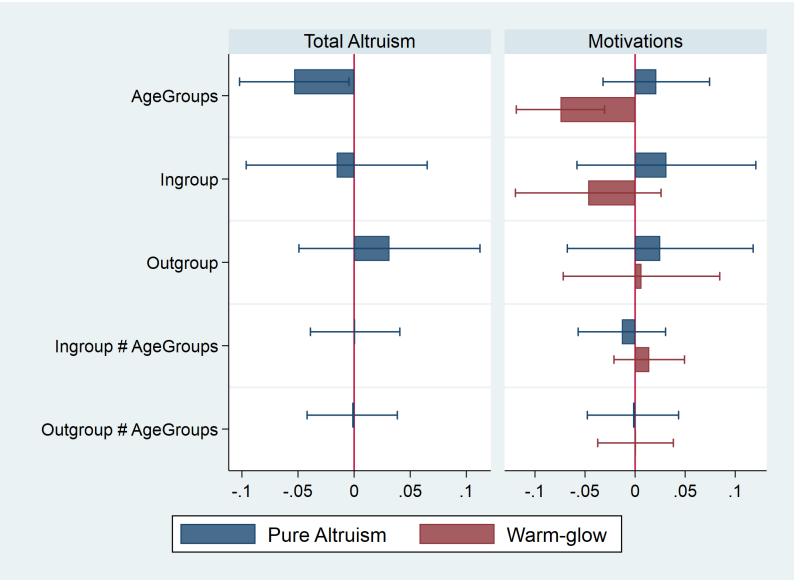
This section examines how motivations for giving change with age and identity of the participants. Figure 2 presents the estimated coefficients that results from regressing altruism on age, identity and the interaction effect. We find that a significantly negative association of total altruism and warm-glow with age. However, none of the estimated coefficients is significantly associated with identity. This association also does not change with age. Hence, we reject Hypothesis 1 stating that warm-glow and pure altruism increase with age and also reject Hypothesis 2 stating that those motivations for giving are higher towards the in-group than the out-group.

Table 5: Altruistic Preferences - Identity effects

	Abstract	In-group	Out-group
	(1)	(2)	(3)
	b/se	b/se	b/se
Pure altruism (α)			
Constant	0.175	0.186	0.202
	(0.256)	(0.246)	(0.256)
Warm glow (β)			
Constant	0.224	0.206	0.227
	(0.22)	(0.211)	(0.234)
Altruism ($\alpha + \beta$)			
Constant	0.398	0.391	0.429
	(0.241)	(0.229)	(0.228)
Hypothesis testing	(1) vs (2)	(1) vs (3)	(2) vs (3)
H0: α	0.468	0.07	0.264
	[0.419]	[0.187]	[0.283]
H0: β	0.164	0.798	0.09
	[0.254]	[0.55]	[0.187]
H0: Total Altruism	0.615	0.030	0.004
	[0.445]	[0.137]	[0.038]
Observations	527	624	610

The table shows the average of the individual estimations. Based on Equation 9, non-linear Tobit method is used to estimate the pure altruism and warm-glow for each individual in the sample. This method takes into account the corner solutions. To observe identity effects, in each treatment, children across all ages are pooled. Standard deviations in parentheses. For the hypothesis testing, a two-sided Student's t-test is used to test differences in estimations across the identity treatments. The estimated p-values are reported. The sharpened False Discovery Rate (FDR) q-values are displayed in brackets. * p<0.1, ** p<0.05, *** p<0.01

Figure 2: Total effect of Warm-glow and Pure altruism



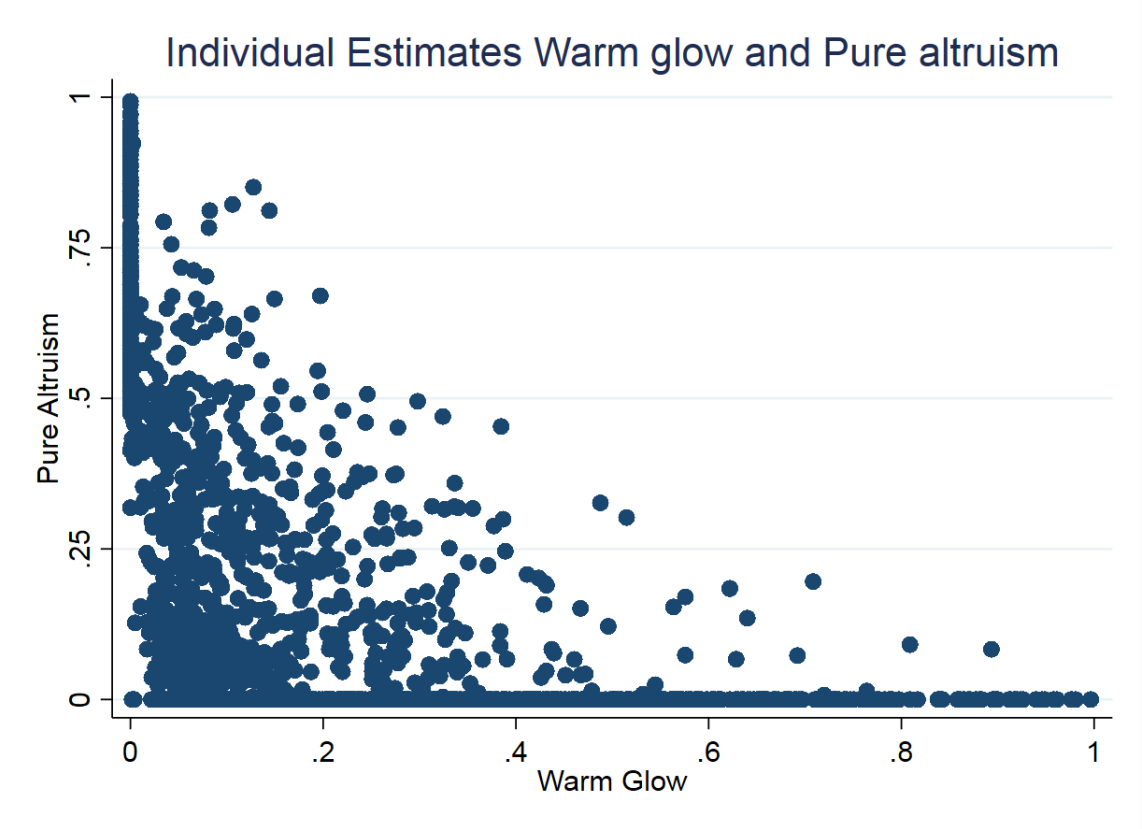
The figure plots the estimated coefficients that result from regressing individual estimates of total altruism (panel a) and pure altruism and warm-glow (panel b) on age, identity and the interaction. The The estimates were obtained using a non-linear Tobit method from Equation 9. Table 9 in the Appendix provides the mean estimated parameters by age and identity.

6 Drivers of Altruism

In this subsection, we present the distribution of warm-glow and pure altruistic individuals in our sample. We can also observe other drivers of altruistic giving (apart from the donor's age and identity of the recipient).

We begin by classifying individuals as types, namely warm-low, pure altruistic, and impure altruistic. We find individuals are mainly impure altruistic (45%) or warm-glow givers (45%). The pure altruistic is the less common type (10%). For the intensive margin, we observe the actual amount donated by the respondents. Even though a small proportion of individuals are pure altruistic givers, their contribution is the highest ranging from Rs.30.65 to Rs.28.82 for the in-group and out-group, respectively. The majority of the children are classified as warm-glow givers, and their average donations to the recipient is significantly smaller (ranging from Rs.14 to Rs.16). However, figure 3 reveals substantial heterogeneity in the donor's estimated α and β parameters. The sample's heterogeneity is also confirmed by the positive and significant (ρ) parameter in Table 3.

Figure 3: Distribution of Individual Estimates



The figure plots the individual estimates for pure altruism (α) on the Y-axis and warm-glow (β) on the X-axis. The individual estimates are obtained from Equation 9.

Given the high heterogeneity in our sample and the large deviations not only across but within individuals, we create a new variable that measures the strength of warm-glow giving relative to the

total measure of generosity, $(\alpha + \beta)$, for each individual. This term is based on the assumption that more individuals are impurely altruistic and have a relative degree of warm-glow associated with their charitable decision-making. We create an index of warm-glow similar to that of Ottoni-Wilhelm et al. (2017), and it is defined as follows,

$$\gamma = \beta/(\alpha + \beta) \tag{10}$$

The index (γ) ranges from zero (pure altruism) to one (warm-glow). We use this parameter γ, i.e., the degree of warm-glow preferences, as a dependent variable in the following section. We estimate a simple OLS regression to observe other covariates (controlling for age and recipient's identity) to explain the degree of warm-glow giving and total altruism for the participants in our sample.

We estimate two models with the following dependent variables - degree of warm-glow or γ (Column 1) and the combined motivation for altruistic giving or $\alpha + \beta$ (Column 2). Since the errors of the two dependent variables could be correlated, with estimate a Seemingly unrelated OLS regression. Based on the results in Table 6, we find a positive correlation between the degree of warm-glow and the overall altruistic motivations of fathers and children. Furthermore, the parent's engagement with recent charitable giving and their beliefs on the importance of religious equality are both positively correlated with the child's altruism in the experiment. This can be corroborated in other recent empirical studies that observe inter-generational preferences to be positively correlated, particularly with older children (Ben-Ner et al., 2017; Brown et al., 2014; Wilhelm et al., 2008).[10]

We find that religiosity, measured as the frequency of visiting a religious place, is positively correlated with both relative degree of warm-glow, giving, and overall altruistic motives. The positive association between religious practice and pro-sociality has been discussed in theoretical models whereby religiosity is assumed to increase social contact among people and provide them with more opportunities to engage in charity (Bekkers and Schuyt, 2008). It also makes individuals more salient to others' suffering and increases the emotion 'feeling good about contributing' (Andreoni, 2006; Li, 2017). We find this empirically for our sample.

In the post-experimental survey, we asked the participants questions about the NGO, their expectations regarding others' pro-sociality, and the willingness to follow social norms. We measured peer expectations using first order beliefs by asking: 'How much do you expect the others in your class to have given to the NGO?'. We also ask whether the participants would follow the social norm and contribute similar amounts as others in their class. Finally, we asked about beliefs that the NGO would favor their respective in-groups. We find expectations regarding other's giving are positively correlated only with total altruism, supporting previous research that shows pro-sociality to be positively correlated

[10] Theories on inter-generational transmission of generosity (altruism) have been proposed by Becker et al. (2016), and Wilhelm et al. (2008) emphasize the parents' objective to make responsible citizens and generosity part of their identity.

with peer expectations and social norms (Kosse et al., 2019; Engelmann et al., 2018; Vesterlund, 2016). The warm-glow giving was negatively correlated among those who believed that the NGO favored their in-group and those willing to follow the social norm. This corroborates with our experimental evidence, wherein we find warm-glow giving to be smaller in magnitude towards recipients from the in-group (driven by the youngest and middle cohorts).

Table 6: Other explanations for warm-glow and overall altruistic giving

	Degree of Warm-glow	Altruism
	(1)	(2)
	b/se	b/se
Warm-glow father	0.202***	
	(0.042)	
Warm-glow mother	-0.059	
	(0.045)	
Altruism father		0.123***
		(0.047)
Altruism mother		0.028
		(0.052)
Female	-0.020	-0.048**
	(0.037)	(0.022)
Hindu	0.127***	-0.057**
	(0.042)	(0.028)
Siblings	-0.006	0.028***
	(0.011)	(0.008)
Distance to school	-0.006***	0.009***
	(0.002)	(0.001)
Cognition	0.005	0.021***
	(0.010)	(0.006)
Religiousity	0.047***	0.017*
	(0.014)	(0.010)
Expectation	-0.002	0.004***
	(0.002)	(0.001)
NGO favors in-group	-0.194***	0.038
(1=Yes)	(0.037)	(0.025)
Follow social norm	-0.151***	-0.113***
(1=Yes)	(0.038)	(0.025)
Father's years of education	0.003	-0.004
	(0.004)	(0.003)
Father recent charity	0.026	0.080***
	(0.049)	(0.029)
Parent's beliefs on	0.070***	-0.009
Religious Equality (1-Agree)	(0.019)	(0.013)
Constant	-2.109*	-0.959
	(1.156)	(0.763)
R squ.	0.211	0.275
Observations	672	762
Treatment dummies	Yes	Yes
Age controls	Yes	Yes
VIF	1.55	1.57

The table represents a OLS model with the dependent variables as degree of warm-glow (Model 1) and total altruism (Model 2). The analysis is conducted for all the children who participated in the experiment and later answered questions about their decisions (post experimental survey). Standard errors are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Independent variables include: Expectation-continuous variable of own expectation regarding other's contribution; Female (0=Male) is a dummy for gender; Hindu (0=Muslim) is a dummy for religion; Siblings - continuous variable as number of siblings for the respondent; Distance to school - continuous variable measured in minutes; Cognition (scale 1-6); Religiosit (scale 0 Everyday-6 Never); NGO favors in-group (1=Yes); Follow Social norm (1=Yes); Father's years of education - continuous; Did the father undertake a recent charity action? (1=Yes); Both parents think all religions are equal (1=Agree).

7 Future research and potential concerns

There are three critical aspects concerning the experiment design that need to be highlighted to bring the results into perspective. Our experiment builds on Ottoni-Wilhelm et al. (2017) experimental design where participants take decisions on donations with different implicit levels of taxes and subsidies. Unlike Eckel and Grossman (2005), we do not make salient the trade-off across scenarios. Given that their results revealed a 98% crowding-out of private contributions when the participants were aware of a 3$ tax imposed on them, future research should test whether the estimated parameters of pure altruism and warm-glow that can underestimated in our design.

Apart from disentangling the motivations of altruistic giving, our study attempted to observe how pure altruism and warm-glow vary with the recipient's identity. Despite historically contentious relations between the two selected groups and having implemented the treatments in either Hindu dominant or Muslim dominant schools, we find a higher degree of total altruism towards the out-group than in-group and abstract treatments. Besides, there is a higher degree of warm-glow to the out-group than the in-group treatment. One of the reasons why there is out-group favoritism could be due to the weak identity treatment. However, we argue that this is not the case. In a post-experiment survey, we asked the participants if they thought the NGO favored children from their own religious groups. We find that 78 percent of the sample in the in-group treatment recognized that the recipients belonged to their own religion, and this is significantly larger than the control and out-group treatments as displayed in Table 2. One potential mechanism that needs to be explored in future work is whether perceptions of deservingness explain out-group favoritisms.

Similar to Ottoni-Wilhelm et al. (2017), we use a Cobb-Douglas utility function to estimate the optimal demand for giving, pure altruism, and warm-glow parameters displayed in Table 3. One of the concerns regarding the study is the use of a structural estimation assuming a Cobb-Douglas function. This could entail two issues, namely difficulty in model convergence and high heterogeneity in parameters across participants. In order to facilitate the convergence of the model, non-linear Tobit estimation allowed for both upper and lower limit corner solutions. However, it did not include subjects that sometimes choose lower and other times upper limit across the six decisions (2 participants). Besides, 3 participants mirrored the experimenter donation in each decision set, and 62 participants (7%) gave the same amount across all the decisions. For the last two cases, the structural estimation assumed these participants to be warm-glow givers.

Second is the high heterogeneity across participants based on the ρ estimate (0.63). The parameter indicates heterogeneity in an individual's random deviation from the Cobb-Douglas model. This could be a consequence of misspecifying the model as a Cobb-Douglas function. Furthermore, a Cobb-Douglas specification assumes constant elasticity of substitution and linearity (for the parameters). While these assumptions have an advantage of algebraic tractability, they could result in bias from omitted variables

(other factors explaining voluntary giving). We attempt to overcome this bias by controlling for other factors that could explain the demand for giving as presented in Table 6. However, in future studies, researchers could assume alternative utility functions.

8 Conclusion

One of our paper's main contributions is to observe warm-glow and pure altruistic motivations when we consider voluntary giving, particularly across children of different ages. Besides, we attempt to explain religious identity-based discrimination using these motivations of giving. To obtain our estimates of pure altruism and warm-glow, we run a structural estimation and use non-linear Tobit maximum likelihood techniques (Ottoni-Wilhelm et al., 2017). Our surveys and charity experiments were conducted across different public schools in Mumbai. We mainly found locations within the city that were extensively segregated, and as a result, the schools also had either Hindu or Muslim children.

Two studies have previously attempted to study motivations of altruistic giving among children. While List and Samak (2013) find pure altruism to be the strongest motivation for giving among children between ages three and five, Liebe and Tutic (2010) observed teenagers between 14 and 18 years and found warm-glow as the primary motivation of giving. For the entire sample, similar to the latter, we find warm-glow giving to be the stronger motivation driving charitable giving (relative to pure altruism). However, when we consider the association of warm-glow and pure altruism with age, there is a tendency to observe a higher degree of pure altruism and a lower degree of warm-glow motivation of giving for teenagers than younger children. Unlike the previous two studies (who could test only one of the motivations), our study's advantage is the ability to identify both parameters, namely warm-glow and pure altruism, and compare each motivation's relative strength. In order to achieve this, we implement the experimental design by Ottoni-Wilhelm et al. (2017).

Apart from understanding the cognitive effects on altruistic preferences, we are keen to see whether the recipient's religious identity impacts children's altruistic motivations. Previous studies that utilized pre-existing identities found strong evidence of in-group bias among adults and children (Angerer et al., 2015a; Ben-Ner et al., 2017; Chai et al., 2011; Gangadharan et al., 2018; Chakravarty et al., 2016). We go a step further to analyze whether such an in-group bias exists for different motives of altruistic giving. For our sample of children between 7 to 17 years of age, we do not observe an in-group bias in both warm-glow and pure altruistic motivations. On average, we find that pure altruism is greater towards the out-group (compared to the abstract identity) and warm-glow is higher towards the out-group than the in-group. Apart from age and the recipient's religious identity, we find altruistic giving to be positively associated with religiosity. Furthermore, we observe an intergenerational transmission of altruistic giving between the parents and children.

We find that voluntary contributions are highly motivated by impure altruistic preferences in terms of economic policy implications. Hence taxes and subsidies generate only incomplete crowding-out of giving. Another policy-relevant aspect of our study is how heterogeneous altruistic motivations change when the recipient is from a salient out-group. Given the widespread rhetoric that heterogeneous societies negatively impact access to public goods, we do not observe an in-group bias in the domain of voluntary or charitable donations. On the other hand, total altruism and warm-glow giving are greater towards recipients from the out-group than in the abstract and in-group treatments.

References

Ahmed, A. M. (2008). Are Religious People More Prosocial? A Quasi-Experimental Study with Madrasah Pupils in a Rural Community in India.

Almas, I., Cappelen, A. W., SÃžrensen, E., and Tungodden, B. (2010). Fairness and the development of inequality acceptance. *Science*.

Anderson, M. L. (2008). Multiple inference and gender differences in the effects of early intervention: A reevaluation of the abecedarian, perry preschool, and early training projects. *Journal of the American statistical Association*, 103(484):1481–1495.

Andreoni, J. (1990). Impure Altruism and Donations to Public Goods: A Theory of Warm-Glow Giving. *The Economic Journal*, 100:464–477.

Andreoni, J. (2006). Leadership giving in charitable fund-raising. *Journal of Public Economic Theory*.

Angerer, S., Glätzle-Rützler, D., Lergetporer, P., and Sutter, M. (2015a). Cooperation and discrimination within and across language borders: Evidence from children in a bilingual city.

Angerer, S., Glätzle-Rützler, D., Lergetporer, P., and Sutter, M. (2015b). Donations, risk attitudes and time preferences: A study on altruism in primary school children. *Journal of Economic Behavior & Organization*, 115:67–74.

Arrow, K. J. (1977). Extended sympathy and the possibility of social choice. *The American Economic Review*, 7(2):223–237.

Asher, S., Novosad, P., and Rafkin, C. (2018). Intergenerational Mobility in India: Estimates from New Methods and Administrative Data. Technical report.

Banerjee, A., Iyer, L., and Somanathan, R. (2005). History, Social Divisions, and Public Goods in Rural India. *Journal of the European Economic Association*, 3(2-3):639–647.

Banerjee, R. (2002). Audience effects on self-presentation in childhood. *Social Development*, 11(4):487–507.

Bauer, M., Cassar, A., ChytilovÃ¡, J., and Henrich, J. (2014). War's Enduring Effects on the Development of Egalitarian Motivations and In-Group Biases. *Psychological Science*, 25(1):47–57.

Becker, G. (1976). Altruism, Egoism, and Genetic Fitness: Economics and Sociobiology. *Journal of Economic Literature*, 14(3):817–26.

Becker, G. S., Murphy, K. M., and Spenkuch, J. L. (2016). The manipulation of children's preferences, old-age support, and investment in children's human capital. *Journal of Labor Economics*.

Bekkers, R. and Schuyt, T. (2008). And who is your neighbor? Explaining the effect of religion on charitable giving and volunteering. *Review of Religious Research*.

Ben-Ner, A., List, J. A., Putterman, L., and Samek, A. (2017). Learned generosity? An artefactual field experiment with parents and their children. *Journal of Economic Behavior and Organization*.

Bergstrom, T., Blume, L., and Varian, H. (1986). On the private provision of public goods. *Journal of Public Economics*, pages 25–49.

Bernhard, H., Fischbacher, U., and Fehr, E. (2006). Parochial altruism in humans. *Nature*, 442(24):912–915.

Blake, P., McAuliffe, K., Corbit, J., Callaghan, T., Barry, O., Bowie, A., Kleutsch, L., Kramer, K., Ross, E., Vongsachang, H., et al. (2015). The ontogeny of fairness in seven societies. *Nature*, 528(7581):258–261.

Bohnet, I. and Frey, B. S. (1999). The sound of silence in prisoner's dilemma and dictator games. *Journal of Economic Behavior & Organization*.

Bolton, G. E. and Katok, E. (1998). An experimental test of the crowding out hypothesis: The nature of beneficent behavior. *Journal of Economic Behavior & Organization*, 37:315–331.

Brown, S., Srivastava, P., and Taylor, K. (2014). Intergenerational Analysis of the Donating Behaviour of Parents and their Offspring. *Southern Economic Journal*.

CAF (2018). CAF World Giving Index 2018. Technical report.

Cappellari, L. and Jenkins, S. P. (2006). Calculation of multivariate normal probabilities by simulation, with applications to maximum simulated likelihood estimation.

Chai, S.-K., Dorj, D., Hampton, K., and Liu, M. (2011). The Role of Culture in Public Goods and Other Experiments. Technical Report 4.

Chakravarty, S., Fonseca, M. A., Ghosh, S., and Marjit, S. (2016). Religious fragmentation, social identity and cooperation: Evidence from an artefactual field experiment in India. *European Economic Review*, 90:265–279.

Chen, Y. and Li, S. X. (2009). Group Identity and Social Preferences. *American Economic Review*, 99(1):431–457.

Chiang, Y. S. and Wu, C. I. (2015). Social influence and the adaptation of parochial altruism: A dictator-game experiment on children and adolescents under peer influence. *Evolution and Human Behavior*, 36(6):430–437.

Corr, P. J., Hargreaves Heap, S. P., Seger, C. R., and Tsutsui, K. (2015). An experiment on individual 'parochial altruism' revealing no connection between individual 'altruism' and individual 'parochialism'. *Frontiers in Psychology*.

Costard, J. and Bolle, F. (2011). Solidarity, responsibility and group identity.

Crumpler, H. and Grossman, P. J. (2008). An experimental test of warm glow giving. *Journal of Public Economics*, 92:1011–1021.

de Vignemont, F. and Singer, T. (2006). The empathic brain: how, when and why? *Trends in Cognitive Sciences*, 10(10):435–441.

De Wit, A. and Bekkers, R. (2017). Government support and charitable donations: A meta-analysis of the crowding-out hypothesis. *Journal of Public Administration Research and Theory*, 27(2):301–319.

De Wit, A., Bekkers, R., and Van Groenou, M. B. (2017). Heterogeneity in crowding-out: When are charitable donations responsive to government support? *European Sociological Review*, 33(1):59–71.

Deshpande, A. and Sharma, S. (2016). Disadvantage and discrimination in self-employment: caste gaps in earnings in Indian small businesses. *Small Business Economics*, 46(2):325–346.

Dotterer, A. M. and Lowe, K. (2015). Journal of Applied Developmental Psychology Perceived discrimination , parenting , and academic adjustment among racial / ethnic minority adolescents. *Journal of Applied Developmental Psychology*, 41:71–77.

Eckel, C. C. and Grossman, P. J. (2005). Managing diversity by creating team identity. *Journal of Economic Behavior and Organization*, 58(3):371–392.

Engelmann, J. M., Herrmann, E., and Tomasello, M. (2018). Concerns for Group Reputation Increases Prosociality in Young Children. *Psychological Science*, 29(2):181–190.

Engelmann, J. M., Over, H., Herrmann, E., and Tomasello, M. (2013). Young children care more about their reputation with ingroup members and potential reciprocators. *Developmental Science*, 16(6):952–958.

Fabes, R. A. and Eisenberg, N. (1998). Meta-analyses of age and sex differences in children's and adolescents' prosocial behavior. *Handbook of Child Psycholody*, 3:29–71.

Fehr, E., Glätzle-Rützler, D., and Sutter, M. (2013). The development of egalitarianism, altruism, spite and parochialism in childhood and adolescence. *European Economic Review*, 64:369–383.

Fehr, E. and Hoff, K. (2011). Introduction: Tastes, Castes and Culture: The Influence of Society on Preferences. *The Economic Journal*, 121:396–412.

Friesen, J., Arifovic, J., Wright, S. C., Ludwig, A., Giamo, L., and Baray, G. (2012). Ethnic identity and discrimination among children. *Journal of Economic Psychology*, 33(6):1156–1169.

Gangadharan, L., Grossman, P. J., and Jones, K. (2014). Deconstructing Giving: Donor Types and how they give.

Gangadharan, L., Grossman, P. J., Jones, K., and Leister, C. M. (2018). Paternalistic giving: Restricting recipient choice. *Journal of Economic Behavior and Organization*, 151:143–170.

Goette, L., Huffman, D., Meier, S., The, S., Economic, A., May, N., Goette, B. L., Huffman, D., Meier, S., Akerlof, G. A., and Kranton, R. E. (2006). The Impact of Group Membership on Cooperation and Norm Enforcement : Evidence Using Random Assignment to Real Social Groups. *The American Economic Review*, 96(2):212–216.

Gummerum, M., Keller, M., Takezawa, M., and Mata, J. (2008). To give or not to give: children's and adolescents' sharing and moral negotiations in economic decision situations. *Child Development*, 79(3):562–576.

Harbaugh, W. T., Krause, K., Liday, S. G., and Vesterlund, L. (2003). Trust in children. *Trust and Reciprocity: Interdisciplinary Lessons from Experimental Research*, 9781610444:302–322.

Harbaugh, W. T., Mayr, U., and Burghart, D. R. (2007). Neural Responses to Taxation and Voluntary Giving Reveal Motives for Charitable Donations. *Science*, 316:1622–1626.

Hoff, K. and Walsh, J. (2017). The Whys of Social Exclusion.

Hoffman, E., Mccabe, K., and Smith, V. L. (1996). Social Distance and Other-Regarding Behavior in Dictator Games. Technical Report 3.

Hungerman, D. M. (2009). Crowd-out and diversity. *Journal of Public Economics*, 93:729–740.

Kingma, B. R. (1989). An Accurate Measurement of the Crowd-out Effect, Income Effect, and Price Effect for Charitable Contributions. *Journal of Political Economy*.

Konow, J. (2010). Mixed feelings: Theories of and evidence on giving. *Journal of Public Economics*, 94(3-4):279–297.

Kosse, F., Deckers, T., Pinger, P., Schildberg-Hoerisch, H., and Falk, A. (2019). The Formation of Prosociality: Causal Evidence on the Role of Social Environment. *Journal of Political Economy*.

Kranton, R. E. (2016). Identity economics 2016: Where do social distinctions and norms come from? In *American Economic Review*, volume 106, pages 405–409.

Kranton, R. E., Pease, M., Sanders, S., and Huttel, S. (2013). Identity, group conflict, and social preferences. *Manuscript in preparation*.

Li, Y. (2017). Is methodology destiny? Religiosity and charitable giving. *International Journal of Social Economics*, 44(9):1197–1210.

Liebe, U. and Tutic, A. (2010). Status groups and altruistic behaviour in dictator games. *Rationality and Society*, 22(3):353–380.

List, J. A. and Samak, A. C. (2013). Exploring the origins of charitable acts: Evidence from an artefactual field experiment with young children. *Economics Letters*, 118(3):431–434.

Meyer, M. L., Masten, C. L., Ma, Y., Wang, C., Shi, Z., Eisenberger, N. I., and Han, S. (2013). Empathy for the social suffering of friends and strangers recruits distinct patterns of brain activation. *Social Cognitive and Affective Neuroscience*, 8(4):446–454.

Ottoni-Wilhelm, M., Vesterlund, L., and Xie, H. (2017). Why do people give? Testing pure and impure altruism. *American Economic Review*, 107(11):3617–3633.

Pan, X. S. and Houser, D. (2013). Cooperation during cultural group formation promotes trust towards members of out-groups. *Proceedings of the Royal Society B: Biological Sciences*, 280(1762).

Raven, J., Raven, J., and Court, J. (1998). *Manual for Raven's progressive matrices and vocabulary scales.*

Ribar, D. C. and Wilhelm, M. O. (2002). Altruistic and joy-of-giving motivations in charitable behavior. *Journal of Political Economy*, 110(2):425–457.

Rochat, P., Dias, M. D., Liping, G., Broesch, T., Passos-Ferreira, C., Winning, A., and Berg, B. (2009). Fairness in distributive justice by 3-and 5-year-olds across seven cultures. *Journal of Cross-Cultural Psychology*, 40(3):416–442.

Rotemberg, J. J. (2014). Charitable giving when altruism and similarity are linked. *Journal of Public Economics*, 114:36–49.

Roth, A. E. (1995). Bargaining experiments. In *Handbook of experimental economics*, pages 253–348.

Sachar, C. R. (2006). Social Economic and Educational status of the Muslim community of India: A Report. Technical report, Prime Minister's High Level Committee Cabinet Secretariat Government of India.

Selten, R. and Ockenfels, A. (1998). An experimental solidarity game. *Journal of Economic Behavior and Organization*, 34(4):517–539.

Sen, A. (1985). Goals, Commitment, and Identity. *Journal of Law, Economics Organization*, 1(2):341–356.

Sen, A. K. (1977). Rational Fools: A Critique of the Behavioral Foundations of Economic Theory. Technical Report 4.

Simpson, B., Willer, R., and Harrell, A. (2017). The Enforcement of Moral Boundaries Promotes Cooperation and Prosocial Behavior in Groups. *Scientific Reports*.

Smith, A. and Adam, S. (1759). Theory of Moral Sentiments. *Cambridge Texts in the History of Philosophy*.

Tajfel, H. and Turner, J. (1979). An integrative theory of inter-group conflict. In *The social psychology of intergroup relations*.

Tajfel, H. and Turner, J. C. (2019). The Social Identity Theory of Intergroup Behavior. In *Political Psychology*.

Tonin, M. and Vlassopoulos, M. (2014). An experimental investigation of intrinsic motivations for giving. *Theory and Decision*, 76(1):47–67.

Vesterlund, L. (2003). The informational value of sequential fundraising. *Journal of Public Economics*, 87(3-4):627–657.

Vesterlund, L. (2016). Using Experimental Methods to Understand Why and How We Give to Charity. In *The Handbook of Experimental Economics, Volume Two*, chapter 2, pages 91–151.

Warr, P. G. (1982). Pareto optimal redistribution and private charity. *Journal of Public Economics*, 19(1):131–138.

Warr, P. G. (1983). The private provision of a public good is independent of the distribution of income. *Economics Letters*, 13(2-3):207–211.

Wilhelm, M. O., Brown, E., Rooney, P. M., and Steinberg, R. (2008). The intergenerational transmission of generosity. *Journal of Public Economics*, 92(10-11):2146–2156.

Willard, A. K. (2017). Religion and prosocial behavior among the Indo-Fijians. *Religion, Brain & Behavior*.

Xu, X., Zuo, X., Wang, X., and Han, S. (2009). Do you feel my pain? Racial group membership modulates empathic neural responses. *Journal of Neuroscience*, 29(26):8525–8529.

9 Online Appendix A

Table 7: Frequency Table

	Control		Hindu		Muslim		Total	
	No.	%	No.	%	No.	%	No.	%
Class								
4	57	7.5	85	10.6	79	9.7	221	9.3
5	159	20.9	181	22.6	163	19.9	503	21.1
6	69	9.1	23	2.9	65	7.9	157	6.6
7	141	18.5	269	33.6	239	29.2	649	27.3
8	118	15.5	63	7.9	81	9.9	262	11.0
9	177	23.3	113	14.1	154	18.8	444	18.7
10	40	5.3	66	8.3	37	4.5	143	6.0
Total	761	100.0	800	100.0	818	100.0	2,379	100.0
Father Work								
Job	315	41.4	298	37.3	375	45.8	988	41.5
Daily wage	174	22.9	211	26.4	178	21.8	563	23.7
Small Business	136	17.9	137	17.1	125	15.3	398	16.7
Big Business	53	7.0	62	7.8	71	8.7	186	7.8
At home	19	2.5	19	2.4	22	2.7	60	2.5
Missing	64	8.4	73	9.1	47	5.7	184	7.7
Total	761	100.0	800	100.0	818	100.0	2,379	100.0
Mother Work								
Job	52	6.8	61	7.6	67	8.2	180	7.6
Daily wage	64	8.4	60	7.5	61	7.5	185	7.8
Small Business	23	3.0	39	4.9	33	4.0	95	4.0
Big Business	6	0.8	8	1.0	9	1.1	23	1.0
At home	549	72.1	555	69.4	600	73.3	1,704	71.6
Missing	67	8.8	77	9.6	48	5.9	192	8.1
Total	761	100.0	800	100.0	818	100.0	2,379	100.0
Travel to school								
Walk	502	66.0	536	67.0	590	72.1	1,628	68.4
Cycle	17	2.2	23	2.9	12	1.5	52	2.2
Auto	15	2.0	17	2.1	15	1.8	47	2.0
School Bus	70	9.2	60	7.5	61	7.5	191	8.0
Public Bus	36	4.7	35	4.4	39	4.8	110	4.6
Van	33	4.3	39	4.9	30	3.7	102	4.3
Train	5	0.7	9	1.1	7	0.9	21	0.9
Taxi	2	0.3	1	0.1	2	0.2	5	0.2
Motor Bike	21	2.8	22	2.8	16	2.0	59	2.5
Private bus	0	0.0	0	0.0	1	0.1	1	0.0
Car	2	0.3	1	0.1	3	0.4	6	0.3
Missing	58	7.6	57	7.1	42	5.1	157	6.6
Total	761	100.0	800	100.0	818	100.0	2,379	100.0

Table 8: Balance Table - Parents

	(1) Control	(2) Ingroup	(3) Outgroup	(4) (1) vs. (2), p-value	(5) (1) vs. (3), p-value	(6) (2) vs. (3), p-value
Father						
Monthly Income	12875.629	13763.446	14348.840	0.119	0.018	0.371
Years Education	8.674	8.780	8.845	0.634	0.445	0.764
Religiousity	4.140	4.098	4.175	0.444	0.533	0.134
Experience discrimin	0.203	0.217	0.220	0.666	0.584	0.917
Recent charity	0.881	0.910	0.886	0.285	0.842	0.325
Discuss charity	0.161	0.224	0.197	0.039	0.222	0.350
Risk seeking	0.727	0.695	0.681	0.223	0.091	0.614
Impatient	0.792	0.794	0.763	0.941	0.235	0.188
All equal education	0.269	0.281	0.325	0.653	0.041	0.093
All equal work	0.349	0.331	0.382	0.520	0.251	0.062
Respect all	0.403	0.348	0.447	0.059	0.140	0.000
Minority discrimin work	0.575	0.607	0.627	0.265	0.078	0.489
Minority discrimin edu	0.499	0.540	0.562	0.172	0.036	0.437
Mother						
Monthly Income	6697.312	7819.643	8460.507	0.223	0.104	0.539
Years Education	7.375	7.994	7.606	0.012	0.352	0.102
Religiousity	4.136	4.122	4.071	0.789	0.224	0.299
Experience discrimin	0.269	0.215	0.208	0.096	0.061	0.807
Recent charity	0.857	0.883	0.886	0.308	0.311	0.900
Discuss charity	0.217	0.198	0.200	0.558	0.613	0.931
Risk seeking	0.767	0.713	0.691	0.041	0.005	0.396
Impatient	0.816	0.807	0.768	0.715	0.050	0.092
All equal education	0.296	0.285	0.350	0.677	0.056	0.014
All equal work	0.376	0.339	0.395	0.187	0.522	0.040
Respect all	0.397	0.368	0.452	0.323	0.062	0.003
Minority discrimin edu	0.593	0.608	0.650	0.604	0.049	0.126
Minority discrimin work	0.496	0.557	0.585	0.042	0.003	0.319
N	547	647	626			

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 4: Distribution under tax and subsidy

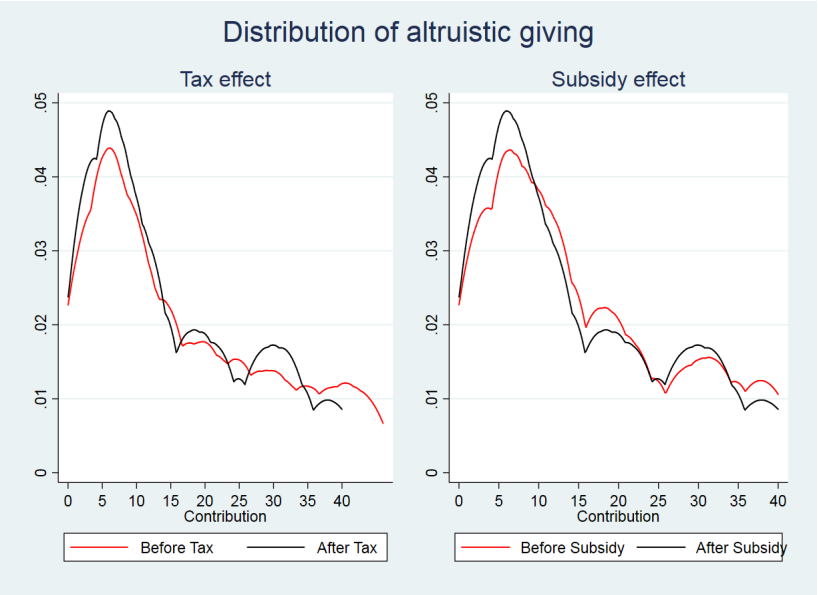


Figure 5: Distribution under tax and subsidy- Parents

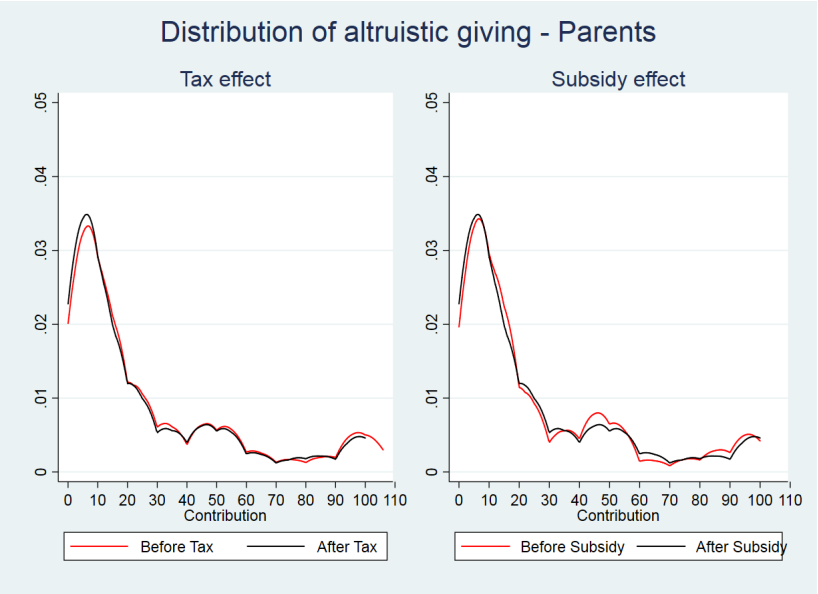


Table 9: Altruistic Preferences - Identity and Age

	7-9 yrs	10-13 yrs	14-17 yrs	Hypothesis test		
	(1)	(2)	(3)			
	b/se	b/se	b/se	(1) vs (2)	(1) vs (3)	(2) vs (3)
Pure altruism (α)						
Ingroup (T1)	0.19	0.175	0.24	0.495	0.721	0.311
	(0.247)	(0.248)	(0.239)	[0.980]	[1.000]	[0.845]
Outgroup (T2)	0.19	0.197	0.225	0.783	0.243	0.284
	(0.257)	(0.252)	(0.262)	[1.000]	[0.845]	[0.845]
Abstract (T0)	0.178	0.155	0.202	0.396	0.418	0.077
	(0.264)	(0.241)	(0.267)	[0.845]	[0.845]	[0.301]
Warm glow (β)						
Ingroup (T1)	0.215	0.205	0.193	0.643	0.357	0.583
	(0.2)	(0.22)	(0.206)	[1.000]	[0.845]	[1.000]
Outgroup (T2)	0.25	0.231	0.188	0.423	0.016	0.076
	(0.229)	(0.245)	(0.209)	[0.845]	[0.161]	[0.301]
Abstract (T0)	0.247	0.234	0.181	0.584	0.006	0.025
	(0.215)	(0.235)	(0.194)	[1.000]	[0.122]	[0.166]
Observations	498	853	410			

Notes: The table shows mean individual pure altruism and warm-glow estimations by age and identity treatment. The mean is also presented in Figure 2. The individual estimates of pure altruism and warm-glow in the table are based on Equation 9 and a non-linear Tobit method. This method takes into account the corner solutions. Two sided Student t-test. The estimated p-values are reported and the sharpened False Discovery Rate (FDR) q-values are displayed in brackets. Standard deviations in parentheses. * p<.1, ** p<.05, *** p<.01

Table 10: Motivations of altruism - by Age

	All	7-10ys	11-13yrs	14-17yrs	Parents
	(1)	(2)	(3)	(4)	(5)
	b/se	b/se	b/se	b/se	b/se
Pure altruism(α)					
Constant	0.042	0.035	-0.006	0.118**	0.119***
	(0.036)	(0.070)	(0.060)	(0.057)	(0.022)
Warm glow(β)					
Constant	0.337***	0.362***	0.372***	0.264***	0.181***
	(0.026)	(0.051)	(0.044)	(0.040)	(0.013)
sigma_m					
Constant	12.227***	11.776***	12.670***	11.859***	28.819***
	(0.151)	(0.273)	(0.235)	(0.282)	(0.366)
Obs	544	155	242	147	517
Hypothesis testing		(2) vs (3)	(2) vs (4)	(3) vs (4)	
H0: α		0.138	0.213	0.025**	
H0: β		0.783	0.001***	0.000***	

Notes: Robustness checks - The table shows the estimates of pure altruism and warm-glow based on a linear maximum likelihood estimation. The estimates are presented for the sample of children and their parents in the baseline treatment - Abstract. The estimates are presented for three age groups. This method does not take into account the corner solutions. Robust standard errors in parentheses. * p<.1, ** p<.05, *** p<.01

Table 11: Motivations of altruism - Religious identity of recipient

	Abstract	In-group	Out-group
	(1)	(2)	(3)
	b/se	b/se	b/se
Pure altruism (α)			
Constant	0.042	0.093***	0.129***
	(0.036)	(0.028)	(0.030)
Warm glow (β)			
Constant	0.337***	0.286***	0.287***
	(0.026)	(0.020)	(0.021)
sigma_m			
Constant	12.227***	11.748***	11.812***
	(0.151)	(0.133)	(0.136)
Obs	544	645	624
Hypothesis testing	(1) vs (2)	(1) vs (3)	(2) vs (3)
H0: Alpha	0.052	0.000	0.123
H0: Beta	0.000	0.033	0.953

Notes: Robustness checks - The table shows the estimates of pure altruism and warm-glow based on a linear maximum likelihood estimation. The estimates are presented for the entire sample (pooling across agr groups) and disaggregated by the three identity treatment groups. This method does not take into account the corner solutions. Robust standard errors in parentheses. * p<.1, ** p<.05, *** p<.01.

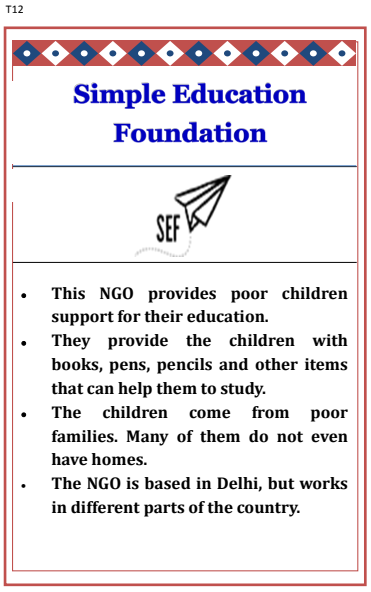
Table 12: Motivations of altruism - by Age and Identity

	All	7-10yrs	11-13yrs	14-17yrs	Hypothesis test		
	(1) b/se	(2) b/se	(3) b/se	(4) b/se	(5) (2) vs (3)	(6) (2) vs (4)	(7) (3) vs (4)
Pure altruism (α)							
Ingroup	0.050	0.010	0.097	0.033	0.017	0.805	0.384
	(0.046)	(0.090)	(0.071)	(0.078)			
Outgroup	0.087*	0.005	0.143**	0.081	0.053	0.217	0.477
	(0.046)	(0.095)	(0.072)	(0.075)			
Constant	0.042	0.035	-0.006	0.118**	0.138	0.213	0.025
	(0.035)	(0.069)	(0.058)	(0.055)			
Warm glow (β)							
Ingroup	-0.051	-0.033	-0.087*	-0.023	0.266	0.893	0.011
	(0.032)	(0.066)	(0.051)	(0.053)			
Outgroup	-0.050	0.002	-0.087*	-0.047	0.211	0.227	0.343
	(0.033)	(0.070)	(0.052)	(0.051)			
Constant	0.337***	0.362***	0.372***	0.264***	0.78	0.001	0.000
	(0.025)	(0.050)	(0.042)	(0.038)			
sigma_m							
Constant	11.915***	11.657***	12.233***	11.467***			
	(0.081)	(0.149)	(0.119)	(0.161)			
Obs	1813	544	645	624			

Notes: Robustness checks - The table shows the estimates of pure altruism and warm-glow based on a linear maximum likelihood method. The estimates presented are the marginal effects from the interaction term between age groups and the identity treatment. The baseline or reference group is the Abstract treatment. This method does not take into account the corner solutions. Robust standard errors in parentheses. * p<.1, ** p<.05, *** p<.01.

Figure 6: Flyer-Hindu Identity treatment (English version)

(a) Pages 1 and 4



(b) Pages2 and 3

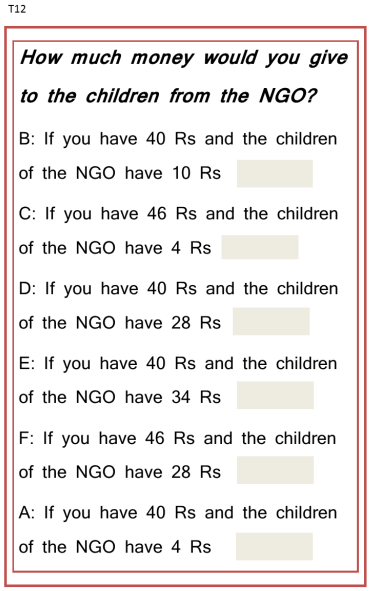


Figure 7: Flyers-Abstract treatment

Figure 8: Flyers-Identity treatment (Muslim children)

10 Appendix B - Questionnaires

I. Education survey

The education survey is the same as the survey **??** in Chapter 1.

II. Exit survey

The enumerators randomnly selected 50% of the students in the class and asked them questions regarding the pictures and the NGO mentioned in the flyer. In addition, they were also asked questions on their religiousity.

1. **Student ID**: _____
2. **School ID**: _____
3. **Your name**: _____
4. **Father's name**: _____
5. **Last name**: _____
6. **Have you heard of this NGO (Show picture) before?**

   ☐ Yes

   ☐ No

Below are some statements. Please answer by selecting one of the following options:

7. **Giving some of your earned gift to this NGO will benefit the entire society.**

   ☐ Yes ☐ No

8. **After looking at these pictures, do you think the NGO will help only those children from your own religion?**

   ☐ Yes ☐ No

9. **You would give your gift to the children of this NGO because:** You can answer more than one option

   ☐ They were children from your religion

   ☐ They were poorer that you

   ☐ They were poor and from your religion

   ☐ They were poor but not from your religion

10. **If other children increased their giving to the poor children, what will you do?**

    ☐ Follow what the other children did

    ☐ I will give more

☐ I will give less

☐ I will give the same as before

☐ I do not know

11. If we reduce some money from your gift and give it directly to the children, what will you do?

☐ I will give more

☐ I will give less

☐ I will give the same as before

☐ I do not know

12. If other children from your own religion increased their giving to the poor children, what will you do?

☐ I will give more

☐ I will give less

☐ I will give the same as before

☐ I do not know

13. Expectation: How much do you think the other children in your class gave to the children of this NGO? State a number.

Minimum: _____

14. Which of the following religious places do you frequently visit?

☐ Temple

☐ Mosque

☐ Church

☐ None [End the questionnaire]

☐ Others: _____

15. How often do you visit this religious place

☐ Everyday

☐ Once a week

☐ Few times in one month

☐ Once in 6 months

☐ Once a year

☐ Never

III. Parents survey

Both mothers and fathers of the respondents were asked a few questions over a telephonic conversation. At the end of the survey, they played a dictator game and recieved some money in the form of telephone recharge. Both the survey questions and the dictator game is explained below.

To the parents:*I am a researcher conducting research on schooling in Mumbai. We had recently visited your child [name of child] in their school. We would also like to ask you few questions. The questions relate to your household situation and your opinions regarding the society. We would be grateful if can respond to these questions. I would like to tell you that this information will be treated with complete confidentiality and never disclose your views.*

16. **Are you willing to answer the questions that I will be asking you? You can withdraw your consent incase you do not wish to answer any of the questions at anytime of this survey.**

    ☐ Yes [Continue to next question]

    ☐ No [End survey]

Opportunities 1

17. **All religious groups and caste groups should have equal chances to get a good education in this country.**

    ☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree

18. **Women should have the same rights as men in every way.**

    ☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree

19. **All religious and caste groups should have equal chances to get good Jobs in this country.**

    ☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree

20. **Schools should teach students to respect members of all religious groups.**

    ☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree

21. **When Jobs are scarce, men have more right to a job than women.**

    ☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree

Opportunities 2

22. **Children who are members of certain minority religious and caste groups have fewer chances than other children to get a good education in this country.**

    ☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree

23. Girls have fewer chances than boys to get a good education in this country.

☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree

24. Adults who are members of certain minority religious and caste groups have fewer chances than others to get better jobs in this country.

☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree

25. Women have fewer chances than men to get Jobs in this country.

☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree

26. Have you faced discrimination from people of other religions?

☐ Yes

☐ No

27. In the last 6 months, have you donated anything for charity or to poor people?

☐ Yes

☐ No [Skip to 26]

28. Do your children know about this?

☐ Yes

☐ No

29. Do you speak to your children about charity and donations?

☐ Yes

☐ No

Socio-Economic details

30. Complete name: _____

31. What is the name of your child?: _____

32. What is your relationship with the child?

☐ Mother ☐ Father ☐ Guardian

33. What is your total monthly income? (in Rs.): _____

34. We would like to know something about the organisations in which you participate. Here is a list of several organisations. Please indicate if you are a member or not, if you are an active or non active member (Mark only one answer per line)

	I am not a member	I am an active member	I am a member but not active
Political party			
Religious organisation			
Housing society			
Workers union			
Others _____			