Disaster, Aid and Preferences: The Long-run Impact of the Tsunami on Giving in Sri Lanka

Calamity, Aid and Indirect Reciprocity: the Long Run Impact of Tsunami*

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Abstract

Natural disasters have been shown to produce effects on social capital, risk and time preferences of victims. We run experiments on altruistic preferences on a sample of Sri Lankan microfinance borrowers affected/unaffected by the tsunami shock in 2004 at a 7-year distance from the event (a distance longer than in most empirical studies). We find that people who suffered at least a damage from the event transfer less in dictator games as senders (and expect less as receivers) than those who do not report any damage. Interestingly, among damaged, those who suffered also house damages or injuries send (expect) more than those reporting only losses to the economic activity. Since the former are shown to receive significantly more help than the latter we interpret this last finding as a form of indirect reciprocity.

Keywords: tsunami, disaster recovery, social preferences, altruism, development aid.

JEL codes: C90, D03, O12.

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1. Introduction

Natural disasters are dramatic shocks which produce severe consequences on at least two main economic dimensions. At macro level they cause widespread destruction of material wealth and capital stock - with consequent job losses - creating the premises for a following phase of reconstruction. At micro level they affect expectations, preferences and choices of economic agents with consequences on their consumption/saving and human capital investment decisions.

A first and still ongoing branch of the literature has mainly focused on empirical research at macro level (Skydmore 2001; Toya and Skidmore, 2002 and 2007; Kahn, 2005; Cuaresma et al. 2008; Noy, 2009) while, more recently, a new branch of empirical papers has started to analyze with experimental data the impact of calamities on individual preferences with conflicting results which represent an unsolved puzzle in the literature.

To quote just an example, on the one side, Cassar et al. (2011) find that Thai tsunami victims become slightly more impatient. The interpretation is that one of the factors affecting subjective discount rates is uncertainty about the future and the calamity leads to a restatement of how much the future is uncertain[1]. On the other side, Callen's (2010) empirical findings go in opposite direction with respect to those of Cassar et al. (2011) documenting a significant reduction of impatience in the Sri Lankan victims of the same Tsunami calamity.

Natural and manmade disasters have been tested and found to affect not only discount rates, but also social capital, trust and trustworthiness, and risk aversion. Whitt and Wilson (2007) find increased group cooperation among individuals who were evacuated from New Orleans to Houston shelters in the aftermath of Hurricane Katrina, while Solnit (2009) provides evidence that disasters are more often catalysts for social capital increase than for social

[1] See Vastfjall et al. (2008) for a psychological research on this issue using a sample of Swedish undergraduate students.

order collapse. Castillo and Carter (2011) estimate the impact of the 1998 hurricane Mitch on altruism, trust and reciprocity on a sample of Honduran victims. The authors find a non-linear effect of the severity of the shock on the mean and variance of behaviors: intermediate shocks help coordination around a higher equilibrium in an anonymous interaction game, while extreme shocks undercut such cooperation. Fleming et al. (2011) show that people hit by the Chilean 2010 earthquake reveal significantly lower trustworthiness. Eckel et al. (2009) document that survivors of Hurricane Katrina in New Orleans tended to act more risk lovingly in the short term. Cassar et al. (2011) find that Tsunami victims are more trusting, moderately more trustworthy and, contrary to what found by Eckel et al. (2009), more risk-averse. Cameron and Shah (2011), similarly to Cassar et al. (2011), register a significant increase in risk aversion among individuals who experienced a natural disaster in Indonesia. The authors have also the opportunity to provide evidence on this rationale by finding that calamity survivors report significantly and unrealistically higher probabilities of natural disasters in the months following the event. When looking at manmade calamities, Voors et al. (2012) find that people exposed to violence in Burundi have higher discount rates. In a similar vein, Becchetti et al. (2011) run a field experiment in Kenya and find that violence suffered during the 2007 political outbreaks negatively affects trustworthiness.

We intend to contribute originally to this literature in four main respects.

First, we believe that, given its heterogeneous and conflicting results, one of the most relevant contributions would be the attempt of interpreting such variability by considering a more complex pattern of relationships than the simple calamity experience/non experience. We are aware that part of the heterogeneity in the existing results on catastrophes and social preferences may be well due to cultural differences and/or differences in experimental designs and methodologies. However, we argue that a factor which may help to explain a great deal of this variation is *the type of damage suffered*. In order to capture such factor we

measure in different ways experiences of aid and recovery in our survey and distinguish six different types of economic and psychological damages, namely: i) family members dead or injured or, alternatively, damages to ii) house; iii) office buildings; iv) working tools; v) raw materials; vi) economic activity in general.

Second, Callen (2010) and Cassar et al. (2011) collected data and run experiments on the effect of Tsunami respectively in mid 2007 and mid 2009, while our database refers to December 2011, seven years after the catastrophe. This longer time horizon allows us to capture longer run calamity and recovery effects on social, risk and time preferences.

Third, differently from both Callen (2010) and Cassar et al. (2011), by having information on individuals' victimization status within each village, we do not measure the impact of the shock at the village but at the individual level. This may help to reduce heterogeneity between the "treatment" (participants to the experiment hit by the Tsunami) and the control group (inhabitants of the same village who were not hit by the calamity).

Fourth, we look at differences not just between victims and non victims but *within* the more homogeneous groups of damaged based on the different types of damages suffered discriminating among damages to individuals, to their homes and economic losses.

The combination of these four original features also contributes to solve the identification problem arising from the impossibility of randomizing ex ante the calamity experience. What we need to verify from this point of view is the plausibility of the alternative interpretation to a causality link going from the tsunami shock to social preferences, that is, the hypothesis that more altruistic individuals selected areas (in which they have family, house and economic activities) which were more likely to be inundated by the tsunami.

We document that such interpretation is hardly plausible given that: i) very limited differences on observables (and, arguably, on unobservables) exist between damaged and non damaged living in the same villages; ii) differences on observables (and, arguably, on unobservables) are not significant in the within-victims analysis when we compare damaged who suffered different types of shocks (ie. the difference in distance from the coast for the two groups with different types of damages falls to 40 meters).

A further element which reduces heterogeneity is that both damaged and non damaged belong to a restricted and selected group of individuals borrowing from the same microfinance organisation. This implies that they share some common unobservable factors (ie. sense of entrepreneurship, trustworthiness which are typically out of reach for the experimenter and are the main suspect of self-selection) which helped them to pass the screening of the same MFI which has salient incentives to select only potentially successful borrowers. Furthermore, since this MFI, as many others traditionally do, organises frequent borrower meetings, we also reasonably assume that damaged and non damaged share similar cultural elements represented by the organization *ethos*.

To sum up, our identification strategy hinges on three elements. Balancing properties on observables are met by comparing damaged and non damaged living at small distance from each other in the same village and, even more, victims of different types of damage. The conditional independence assumption (unobservables and outcomes are independent conditionally upon observables) is likely to be met in this framework given that both treatment and control group participants are borrowers from the same MFI, a factor which is likely to control for what is considered one of the most important unobservables in the literature (enterprising attitude).

The main findings of the paper support the hypothesis that the shock affects participants' preferences even in the long run. First, those who suffered at least one damage give and expect less than those who did not. Second, we find a significant difference among damaged since those suffering only losses to the economic activities give and expect significantly less than those who suffer also injuries or house damages. Since the latter are shown to receive significantly more help than the former, we interpret the superior generosity of house damaged as a form of indirect reciprocity.

The paper is divided into seven sections (introduction and conclusions included). In the second section we present our research design. In the third section we present descriptive findings and in the fourth our research hypothesis. In the fifth and sixth sections we illustrate and comment our empirical findings. The seventh section concludes.

2. Research Design

In what follows we briefly sketch the historical scenario in which our research is carried out (section 2.1) and then enter into details of our experiment design (section .2.2)

2.1 The Background

Sri Lanka was severely hit by the 2004 tsunami. Over 1,000 kilometers of coast (two thirds of the country's coastline) were affected by the wave. The calamity caused dramatic human (over 35,000 dead and 443,000 displaced people) and economic losses (24,000 boats, 11,000 businesses and 88,500 houses damaged or destroyed). Several international organizations and NGOs stepped in to provide help and support.

The specific characteristics of this event was that of affecting almost randomly individuals living at short distance from each other based on their location at the moment of the tsunami with respect to the waterline (see Figure 1). This unfortunate event therefore created a

particularly favourable scenario to investigate the effects of calamities and aid on individual preferences in a quasi-experimental environment with reduced identification problems.

From November 2011 our research team carried out the field part of the study in Sri Lanka with the support of a local staff (driver and translators). From a list of borrowers of a local microfinance institution (Agro Micro Finance, hereon AMF) we randomly selected 380 borrowers. Out of those, with the help of the AMF staff, we identified a group of individuals hit by the 2004 tsunami and a group of them who were not.[2] Participants to our experiment originate from three villages located on the southern coast of Sri Lanka, namely Galle, Matara and Hambantota. Differently from the studies summarized in the introduction (in which all damaged people were selected from one village whereas all non-damaged from another village not exposed to the shock), we sampled both damaged and non-damaged participants at village level [3]. As documented by Figure 2, the three chosen villages were only partially affected by the calamity and this gave us the opportunity to exploit such within-village heterogeneity.

We decided to carry out our analysis on a sample of borrowers from the same microfinance institution for two reasons. First, the initial screening by AMF (and/or potential self-selection into it) is likely to reduce heterogeneity between the two groups whose social preferences are to be compared, i.e. damaged vs. non damaged borrowers. Second, AMF loan officers informed us about the damaged/non-damaged status of their borrowers *before* implementing the experiment. Thanks to this prior information, we were able to assign ex-ante participants to the two groups of damaged/non-damaged in each village and avoided potential framing

[2] The damaged/non damaged status of the borrowers is checked and confirmed in the ex post-experimental survey. Damaged are slightly oversampled with respect to the control sample (201 against 179) in order to have sufficient groups for within damaged experiments.
[3] The distribution of damaged borrowers within villages is as follows: 66.2 percent in Galle, 52.5 percent in Matara and 44.5 percent in Hambantota.

effects arising from asking players for their damaged/non-damaged status before the beginning of the game. [4]

2.2 The Experiment

The study is composed of three parts, i.e in the order: i) an experimental session, ii) a socio-demographic survey, iii) a final lottery.

As far as the experimental session is concerned, we implement two games, i.e. a "Dictator Game" (DG) and a "Risky Investment Game" (RG). We randomly alternate the two games to avoid order effects. The DG is a standard and simple game largely adopted in the literature to elicit altruistic preferences in an incentive compatible way (see, for instance, Eckel and Grossman, 1996 and Engel, 2011). The game involves two players, a Sender (S) and a Receiver (R). Their true identity is not revealed so that no player can identify whom (s)he is playing with. S is endowed with 900 LKR (the equivalent of 5.74 €) and has to decide how much of it to send to R; R takes no actions in this game and receives the amount of money S has sent. According to the classic utility theory, S's maximum utility is reached by sending 0 LKR and keeping the whole endowment (900 LKR). Any S's deviation from 0 can be interpreted as a measure of altruism. [5]

The RG provides us with a behavioral measure of risk aversion through a simple game which does not require a great deal of participants' familiarity with numbers and probabilities nor it leaves much room for interpretation to translators/experimenters. The game, adopted in a slightly different framework also by Charness and Genicot (2009) and Gneezy and Potters (1997), consists of a simple investment decision. Each participant is endowed with 300 LKR

[4] A borrower is classified as "damaged" if she/he suffered at least one type of physical or material harm from the 2004 tsunami (i.e. injuries to family members, damage to the economic activity and/or to the house).

[5] A recent meta-paper of Engel (2011) actually shows that departures from the self-interested benchmark are huge. Using data from 328 different dictator game experiments for a total of 20,813 observations the author finds that the share of individuals following Nash rationality is around 36 percent. The share of dictators giving zero falls to 28 percent if the money property rights are of the recipient and the dictator may take from him, 25 percent if players handle real money in the game, and 19 percent if the recipient is deserving (ie. is identified as poor). It falls further for adult or elder dictators.

and has to decide whether keeping the money (option 1) or investing any portion *x* of it in a risky asset that has a 50% chance of success (option 2). The investment pays 3*x* if successful but zero if unsuccessful; the decision maker keeps all uninvested units.[6] The amount invested (*x*) provides us with a rough proxy of risk aversion (the higher the investment, the less risk averse being the individual).

After participants make their choice, the game ends and they are asked to answer to questions concerning socio-demographic information, their social preferences[7] and the kind and intensity of damage they received in the 2004 on six dimensions, i.e. family members, house, economic activity, buildings/assets, working tools, raw materials.

The final stage is a lottery which provides us with a behavioral measure of all participants' time preferences. In order to elicit time preferences in a standard incentivized way we implemented a (simplified) procedure similar to that used by Andersen et al. (2008) and Cassar et al. (2011). We tell participants they are involved in a lottery we are running among all the 380 people we are interviewing. If (s)he will be extracted, s(he) can win at least 10,000 LKR. The participant has to choose among two payment methods for the lottery, i.e. receive a prize of 10,000 LKR after 2 months from the interview date (option A) or receive a prize of 10,000 LKR *+ x* after 8 months (option B). Each participant repeats this decision for eight *potential lotteries*; in each of those, we increment *x* in option B, rewarding the "patient" option more than the previous. The increments in *x* are accounted for by a variation of the interest rate from 2% to 100%.[8] We use the "switch point" - namely, the potential lottery

[6] A part from being easy to understand, the use of a 50% probability of success also avoids the problem of subjective over-weighting of low-probability events (Charness and Genicot, 2009). In order to further simplify the comprehension of the chances of success/failure, we assigned the outcome to the toss of a coin.
[7] We used some standard GSS questions regarding trust, negative reciprocity, sociability, etc. See the questionnaire in the Appendix.
[8] See the lottery and payoff table in the relevant experimental sheet in the Appendix.

number at which the participant switches from option A to option B - as a measure of impatience.[9]

Interviews and games are conducted mainly house-by-house by three teams composed of a field-researcher and a translator. Translators were intensively trained on the questionnaire, the game and standard experimental rules before the beginning of the project. [10]

2.2. The protocol

Participants are told about the sequence of the interview process, i.e. an experimental session composed of two games, a survey and a final lottery. They are informed they are paid just for one randomly extracted game. The game has been extracted before they play[11] so that their decisions in the game do not affect game-selection for payment. As far as the DG is concerned, the participant is told that, if that game is the one extracted for payment, (s)he can earn real money (up to 900 LKR) according to her/his own or the matched counterpart's choices in the game. Then the game is explained and the participant is informed on her/his role, i.e. S or R[12]. We show to R-players a close envelope containing the answer sheet of their matched S-player. Then the game starts and the participant reports her/his choices. If the participant is chosen to be R, no choice is required and we elicit her/his First Order Beliefs (FOBs), i.e. how much (s)he thinks S has sent to him/her (we pay 50 LKR for a correct guess). The protocol is similar for the RG (except from the matched-player answer sheet since no roles are involved

[9] In particular, the later (sooner) the switch from option A to B - i.e. the higher (lower) the switch number - the more (less) participants are considered "*impatient*".

[10] Notice that in a preliminary version of the experiment we originally designed a more complex experimental scheme to elicit risk and time preferences by using an approach more closely related to Anderson et al. (2008) and Holt and Laury (2002). Once in the field, we however opted for the simpler one described above, thus sacrificing completeness/complexity in order to ensure an adequate level of comprehension for both translators and participants and, consequently, more reliable data (with the original framework each interview process would have lasted for more than two hours and a half for each participant with the risk of generating non reliable answers because of the high degree of stress induced to translators and participants).

[11] The randomly extracted game was contained in a sealed envelope. The envelope was shown to the participant before the experimental session started.

[12] We kept the wording neutral in all games in order to avoid framing effects (for instance, we never presented the game as a "dictator game", but we rather called it "DG". Roles were phrased as "player 1" and "player 2" respectively for S and R).

in this game). Participants are told they can earn up to 900 LKR - if such game is selected for payment - according to their choice and the outcome of a fair coin that will be tossed at the end of the interview process[13]. Then the game is explained, the participant makes his/her decision and the game ends. When the experimental session ends, the socio-demographic survey is delivered and, finally, the lottery described above is implemented.

Payments are carried out as follows. When the interview process finishes, we open the envelope containing the game extracted for payment. If the game selected for payment is the RG, we toss the coin and pay the subject according to her/his choice if (s)he opted for option 2; we pay 300 LKR otherwise. If the game selected for payment is the DG, if a participant played as S, (s)he is given the amount of money (s)he has chosen to keep; if (s)he played as R, we show the answer sheet of the matched S-player and pay accordingly[14]. As far as the payment for the lottery is concerned, we inform the participant that when all the other interviews are finished, we extract one out of all the names of the people interviewed; that person will be the only winner of this lottery. Then, we extract from another urn a number from 1 to 8 and we pay the winner only according to his/her choice in the potential lottery number equal to the one extracted.[15]

Despite the potential interviewer-bias due to the presence of a translator, we believe in truthful reporting since the amount at stake is very large considering participants' standards of living --- even if we ignore the payment from the lottery, the maximum payoff from one of the games (900 LKR) represents in our sample about 51% of the median per capita monthly food expenditure. Moreover, even if the presence of translators might have influenced participants' reported decisions, the unobservable interview bias is not likely to explain

[13] We decide to pay at the end of the interview process (i.e. when decisions or questions are no longer required) in order to avoid potential confounding effects of pay-off revelation on later stages of the interview.
[14] We interviewed each day first S-players and then R-players in order to make this payment procedure feasible.
[15] For example, if the number selected is 5, we pay the winner the amount corresponding to his/her choice in lottery 5. If the winner in lottery 5 chose to receive "10,000 after two months", we transfer that amount via "Western Union" after two months from his/her interview date.

completely the different altruistic behavior between damaged vs. non damaged participants since both would be exposed to the same source of bias.

3. Descriptive findings

Summary statistics of our sample document that participants' age is 47 on average while the gender split (around 93 percent women) reproduces that of some of the main microfinance organizations in Asia (Table 1.1).[16] The average number of household members is 4.5. Most of the women are married (84 percent). The average number of education years among participants is 10.5 (two and a half years of secondary school). Almost 63 percent of them reveal to be relatively impatient[17] and, on average, 60 percent of the amount at disposal is invested in the risky option.

Slightly more than half of participants to the experiment (53 percent) suffered from at least one type of damage from the tsunami (Table 1.1).

We divide damage types into three categories: i) injuries to family members; ii) losses to economic activities (i.e. damages to raw materials, to the economic activity or to working tools); iii) damages to one's own house. We document in this respect that the majority of those hit by the tsunami experienced losses to the economic activity (84 percent). A much smaller share of them (24 percent) experienced injuries and a similar share damages to the house (26 percent). When we look at overlaps among different types of damages we find that 6.5 percent experienced injuries only, 17.4 percent experienced both injuries and losses to economic activity, 25.4 percent both losses to economic activities and house damages and around 47 percent of the sample only losses to economic activities.

[16] Roodman (2012) documents that, after 1985, the year in which the policy of lending to women becomes official, Grameen converged to a 97 percent of loans to women. This figure is close to the 93 percent share of the other main microfinance institution (BRAC) operating in South Asia.

[17] They switch from option A to option B in a potential lottery number greater or equal then the median one (i.e. seven).

In order to have a clue on whether the identification problem is serious we inspect balancing properties between damaged and non damaged and find that some differences are significant even if we look at individuals who all share the experience of being borrowers of the same microfinance organisation (Table 1.3).

More specifically, the damaged are on average 5 year older and married in a higher proportion. As expected, they are significantly less distant from the coast in terms of house location (3.5 against 10.7 Km). The higher share of damaged working in fishery and the lower share of them working in agriculture is also consistent with such difference in geographical distance.

This important point confirms that the Tsunami shock is far from perfect in randomly selecting damaged and non damaged in terms of observables. However, if we discriminate within damaged using different types of shocks, we find that heterogeneity in terms of observables is practically eliminated. More specifically, the partition we consider relevant (also in order to have a sufficient number of observations in the two samples) is that discriminating between those who suffered only economic losses and those who suffered house damages or injuries to relatives (with or without concurring losses to economic activity). Hence, even though we allow for the presence of an overlapping element (economic losses), the crucial factor of this taxonomy (the discriminating factor between the two groups) is the experience/non experience of house damages or injuries to relatives. This for two reasons. First, house and family are different from business activities and a damage to them has a different psychological impact. Second, aid received by donors after the tsunami is substantially different according to the type of damage. This last point is documented in Table 1.4: 44.2 percent of interviewed with house damages received monetary help against only 23.2 percent among those reporting only losses to the economic activity (the difference is significant at 95 percent). The shares of the same two groups receiving aid under the form of

credit is 13.5 against 8.5 percent, while 48 against 28.4 percent in terms of food aid, 40 against 18 percent in terms of medicines, 30.8 percent against 6.3 percent in terms of raw materials. A similar pattern is observed also for what concerns tools and consumption aids.

To summarize this information we create for each respondent a synthetic aid index (the *helpindex* variable) which is equal to the sum of the types of aid received (*receivehelp*) divided by the maximum potential number of aid typologies an individual might receive (eight, in our case). Consistently with the above pattern of each different aid typology, those who report damages to the house show a higher score of the *helpindex* variable than those who report only losses to the economic activity. The former declare to have received 36.1 percent of the total potential aid, whereas the latter only 17.2 percent and the difference is statistically significant in our non-parametric test (z-stat = 3.661, p-value = 0.0003). Such a difference remains significant also when comparing those who report only losses to the economic activity against those who declare house damages *or* injuries to relatives (29 vs. 17.2 percent, with z = 2.801 and p-value =0.0051).

Balancing properties for these two categories are shown in Table 1.5. Age and marital status do not significantly discriminate anymore and, more in general, there are no socio-demographic variables which are significantly different at 5 percent between the two groups. Differences in geographical distance from the coast are now minimal (just 40 meters) and no longer significant in the parametric test. Hence it seems likely that some random factors (i.e. presence or not of natural/artificial barriers which reduce the wave impact on the house or workplace, difference of some meters in the position of the damaged at the moment of the Tsunami, etc.), have crucially influenced the probability of having just losses to the economic activity or also house damages or injuries. Beyond such random factors, no other significant differences in observables and unobservables exist between the two different groups of microfinance borrowers hit by the tsunami.

It is important to notice that in the preliminary tests just described, damaged and non-damaged participants do not show significant differences in terms of risk and time preferences. We also run further econometric analysis on the relations between tsunami damages and risk/time preferences, but no significant patterns have been found [18]. This evidence does not necessarily contradict the hypothesis that the calamity may have affected risk and time preferences soon after the event [19]. It however documents that in a longer run perspective such an effect is not present in our study. This leads us to focus on altruistic preferences, which seem to be significantly and persistently affected from the tsunami damages even at a seven year distance from the event. Hence, in the next sessions we concentrate our analysis on the comparison among damaged and non-damaged responses in the dictator game and use risk and time attitudes as controls.

4. Hypothesis testing

The hypothesis we want to test is whether the tsunami shock in dictator games affects:

i) sender's giving,

ii) receiver's expectation on sender's giving;

iii) a "solidarity norm" which, if exists, we assume as being equal to the amount given for the sender and the expectation about the amount to be received for the receiver.

This third point refers to the ample literature on social norms as explicit or implicit rules which individuals from the same community follow in order not to incur in informal sanctions from the same community members or in psychological sanctions arising from deviations from the social norms when these are interiorized and become also moral norms.[20] We call

[18] Econometric results on the effects of tsunami damages on time and risk preferences are omitted for reasons of space and for the lack of significant patterns. They are, however, available upon request.

[19] Thus, this does not necessarily contradict neither Callen et al. (2010) finding on tsunami-damaged people's discount rates at 2.5 years from the event, nor those by Cassar et al. (2011) at a 5-year distance from it.

[20] According to Bicchieri (2006), two conditions must be satisfied for a social norm to exist in a given population. First, a sufficient number of individuals must know that the norm exists and applies to a situation. Second, a

the latter "solidarity norm" since the motivation for the sender's giving may just be pure altruism or conformity to a solidarity norm. In the same way the rationale for the receiver's expectation is the average forecast on what an anonymous individual of the same village would do in these situations. The rational expectation in this case is therefore the social norm of the village about solidarity and giving.

What also seems to justify the existence of such rule is the extremely low standard deviation in dictator giving (2 percent) if compared to the average giving (34 percent) and the closeness of such average to a 1/3 rule of thumb and to the world modal giving interval documented by the most important meta paper on dictator games (Engel, 2011). The average amount expected by the receiver does not coincide but is also close (41.5 percent). Receivers therefore reveal excess optimism in their expectations on the amount received by senders.

Given the longer time distance from the shock in our experiment with respect to similar results in the literature our three hypotheses may be considered as tests on the long run effects of the tsunami calamity on social preferences.

More formally we test what follows

i)	*Sender giving*	H_{0A}: $G^{Sr\ Dam} = G^{Sr\ NonDam}$	*vs.*	H_{1A}: $G^{Sr\ Dam} < G^{Sr\ NonDam}$
ii)	*Recipient expected receiving*	H_{0B}: $\mathrm{E}[R]^{RcDam} = \mathrm{E}[R]^{Rc\ NonDam}$	*vs.*	H_{1B}: $\mathrm{E}[R]^{Rc\ Dam} < \mathrm{E}[R]^{Rr\ NonDam}$
iii)	*Solidarity norm*	H_{0C}: $Sn^{Dam} = Sn^{NonDam}$	*vs.*	H_{1C}: $Sn^{Dam} < Sn^{NonDam}$

where $G^{Sr\ Dam}$ *and* $G^{Sr\ NonDam}$ are, respectively, the amounts given by damaged and non damaged, $\mathrm{E}[R]^{Rc\ Dam}$ and $\mathrm{E}[R]^{Rc\ NonDam}$ the amounts that recipients from the two groups expect to receive and *Sn* the solidarity norm which is the amount sent for senders and the expectation about the amount received for recipients.

Furthermore, if we believe that damaged individuals are affected differently according to whether they had only losses to the economic activity or also house damages and personal

sufficient number of individuals must have a *conditional preference* to comply with the norm, given the right expectations are satisfied. This second condition—the presence of a sufficient number of *conditional followers*—is the one that justifies distinguishing social and moral norms.

injuries (due to the psychological effect or to the more significant experience of aid lived) we also test:

iv)	*Sender giving*	H_{0A}: $G^{Sr\ HighDam} = G^{Sr\ LowDam}$	*vs.*	H_{1A}: $G^{HighDam} > G^{S\ LowDam}$
v)	*Recipient expected receiving*	H_{0B}: $\mathrm{E}[R]^{Rc\ HighDam} = \mathrm{E}[R]^{Rc\ LowDam}$	*vs.*	H_{1B}: $\mathrm{E}[R]^{Rc\ HighDam} > \mathrm{E}[R]^{Rc\ LowDam}$
vi)	*Solidarity norm*	H_{0C}: $Sn^{HighDam} = Sn^{S\ LowDam}$	*vs.*	H_{1C}: $Sn^{HighDam} > Sn^{S\ LowDam}$

where *HighDam* are victims who suffered *also* house damages or injuries (ie. in addition or not to losses to the economic activity), while *LowDam* are damaged people suffering only losses to the economic activity.

We first perform parametric and non parametric tests on the hypothesis that the tsunami shock has long run effects on social preferences looking at the difference between damaged and non damaged. When we consider test i) on dictator's giving we find that the null is rejected at 95 percent significance level (Table 2.1). On average damaged give 31 percent of what they receive, while non damaged 6 percent more. Note that the share of experiment participants which are fully self-interested is very low and equal to 2.62 percent (only five players with two tsunami damaged among them).[21]

When we perform the test in the subsample of damaged (excluding non damaged and comparing the two different damage groups) we find that the null of hypothesis iv) is not rejected. Consider however that the number of observations is very small and that we find that those who suffered a damage to their house give on average 37 percent, much more than those who suffered only economic losses (29 percent). Those suffering injuries are in the middle (32 percent).[22]

[21] The share of fully self-interested participants is far lower than that reported by Engel (2011) in his meta paper on dictator games (36 percent). Note however that the Engel's share falls considerably in the subgroups of deserving, adult and non student recipients. We may as well think that a further fall may be caused by the impact of the tsunami event even on non victims.

[22] Note that these average giving shares are consistent with the world modal value of the distribution of giving in the meta paper of Engel (2011) which is in the 30-40 percent interval.

When testing hypothesis ii) between damaged and non damaged we find that the null is rejected at 95 percent (p-value 0.017 in non parametric and 0.046 in parametric tests). Non damaged expect on average 44 percent while damaged 39 percent. Again, we find among damaged a difference between those suffering only losses to the economic activity (expecting 33 percent) and those suffering injuries (43 percent) and house damages (42 percent). This creates in this case a significant difference within damaged between those suffering only losses to the economic activity and those having also injuries or house damages (p-value 0.025 in non parametric and 0.012 in parametric tests) leading to reject hyp. v) in favour of the alternative. Given what considered in the previous section and in the introduction, it is very hard to attribute such differences to some form of selection into victimization in this case, both on logical grounds and after observing balancing properties on observables in Table 1.5.

Note that results on the impact of the shock on giving and expected giving go in the same direction. This supports the hypothesis that the shock affects the way participants behave as senders and they expect to be treated as receivers, presumably because they expect to be treated as they would do in the senders' position.

As it is reasonable to expect, results from Tables 2.1 and 2.2, when aggregated, generate significant differences in terms of solidarity norms leading to strong rejection of hypothesis iii). In the comparison between damaged and non damaged the average share (given or expected to be received) is 41 percent for non damaged while 35 percent for damaged (p-value .002 in the non parametric test and .004 in the parametric test). This also indicates a strongly significant impact of the tsunami shock on the solidarity norm in the long run.

What is more impressive here is that the null is strongly rejected also within damaged (hyp. vi). Those suffering not only economic losses give or expect to receive on average 39 percent against 31 percent of the complementary sample (p-value 0.004 in the rank sum non

parametric test and 0.002 in the parametric test). As we already commented above identification problems are much more limited in this comparison since the two categories do not differ in terms of observables (see the balancing properties in Table 1.5) and even the difference in the average distance from the coast for the two groups is minimal. Note that the rejection of the null in direction of the alternative may be conceived here as a test of indirect reciprocity (Stanca, 2010, Nowak and Sigmund, 2005) if we interpret the result in the light of the difference in the help received by the two groups.

Consider as well that participants to the experiment know that their identity (and therefore their damaged/non damaged status) is not revealed to the counterpart. Furthermore, the design eliminates any reference to the damage experience (the survey including questions on the tsunami experience is administered after the experiment). Hence, damaged receivers cannot expect more because they assume that senders will give more to them knowing their damaged status.

On the other hand, senders may think they have the right to give less since they have been damaged, even though they cannot share this motivation with the receivers who, in turn, cannot internalize it in their utility function. However, it has to be also noted that, if this reasoning applies, no differences in giving should be observed between those who report only damages to the economic activity vs. those who report also injuries or house damages. Our data do not support this last point: more specifically, the inferior giving (and expected receiving) of those suffering only losses to the economic activity relative to those who report also injuries or house damages appears counterintuitive since the latter may expect and think that they have the right to give less (receive more).

The rationale for our findings may be of two different types. First, there may be different psychological effects when the damage concerns one's own dwellings and body (or physical

integrity of close relatives) with respect to a damage to one's own business. Second, the aid received may be different in the two cases. As a matter of fact we have documented that house damaged tend to receive significantly more aid than those suffering only losses to economic activities (see Table 1.3). In this sense our findings appear to support the hypothesis of generalised indirect reciprocity (Stanca, 2010, Nowak and Sigmund, 2005) according to which a kind (or unkind) action received directly or indirectly - in our case by development aid agencies or other donors[23] - is reciprocated towards a *third* agent - in our case, the receiver in a dictator game. Note that our result is particularly strong since the indirect reciprocating act occurs in a one-shot anonymous interaction and it cannot therefore be explained by reputational concerns as it occurs in some empirical tests of indirect reciprocity with iterated interactions (e.g. Wedekind and Milinski, 2000, Engelmann and Fischbacher, 2003, Seinen and Schram, 2004, Bolton, Katok and Ockenfels, 2004, Greiner and Levati, 2005).[24] Furthermore, the first action triggering indirect reciprocity is not produced experimentally but is a 7-year distance event, even though is an event certainly more important and memorable to affected players than those produced in artificial experiments.

5. Econometric analysis

Econometric estimates may enrich our parametric and non parametric tests by verifying the impact of additional covariates on giving and giving norms.

The general specification we test is

[23] Agro Micro Finance reported direct and indirect losses on 620 clients in the districts of Galle, Matara, and Hambantota and estimated that they amounted to almost 24.4% of the MFI loan portfolio at the tsunami date. Support to AMF refinancing needs came from USAID, UNDP, and an Italian MFI (Etimos). On the short run effects of this intervention see Becchetti and Castriota (2010 and 2011) .

[24] Relatively less evidence is available on strong indirect reciprocity (e.g. Dufwenberg et. al, 2000, Guth et al., 2001), and the results are generally not conclusive.

$$Y_i = \alpha_0 + \alpha_1 Damaged_i + \Sigma_k \gamma_k X_{ki} + \varepsilon_{it}$$

where Y is the dependent variable, that is, the share of the endowment sent for senders (in senders' estimates) or the amount that receivers expect to receive (in receivers' estimates), *Damaged* is the treatment dummy variable and the X socio-demographic controls include age, gender, years of education, two village dummies, marital status dummies, the body mass index, a variable measuring borrower's seniority (the number of loan cycles) plus three dummies for the respondent's working activity (trading, fishery and manufacturing).[25] For a robustness check we estimate the model with and without controls and we replace the damage dummy with two different types of damages (losses to the economic activity and injury) and keep the third as omitted benchmark (house damage).

We finally introduce as additional controls two experimental measures of impatience and risk attitudes. As already explained above, we do not find any significant effect of the damaged/non damaged status or the kind of damages on risk/time preferences. For this reason we use these experimental measures just as further controls in the estimates concerning altruistic preferences.

First of all, when considering giving as dependent variable (the *giving* variable), estimates findings document that none of the controls is significant at 5% (Table 3.1), except for the amount invested into the risky option (*risk_loving ratio*) which is positive and significant [26].

The damage dummy is negative and significant since senders hit by the tsunami give about 6 percent less than those who are not hit (a magnitude equal to the effect measured in parametric/non parametric tests in section 4). When we decompose the general effect into damage types (specifically losses to the economic activity and injuries with house damages as

[25] For details on the construction of such controls see variable legend in Table 1.
[26] On the relations between risk attitudes and social preferences see, among others, Back (1994) and Bohnet et al. (2008). The significance of the risk-preference variable may also be due to the multi-game nature of experiment, since payments depend on one randomly selected game.

omitted benchmark), we find that those suffering the former give 5.6 percent less relative to those who report house damages while there is no significant impact of the latter on giving. The adoption of Tobit estimates which take into account the left and right limit of our dependent variable does not change results discussed above.

In order to reduce further identification concerns we re-estimate the model with weighted least squares by weighting each observation inversely with the probability of being damaged[27]. Results are in this way enhanced since the damage dummy is more significant and the effect moves from 6 to 9/10 percent. Again, the effect is all concentrated on the loss to economic activity experience while house damage and personal injuries do not affect the giving choice (Table 3.2).

As far as the determinants of expected giving are concerned, we repeat the econometric analysis for receivers' expectation on sender's giving (Tables 4.1 and 4.2). Here we find exactly the same pattern of results observed for senders. The only difference from the previous regression is that time (and not risk) preferences are now significant predictors of expected giving. In particular, impatient participants tend to expect around 7% less than patient ones. Regarding the impact of tsunami, having received at least a damage reduces receiver's expected giving by 5 percent in the baseline estimate and by around 7 percent when we include other covariates. This effect is mainly driven by the losses to the economic activity since those who report such losses expect 6-7 percent less from the sender than those with house damages. Also in this case, there is no significant impact of injuries.

[27] Specifically, for each individual, the weights are computed as: $\frac{\text{damaged}}{\widehat{\text{pscore}_{(\text{damaged})}}} + \frac{1-\text{damaged}}{1-\widehat{\text{pscore}_{(\text{damaged})}}}$, where *pscore* is a non-parametric estimate of the propensity score (probability of *damaged*). The *pscore* is estimated using as regressors the following variables: *age, years_schooling, galle, hambantota, years_schooling, trading, fishery, manufacturing, BMI, distant, loancycle* (see variable legend in Table 1). For details on this methodological approach see, among others, Blattman and Annan (2010) and Hirano, Imbens and Ridder (2003).

Finally, we extend the econometric analysis also to hypothesis iii) as in the previous section. Specifically, we check the impact of the tsunami shock and of the various types of damage on the solidarity norm in the overall sample of experiment participants (Tables 5.1 and 5.2). The specification adopted allows us to control for the heterogeneity in the sender/receiver status with a receiver dummy and includes first the damage dummy (Tables 5.1a and 5.1b) and then the two types of damage separately (Tables 5.2a and 5.2b). Consistently with the previous analysis, for both cases we re-estimate the specifications by weighing each observation with the inverse of the propensity score of receiving at least a damage from the tsunami (Table 5.1b and 5.2b). The significance of the receiver dummy in all the specifications suggests that, net of the impact of all other controls and of the damage/non damage type, receivers expect 7-8 percent more than what the senders actually give (Table 5.1a and 5.1b). As far as the impact of the specific damages is concerned, we find that losses to the economic activity generate a deviation from the solidarity norm of around 6-7 percent relative to damages to the house (Table 5.2 a and b, columns 1, 3, 5 and 7). Consistently with all the previous results, there is no evidence supporting a possible impact of injuries on the solidarity norm. Moreover, confirming the results from parametric and non parametric tests in section 4, we find that borrowers who receive *only* losses to the economic activity tend to deviate from the solidarity norm by 6-8 percent relative to those who reported injuries or were house damaged (Table 5.2a and 5.2b, columns 2, 4, 6 and 8 – variable *OnlyEcLoss*). Among other controls, we find a significant impact of time preferences, with more impatient participants deviating from the solidarity norm, whereas no significant effects of risk attitudes are found.

6. IV estimates

We enrich our identification strategy through the instrumental variable re-estimation of the specifications that are more suspected of endogeneity (those on the damaged/non damaged

effect) given the documented presence of some differences in observables (see Table 1.3). Specifically, we repeat the estimates of Table 5.1 instrumenting the *damaged* dummy. The first natural candidate in our set of instruments is the individual's distance from the coast at the moment of the tsunami (even though the presence/absence of natural barriers makes the protecting capacity of such distance heterogeneous). The instrument is logically and statistically (see Table 1.3) relevant since those living closer to the coast were more likely to be damaged from the tsunami. It is also very likely to be logically valid since it is hard to assume that a difference of a few kilometers in terms of distance from the coast may affect altruistic preferences.[28]

A second instrument we use is individual's body mass index (BMI) defined as the individual's body mass divided by the square of his/her height. Also in this case the instrument appears logically valid since it is hard to think of a direct and statistically significant link between a proxy for human body fat and social preferences. In addition, interpreting BMI as a measure of health status or fitness, we have also a relevant instrument since more fit individuals (i.e., for instance, not over nor underweighted or in good health conditions) are reasonably more likely to escape harsh damages and recover faster than less fit ones.

We re-estimate the OLS specifications of Table 5.2 instrumenting the *damaged* dummy first with a dummy equal to one if the individual lived above the median sample distance from the coast at the time of tsunami (*distant*), then with the individual's *BMI* and, finally, with both instruments. Results are reported in Table 5.3. In all the specifications (with/without demographic controls) with the *distant* instrument the effect of receiving at least one damage from the tsunami on the solidarity norm is significant and strong in magnitude (i.e. tsunami damaged send/expect roughly 10 percent less than non damaged). Even if consistent in

[28] Note that the few observables in which the two groups of victims/non victims differ do not affect altruism in previous econometric estimates (see Tables 3.1 and 3.2).

magnitude and direction, the *damaged* dummy is not significant when instrumented only with *BMI*. In particular, while the high values of the first-stage F-statistics, as well as results of the Stock-Yogo test (2002 and 2005) when the instrument *distant* is adopted, confirm the relevance of the latter (given an acceptable bias of the instrumented coefficient), the specifications in which the instrument is just *BMI* are, conversely, subject to a weak instrument problem (Table 5.3, columns 3 and 4). This would not allow us to make robust inference on results obtained using only *BMI* as instrument. In contrast, when both instruments are used, the damaged effect remains significant and relatively close in magnitude to the one found in previous estimates (Table 5.3, columns 5 and 6); the first stage F-statistics are significantly high, confirming the logical relevance of our instruments; furthermore, the model is not overidentified since the Sargan test (1958) on overidentifying restrictions does not reject the null in the specification in which more than one instrument is used.

Last, to determine whether selected instruments are uncorrelated with the error term in the original equation (i.e. instrument validity assumption), the Wooldridge's (1995) heteroskedasticity-robust score test is performed.[29] We are confident about the inference from results obtained from our IV estimations (especially when *distant* is used as instrument alone or with *BMI*) since in all of them the null of instrument exogeneity is never rejected (Table 5.3).

6. Discussion

The validity of our *distant* instrument hinges on the assumption that distance from the coast and altruism are correlated only through victimization. It can be possible however that the

[29] This test consists in verifying whether the residual (from a "modified specification" in which instruments replace the endogenous regressor) has significant effects when introduced into the standard non-instrumented equation. Instrumented variables are exogenous if the null of the insignificance of the added variable (residual from the "modified specification") in the standard non-instrumented equation is not rejected.

individuals' location choice is endogenously based on unobservable factors that influence both altruism and victimization. One of such factors can be, for instance, the pre-tsunami risk attitude towards natural events since individuals with higher (lower) expectation of a shock and/or more (less) risk averse can decide to live more (less) far away from the coast. Since we don't have pre-tsunami data, we cannot control for ex-ante risk preferences. However, the 2004 tsunami was a completely unexpected event so that location decisions may be hardly driven by the background risk of tsunami. Another possible third omitted factor affecting the validity of our *distant* instrument is the pre-tsunami profitability of the employment sector. Individuals expecting higher returns from agriculture may have decided to live farther away from the coast then those who expected higher returns from fishing. In order to check for the existence heterogeneity in sector profitability, we compare the average per-capita food expenditure (our proxy of income) between farmers and fishermen. We find that the difference is not statistically significant (two sided test p-value = 0.8654) supporting the validity of the exclusion restriction.

Another source of endogeneity derives from post-tsunami migration based on unobservable factors which introduce a survivorship bias in our estimates (for instance, connection to social networks which is correlated with altruism and tsunami exposition). We don't believe migration can affect our estimates since it turns out to be a very limited phenomenon (as documented by AMF) and, above all, there would be little incentive for borrowers to migrate after the tsunami because of the extremely favourable loan conditions posed by AMF as well as the huge amount of local and international aid flows.

In any case and more importantly, all the above-mentioned sources of bias may only affect the damaged/non-damaged comparison whereas the intra-damaged analysis of giving is plausibly free of heterogeneity.

7. Conclusions

The tsunami shock is an unfortunate event which creates a unique framework for investigating the effects of a calamity on individual preferences. The characteristics of the event are such that people living or being at a few meters from each other at the event time are randomly affected or unaffected. The opportunity has been already exploited by several studies in the past. The originality of our paper is in testing similar hypotheses at a longer time distance, using within village variability between damaged and non damaged and exploiting the variability across damage types. In particular, we test the effect of the shock within two victim groups, i.e. those who report only losses to the economic activity vs. those who report *also* damages to the house and/or injuries to relatives (i.e. with or without concurring losses to economic activity). The advantage of this last comparison is that differences in observables (including the distance from the coast) between the two groups disappear. We further reduce identification problems by selecting for the treatment and control group (damaged and non damaged) borrowers from the same microfinance organization which are therefore very likely to share some important common unobservables (i.e. entrepreneurial skills, trustworthiness usually unobservable to researchers and main suspect of self-selection) - which the microfinance organization takes into account in its screening activity. We complete our identification strategy with an IV estimate documenting that our main findings remain significant when instrumented with instruments which we document as being valid and relevant.

Empirical evidence highlights two main results: i) those who report at least one damage from the tsunami give and expect less than those who do not; ii) among damaged, those suffering not only losses to economic activities (but also damages to house or injuries to relatives) give and expect significantly more than other damaged. Note that these two groups of people

receiving different kinds of damage do not differ in terms of observable characteristics, nor on other controls such as income which, as well, do not affect per se giving or expected giving. As a consequence we cannot attribute the result to different long run economic effects of the three types of damages. Since - as documented in the paper – those who report only losses to economic activity experience on average less aid than those who also report house damages or injuries, we interpret the superior pro-sociality (expected pro-sociality) of the latter in terms of indirect reciprocity.

If the interpretation is correct, we identify an original hidden effect of recovery after calamities documenting that the benevolence experienced from donors may heal the loss of pro social attitudes generated by the calamity shock.

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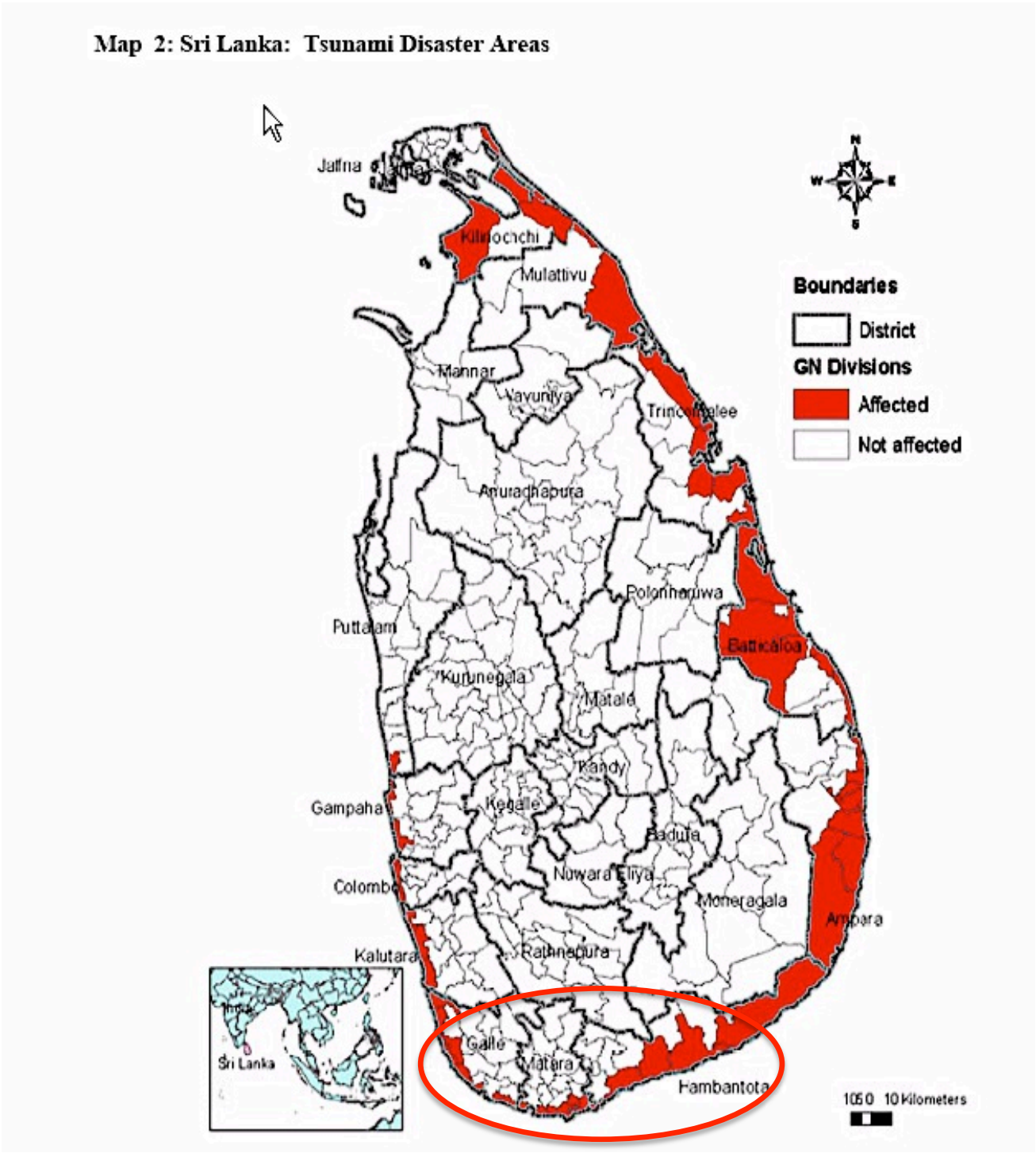
Figure 1. The Tsunami waterline: satellite view

Figure 2. Sri Lankan areas affected by the tsunami and the location of the selected villages



Legend: in the red circle the three villages of Galle, Matara and Hambantota in which we run our experiment.

Table 1. Variable legend

Giving	amount sent by the sender / max amount (s)he can send (900 LKR)
Expected_Receiving	sender's amount expected by the receiver / max amount the receiver can send (900 LKR)
Solidarity Norm	"Giving" if the player is a Sender or "Expected_Receiving" if the player is a Receiver.
Receiver	= 1 if the player is a Receiver; = 0 if the player is a Sender.
Age	respondent's age
Male	=1 if the respondent is male
Married	=1 if the respondent is married
Widowed	=1 if the respondent is widowed
Separated	=1 if the respondent is separated
Single	=1 if the respondent is single
N_house_members	n. of house components
Years_schooling	respondent's years of schooling
Food_exp_std	monthly respondent's household food expenditure (in LKR, scaled by 1000).
Agriculture	= 1 if the respondent works in the agricultural sector
Manufacturing	= 1 if the respondent works in the manufacturing sector
Fishery	= 1 if the respondent works in the fishery sector
Trading	= 1 if the respondent works in the trading sector
Riskloving	amount invested in the risky option of the risky investment game.
Riskloving_ratio	amount invested in the risky option of the risky investment game / maximum amount investible (300 LKR).
Switch	potential lottery number at which the participant switches from option A (*receive 10.000 LKR after 2 months*) to option B (*receive 10.000 + x LKR after 8 months*). It is a real number between 1 and 9; it is =1 if the participant chooses B from the first potential lottery and never switches to A (maximum degree of patience); it is =9 if the participant chooses A from the first potential lottery and never switches to B (maximum degree of impatience). See relevant game sheets in the Appendix for the options in each single lottery.
Impatient	= 1 if switch ≥ 7, i.e the respondent is equal-or-above the median level of impatience--- (s)he has switched to option B (highest payoff with latest payment) from or after the seventh potential lottery. See relevant game sheets in the Appendix for the options in each single lottery.
Galle	= 1 If the respondent lives in Galle district.
Matara	= 1 If the respondent lives in Matara district.
Nambantota	= 1 If the respondent lives in Hambantota district.
Most_can_be_trusted	"Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?". 2 = Most people can be trusted; 1 = Have to be careful
Cant_rely	respondent's 1-5 Likert scale agreement on the statement: "Nowadays, you can't rely on anybody"
People_take_advantage	respondent's 1-5 Likert scale agreement on the statement: "If you are not careful, other people will take advantage of you"
Trustindex	= (most_can_be_trusted+cant_rely+ people_take_advantage)/3
BMI	respondent's body mass index = weight/height^2
Distance_housecoast	respondent's distance from the coast at the time of 2004 Tsunami (in Km)
Distant	=1 if respondent lived above the median distance from the coast (3 Km) at the time of 2004 Tsunami
DistantAMF	=1 if respondent lived above the median distance from the AMF closest office when (s)he received the first loan
Loancycle	total n. of loan repaid (borrower's seniority)
Injury	=1 if the respondent reports injuries to family members
Economicloss	=1 if the respondent reports damages to the economic activity/buildings/assets/working tools
Eclossonly	=1 if the respondent reports ONLY damages to the economic activity/buildings/assets/working tools
Housedamage	=1 if the respondent reports damages to the house
InjuryOrHouseDamaged	=1 if the respondent reports damages to the house OR injuries to relatives
Injuryonly	=1 if the respondent reports ONLY injuries to family members
Housedamageonly	=1 if the respondent reports ONLY damages to the house
Injuryhousedamage	=1 if the respondent reports damages to the house AND injuries to relatives
Injuryeconomic	=1 if the respondent reports damages to the economic activity/buildings/assets/working tools AND injuries to relatives
Eclosshousedamage	=1 if the respondent reports damages to the economic activity/buildings/assets/working tools AND to the house
Alldamages	=1 if the respondent reports all types of damage
Damage	=1 if the respondent reports at least one type of damages (among injury, economic losses and house damages)
Money_aid	=1 if the respondent received financial aid (non microfinance) after the tsunami
Credit_aid	=1 if the respondent received financial support (microfinance) after the tsunami
Food_aid	=1 if the respondent received assistance in terms of food after the tsunami
Medicines_aid	=1 if the respondent received assistance in terms of medicines after the tsunami
Rawmaterials_aid	=1 if the respondent received assistance in terms of raw materials for repairing/rebuilding your house after the tsunami
Tools_aid	=1 if the respondent received assistance in terms of working tools after the tsunami
Consumption_aid	=1 if the respondent received consumption aid after the tsunami
Other_aid	=1 if the respondent received other kind of aids after the tsunami
Receivehelp	= sum of *_aid dummies
Helpindex	= receivehelp/8

Table 1.1 Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Age	380	46.855	12.216	12	71
Male	380	0.071	0.257	0	1
Married	380	0.839	0.368	0	1
Separated	380	0.018	0.135	0	1
Widowed	380	0.097	0.297	0	1
Single	380	0.045	0.207	0	1
N_house_members	380	4.537	1.409	1	10
Years_schooling	374	10.535	2.466	0	16
Food_exp_std	379	8.742	6.942	0.4	120
Agriculture	380	0.218	0.414	0	1
Manufacturing	380	0.321	0.467	0	1
Fishery	380	0.037	0.189	0	1
Trading	380	0.374	0.484	0	1
Galle	380	0.195	0.397	0	1
Matara	380	0.516	0.500	0	1
Hambantota	380	0.289	0.454	0	1
Switch	380	5.900	2.998	1	9
Impatient	380	0.629	0.484	0	1
Riskloving	380	177.790	86.212	0	300
Trustindex	378	1.207	0.340	0.6666667	2.666667
Most_can_be_trusted	378	1.966	0.182	1	2
Cant_rely	380	1.505	0.842	1	5
People_take_advantage	378	1.087	0.365	1	4
BMI	377	23.576	5.432	12.09451	74.00188
Distance_housecoast	370	6.900	10.743	0	100
Distant	380	0.497	0.501	0	1
Loancycle	380	2.066	3.231	0	28
Giving	190	0.340	0.188	0	1
Expected_Receiving	190	0.415	0.201	0	1
Solidarity Norm	380	0.378	0.198	0	1
Receiver	380	0.500	0.501	0	1
Damaged	380	0.529	0.500	0	1

Table 1.2 The damage experience in the sample (tsunami damaged only)

Variable	Obs	Mean	Std. Dev.	Min	Max
Injury	201	0.239	0.427	0	1
Economicloss	201	0.841	0.367	0	1
Housedamage	201	0.259	0.439	0	1
Injuryonly	201	0.065	0.247	0	1
Eclossonly	201	0.473	0.500	0	1
Housedamageonly	201	0.005	0.071	0	1
Injuryhousedamage	201	0.060	0.238	0	1
Injuryeconomic	201	0.174	0.380	0	1
Eclosshousedamage	201	0.254	0.436	0	1
Alldamages	201	0.060	0.238	0	1

Table 1.3 Balancing properties (damaged versus non damaged)

Variable	Group	Obs	Mean	Std dev	Non-par test (z, p)	T-test, P(T<t)	T-test, (|T|>|t|)	T-test, P(T>t)
age	Rest of sample	179	44.53	12.671	-3.410	1.000	0.000	0.000
	Damaged	201	48.93	11.433	0.001	.	.	.
male	Rest of sample	179	0.05	0.219	-1.485	0.931	0.138	0.069
	Damaged	201	0.09	0.286	0.137	.	.	.
married	Rest of sample	179	0.90	0.302	3.001	0.001	0.003	0.999
	Damaged	201	0.79	0.411	0.003	.	.	.
separated	Rest of sample	179	0.01	0.075	-1.754	0.960	0.080	0.040
	Damaged	201	0.03	0.171	0.080	.	.	.
widowed	Rest of sample	179	0.07	0.251	-1.880	0.970	0.060	0.030
	Damaged	201	0.12	0.331	0.060	.	.	.
single	Rest of sample	179	0.03	0.165	-1.493	0.932	0.136	0.068
	Damaged	201	0.06	0.238	0.135	.	.	.
n_house_members	Rest of sample	179	4.37	1.381	-2.598	0.986	0.028	0.014
	Damaged	201	4.69	1.420	0.009	.	.	.
years_school ing	Rest of sample	178	10.81	2.352	1.981	0.020	0.040	0.980
	Damaged	196	10.29	2.546	0.048	.	.	.
foodexp_std	Rest of sample	178	8.27	3.724	-0.646	0.892	0.217	0.108
	Damaged	201	9.16	8.856	0.518	.	.	.
agricolture	Rest of sample	179	0.31	0.463	3.950	0.000	0.000	1.000
	Damaged	201	0.14	0.347	0.000	.	.	.
manufacturing	Rest of sample	179	0.32	0.467	-0.103	0.541	0.918	0.459
	Damaged	201	0.32	0.469	0.918	.	.	.
fishery	Rest of sample	179	0.01	0.105	-2.503	0.994	0.012	0.006
	Damaged	201	0.06	0.238	0.012	.	.	.
trading	Rest of sample	179	0.32	0.467	-2.098	0.982	0.036	0.018
	Damaged	201	0.42	0.495	0.036	.	.	.
galle	Rest of sample	179	0.14	0.348	-2.555	0.995	0.010	0.005
	Damaged	201	0.24	0.430	0.011	.	.	.
matara	Rest of sample	179	0.52	0.501	0.138	0.445	0.890	0.555
	Damaged	201	0.51	0.501	0.890	.	.	.
hambantota	Rest of sample	179	0.34	0.475	2.078	0.019	0.037	0.981
	Damaged	201	0.24	0.430	0.038	.	.	.
switch	Rest of sample	179	5.70	3.064	-1.292	0.885	0.229	0.115
	Damaged	201	6.07	2.934	0.197	.	.	.
impatient	Rest of sample	179	0.60	0.492	-1.186	0.882	0.236	0.118
	Damaged	201	0.66	0.476	0.236	.	.	.
riskloving	Rest of sample	179	176.31	87.241	-0.146	0.623	0.753	0.377
	Damaged	201	179.10	85.482	0.884	.	.	.
trustindex	Rest of sample	179	1.21	0.333	0.538	0.392	0.784	0.608
	Damaged	199	1.20	0.348	0.591	.	.	.
most_can_be_trusted	Rest of sample	179	1.97	0.180	0.088	0.465	0.930	0.535
	Damaged	199	1.96	0.185	0.930	.	.	.
cant_rely	Rest of sample	179	1.54	0.869	0.802	0.212	0.424	0.788
	Damaged	201	1.47	0.819	0.423	.	.	.
people_take_advantage	Rest of sample	179	1.06	0.303	-1.202	0.904	0.192	0.096
	Damaged	199	1.11	0.412	0.229	.	.	.
BMI	Rest of sample	177	22.97	4.555	-1.671	0.979	0.043	0.021
	Damaged	200	24.11	6.065	0.095	.	.	.
distance_housecoast	Rest of sample	173	10.73	12.563	9.988	0.000	0.000	1.000
	Damaged	197	3.54	7.383	0.000	.	.	.
distant	Rest of sample	179	0.74	0.438	9.026	0.000	0.000	1.000
	Damaged	201	0.28	0.449	0.000	.	.	.

Table 1.4 Aid experience and type of tsunami shock suffered

		money_aid	credit_aid	food_aid	medicines_aid	rawmaterials_aid	tools_aid	consumpion_aid	other_aid	helpindex	receivehelp
Damaged	*Obs*	201	200	200	200	201	201	201	198	201	201
	Mean	0.249	0.080	0.305	0.245	0.124	0.204	0.154	0.015	0.211	1.687
	Std. Err.	0.031	0.019	0.033	0.030	0.023	0.028	0.026	0.009	0.019	0.155
	[95% CI]	.1884799	.0420764	.2406404	.1848788		.1477945		-.0020119	.1726659	1.381327
		.3090325	.1179236	.3693596	.3051212	.0783631 .1703931	.2601657	.1038697 .204588	.0323149	.2489759	1.991807
non damaged	*Obs*	179	178	179	179	179	179	179	177	179	179
	Mean	0.061	0.034	0.078	0.061	0.028	0.061	0.056	0.006	0.071	0.570
	Std. Err.	0.018	0.014	0.020	0.018	0.012	0.018	0.017	0.006	0.012	0.093
	[95% CI]	.0259304	.0069371	.0384974	.0259304		.0259304		-.0055002	.0482759	.3862072
		.0969746	.0604786	.1179272	.0969746	.00356 .0523059	.0969746	.0218963 .0898356	.0167996	.0941822	.7534576
Injury	*Obs*	48	48	48	47	48	48	48	47	48	48
	Mean	0.229	0.083	0.292	0.340	0.146	0.250	0.167	0.000	0.240	1.917
	Std. Err.	0.061	0.040	0.066	0.070	0.051	0.063	0.054	0.000	0.043	0.343
	[95% CI]	.1058338	.0022301	.1582883	.1997932		.1229357			.1532893	1.226314
		.3524996	.1644366	.425045	.4810579	.042266 .2494007	.3770643	.0573071 .2760262	0 0	.3258774	2.607019
Economic Losses	*Obs*	169	168	169	169	169	169	169	166	169	169
	Mean	0.284	0.095	0.343	0.260	0.130	0.213	0.172	0.018	0.231	1.846
	Std. Err.	0.035	0.023	0.037	0.034	0.026	0.032	0.029	0.010	0.022	0.174
	[95% CI]	.215339	.0503924	.2708813	.1935163		.1506552		-.0024039	.1877707	1.502166
		.3527083	.1400838	.4155092	.3271937	.0789248 .1814302	.2753803	.1141715 .2290238	.0385485	.2737678	2.190142
House damage	*Obs*	52	52	52	52	52	52	52	50	52	52
	Mean	0.442	0.135	0.481	0.404	0.308	0.365	0.269	0.040	0.361	2.885
	Std. Err.	0.070	0.048	0.070	0.069	0.065	0.067	0.062	0.028	0.046	0.365
	[95% CI]	.3026875	.0386664	.3403143	.2659108		.2300157		-.0162564	.2689816	2.151853
		.5819279	.2305644	.6212242	.5417816	.1779456 .4374391	.5007536	.1445381 .3939235	.0962564	.4521723	3.617378
Injury OrHouseDamage	*Obs*	88	88	88	87	88	88	88	86	88	88
	Mean	0.318	0.091	0.386	0.368	0.205	0.318	0.205	0.023	0.290	2.318
	Std. Err.	0.050	0.031	0.052	0.052	0.043	0.050	0.043	0.016	0.033	0.261
	[95% CI]	.2189289	.0296489	.2826049	.2644472		.2189289		-.009247	.2249546	1.799637
		.4174347	.1521693	.4901224	.471185	.1185899 .290501	.4174347	.1185899 .290501	.0557587	.3545909	2.836727
Ec. Loss only	*Obs*	95	94	95	95	95	95	95	94	95	95
	Mean	0.232	0.085	0.284	0.179	0.063	0.116	0.137	0.011	0.172	1.379
	Std. Err.	0.044	0.029	0.047	0.040	0.025	0.033	0.035	0.011	0.025	0.200
	[95% CI]	.1451896	.027647	.191842	.1004492		.050262		-.0104873	.1227889	.982311
		.3179683	.1425657	.376579	.2574455	.0133431 .1129727	.181317	.0664594 .2072248	.0317638	.221948	1.775584

Table 1.5 Balancing properties

(individuals with only losses to economic activity versus individuals with house damage and/or injuries)

Variable	Group	Obs	Mean	Std dev	Non-par test (z, p)	P(T<t)	P(|T|>|t|)	P(T>t)
age	InjuryOrHouseDamaged	88	49.67	11.603	1.618	0.055	0.109	0.945
	Only Ec. Loss	95	46.93	11.459	0.106	.	.	.
male	InjuryOrHouseDamaged	88	0.08	0.272	-0.363	0.641	0.718	0.359
	Only Ec. Loss	95	0.09	0.294	0.717	.	.	.
married	InjuryOrHouseDamaged	88	0.78	0.414	-0.627	0.734	0.532	0.266
	Only Ec. Loss	95	0.82	0.385	0.531	.	.	.
separated	InjuryOrHouseDamaged	88	0.02	0.150	-0.366	0.642	0.715	0.358
	Only Ec. Loss	95	0.03	0.176	0.714	.	.	.
widowed	InjuryOrHouseDamaged	88	0.15	0.357	1.869	0.031	0.061	0.969
	Only Ec. Loss	95	0.06	0.245	0.062	.	.	.
single	InjuryOrHouseDamaged	88	0.05	0.209	-1.055	0.854	0.293	0.146
	Only Ec. Loss	95	0.08	0.279	0.291	.	.	.
n_house_members	InjuryOrHouseDamaged	88	4.66	1.492	-0.422	0.794	0.413	0.206
	Only Ec. Loss	95	4.83	1.350	0.673	.	.	.
years_schooling	InjuryOrHouseDamaged	84	10.05	2.574	-1.144	0.907	0.185	0.093
	Only Ec. Loss	94	10.54	2.390	0.252	.	.	.
foodexp_std	InjuryOrHouseDamaged	88	8.40	3.856	-0.494	0.719	0.562	0.281
	Only Ec. Loss	95	8.75	4.126	0.621	.	.	.
agricolture	InjuryOrHouseDamaged	88	0.14	0.345	0.201	0.421	0.842	0.579
	Only Ec. Loss	95	0.13	0.334	0.841	.	.	.
manufacturing	InjuryOrHouseDamaged	88	0.31	0.464	-0.433	0.667	0.666	0.333
	Only Ec. Loss	95	0.34	0.475	0.665	.	.	.
fishery	InjuryOrHouseDamaged	88	0.10	0.305	1.925	0.027	0.054	0.973
	Only Ec. Loss	95	0.03	0.176	0.054	.	.	.
trading	InjuryOrHouseDamaged	88	0.43	0.498	0.291	0.386	0.772	0.614
	Only Ec. Loss	95	0.41	0.495	0.771	.	.	.
galle	InjuryOrHouseDamaged	88	0.20	0.406	-1.554	0.940	0.121	0.060
	Only Ec. Loss	95	0.31	0.463	0.120	.	.	.
matara	InjuryOrHouseDamaged	88	0.55	0.501	1.536	0.062	0.125	0.938
	Only Ec. Loss	95	0.43	0.498	0.125	.	.	.
hambantota	InjuryOrHouseDamaged	88	0.25	0.435	-0.203	0.580	0.840	0.420
	Only Ec. Loss	95	0.26	0.443	0.839	.	.	.
switch	InjuryOrHouseDamaged	88	5.77	3.012	-1.130	0.881	0.237	0.119
	Only Ec. Loss	95	6.28	2.823	0.259	.	.	.
impatient	InjuryOrHouseDamaged	88	0.60	0.492	-1.307	0.904	0.192	0.096
	Only Ec. Loss	95	0.69	0.463	0.191	.	.	.
riskloving	InjuryOrHouseDamaged	88	188.86	87.749	1.606	0.069	0.138	0.931
	Only Ec. Loss	95	169.89	84.356	0.108	.	.	.
trustindex	InjuryOrHouseDamaged	87	1.18	0.355	-1.836	0.887	0.225	0.113
	Only Ec. Loss	94	1.25	0.356	0.066	.	.	.
most_can_be_trusted	InjuryOrHouseDamaged	87	2.00	0.000	2.575	0.005	0.010	0.995
	Only Ec. Loss	95	1.93	0.263	0.010	.	.	.
cant_rely	InjuryOrHouseDamaged	88	1.42	0.827	-1.649	0.883	0.234	0.117
	Only Ec. Loss	95	1.57	0.846	0.099	.	.	.
people_take_advantage	InjuryOrHouseDamaged	87	1.14	0.510	-0.274	0.312	0.623	0.688
	Only Ec. Loss	94	1.11	0.343	0.784	.	.	.
BMI	InjuryOrHouseDamaged	88	24.13	4.819	0.704	0.461	0.921	0.539
	Only Ec. Loss	94	24.04	7.174	0.481	.	.	.
distance_housecoast	InjuryOrHouseDamaged	86	3.39	9.215	-2.406	0.483	0.967	0.517
	Only Ec. Loss	95	3.35	5.359	0.016	.	.	.
distant	InjuryOrHouseDamaged	88	0.25	0.435	-0.363	0.641	0.718	0.359
	Only Ec. Loss	95	0.27	0.448	0.717	.	.	.

Table 2.1 Testing Giving By Damage

Giving by:	Obs	Mean	Std dev	Non-par test (z, p)	P(T<t)	P(|T|>|t|)	P(T>t)
Rest of sample	89	0.37	0.205	2.051	0.015	0.030	0.985
Damaged	101	0.31	0.168	0.040	.	.	.
Rest of sample	169	0.34	0.191	0.518	0.267	0.534	0.733
Injury	21	0.32	0.160	0.604	.	.	.
Rest of sample	103	0.37	0.200	2.069	0.019	0.038	0.981
Economicloss	87	0.31	0.169	0.039	.	.	.
Rest of sample	165	0.34	0.194	-1.056	0.798	0.404	0.202
Housedamage	25	0.37	0.139	0.291	.	.	.
Rest of sample	96	0.37	0.202	0.410	0.274	0.547	0.726
Only injured	6	0.32	0.170	0.682	.	.	.
Rest of sample	96	0.37	0.202	2.329	0.011	0.023	0.989
Only economicloss	54	0.29	0.181	0.020	.	.	.
Rest of sample	96	0.37	0.202	-0.977	.	.	.
Only housedamage	1	0.50	.	0.329	.	.	.
Injury	21	0.32	0.160	0.837	0.295	0.589	0.705
Only Ec. Losses	54	0.29	0.181	0.403	.	.	.
InjuryOrHouseDamage	40	0.34	0.148	1.667	0.088	0.176	0.912
Only Ec. Losses	54	0.29	0.181	0.096	.	.	.

Table 2.2 Testing Expected Receiving By Damage

Expected Receiving by:	Obs	Mean	Std dev	Non-par test (z, p)	P(T<t)	P(|T|>|t|)	P(T>t)
Rest of sample	90	0.44	0.189	2.396	0.046	0.092	0.954
Damaged	100	0.39	0.209	0.017	.	.	.
Rest of sample	163	0.41	0.194	0.067	0.704	0.591	0.296
Injury	27	0.43	0.242	0.947	.	.	.
Rest of sample	108	0.44	0.191	2.473	0.026	0.053	0.974
Economicloss	82	0.38	0.209	0.013	.	.	.
Rest of sample	163	0.42	0.204	0.198	0.509	0.983	0.491
Housedamage	27	0.42	0.185	0.843	.	.	.
Rest of sample	101	0.44	0.183	0.151	0.623	0.754	0.377
Only injured	7	0.46	0.307	0.880	.	.	.
Rest of sample	101	0.44	0.183	3.221	0.002	0.003	0.998
Only economicloss	41	0.33	0.203	0.001	.	.	.
Injury	27	0.43	0.242	1.647	0.033	0.067	0.967
Only Ec. Losses	41	0.33	0.203	0.100	.	.	.
InjuryOrHouseDamage	48	0.44	0.220	2.235	0.012	0.024	0.988
Only Ec. Losses	41	0.33	0.203	0.025	.	.	.

Table 2.3 Testing the Solidarity Norm by Damage

Solidarity Norm by:	Obs	Mean	Std dev	Non-par test (z, p)	P(T<t)	P(|T|>|t|)	P(T>t)
Rest of sample	179	0.41	0.200	3.164	0.004	0.007	0.996
Damaged	201	0.35	0.193	0.002	.	.	.
Rest of sample	332	0.38	0.195	0.271	0.574	0.852	0.426
Injury	48	0.38	0.216	0.786	.	.	.
Rest of sample	211	0.40	0.198	3.298	0.002	0.004	0.998
Economicloss	169	0.34	0.193	0.001	.	.	.
Rest of sample	328	0.38	0.203	-0.588	0.734	0.532	0.266
housedamage	52	0.39	0.165	0.557	.	.	.
Rest of sample	197	0.40	0.195	0.436	0.437	0.875	0.563
Only injured	13	0.39	0.255	0.663	.	.	.
Rest of sample	197	0.40	0.195	4.106	0.000	0.000	1.000
Only economicloss	95	0.31	0.191	0.000	.	.	.
Rest of sample	379	0.38	0.198	-0.869	.	.	.
Only housedamage	1	0.50	.	0.385	.	.	.
Injury	48	0.38	0.216	1.870	0.020	0.041	0.980
Only Ec. Losses	95	0.31	0.191	0.062	.	.	.
InjuryOrHouseDamage	88	0.39	0.196	2.863	0.002	0.004	0.998
Only Ec. Losses	95	0.31	0.191	0.004	.	.	.

Table 3.1 Determinants Of Giving

Dep. Var: *Giving*	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) TOBIT	(7) TOBIT	(9) TOBIT	(11) TOBIT
damaged	-0.0593**	-0.0582**			-0.0590**	-0.0566**		
	(0.0274)	(0.0291)			(0.0282)	(0.0284)		
injury			-0.0111	-0.0180			-0.00903	-0.0160
			(0.0381)	(0.0419)			(0.0381)	(0.0402)
economicloss			-0.0556**	-0.0505*			-0.0560**	-0.0494*
			(0.0272)	(0.0299)			(0.0278)	(0.0293)
age		-0.00194		-0.00193		-0.00199*		-0.00198*
		(0.00122)		(0.00123)		(0.00119)		(0.00119)
single		-0.0566		-0.0551		-0.0531		-0.0513
		(0.0684)		(0.0695)		(0.0655)		(0.0665)
widowed		0.0268		0.0225		0.0286		0.0246
		(0.0350)		(0.0354)		(0.0337)		(0.0341)
separated		0.110		0.108		0.109		0.108
		(0.0784)		(0.0805)		(0.0745)		(0.0763)
male		0.0301		0.0211		0.0271		0.0182
		(0.0603)		(0.0602)		(0.0596)		(0.0593)
food_exp_std		-0.000497		-0.000866		-0.000427		-0.000783
		(0.000965)		(0.00102)		(0.000937)		(0.000992)
galle		-0.00525		-0.00551		-0.00453		-0.00469
		(0.0359)		(0.0359)		(0.0354)		(0.0353)
hambantota		-0.0472		-0.0470		-0.0458		-0.0458
		(0.0356)		(0.0363)		(0.0346)		(0.0352)
years_schooling		-0.00171		-0.00142		-0.00174		-0.00148
		(0.00652)		(0.00670)		(0.00630)		(0.00644)
n_house_members		-0.00731		-0.00713		-0.00796		-0.00779
		(0.0102)		(0.0103)		(0.01000)		(0.0101)
trading		-0.0282		-0.0267		-0.0280		-0.0265
		(0.0281)		(0.0284)		(0.0275)		(0.0277)
fishery		0.0418		0.0476		0.0422		0.0477
		(0.0486)		(0.0499)		(0.0464)		(0.0475)
manufacturing		0.00113		0.00302		-0.00114		0.000658
		(0.0305)		(0.0305)		(0.0301)		(0.0301)
impatient		-0.0452		-0.0460		-0.0478		-0.0486*
		(0.0298)		(0.0299)		(0.0291)		(0.0291)
trustindex		-0.0209		-0.0139		-0.0244		-0.0176
		(0.0509)		(0.0515)		(0.0508)		(0.0514)
loancycle		-0.00224		-0.00256		-0.00236		-0.00269
		(0.00247)		(0.00255)		(0.00243)		(0.00250)
riskloving_ratio		0.108**		0.107**		0.111**		0.110**
		(0.0486)		(0.0504)		(0.0478)		(0.0494)
Observations	190	185	190	185	190	185	190	185
R-squared	0.025	0.127	0.023	0.123				

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. Variable legend, see Table 1.

Table 3.2 Determinants Of Giving (Inv Pscore Weighed)

Dep. Var: *Giving*	(1) WLS	(2) WLS	(3) WLS	(4) WLS	(5) I.W.TOBIT	(7) I.W.TOBIT	(9) I.W.TOBIT	(11) I.W.TOBIT
damaged	-0.0913***	-0.0802**			-0.0913***	-0.0784**		
	(0.0338)	(0.0346)			(0.0349)	(0.0340)		
injury			-0.0579	-0.0662			-0.0563	-0.0661
			(0.0501)	(0.0509)			(0.0500)	(0.0490)
economicloss			-0.0848**	-0.0667**			-0.0855**	-0.0647*
			(0.0327)	(0.0336)			(0.0336)	(0.0331)
age		-0.00130		-0.00129		-0.00133		-0.00131
		(0.00128)		(0.00129)		(0.00125)		(0.00125)
single		-0.145*		-0.148*		-0.143*		-0.147**
		(0.0758)		(0.0762)		(0.0731)		(0.0734)
widowed		0.0420		0.0304		0.0439		0.0323
		(0.0395)		(0.0389)		(0.0381)		(0.0376)
separated		0.177**		0.166**		0.177**		0.166**
		(0.0749)		(0.0760)		(0.0719)		(0.0725)
male		0.0631		0.0529		0.0608		0.0508
		(0.0721)		(0.0725)		(0.0699)		(0.0701)
food_exp_std		-0.000549		-0.000948		-0.000419		-0.000811
		(0.00138)		(0.00139)		(0.00137)		(0.00138)
galle		-0.0156		-0.0183		-0.0142		-0.0170
		(0.0439)		(0.0441)		(0.0426)		(0.0425)
hambantota		-0.0318		-0.0274		-0.0285		-0.0240
		(0.0481)		(0.0500)		(0.0486)		(0.0505)
years_schooling		-0.000360		-0.000155		-0.000126		9.57e-05
		(0.00912)		(0.00929)		(0.00889)		(0.00903)
n_house_members		-0.00400		-0.00378		-0.00450		-0.00429
		(0.0138)		(0.0139)		(0.0139)		(0.0139)
trading		-0.00960		-0.00879		-0.00959		-0.00887
		(0.0317)		(0.0321)		(0.0316)		(0.0318)
fishery		0.0464		0.0601		0.0466		0.0599
		(0.0586)		(0.0636)		(0.0559)		(0.0606)
manufacturing		0.0130		0.0174		0.0129		0.0174
		(0.0314)		(0.0311)		(0.0313)		(0.0308)
impatient		-0.0757**		-0.0760**		-0.0805**		-0.0808**
		(0.0354)		(0.0353)		(0.0353)		(0.0351)
trustindex		0.0321		0.0386		0.0307		0.0368
		(0.0792)		(0.0795)		(0.0831)		(0.0834)
loancycle		-0.00189		-0.00216		-0.00220		-0.00244
		(0.00351)		(0.00354)		(0.00355)		(0.00357)
riskloving_ratio		0.136***		0.139***		0.143***		0.145***
		(0.0520)		(0.0524)		(0.0524)		(0.0526)
Observations	184	183	184	183	184	183	184	183
R-squared	0.047	0.184	0.050	0.186				

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. the weights are computed as: $\frac{damaged}{\widehat{pscore_{(damaged)}}} + \frac{1-damaged}{1-\widehat{pscore_{(damaged)}}}$,

where *pscore* is a non-parametric estimate of the propensity score (probability of *damaged*). The *pscore* is estimated using as regressors the following variables: *age, years_schooling, galle, hambantota, years_schooling, trading, fishery, manufacturing, BMI, distant loancycle* (see variable legend in Table 1).

Table 4.1 Determinants Of Expected Receiving

Dep Var	(1)	(2)	(3)	(4)	(5)	(7)	(9)	(11)
Expected Receiving	OLS	OLS	OLS	OLS	TOBIT	TOBIT	TOBIT	TOBIT
damaged	-0.0491*	-0.0754**			-0.0488	-0.0759**		
	(0.0289)	(0.0304)			(0.0302)	(0.0301)		
injury			0.0460	0.0242			0.0534	0.0317
			(0.0511)	(0.0546)			(0.0540)	(0.0554)
economicloss			-0.0651**	-0.0715**			-0.0678**	-0.0751**
			(0.0314)	(0.0320)			(0.0329)	(0.0319)
age		-0.000981		-0.00127		-0.00122		-0.00151
		(0.00137)		(0.00139)		(0.00138)		(0.00140)
single		-0.00278		0.000327		2.56e-05		0.00519
		(0.0579)		(0.0608)		(0.0561)		(0.0590)
widowed		0.0594		0.0496		0.0619		0.0523
		(0.0433)		(0.0439)		(0.0423)		(0.0428)
separated		0.149***		0.125**		0.154***		0.128**
		(0.0565)		(0.0625)		(0.0580)		(0.0626)
male		-0.0637		-0.0612		-0.0630		-0.0604
		(0.0676)		(0.0707)		(0.0644)		(0.0675)
food_exp_std		-0.000846		-0.000403		-0.000912		-0.000446
		(0.00441)		(0.00450)		(0.00435)		(0.00442)
galle		-0.0752**		-0.0677**		-0.0773**		-0.0690**
		(0.0336)		(0.0336)		(0.0335)		(0.0332)
hambantota		-0.0408		-0.0350		-0.0457		-0.0400
		(0.0403)		(0.0410)		(0.0409)		(0.0415)
years_schooling		-0.0105*		-0.0108**		-0.0111**		-0.0116**
		(0.00539)		(0.00541)		(0.00534)		(0.00534)
n_house_members		0.0102		0.0119		0.0104		0.0122
		(0.0119)		(0.0124)		(0.0118)		(0.0122)
trading		0.0595*		0.0600*		0.0630**		0.0638**
		(0.0316)		(0.0316)		(0.0313)		(0.0311)
fishery		0.0132		0.0175		0.0137		0.0173
		(0.0671)		(0.0710)		(0.0651)		(0.0689)
manufacturing		-0.0477*		-0.0422		-0.0496*		-0.0441
		(0.0275)		(0.0273)		(0.0276)		(0.0273)
impatient		-0.0689**		-0.0677**		-0.0723**		-0.0712**
		(0.0302)		(0.0299)		(0.0300)		(0.0295)
trustindex		-0.0353		-0.0320		-0.0324		-0.0284
		(0.0435)		(0.0412)		(0.0443)		(0.0421)
loancycle		0.0126		0.0112		0.0135		0.0121
		(0.00810)		(0.00815)		(0.00847)		(0.00854)
riskloving_ratio		-0.0353		-0.0360		-0.0413		-0.0423
		(0.0602)		(0.0590)		(0.0620)		(0.0607)
Observations	190	187	190	187	190	187	190	187
R-squared	0.015	0.185	0.026	0.181				

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. Variable legend, see Table 1.

Table 4.2 Determinants Of Expected Giving (Inv Pscore Weighed)

Dep Var	(1)	(2)	(3)	(4)	(5)	(7)	(9)	(11)
Expected Receiving	WLS	WLS	WLS	WLS	I.W.TOBIT	I.W.TOBIT	I.W.TOBIT	I.W.TOBIT
damaged	-0.0313	-0.0507			-0.0296	-0.0490		
	(0.0314)	(0.0326)			(0.0322)	(0.0319)		
injury			-0.0579	-0.0662			0.0276	0.00737
			(0.0501)	(0.0509)			(0.0697)	(0.0555)
economicloss			-0.0848**	-0.0667**			-0.0529	-0.0576*
			(0.0327)	(0.0336)			(0.0330)	(0.0315)
age		-0.000416		-0.00129		-0.000519		-0.000595
		(0.00124)		(0.00129)		(0.00122)		(0.00120)
single		-0.0427		-0.148*		-0.0420		-0.0357
		(0.0478)		(0.0762)		(0.0458)		(0.0469)
widowed		0.0263		0.0304		0.0275		0.0202
		(0.0433)		(0.0389)		(0.0414)		(0.0410)
separated		0.129**		0.166**		0.131**		0.118*
		(0.0549)		(0.0760)		(0.0528)		(0.0623)
male		-0.0925		0.0529		-0.0920		-0.0952
		(0.0793)		(0.0725)		(0.0757)		(0.0791)
food_exp_std		-0.00220		-0.000948		-0.00245		-0.00180
		(0.00485)		(0.00139)		(0.00472)		(0.00472)
galle		-0.0567		-0.0183		-0.0573		-0.0528
		(0.0368)		(0.0441)		(0.0363)		(0.0361)
hambantota		0.00268		-0.0274		0.00243		0.00472
		(0.0391)		(0.0500)		(0.0381)		(0.0384)
years_schooling		-0.00990		-0.000155		-0.0103*		-0.0105*
		(0.00606)		(0.00929)		(0.00595)		(0.00592)
n_house_members		0.00607		-0.00378		0.00684		0.00754
		(0.0149)		(0.0139)		(0.0144)		(0.0146)
trading		0.0771**		-0.00879		0.0796***		0.0809***
		(0.0308)		(0.0321)		(0.0302)		(0.0302)
fishery		0.00179		0.0601		0.000771		0.0135
		(0.0649)		(0.0636)		(0.0627)		(0.0643)
manufacturing		-0.0418		0.0174		-0.0425		-0.0380
		(0.0277)		(0.0311)		(0.0274)		(0.0265)
impatient		-0.0999***		-0.0760**		-0.103***		-0.102***
		(0.0326)		(0.0353)		(0.0319)		(0.0319)
trustindex		-0.00241		0.0386		-0.000136		0.00225
		(0.0399)		(0.0795)		(0.0399)		(0.0398)
loancycle		0.0117		-0.00216		0.0120		0.0111
		(0.00731)		(0.00354)		(0.00736)		(0.00734)
riskloving_ratio		-0.0381		0.139***		-0.0448		-0.0451
		(0.0554)		(0.0524)		(0.0557)		(0.0545)
Observations	187	186	184	183	187	186	187	186
R-squared	0.007	0.190	0.050	0.186				

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. The weights are computed as: $\frac{damaged}{\widehat{pscore_{(damaged)}}} + \frac{1-damaged}{1-\widehat{pscore_{(damaged)}}}$, where *pscore* is a non-parametric estimate of the propensity score (probability of *damaged*). The *pscore* is estimated using as regressors the following variables: *age, years_schooling, galle, hambantota, years_schooling, trading, fishery, manufacturing, BMI, distant loancycle* (see variable legend in Table 1).

Table 5.1a Whole Sample - Determinants of the Solidarity Norm

Dep Var:	(1)	(2)	(3)	(5)
Solidarity Norm	OLS	OLS	TOBIT	TOBIT
receiver	0.0750***	0.0780***	0.0761***	0.0794***
	(0.0198)	(0.0204)	(0.0205)	(0.0207)
damage	-0.0542***	-0.0619***	-0.0539***	-0.0618***
	(0.0199)	(0.0213)	(0.0206)	(0.0215)
age		-0.00195**		-0.00208**
		(0.000918)		(0.000934)
single		-0.0241		-0.0202
		(0.0490)		(0.0482)
widowed		0.0586**		0.0613**
		(0.0293)		(0.0290)
separated		0.126***		0.128***
		(0.0426)		(0.0419)
male		0.00277		0.00172
		(0.0435)		(0.0436)
food_exp_std		-0.000479		-0.000444
		(0.000944)		(0.000948)
galle		-0.0465*		-0.0476*
		(0.0243)		(0.0246)
hambantota		-0.0524**		-0.0537**
		(0.0252)		(0.0257)
years_schooling		-0.00675*		-0.00697*
		(0.00406)		(0.00407)
n_house_members		0.000894		0.000904
		(0.00806)		(0.00809)
trading		0.0189		0.0207
		(0.0208)		(0.0210)
fishery		0.0340		0.0343
		(0.0371)		(0.0364)
manufacturing		-0.0219		-0.0246
		(0.0206)		(0.0211)
impatient		-0.0626***		-0.0653***
		(0.0214)		(0.0217)
trustindex		-0.0300		-0.0304
		(0.0328)		(0.0338)
loancycle		0.00456		0.00492
		(0.00396)		(0.00415)
riskloving_ratio		0.0407		0.0394
		(0.0388)		(0.0401)
Observations	380	372	380	372
R-squared	0.055	0.132		

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. Variable legend, see Table 1.

Table 5.1b Whole Sample - Determinants of the Solidarity Norm

Dep Var: *Solidarity Norm*	(1) WLS	(2) WLS	(3) I. W. TOBIT	(4) I. W. TOBIT
receiver	0.0582**	0.0646***	0.0588**	0.0655***
	(0.0243)	(0.0234)	(0.0251)	(0.0238)
damaged	-0.0611***	-0.0648***	-0.0602**	-0.0637***
	(0.0232)	(0.0238)	(0.0239)	(0.0238)
age		-0.00124		-0.00130
		(0.000872)		(0.000874)
single		-0.0821*		-0.0798*
		(0.0465)		(0.0456)
widowed		0.0473		0.0497
		(0.0325)		(0.0321)
separated		0.127***		0.128***
		(0.0366)		(0.0364)
male		0.000206		-0.000412
		(0.0544)		(0.0535)
food_exp_std		-0.000229		-0.000179
		(0.00129)		(0.00130)
galle		-0.0385		-0.0383
		(0.0267)		(0.0268)
hambantota		-0.0261		-0.0247
		(0.0297)		(0.0302)
years_schooling		-0.00619		-0.00625
		(0.00510)		(0.00508)
n_house_members		-0.00111		-0.000826
		(0.0103)		(0.0104)
trading		0.0347		0.0362*
		(0.0217)		(0.0218)
fishery		0.0334		0.0334
		(0.0375)		(0.0368)
manufacturing		-0.0120		-0.0127
		(0.0206)		(0.0208)
impatient		-0.0957***		-0.0998***
		(0.0243)		(0.0247)
trustindex		0.0159		0.0170
		(0.0373)		(0.0390)
loancycle		0.00381		0.00380
		(0.00410)		(0.00420)
riskloving_ratio		0.0529		0.0524
		(0.0397)		(0.0404)
Observations	371	369	371	369
R-squared	0.045	0.149		

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. the weights are computed as: $\frac{damaged}{\widehat{pscore_{(damaged)}}} + \frac{1-damaged}{1-\widehat{pscore_{(damaged)}}}$, where *pscore* is a non-parametric estimate of the propensity score (probability of *damaged*). The *pscore* is estimated using as regressors the following variables: *age, years_schooling, galle, hambantota, years_schooling, trading, fishery, manufacturing, BMI, distant loancycle* (see variable legend in Table 1).

Table 5.2a Whole Sample - Determinants of the Solidarity Norm

Dep Var:	(1)	(2)	(3)	(4)	(5)	(7)	(9)	(11)
Solidarity Norm	OLS	OLS	OLS	OLS	TOBIT	TOBIT	TOBIT	TOBIT
receiver	0.0731***	0.0695***	0.0762***	0.0728***	0.0740***	0.0703***	0.0774***	0.0740***
	(0.0198)	(0.0197)	(0.0205)	(0.0205)	(0.0205)	(0.0205)	(0.0208)	(0.0209)
injury	0.0200		0.0149		0.0246		0.0201	
	(0.0328)		(0.0365)		(0.0340)		(0.0372)	
economicloss	-0.0598***		-0.0612***		-0.0612***		-0.0632***	
	(0.0206)		(0.0226)		(0.0214)		(0.0230)	
eclossonly		-0.0845***		-0.0711***		-0.0878***		-0.0744***
		(0.0227)		(0.0233)		(0.0239)		(0.0241)
age			-0.00208**	-0.00216**			-0.00221**	-0.00230**
			(0.000918)	(0.000901)			(0.000932)	(0.000917)
single			-0.0176	-0.0256			-0.0124	-0.0210
			(0.0500)	(0.0510)			(0.0494)	(0.0504)
widowed			0.0537*	0.0464			0.0567*	0.0490*
			(0.0292)	(0.0295)			(0.0289)	(0.0291)
separated			0.116**	0.118***			0.119***	0.121***
			(0.0462)	(0.0404)			(0.0456)	(0.0397)
male			-0.00387	-0.00387			-0.00505	-0.00481
			(0.0437)	(0.0432)			(0.0438)	(0.0432)
food_exp_std			-0.000671	-0.000718			-0.000630	-0.000688
			(0.000988)	(0.000963)			(0.000995)	(0.000969)
galle			-0.0425*	-0.0410*			-0.0430*	-0.0415*
			(0.0238)	(0.0239)			(0.0240)	(0.0242)
hambantota			-0.0528**	-0.0480*			-0.0544**	-0.0493*
			(0.0257)	(0.0251)			(0.0262)	(0.0256)
years_schooling			-0.00684*	-0.00536			-0.00713*	-0.00559
			(0.00411)	(0.00410)			(0.00410)	(0.00410)
n_house_members			0.00165	0.00163			0.00174	0.00177
			(0.00823)	(0.00793)			(0.00825)	(0.00798)
trading			0.0201	0.0158			0.0222	0.0180
			(0.0211)	(0.0208)			(0.0212)	(0.0210)
fishery			0.0375	0.0127			0.0374	0.0131
			(0.0390)	(0.0391)			(0.0383)	(0.0384)
manufacturing			-0.0201	-0.0210			-0.0229	-0.0238
			(0.0206)	(0.0203)			(0.0211)	(0.0208)
impatient			-0.0624***	-0.0605***			-0.0651***	-0.0631***
			(0.0212)	(0.0212)			(0.0215)	(0.0215)
trustindex			-0.0247	-0.0257			-0.0247	-0.0258
			(0.0324)	(0.0323)			(0.0335)	(0.0333)
loancycle			0.00385	0.00348			0.00417	0.00383
			(0.00404)	(0.00411)			(0.00423)	(0.00430)
riskloving_ratio			0.0374	0.0354			0.0357	0.0337
			(0.0389)	(0.0385)			(0.0402)	(0.0398)
Observations	380	380	372	372	380	380	372	372
R-squared	0.058	0.070	0.130	0.133				

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. Variable legend, see Table 1.

Table 5.2b Whole Sample - Determinants of the Solidarity Norm

Dep Var:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Solidarity Norm	WLS	WLS	WLS	WLS	I.W.TOBIT	I.W.TOBIT	I.W.TOBIT	I.W.TOBIT
receiver	0.0580**	0.0560**	0.0638***	0.0618***	0.0586**	0.0567**	0.0646***	0.0627***
	(0.0241)	(0.0246)	(0.0232)	(0.0237)	(0.0249)	(0.0254)	(0.0236)	(0.0242)
economicloss	-0.0683***		-0.0627***		-0.0690***		-0.0634***	
	(0.0231)		(0.0230)		(0.0237)		(0.0232)	
injury	-0.0143		-0.0284		-0.0105		-0.0246	
	(0.0434)		(0.0426)		(0.0444)		(0.0429)	
eclossonly		-0.0725***		-0.0608***		-0.0739***		-0.0621***
		(0.0244)		(0.0231)		(0.0251)		(0.0233)
age			-0.00129	-0.00146*			-0.00135	-0.00152*
			(0.000871)	(0.000859)			(0.000873)	(0.000861)
single			-0.0807*	-0.0825*			-0.0776*	-0.0799*
			(0.0473)	(0.0466)			(0.0466)	(0.0458)
widowed			0.0393	0.0389			0.0421	0.0416
			(0.0317)	(0.0316)			(0.0313)	(0.0312)
separated			0.116***	0.112***			0.117***	0.114***
			(0.0402)	(0.0418)			(0.0402)	(0.0415)
male			-0.00660	-0.0125			-0.00731	-0.0128
			(0.0552)	(0.0556)			(0.0542)	(0.0545)
food_exp_std			-0.000327	-0.000322			-0.000263	-0.000269
			(0.00133)	(0.00134)			(0.00133)	(0.00134)
galle			-0.0381	-0.0368			-0.0373	-0.0361
			(0.0260)	(0.0263)			(0.0261)	(0.0264)
hambantota			-0.0260	-0.0257			-0.0249	-0.0244
			(0.0302)	(0.0301)			(0.0307)	(0.0306)
years_schooling			-0.00612	-0.00534			-0.00624	-0.00544
			(0.00516)	(0.00526)			(0.00513)	(0.00524)
n_house_members			-0.000524	-0.00130			-0.000225	-0.000984
			(0.0104)	(0.0103)			(0.0105)	(0.0105)
trading			0.0360	0.0321			0.0377*	0.0338
			(0.0219)	(0.0218)			(0.0220)	(0.0219)
fishery			0.0481	0.00262			0.0479	0.00321
			(0.0394)	(0.0387)			(0.0385)	(0.0380)
manufacturing			-0.00930	-0.00896			-0.0100	-0.00987
			(0.0203)	(0.0206)			(0.0205)	(0.0209)
impatient			-0.0942***	-0.0942***			-0.0983***	-0.0983***
			(0.0241)	(0.0244)			(0.0245)	(0.0248)
trustindex			0.0196	0.0202			0.0211	0.0216
			(0.0377)	(0.0375)			(0.0395)	(0.0393)
loancycle			0.00316	0.00220			0.00311	0.00219
			(0.00415)	(0.00417)			(0.00426)	(0.00427)
riskloving_ratio			0.0526	0.0529			0.0521	0.0524
			(0.0398)	(0.0401)			(0.0405)	(0.0408)
Observations	371	371	369	369	371	371	369	369
R-squared	0.049	0.042	0.149	0.140				

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. the weights are computed as: $\frac{damaged}{\widehat{pscore_{(damaged)}}} + \frac{1-damaged}{1-\widehat{pscore_{(damaged)}}}$,

where *pscore* is a non-parametric estimate of the propensity score (probability of *damaged*). The *pscore* is estimated using as regressors the following variables: *age, years_schooling, galle, hambantota, years_schooling, trading, fishery, manufacturing, BMI, distant loancycle* (see variable legend in Table 1)

Table 5.3 Whole Sample - Determinants Of the Solidarity Norm (IV estimates)

Dep Var:	(1)	(2)	(3)	(4)	(5)	(6)
Solidarity Norm	IV	IV	IV	IV	IV	IV
damaged	-0.0947**	-0.0998**	-0.0433	0.0746	-0.0961**	-0.0959**
	(0.0431)	(0.0491)	(0.197)	(0.252)	(0.0417)	(0.0477)
receiver	0.0748***	0.0783***	0.0782***	0.0813***	0.0775***	0.0807***
	(0.0199)	(0.0199)	(0.0199)	(0.0210)	(0.0200)	(0.0200)
age		-0.00180*		-0.00222*		-0.00163*
		(0.000935)		(0.00133)		(0.000930)
single		-0.0168		-0.0493		-0.0172
		(0.0501)		(0.0665)		(0.0502)
widowed		0.0634**		0.0394		0.0612**
		(0.0291)		(0.0422)		(0.0290)
separated		0.141***		0.0711		0.139***
		(0.0457)		(0.110)		(0.0457)
male		0.00912		-0.0205		0.00772
		(0.0430)		(0.0594)		(0.0430)
food_exp_std		-0.000424		-0.000676		-0.000410
		(0.000915)		(0.00108)		(0.000918)
galle		-0.0417*		-0.0704		-0.0446*
		(0.0241)		(0.0454)		(0.0248)
hambantota		-0.0537**		-0.0429		-0.0497**
		(0.0247)		(0.0281)		(0.0247)
years_schooling		-0.00770*		-0.00310		-0.00732*
		(0.00414)		(0.00730)		(0.00412)
n_house_members		0.00202		-0.00310		0.00191
		(0.00812)		(0.0108)		(0.00809)
trading		0.0232		0.00286		0.0218
		(0.0213)		(0.0353)		(0.0213)
fishery		0.0477		-0.0295		0.0444
		(0.0394)		(0.114)		(0.0428)
manufacturing		-0.0217		-0.0235		-0.0224
		(0.0201)		(0.0212)		(0.0201)
impatient		-0.0613***		-0.0678***		-0.0627***
		(0.0208)		(0.0231)		(0.0209)
trustindex		-0.0301		-0.0310		-0.0305
		(0.0323)		(0.0325)		(0.0323)
loancycle		0.00521		0.00172		0.00489
		(0.00393)		(0.00524)		(0.00389)
riskloving_ratio		0.0403		0.0364		0.0347
		(0.0379)		(0.0395)		(0.0381)
Observations	380	372	377	369	377	369
R-squared	0.045	0.124	0.056	0.036	0.044	0.123
Instruments	*distant*	*distant*	*BMI*	*BMI*	*distant, BMI*	*distant, BMI*
First Stage F-Statistic	*51.64*	*13.28*	*3.05*	*5.63*	*37.49*	*13.40*
Exogeneity test: chi-square:	*1.062*	*0.699*	*0.00160*	*0.284*	*1.415*	*0.642*
Exogeneity test: p-value	*0.303*	*0.403*	*0.968*	*0.594*	*0.234*	*0.423*
Test of excluded instruments (Weak Id.Test): F-stat	*103.3*	*76.32*	*5.946*	*3.922*	*56.23*	*40.24*
Overid.test: chi-square					*0.0687*	*0.454*
Overid.test: p-value					*0.793*	*0.500*

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. Variable legend, see Table 1.

APPENDIX

INSTRUCTIONS - GAME "DG"

Today you are given the chance to play and earn real money. In this game you will be asked some questions and depending on how your and the other player's answers you may earn up to 900 LKR.
This game is based on a division of money between two individuals with anonymity, that is each player does not know the identity of the other. You play with someone from your village who is not present in this session and you do not know his/her identity nor he/she knows yours.
The game involves two roles, i.e. player one and player two. You are randomly chosen to play just one of these two. The other role is played by another person in this village.
We give to player one 900 LKR. Player one has to choose how much of this amount to keep for him/herself and how much to send to player two. Player two makes no choice in this game. After the first player has made his choice, the game ends.
Let's make an example: if you are chosen to play as *player one*, you are given 900 LKR. You have to decide how much to keep for yourself and how much to send to player two. If, for instance, you keep 480 LKR and send to the second player 420 LKR he/she will receive 420 LKR and your final pay-off in this game will be 480 LKR. If instead you are chosen to play as *player two*, no action is required and your payoff will entirely depend on player one decision.
Once you have finished this game, if this game is selected for payment we randomly match you with another person who play in the other role and we will pay both of you according to the decision of the person who played as player one.
Now let's start the game.

******

P1) You are chosen to play as *Player 1*. You are given 900 LKR as initial endowment. So you have to decide how much of this amount to send to player 2.

1. **How much of the 900 LKR would you give to the other player?**

☐ *0*	☐ *330*	☐ *630*
☐ *30*	☐ *360*	☐ *660*
☐ *60*	☐ *390*	☐ *690*
☐ *90*	☐ *420*	☐ *720*
☐ *120*	☐ *450*	☐ *750*
☐ *150*	☐ *480*	☐ *780*
☐ *180*	☐ *510*	☐ *810*
☐ *210*	☐ *540*	☐ *840*
☐ *240*	☐ *570*	☐ *870*
☐ *270*	☐ *600*	☐ *900*
☐ *300*		

2. **How much of their initial endowment do you think other people from your village have given on average?** *(you earn 50 LKR for correct guess)*

☐ *0*	☐ *330*	☐ *630*
☐ *30*	☐ *360*	☐ *660*
☐ *60*	☐ *390*	☐ *690*
☐ *90*	☐ *420*	☐ *720*
☐ *120*	☐ *450*	☐ *750*
☐ *150*	☐ *480*	☐ *780*
☐ *180*	☐ *510*	☐ *810*
☐ *210*	☐ *540*	☐ *840*
☐ *240*	☐ *570*	☐ *870*
☐ *270*	☐ *600*	☐ *900*
☐ *300*		

3. **How much do you think the other player expects from you?** *(you earn 50 LKR for correct guess)*

☐ *0*	☐ *330*	☐ *630*
☐ *30*	☐ *360*	☐ *660*
☐ *60*	☐ *390*	☐ *690*
☐ *90*	☐ *420*	☐ *720*
☐ *120*	☐ *450*	☐ *750*
☐ *150*	☐ *480*	☐ *780*
☐ *180*	☐ *510*	☐ *810*
☐ *210*	☐ *540*	☐ *840*
☐ *240*	☐ *570*	☐ *870*
☐ *270*	☐ *600*	☐ *900*
☐ *300*		

4. **What is the minimum amount of LKR you think you need to send in order not to make the player two feel cheated?** If player two receives from me less then_____he/she would feel cheated. *(you earn 50 LKR for correct guess)*

☐ *0*	☐ *330*	☐ *630*
☐ *30*	☐ *360*	☐ *660*
☐ *60*	☐ *390*	☐ *690*
☐ *90*	☐ *420*	☐ *720*
☐ *120*	☐ *450*	☐ *750*
☐ *150*	☐ *480*	☐ *780*
☐ *180*	☐ *510*	☐ *810*
☐ *210*	☐ *540*	☐ *840*
☐ *240*	☐ *570*	☐ *870*
☐ *270*	☐ *600*	☐ *900*
☐ *300*		

*****

P2) You are chosen to play as *Player 2*. No action is required at this stage. Please just answer to the following questions (you can earn money for correct guess).

1. **How much do you think the first player has sent to you?** *(you can earn 50 LKR for correct guess)*

☐ *0*	☐ *330*	☐ *630*
☐ *30*	☐ *360*	☐ *660*
☐ *60*	☐ *390*	☐ *690*
☐ *90*	☐ *420*	☐ *720*
☐ *120*	☐ *450*	☐ *750*
☐ *150*	☐ *480*	☐ *780*
☐ *180*	☐ *510*	☐ *810*
☐ *210*	☐ *540*	☐ *840*
☐ *240*	☐ *570*	☐ *870*
☐ *270*	☐ *600*	☐ *900*
☐ *300*		

2. **How much of their initial endowment do you think other people from your village have given on average?** *(you earn 50 LKR for correct guess)*

☐ *0*	☐ *330*	☐ *630*
☐ *30*	☐ *360*	☐ *660*
☐ *60*	☐ *390*	☐ *690*
☐ *90*	☐ *420*	☐ *720*
☐ *120*	☐ *450*	☐ *750*
☐ *150*	☐ *480*	☐ *780*
☐ *180*	☐ *510*	☐ *810*
☐ *210*	☐ *540*	☐ *840*
☐ *240*	☐ *570*	☐ *870*
☐ *270*	☐ *600*	☐ *900*
☐ *300*		

3. **What is the minimum amount of money you would need to receive from the first player in order not to feel cheated?** *If I receive less than _____ I feel cheated*

☐ *0*	☐ *330*	☐ *630*
☐ *30*	☐ *360*	☐ *660*
☐ *60*	☐ *390*	☐ *690*
☐ *90*	☐ *420*	☐ *720*
☐ *120*	☐ *450*	☐ *750*
☐ *150*	☐ *480*	☐ *780*
☐ *180*	☐ *510*	☐ *810*
☐ *210*	☐ *540*	☐ *840*
☐ *240*	☐ *570*	☐ *870*
☐ *270*	☐ *600*	☐ *900*
☐ *300*		

INSTRUCTIONS - GAME "RG"

Today you are given the chance to play and earn real money; depending on your decision in this game you may earn up to 900 LKR. This game is based on an investment decision.

We give to you 300 LKR and ask you to choose between the following alternatives:

- option 1: you keep the 300 LKR with certainty and do not invest any money.
- option 2: you invest from 30 to 300 LKR in an economic activity. You keep with certainty the sum you decided not to invest. Then, with 50% probability you earn from the economic activity an amount of money equal to the invested sum *multiplied by 3*. Otherwise, with 50% probability the economic activity you invested in generates for you no returns.

Once you have chosen one of the two options, we pay you according to the following scheme:

- If you choose option 1, we give to you 300 LKR at the end of this session if this game is selected for payment.
- If you choose option 2, we toss a coin and a) if it's head we triple the amount you decided to invest and give it to you at the end of the session if this game is selected for payment (in addition to the amount you decided to keep); b) if not, we will give you just the money you decided to keep at the end of this session if this game is selected for payment (so no extra returns from the investment).

For example, suppose you choose option 2 and decide to invest 30 LKR and keep 270 LKR. The economic activity triples your investment with 50% chances. So we toss a coin and if it's head will give you 90 LKR as returns from the investment in addition to the 270 LKR you decided to keep (so in total 270+90=360 LKR); otherwise, if it's not head, you lose the 30 LKR you invested and we give to you just the amount you decided to keep, 270 LKR. Is it clear?

Now let's start the game.

*****

We give to you 300 LKR. Do you choose:

- option 1: I keep 300 LKR and do not invest, or
- option 2: I invest _____LKR in an asset which, after tossing a coin, triples my investment if it's head or gives me no money otherwise. *Please specify one of the following amount*s:

☐ *30*
☐ *60*
☐ *90*
☐ *120*
☐ *150*
☐ *180*
☐ *210*
☐ *240*
☐ *270*
☐ *300*

******

How do you see yourself: are you generally a person who is fully prepared to take risks or do you try to avoid taking risks?
[Please tick a box on the scale, where the value 0 means: 'not at all willing to take risks' and the value 10 means: 'very willing to take risks']

(*not at all willing to take risks*) [0] [1] [2] [3] [4] [5] [6] [7] [8] [9] [10] (*very willing to take risks*)

THE SURVEY

Thanks a lot for your patience. Your answers will be kept anonymous to other people in the village and to the AMF's staff. We will really appreciate if you can answer in a truthful way.

Question	Answer

1	Experimenter name	
2	Date	
3	Time	
4	District	
5	Type of locality (urban/rural)	

Personal Information

6	Name		
7	Family name		
8	Full Address / Locality		
9	Sex	[1] [2]	Male Female
10	Birthday (DD/MM/YYYY)		
11	Years of formal education		
12	Civil status	[1] [2] [3] [4] [5] [6]	Single Married Widow Divorced Separated Cohabiting
13	Which is your relationship to the head of the household?	[1] [2] [3] [4] [5] [6] [7] [8]	Head of Household Wife/Husband Son/Daughter Parent Other Relative Domestic Servant Boarder Other. Specify
14	Number of people living in the house		
15	Number of children (under 15 years old) living in the house		

16	Years of formal education of your wife/husband/fiancée		
17	Years of formal education of your father		
18	Years of formal education of your mother		

Economic Performance Indicators

0.1 Labour and income (2011)

19	Employment status	[1] [2] [3] [4] [5] [6] [7] [8] [9]	Full-Time Employed (30 hours or more) Part-Time Employed (less than 30 hours) Self-Employed Unemployed Student Household Work Retired Unable to Work Other. Specify
20	Sector of employment	[1] [2] [3] [4] [5]	Agriculture Fishery Manufacturing Trading Others. Specify
21	Employment status of your wife/husband/fiancée (if any)	[1] [2] [3] [4] [5] [6] [7] [8] [9]	Full-Time Employed (30 hours or more) Part-Time Employed (less than 30 hours) Self-Employed Unemployed Student Household Work Retired Unable to Work Other. Specify
22	Sector of employment of your wife/husband/fiancée (if any)	[1] [2] [3] [4] [5]	Agriculture Fishery Manufacturing Trading Others. Specify
23	Monthly income of the household in local currency	[1] [2] [3] [4] [5] [6]	2,500 – 5,000 Rs. 5,000 – 7,500 Rs. 7,500 – 10,000 Rs. 10,000 – 12,500 Rs 12,500 – 15,000 Rs > 15,000 Rs
24	How many hours per week do you work?		
25	How many hours per week does your wife/husband/fiancée (if any) work?		
26	How important from 1 (min) to 10 (max) are	[1]	Remittances

	theseincome sources for the household's livelihood?	[2] [3] [4] [0]	Sri Lanka's Government subsidies Donations and grants from other institutions and Organizations Others. Specify. No

0.2 Consumption (2011)

27	How would you judge your standard of living in terms of consumption goods?	[1] [2] [3] [4] [5]	Very good Good Sufficient Mediocre Not sufficient
28	Does it happen to you to have problems in buying or providing daily meals?	[1] [0]	Yes No
29	How much do you usually spend for food per month within your household? (in local currency)		
30	How much do you manage to produce by yourself for consumption?	[0] [1] [2] [3] [4] [5]	Nothing Little Much Very much Everything Not applicable (no self consumption)
31	Do you usually spend money for these goods and services?	[1] [2] [3] [4] [5] [0]	Private medical consultation fees Not reimbursed medicines Cigarettes and tobacco/alcohol/gambling Entertainment and leisure (pic nic, restaurants, cinema, DVD, theatre, sport etc.) Others. Specify No
32	Does your household own any transportation mean? If yes, please specify if it is necessary for your **business (B) or personal (P):**	[1] [2] [3] [4] [5] [0]	Truck Van or car Tractor Motorbike or three-wheel Bicycle No

Loan or credit-related questions

0.3 Microcredit

33	Who gave to you the first loan in your life?	[1] [2] [3] [4] [5] [6]	Bank AMF MFI (other than Agro Micro Finance) Family member or close friends Others. Specify. Never received a loan
34	If the previous answer is [1], [2] or [3], how did it happen?	[1]	I *did not need* a credit and they (Bank, AMF, other MFI) went to my place to offer the possibility of obtaining one

		[2] [3] [4] [5]	I *needed* a credit and they (Bank, AMF, other MFI) went to my place to offer the possibility of obtaining one I needed a credit and I **spontaneously** went to their place to ask for it (Bank, AMF, other MFI) I needed a credit and I went to their place (Bank, AMF, other MFI) to ask for it, *because of other people's suggestion* Others. Specify
35	How important was the support provided by AMF after the tsunami for your economic recovery (whether in terms of a new loan or in better conditions for the repayment of a previous loan)?	[1] [2] [3] [4] [5] [9]	Critical Very important Important Not that important Indifferent N/A
36	How far was your house from the AMF's office (in km) at the time of your first loan?		
37	Were you able to repay the loan obtained before the tsunami, soon after this event?	[1] [0]	Yes No

In the period 2007- today:

38	Have you ever stopped receiving or repaying loans from/to AMF?	[1] [0]	Yes No
39.1	Is yes, why?	[1] [2] [3] [4] [5] [6] [7] [8]	Impossibility to repay the loan Conditions too strict Co-signers refused to pay for me No need for a loan AMF refused Other. Specify. Do not remember Refuse to answer
39.2	Have you started receiving loans once again from AMF?	[1] [0]	Yes No
39.3	If yes, when?		

For the year 2011…

39	Have you borrowed from AMF during this year?	[1] [0]	Yes No
40	Are you currently repaying to AMF?	[1] [0]	Yes No
41	If 40 **or** 41 are yes, why did you take the loan? If 40 **and** 41 are no, go to question 45.	[1] [2] [3] [4] [5] [6]	Start a new business Improve the outstanding business Recover the damaged business Change business Consumption Others. Specify
42	How would you judge the loan granted by	[1]	Sufficient

	AMF?	[2] Insufficient [9] N/A	
43	How would you judge your attendance to the monthly-meetings?	[1] Excellent [2] Very good [3] Good [4] Seldom [5] None [9] N/A	
44	Have you asked for money, apart from Agro Micro Finance, and were refused?	[1] Bank [2] MFI (other than Agro Micro Finance) [3] Family member or close friends [4] Other people/others. Specify. [0] No	
45	Have you obtained loans, apart from AMF?	[1] Bank [2] MFI (other than Agro Micro Finance) [3] Family member or close friends [4] Other people/others. Specify [0] No	
46	If yes, was the sum of these amounts greater or smaller than the one granted by AMF?	[1] Greater [2] Smaller [3] The same [9] N/A	
47	Please indicate if you/people you know have received these different types of aid		You (y) / Relatives (r) / Others (o)
	a. Money		
	b. Credit		
	c. Food		
	d. Medicines		
	e. Raw material for repairing/rebuilding your house		
	f. Tools		
	g. Consumption		
	h. Others. Specify.		
48	Have you lent money?	[1] Family members [2] Close friends [3] Other people. [0] No	

0.4 Savings

49	How much did you save during the last year?	[1] Very much [2] Much [3] Pretty much [4] Not much [5] Not at all	

Happiness, life satisfaction and self-esteem

50	All considered you would say that you are:	[1] Very Happy [2] Happy [3] Quite happy [4] Not too happy [5] Not at all happy	

51	All considered, how satisfied are you with your life from 1 (not at all satisfied) to 10 (fully satisfied)?		
52	All considered, which is your level of self-esteem from 1 (no self esteem at all) to 10 (full self esteem)?		

Social Capital

53	Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?	[1] [2]	Most people can be trusted Have to be careful
54	How much do you agree on the following statements		a) "*Nowadays, you can't rely on anybody* " [1] Agree [2] Neither agree or not agree [3] Disagree [4] Can't choose [5] Refuse to answer b) "*If you are not careful, other people will take advantage of you*" [1] Agree [2] Neither agree or not agree [3] Disagree [4] Can't choose [5] Refuse to answer *c) If I suffer a serious wrong, I will take revenge as soon as possible, no matter what the costs* [1] Agree [2] Neither agree or not agree [3] Disagree [4] Can't choose [5] Refuse to answer
55	Do you belong to any group?		[1] yes - [0] no
	a. Sporting group		
	b. Neighbour group		
	c.Religious group		
	d. Community groups		
	e. Cultural group (music, dance, etc.)		
	f. NGO		
	g. Political Party		
	h. Other. Specify		

Health

56	All considered, how would you judge your level of health from 1 (not at all satisfied) to 10 (fully satisfied)?		
57	What is your weight (in kg)?		

58	What is your height (in cm)?		

Wealth

59	Does the house where you live belong to your family?	[1] [0]	Yes No
60	If yes, do you have?		Bedrooms (number) Bathrooms (number) Toilets (number) Kitchen
61	How far was your house located from the coast at the time of the Tsunami? (in km)		
62	Did you make any of the following dwelling improvements to your house? (in the period 2007-2011)	[1] [2] [3] [4] [5] [0]	New walls When? _____ New floors When? _____ New roof When? _____ New sanitary services When? _____ Other. Specify When? _____ No
63	What material are the walls of the main dwelling predominantly made of?	[1] [2] [3] [4] [5] [6] [7] [8] [9]	Stone, Brick/Block Mud/Wood Mud/Cement Wood only Corrugated iron sheet Grass/Straw Tin Other. Specify
64	What material is the roof of the main dwelling predominantly made of?	[1] [2] [3] [4] [5] [6] [7]	Corrugated iron sheet Tiles Concrete Asbestos sheet Grass Tin Other. Specify
65	What is the main source of water for the household?	[1] [2] [3] [4] [5] [6] [7] [8] [9] [10 [11	Piped into dwelling Public tap Tube-well/borehole with pump Protected dug well Protected spring Rainwater collection Unprotected dug well/spring River/Lake/ponds/streams Tankers/Truck/Vendor Bottled water Other. Specify
66	What type of toilet facilities does the household use?	[1] [2] [3] [4] [5] [6] [7]	Flush toilet Ventilated improved pit latrine Uncovered pit latrine Covered pit latrine Bucket None Other. Specify
67	Which of the following things does your household own?		Yes [1] no [0]
	a. TV, DVD player		

	b. Mobile phone		
	c.Fridge		
	d. Water pump		
	e. Plowing machine		
	f. Gas stove		

Recalling Tsunami

68	Immediately after the Tsunami, what did you mostly experience: solidarity/Altruism/Cooperation**or**Looting / Opportunism?	[1] [2]	Solidarity (Altruism / Cooperation) Looting (Opportunism)

What kind of damages did you suffer from the tsunami?		a) Family members
	[1]	Dead
	[2]	Permanently injured
	[0]	No
		b) House
	[1]	Totally damaged
	[2]	Partially damaged
	[0]	No
		c) Economic activity
	[1]	Totally damaged
	[2]	Partially damaged
	[0]	No
		d) Buildings/assets
	[1]	Totally damaged
	[2]	Partially damaged
	[0]	No
	[1]	e) Working tools
	[2]	Totally damaged
	[0]	Partially damaged
		No
		f) Raw materials
	[1]	Totally damaged
	[2]	Partially damaged
	[0]	No

LOTTERY

Now we give to you the chance to participate into a lottery we are running. If you will be selected among all the people we interview, you can win at least 10,000 LKR.

You have to decide which option you prefer in 8 cases. In each of these 8 cases, you will be asked if you prefer to receive *after two months* the lottery prize of 10,000 LKR or *after eight months* a prize of an increasing amount in each option. So, you have to choose which of the two alternative forms of payment would you prefer if you won the lottery.

For example, the first option will be "*would you prefer to win 10,000 LKR after two months after this interview, or 10,100 after eight months after this interview?*" So you choose one of the two alternatives. This option will be repeated 8 times; in each of these we keep fixed the amount to be received "*after two month*" (10,000 LKR) in case of winning while the amount "*after eight months*" will be gradually increased option-by-option until 14,142 LKR.

All the people interviewed in this research will participate in this lottery. At the end of this research, we will extract from an urn one out of all the names of people we interviewed; that person will be the only winner of this lottery. Then, we extract from another urn a number from 1 to 8 and we will pay the winner according to his/her choice in the option number equal to the one extracted. For example, if the number selected is 5, we will pay the winner the sum of money corresponding to his/her choice in option 5. If the winner chose to receive "10,000 after two months", we will transfer that amount via "Western Union" after two month from his/her interview date; if instead she/he chose to receive "10,368 after eight months", we will be paying 10,368 LKR after eight months from his/her interview date.

Is it clear?

Let´s start.

Please circle only one of the two choices for each of the following 8 options.

Option n.		***A***	***B***
1	*If you won the lottery, would you like to receive:*	10,000 after 2 month	10,100 after 8 months
2	*If you won the lottery, would you like to receive:*	10,000 after 2 month	10,198 after 8 months
3	*If you won the lottery, would you like to receive:*	10,000 after 2 month	10,368 after 8 months
4	*If you won the lottery, would you like to receive:*	10,000 after 2 month	10,607 after 8 months
5	*If you won the lottery, would you like to receive:*	10,000 after 2 month	10,840 after 8 months
6	*If you won the lottery, would you like to receive:*	10,000 after 2 month	11,180 after 8 months
7	*If you won the lottery, would you like to receive:*	10,000 after 2 month	12,247 after 8 months
8	*If you won the lottery, would you like to receive:*	10,000 after 2 month	14,142 after 8 months

IMPORTANT: If you will be the winner you will receive the money according to your extracted choice. If you do not receive any notification nor payment after 8 months from the date of this interview, unfortunately you have not been extracted.