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The Effect of Network Degree on Bargaining: Experimental Evidence from the Field*

Ben D'Exelle, Christine Gutekunst and Arno Riedl

April 2025

Abstract

We conduct an artefactual field experiment in real-existing trade networks to analyze how individual network degree affects bargaining demands and outcomes. We combine data from a bilateral bargaining experiment with data of trade networks in 24 villages in Uganda. To identify the effect of individual degree in the village trade network we experimentally vary the disclosure of participants' identities in a bargaining pair. We derive hypotheses on how degree should affect behavior and find partial support for them. Specifically, we observe that individual degree affects bargaining demands in the predicted direction when one of the bargainers is informed about the network positions but not when both sides are informed. Moreover, network degree affects the likelihood of agreements and earnings, irrespective of the knowledge of the network positions of bargaining partners.

Keywords: Bargaining, social networks, network degree, experiments **JEL Classification:** C78, C90, L14

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1. Introduction

In recent decades, economists have paid growing attention to the influence of social networks on human behavior. This is also the case for bargaining behavior, on which an important theoretical literature has developed (for an overview, see Manea (2016).¹ A main insight from this stream of research is that the number of connections an agent has in a network (i.e., an agent's degree in a network) increases bargaining power. Theoretically this can be because a higher degree provides a larger set of outside options (Kleinberg and Tardos, 2008; Easley and Kleinberg, 2010) or a higher likelihood of being chosen as a bargaining partner (Calvo-Armengol, 2001). However, empirical evidence on the influence of network connections on bargaining behavior and outcomes is scarce. Some studies have used lab experiments and exogenously created networks (see e.g., Charness et al., 2007; Choi et al., 2017) to test if network positions affect bargaining. However, no study has used real-existing social networks outside the lab to study their role in bargaining. We fill this gap by providing evidence from an artefactual field experiment where participants negotiate the division of a pie with someone in their trade network. Thus, we can test whether the theoretical insights and empirical results obtained in the lab carry over to the more natural but also more noisy environment of a real-existing network. Thereby, contributing to the external validity of both theory and lab experiments.

To study the effect of individual network degree, i.e., the number of direct connections an individual has in a network, on bilateral bargaining, we use an experiment in which randomly paired participants bargain in a Nash demand game (NDG) (Nash, 1953). In the NDG, bargainers make simultaneous demands over a given resource and receive their demands when they are compatible but only a (relatively small) disagreement payoff when they are not. This game combines simplicity with the possibility to observe bargaining behavior (i.e., the demands) as well as bargaining outcomes (i.e., agreements and earnings). To exploit the natural variation in individual degree in real networks, we implement our study in close-knit rural Ugandan villages. Before the bargaining experiment, we use a social tie survey to elicit the complete trade networks in these villages. Obviously, we cannot exogenously vary individuals' network degrees. Therefore, to identify the influence of network degree on bilateral bargaining behavior and outcomes, we experimentally vary the disclosure of the identities of participants in a bargaining pair. The close-knit nature of the investigated communities allows us to use the revelation of identities as a proxy for the revelation of participants' network degrees. Naturally, with the disclosure of identities a number of other characteristics next to degree become known. Therefore, in our analysis we control for a large number of individual characteristics and use fixed effects models.

Our study adds knowledge concerning the external validity of network effects. Specifically, rural villages in developing countries tend to be long-grown social units, where people rely on local

¹This topic has also received attention among sociologists. For an overview, see Cook et al. (2013).

social networks. In other words, social networks are important for how people behave in their local setting. Importantly, such social units are not rare special cases, and are very important in rural areas, where 43% of the global population lives and in low-income countries even 65% of the population (World Bank, 2022). The use of real networks also provides an important methodological advantage as we do not need to actively tell participants their position in the network before the bargaining experiment, which reduces the risk of potential experimenter demand effects.

We implement three identity disclosure treatments. First, in AN, both bargainers in a pair do not know their identities. Second, in SD the informed bargainer in a bargaining pair (SD-i) knows the other's identity, whereas the uninformed bargainer (SD-u) does not know the other's identity. Third, in FD, both bargainers in a pair do know each others identity. Based on existing theoretical studies (Calvo-Armengol, 2001; Kleinberg and Tardos, 2008; Easley and Kleinberg, 2010; Acemoglu et al., 2010; Galeotti et al., 2013), stating that a participant's bargaining power is affected by their own network degree as well as the network degree of the bargaining opponent, we develop hypotheses for the effect of network degree on demands and bargaining outcomes. We do this for AN and for effects in SD and FD, in comparison to AN.

We find partial support for the hypotheses. Specifically, we observe that if only one side of the bargaining table knows the other's identity, demands made by the informed bargainer are increasing in their own degree and decreasing in other's degree, as predicted. In all other cases observed effects are mainly in the predicted direction but fail to reach significance. Regarding bargaining outcomes we see that when there is no information about bargainers' identities, the likelihood of agreement as well as the overall earnings are negatively affected by bargainers' degree, as hypothesized. Otherwise, no effects of degree are observed, but some of these null results are predicted. The most surprising unpredicted null result is that we do not find an effect of degree when both bargainers are fully observed. In Section 4, we discuss possible reasons for this, related to the fact that our experiment is embedded in the everyday life of the investigated villages.

Our study contributes to two strands of literature. First, it provides new experimental evidence on the importance of networks for bargaining. Controlled empirical evidence on how network position affects bargaining behavior is limited.² There are only two studies known to us that use experiments to study bargaining on networks (Charness et al., 2007; Choi et al., 2017). In contrast to these studies, we exploit the naturally occurring variation of network position in real networks in the field. We create experimental variation in information about the counterpart to identify causal effects. Through this we generate empirical evidence on network degree as a source of bargaining

²There is a large sociological literature on networked exchange. This literature has developed a laboratory-based experimental protocol aimed at analyzing the endogenous choice of bargaining partners on a fixed network structure. For a survey of this approach see Easley and Kleinberg (2010). We share with this literature the general motivation to understand how power may emerge in a network, but otherwise our study is quite different. In particular, our experimental design focuses on the causal identification of network effects based on treatment variations and exogenously assigned trading pairs. Moreover, the scope of our study differs as we move our experiment away from a laboratory-based setting into the field using real world trading networks.

power in real trade networks. It is noteworthy that we find effects of degree on bargaining without ever mentioning networks or network degree, which differentiates our approach from those in the laboratory. A potential downside of moving to the field is that there is more noise and the observed effect may only be a lower bound of the actual effect of degree on bargaining.

Second, our paper contributes to the literature that studies social networks in the field, and its importance for a wide range of economically relevant behaviors, such as risk sharing and transfers (Fafchamps and Lund, 2003; Karlan et al., 2009; Jackson et al., 2012; D'Exelle and Verschoor, 2015), social learning (Bandiera and Rasul, 2006; Conley and Udry, 2010; D'Exelle and Verschoor, 2023), peer influence (Calvo-Armengol et al., 2009; D'Exelle et al., 2023), job search (Ioannides and Datcher Loury, 2004), and women's involvement in intra-household decisions (D'Exelle and Ignowski, 2023). Evidence on how real-existing social networks influence bargaining is missing, which we contribute to this literature.

The remainder of the paper is structured as follows. Section 2 introduces the design of the study, including descriptions of the bargaining game, the treatment variations and hypotheses, the experimental procedures, the network elicitation, and the socioeconomic survey. Section 3 presents results on the networks, bargaining demands, and individual earnings. Section 4 discusses the results and section 5 concludes.

2. Design

Following a survey that collected data on individual social networks, participants interacted in a bilateral bargaining game. In this section we first describe the bargaining experiment. Thereafter, we introduce the experimental treatments and present our hypotheses. The section closes with describing the implementation of the experiment and the survey.

2.1. The Bargaining Game

In the experiment we implement the Nash demand game (NDG) (Nash, 1953). In the game, two players *i* and *j* simultaneously and independently make demands x_i and x_j regarding a given resource *R*. If the sum of the demands made by the two players does not exceed the amount of the available resource, that is, $x_i + x_j \le R$, they reach an agreement and the players receive their respective demands. Otherwise, each player gets ex ante defined and known disagreement earnings *d*.

Let $u_i, u_j : [0, R] \cup \{d\} \to \mathbb{R}$ be players' von Neumann-Morgenstern utility functions which map from the space of possible demands into the payoff space. The set of possible bargaining agreements *S* is given by those (x_i, x_j) that fulfill $u_i(x_i) \ge u_i(d), u_j(x_j) \ge u_j(d)$ and $x_i + x_j \le R$. It is easy to see that any pair of demands $(x_i, x_j) \in S$ that satisfies $x_i + x_j = R$ constitutes a Nash equilibrium.

Nash (1950) proposes a solution for this game that appeals to a number of reasonable conditions. He shows that, under such conditions, the unique solution defining the value of the bargaining game is given by the product of the players' utilities — known as the Nash bargaining solution (NBS).³ Later, Harsanyi and Selten (1972) and Kalai (1977) have shown that the NBS can be extended to incorporate differences in bargaining power between the players. This asymmetric NBS takes the following form:

$$\arg\max_{(x_i, x_j) \in S} (u_i(x_i) - u_i(d))^{\alpha_i} (u_j(x_j) - u_j(d))^{\alpha_j},$$
(1)

where the weights α_i and α_j describe the negotiators' relative bargaining power, with $\alpha_i, \alpha_j > 0$. A larger α implies higher bargaining power and, hence, a higher bargaining share.

Bargaining power and network degree. We are interested in testing if the negotiators' network degrees affect bargaining. There are theoretical accounts that suggest that this is the case. More precisely, the theoretical literature on bargaining and networks has shown that bargaining outcomes in a network can be approximated via an allocation rule that coincides with the asymmetric NBS and that the weights α_i and α_j can be interpreted as reflecting the relative degree of the bargaining counterparts. This literature provides some arguments for why relative degree may influence bargaining power. Calvo-Armengol (2001) argues that a well connected agent is more likely to be randomly chosen as the bargaining partner of another agent. Based on this argument, he shows that higher degree leads to higher bargaining power. Work by Kleinberg and Tardos (2008) and Easley and Kleinberg (2010) shows that, when bargaining partners are chosen endogenously, there exists an extension of the NBS in which the outside option for each agent arises directly from the network structure. By defining a set of self-consistent values where each individual transaction follows the asymmetric NBS, they derive a positive relation between degree and bargaining power.

Hence, the mechanism that explains why bargaining power increases with network degree differs depending on the specific approach taken, but the importance of degree as such does not: higher degree leads to higher bargaining power. Below we will exploit this theoretical insight in the motivation of our empirical hypotheses regarding the demands bargainers make and the earnings they receive.

2.2. Treatments

To test if bargainers' degrees influence demands and earnings, the first best solution would be to exogenously vary these degrees. As we are using a real existing network this approach is not

³These conditions include invariance to affine transformations, Pareto optimality, independence of irrelevant alternatives, and symmetry. Originally, Nash's solution was derived under the restriction that $u_i(x) = u_j(x) = u(x)$ and $u_i(d) = u_j(d) = u(d)$ where u(.) is a linear function. Later work analyzes the role of risk aversion in bargaining and shows that the NBS can be extended to cases where $u_i(x) \neq u_j(x)$ and $u_i(d) \neq u_j(d)$ with $u_i(.)$ and $u_j(.)$ being non-linear functions with differing curvatures (see, e.g., Kannai, 1977; Roth, 1979; Kihlstrom et al., 1981; Sobel, 1981).

feasible. However, we can approximate exogenous variations in degrees by varying in a controlled way the information negotiators in a pair have of each other. Specifically, we experimentally vary the disclosure of the identities of the participants in a pair, and consequently information about the participants' degree. We can then use treatment comparisons to examine if participants' degrees affect bargaining behavior. We use the following three information revealing treatments.

In the anonymity treatment (AN), none of the participants in a bargaining pair is informed about the other's identity. In the semi-disclosure treatment (SD), one participant in a pair is informed about the other's identity while the other is not. In the full-disclosure treatment (FD), both participants in a pair know the other's identity. In each treatment, both bargainers are informed about the prevailing information condition. This experimental variation, together with extensive socio-economic controls, allows us to causally identify how bargaining behavior and outcomes depend on (the knowledge of) the bargainers' degrees, and whether this effect depends on the disclosure of one bargainer's identity relative to the other bargainer's identity.

Our identification strategy relies on the following assumptions. First, we assume that the disclosure of the opponent's identity results in access to information about the opponent's position in the network. This assumption likely holds given the close-knit nature of villages selected for this study. Implicitly, we also assume that bargainers know each others' degrees when their identity is disclosed. We are aware that this might be considered a strong assumption as errors in the perception of others' degree are possible. However, as such errors add noise and decrease the likelihood to detect an affect of degree on bargaining, we are likely erring on the conservative side. Second, the identity disclosure in SD and FD provides participants not only with the information necessary to identify the network position of their opponent, it also gives them information about other socio-economic characteristics. The success of our identification therefore relies on minimizing a potential omitted variable bias by controlling for those socio-economic characteristics that might correlate with degree and influence bargaining. We will provide more details on how we do this in the empirical section.

In the following, we label the person whose perspective we take 'ego', while the counterpart is labeled 'alter'. In SD, if ego knows alter's identity, ego is called 'informed' (SD-i), whereas if ego does not have this information, ego is called 'uninformed' (SD-u).

2.3. Hypotheses

We now formulate hypotheses about the effect of network degree on bargaining demands and earnings in the different treatments. Our hypotheses are informed by the theoretical work introduced above which suggests that ceteris paribus higher own degree increases ego's bargaining power, while higher degree of alter decreases ego's bargaining power. We first derive the hypothesis for demands followed by the hypothesis for the likelihood of achieving an agreement and for earnings. Moreover, due to our identification strategy, in the hypotheses, we first formulate the effect of degree in AN in absolute terms, but put the effect of degree in the other treatments relative to AN.

2.3.1. Demands

In AN, both bargainers know that they are randomly matched to another villager and, thus, the only information they can use to form expectations about the other's degree has to be based on aggregate information from the village. We assume that, whenever bargainers have no information about the other's identity, that they both use a summary statistics of the village's degree (e.g., the average degree) as a point of reference regarding the degree of their bargaining opponent (and each believes that the other is doing so). Importantly, ego knows her own degree and also that the likelihood to have a higher degree than alter increases with higher own degree. In AN, therefore, if higher degree correlates with higher bargaining power the demand of ego should increase with her degree but be independent of the actual degree of alter. This expectation is formulated in Hypotheses 1.a below.

In SD, the predicted effect of degree on demands of ego depends on the assigned role. In SD-i, where ego is informed, she can condition her demand on both her own degree and the degree of alter. She also knows that the uninformed alter can only use aggregate information and thus that her (ego's) own actual degree cannot affect alter's behavior. Therefore, if higher degree correlates with higher bargaining power, higher own degree should increase ego's demand and higher alter degree should decrease ego's demand. Note, that relative to AN, in SD-i ego has more accurate information about the own degree relative to the other's degree and we expect that ego's own degree has a stronger effect in SD-i than in AN. In SD-u, where ego is uninformed about the other's identity, she can only use information about her own degree and aggregate village information to formulate her demand. Thus, in SD-u, it is expected that ego's demand increases with own degree but is independent of alter's degree. Therefore, behavior should be similar to AN. We summarize these predictions in Hypotheses 1.b below.

Finally, in FD, both bargainers know that each one knows each other's identity and, thus, that estimates of each other's bargaining power should be based on actual degrees and demands should be affected accordingly. From the above reasoning it follows that, in FD, ego's demands should increase with her own degree whereas they should decrease with the degree of alter. Moreover, as in SD-i, relative to AN, ego's own degree should have a stronger effect. This is formulated in Hypotheses 1.c.⁴

⁴We note that the following hypothesis is based on direct effects of degrees on bargaining and ignore potential indirect (or equilibrium) effects taking into account the potential response of the other bargainer to degree effects. We argue that such effects do not alter the direction of predicted effects. First, consider SD, where the informed (SD-i) bargainer's demand is predicted to increase with own degree and decrease with alter's degree, and the uninformed (SD-u) bargainer's demand is predicted to increase the demand with own degree. If the informed bargainer takes into account the uninformed bargainer's response, then she knows that an uninformed bargainer with a higher degree will tend to have higher demands, which may lead her to decrease her own demand in order to avoid a disagreement.

Hypothesis 1. EFFECT OF DEGREE ON DEMANDS.

- a. In AN, ego's demand increases with ego's own degree and is independent of alter's degree.
- b. Compared to AN, in SD-i, ego's demand increases with ego's own degree and decreases with alter's degree, and in SD-u, ego's demand is not affected by ego's own degree or alter's degree.
- c. Compared to AN, in FD, ego's demand increases with ego's own degree and decreases with alter's degree.

2.3.2. Earnings

The efficiency assumption underlying the asymmetric NBS implies that earnings and demands are identical. Therefore, theoretically, bargaining power translates directly into bargaining shares, that is, earnings. However, there is substantial evidence that bargaining is not always efficient, particularly when information is incomplete. Specifically, it is likely that disagreements happen (e.g., Roth and Murnighan, 1982; Kahn and Murnighan, 1993; Gächter and Riedl, 2005; Karagözoğlu and Riedl, 2015; Karagözoğlu and Kocher, 2019). In our set-up there is not only incomplete information about bargainers' degree by design, as in AN and SD, but even if there is complete information, as in FD, there is some uncertainty about the actual degree of bargainers and how degree translates to bargaining power. Thus, we expect bargaining frictions and we expect them to be related to bargainers' degree. To arrive at a testable hypothesis taking this into account we use Hypothesis 1 to reason about how degree may affect (i) the likelihood to end up in disagreement, (ii) the earnings conditional on reaching an agreement, which together determines the effect on (iii) overall earnings.

In AN we expect that ego's demand increases with ego's own degree and is independent of alter's degree. As this applies to both sides in a bargaining pair, it translates, *ceteris paribus*, into an increased likelihood of disagreement with higher ego or alter degree. For agreements conditional on having reached an agreement (agreement earnings) the hypothesized effects of degree on demands imply that for ego these earnings increase with ego degree and decrease with alter degree. For (overall) earnings of ego, together this implies an indeterminacy of the effect of ego's degree and a negative effect of alter's degree. We formulate this reasoning in Hypothesis 2.a.

If the uninformed bargainer takes this into account she does not have a reason not to condition her behavior on her own degree. Thus, even if both bargainers take into account the other side's potential response it will still be the case that ego's demand decreases with ego's degree and alter's demand increases with alter's degree, as stated in the hypothesis. Second, for AN and FD the predictions are unchanged because in the former neither side can take into account any asymmetric information and in the latter case both are perfectly informed about each other's degree and thus bargaining power.

In SD we expect that for ego's on either side (i.e., SD-i and SD-u) their own degree increases demands whereas for alter's degree we expect a negative effect on demands for the informed bargainer and no effect for the uninformed bargainer. Taken together this implies that, ceteris paribus, the likelihood of disagreement increases with ego's degree because both sides tend to have higher demands with higher degrees, but the effect of alter's degree is not clear as the informed player decreases demands with higher alter degree but the (uninformed) alter has higher demands with higher own degree. Importantly, compared to AN, in SD the informed bargainer has better information about the other's degree and can thus better calibrate the demand to avoid disagreement and the negative degree effect should be weaker than in AN. For ego's earnings conditional on agreement the higher demands with a higher ego's degree and the lower demands for a higher alter's degree translate into higher agreement earnings for higher ego's degree and lower agreement earnings for higher alter's degree. For ego's overall earnings the effect of ego's degree is unclear as it increases earnings in case of agreement but at the same time decreases the likelihood of agreement, whereas given the predicted effects of alter's degree on agreement and agreement earnings, a higher alter's degree should decrease ego's earnings. Thus the effect of ego's and alter's degree on agreement earnings are similar as in AN, and the effect on overall earnings follows the pattern of agreements. We summarize this reasoning in Hypothesis 2.b.

Finally, in FD ego's own degree increases demands and this holds for both sides of the bargaining table, implying that disagreements are more likely with higher ego's degree. Again, as for SD, the effect of alter's degree on agreements is unclear as on the one hand ego decreases demands with higher alter degree, but at the same time alter increases with demands with higher degree. Also, as in SD, compared to AN, in FD the bargainers have better information about the each other's degree and can thus better calibrate the demands to avoid disagreement and the negative degree effect should be weaker than in AN. For ego's agreed earnings the predictions of the effect of ego's and alter's degree follow those for demands. That is, ego's agreement earnings increase with ego's degree and decrease with alter's degree. The effect of degree on ego's overall earnings again follow from the effects on agreements and agreement earnings. Ego's degree increases agreement earnings but decreases the likelihood of agreement with consequently an unclear effect on overall agreement. Alter's degree decreases ego's agreement earnings and decreases ego's agreement earnings which implies a negative effect of alter's degree on ego's overall earnings. Thus, as in SD, the effect of ego's and alter's degree on agreement earnings are similar as in AN, and the effect on overall earnings follows the pattern of agreements. We summarize this reasoning in Hypothesis 2.c. We summarize the above reasoning in the following hypothesis.

Hypothesis 2. EFFECT OF DEGREE ON AGREEMENTS AND EARNINGS.

a. In AN, (i) the likelihood to reach an agreement decreases with both ego's and alter's degree, (ii) ego's agreement earnings increase with ego's degree and decrease with alter's degree, and (iii) ego's overall earnings decrease with alter's degree.

- b. Compared to AN, in SD, (i) the likelihood to reach an agreement increases with ego's and alter's degree, (ii) ego's agreement earnings do not change with ego's or alter's degree, and (iii) ego's overall earnings increase with ego's and alter's degree.
- c. Compared to AN, in FD, (i) the likelihood to reach an agreement increases with ego's and alter's degree, (ii) ego's agreement earnings do not change with ego's or alter's degree, and (iii) ego's overall earnings increase with ego's and alter's degree.

2.4. Experimental Procedures

The experiment was organized in sessions in which participants from at most two villages were gathered in one common place. Individual decision cards were used to record participants' demands and beliefs about the demand of their counterpart. On the card, the participant's own name and picture was displayed if her identity was disclosed to the opponent (in FD and SD-u). To disclose the identity of alter (in FD and SD-i), the picture and name of the opponent was shown on the decision card. In FD, both counterparts' names and pictures were displayed, to show that both participants had information about each other. In SD-i, only alter's name and picture was displayed, and in SD-u, only ego's name and picture was displayed. In AN, no information about either of the counterparts' identities was given.

Each participant took one decision in AN, and two decisions in either FD or SD.⁵ For each decision, participants were matched into a new pair. Having two decisions from each participant in either SD or FD gives us within-subject variation in behavior of one participant towards different opponents of possibly differing degree in SD and FD. To minimize spillover effects, we gave no feedback between decisions. Random matching of pairs was determined before the experiment started, as was the preparation of the decision cards.

Demands and beliefs were elicited through two simple questions on the decision cards that asked participants for the amount that they demanded for themselves and for the amount that they expected the other to demand, respectively. The resource available was 16000 Ugandan Shilling (UGX), which was roughly equal to two daily wages for the average participant. Demands and beliefs could be stated as integers between 0 and 16000. The disagreement payoff was 2000 UGX. Demands were incentivized by informing participants that, at the end of the experiment, one of their decisions would be selected at random to be paid out. This protocol of randomly selecting one single decision for payment was followed to avoid hedging between different decisions (for

 $^{^{5}}$ To understand whether bargaining behavior depends on the opponent being from the same village, we further included anonymous pairs from different villages in the experiment (different village condition – DV). Each participant took one decision in DV, additionally to the same-village anonymous condition AN. This paper focuses solely on the same-village anonymous condition AN.

theoretical arguments and empirical evidence in favor of this procedure, see Azrieli et al., 2018, 2020). Belief elicitation was not incentivized to avoid hedging between demands and beliefs.⁶

Instructions were read out loud and comprehension questions on how to calculate own and others' earnings were asked in private (for details see Appendix C). If participants were unable to answer the comprehension questions further clarifications were given in private. If they were still unable to answer the questions, a note was made so that we could exclude their decisions from the analysis. About 8% of the participants had problems understanding the instructions and were excluded from the analysis.

Participants were seated at desks with sufficient distance from each other, so that they were unable to read their neighbors' decision cards. They were instructed not to talk to their neighbors and to keep their decisions confidential. Participation was voluntary, and participants were told that they were free to leave the experiment at any point. Nobody made use of this option. At the end of the experiment, payments were paid out in private. Payments and decisions made by the participants were treated confidentially, and this was explained at the beginning of the experiment.⁷

2.5. Survey

To elicit social networks and individual socio-economic characteristics, a few weeks before the experiment all participants were interviewed individually and in private. Answers were recorded electronically with tablets.

2.5.1. Network elicitation

The survey had two sections. With the first section, we elicited the individual trade network of each participant in their village. Enumerators used a stack of cards to show a photograph and name of each of the other respondents in a village. With each card shown, they asked the respondent whether they knew the other person. If they answered affirmative, they asked whether they had bought anything from that person or sold anything to that person in the last 18 months. If the answer was again affirmative this counted as a (unilateral) link in the village trade network.⁸ To avoid order effects, the stack of cards was reshuffled before each interview.

⁶We chose not to incentivize beliefs because there is evidence that incentivized belief elicitation entails the risk that participants hedge between action and beliefs, especially when they have a financial stake in the predicted action, which is the case in our set-up (Rutström and Wilcox, 2009; Blanco et al., 2010; Armantier and Treich, 2013).

⁷As the experiment was run with pen and paper, all decisions cards were prepared in advance. We did not have the time or capacity to remove decision cards that involved a participant who did not show up at the experimental session. If a decision card was selected for payment that involved a no-show, we used a no-harm approach, by paying out the bargaining claim made by the participant who was present.

⁸Besides trade networks, other network dimensions such as friendship, borrowing, and advise networks were elicited. We will not use these dimensions in this paper.

This method is a time and resource intensive way of eliciting a community's network, but helps reduce reporting bias. By showing individual pictures, all participants get the same cues to remember all of their connections. Without such cues, more connected people might be more likely to forget a link (Brewer, 2000). This could create non-random errors in the elicitation of the networks which, in turn, could bias the estimated effect of network connections on individual behavior.

2.5.2. Socioeconomic characteristics

The second section of the survey collected socio-economic characteristics, such as wealth, age, education, gender, ethnicity, occupation, trust, agreeableness and risk aversion. To elicit household wealth we asked a variety of questions on the characteristics of the home a family lived in (number of rooms, type of flooring, etc.), their access to electricity, and how much livestock they owned. Based on the answers to these questions we constructed a wealth index using a principal component analysis.

We further asked questions on three relevant psychological traits: trust, agreeableness, and risk aversion. To measure trust we used a principal component analysis of the answers to three questions: whether respondents thought that most people can be trusted, whether most people would try to take advantage if they had the chance, and whether most of the time people tried to be helpful. These questions are based on the World Value Survey. To measure agreeableness we used a principle component analysis of the answers to the following questions from the Big Five questionnaire (Costa and McCrae, 1992): whether one tries to forgive and forget when insulted, whether one is ready to fight back if somebody else starts a fight, and whether one hesitates to express anger even if it is justified. Risk aversion was measured with a self-reported score that indicates whether respondents 'Take risk a lot', 'Take risk but not a lot', 'Avoid risk but not a lot', or 'Avoid risk a lot'.

3. Results

We begin by describing the sample, including elicited degrees in the trade networks, as well as demands and beliefs in the different treatments. Thereafter, we use regression analysis to test our hypotheses on the influence of individual degree on demands, agreements and earnings. We close this section with some robustness tests.

3.1. Sample

We conducted our study in the Sironko district of eastern Uganda. As is typical for rural sub-Saharan Africa, the villages in this area are small-scale, close-knit communities with an active exchange of goods and services between inhabitants. A large share of the population lives from farming activities. Usually, households farm both cash crops and subsistence crops. When harvest is due, members of a community help each other out by working on each others' farms. Beyond this, casual labor is common with a large share of the population being active on informal labor markets. Similarly, goods are exchanged through official or unofficial market places. This induces active trading networks within communities. Traded goods include, but are not limited to, food items, firewood, medicines, farm inputs, household necessities, construction materials, and local brew.

The small-scale, close-knit nature of the studied communities implies high observability. In particular, others' economic activities are easy to observe, including possible involvement in trade of goods and services. Hence, when the identity of a person from the same village is known, bargainers have enough information to form an expectation about the other's position in the village trade network.

To select participants, we used a multi-stage cluster sampling approach. In the first step, we selected a random set of 24 villages. In each of the selected villages, we aimed to include all households, and from each of the participating households one adult was chosen at random to take part in the study.⁹ Overall, we conducted 14 experimental sessions with 225 participants who took a total of 675 decisions. Each session took about two hours and included between 13 and 26 participants who earned an average of 4148.33 UGX. As we are interested in the effect of network positions, for the current study, we only consider those participants who have at least one link in their village's trade network. This amounts to 160 participants who took a total of 480 decisions. Those participants earned an average of 5056.25 UGX.

3.2. Descriptives

3.2.1. Networks

As part of the network survey, participants were asked for each of the other participants from their village whether they had bought something from this person and whether they had sold something to this person. Participants' answers to these two questions were labeled as *out*-ties. Any time a participant was mentioned by someone else, this was counted as an *in*-tie. A trade tie is created by combining *in*-ties and *out*-ties. Specifically, a trade tie exists if *i* said that she bought from *j*, and *j* confirmed having sold to *i*; *or* if *i* said that she sold to *j*, and *j* confirmed having bought from *i*. This definition serves two distinct purposes. First, it combines the two separate dimensions of a trade network—buying and selling— and second, it ensures that ties were only counted if they were mentioned by both sides.

Figure 1 shows the distribution of participants' network degree in the villages' trade networks, i.e., their number of trading partners. The degree distribution is skewed to the left, with about half

⁹We were able to cover between 70% and 100% of households per village, with an average coverage of 90.9%. See Appendix A.1 for further details.



Notes: N = 160. The x-axis denotes degree. The y-axis shows percentages.

Figure 1: Distribution of Individual Degrees in Trade Networks

of the 160 participants having not more than 3 trading partners in their village. The distribution levels off to percentages close to 0 at around 11 trading partners, with none of the participants having more than 17 trading partners. The average degree is 4.18 with substantial variation in individual network degree.¹⁰

3.2.2. Demands and beliefs

Figure 2 plots the distribution of individual demands and beliefs. Although the mode of both distributions is located at 8000, the equal split of the total resource, there is substantial variation in both demands and beliefs. Interestingly, the demand distribution is skewed to the right, while the distribution of beliefs is skewed to the left. This is confirmed by the descriptive statistics of demands and beliefs, presented in Table 1. This table further shows that, on the aggregate, beliefs and demands do not vary significantly across treatments ($p \ge 0.254$; for details see table note). It is noteworthy that, for all information conditions, the mean demand is larger than 8000 while the mean belief is smaller than 8000. On average, demands are 2096.67 higher than beliefs. Individual demands and beliefs, on average, sum to 15112.5, meaning that 887.5 are left on the table in expectations. This indicates a substantial underestimation of others' demands, which persists across all information conditions.¹¹

¹⁰As mentioned before, our analysis focuses on individuals who are part of the trade network. For an overview of the network including isolates, as well as a description of differences between villages, and of the overlap in the buyer and seller dimensions of the network, see Appendix A.1.

¹¹This pattern of demands and beliefs is consistent with overconfidence, as low beliefs allow for higher demands without the danger of disagreement (see, e.g., Moore and Healy, 2008) as well as with self-serving bias in bargaining



Notes: N = 480. The x-axis denotes demands and beliefs, respectively. The y-axis shows percentages.

Figure 2: Distributions of Demands and Beliefs

			Demands			Beliefs	
	Ν	mean	median	st.dev.	mean	median	st.dev.
AN	160	8606.25	8000	2350.16	6293.75	6500	2236.34
SD-u	86	8581.40	8000	2318.54	6755.81	7000	2147.15
SD-i	86	8577.91	8000	2271.48	6317.44	7000	2368.48
FD	148	8631.76	8000	1949.5	6706.08	7000	1932.47
Total	480	8604.58	8000	2206.74	6507.92	7000	2159.8

Table 1: Demands and Beliefs by Treatment

Notes: Demands and beliefs for each information condition (AN, SD, FD) and role assignment in SD-u and SD-i. SD versus FD: p = 0.254 for demands and 0.888 for beliefs; Mann-Whitney U, two-sided. FD versus AN: p = 0.488 for demands and 0.197 for beliefs; Wilcoxon signed-rank, two-sided. SD-i versus AN: p = 0.781 for demands and 0.396 for beliefs; Wilcoxon signed-rank, two-sided. SD-u versus AN: p = 0.858 for demands and 0.355 for beliefs; Wilcoxon signed-rank, two-sided.

3.3. The effect of degree on demands

To test our hypotheses, we analyze how individual demands vary with individual network degree and the information conditions (i.e., treatments). We begin with an analysis of the AN treatment, and then pool the data of all treatments to analyze the effect of degree in SD and FD, relative to AN.

To test the effect of ego's and alter's degree on demands in AN (Hypothesis 1.a) we employ the following OLS regression:

$$y_{ij} = \beta_0 + \beta_1 D_i + \beta_2 D_j + \beta_3 B_{ij} + \beta_4 X_i + \beta_5 X_j + \varepsilon_{ij},$$
(2)

where y_{ij} is ego *i*'s demand when matched with alter *j* in AN (same-village anonymous), D_i and

⁽see, e.g., Babcock and Loewenstein, 1997; Gächter and Riedl, 2005; Karagözoğlu and Riedl, 2015).

 D_j are ego's and alter's degree in the trade network, B_{ij} is *i*'s belief regarding *j*'s demand, X_i and X_j are vectors of control variables for ego's and alter's socioeconomic characteristics including age, education, gender, risk aversion, wealth, agreeableness, and trust as collected with the survey, and ε_{ij} is the error term. To measure wealth, trust, and agreeableness we created indices with a principal component analysis (see Appendix B for details on the construction of these indices). To adjust for potential dependencies within experimental sessions, we estimated standard errors with bootstrapping.¹²

	(1)	(2)
D_i	61.319	90.624^{*}
	(57.532)	(51.580)
D_i	-30.984	12.528
	(40.108)	(40.306)
Belief	-0.558***	-0.591***
	(0.098)	(0.102)
Constant	11960.006***	13515.329***
	(811.934)	(1629.384)
R^2	0.285	0.417
Observations	160	159
Controls	No	Yes

Table 2: Effect of Degree on Ego's Demand in AN

Notes: OLS regressions, dependent variable is ego's demand in AN. Standard errors in parentheses, estimated with bootstrapping (with 2000 repetitions) clustered at session level: ***, **, * indicate two-sided significance levels at 1, 5, and 10%, respectively. Controls include education, age, wealth, gender, risk aversion, agreeableness and trust of ego and alter. AND-ties of the trade network used.

Table 2 presents the results, where Model (1) is without but Model (2) with control variables included.¹³ The coefficient of 'Belief' is negative and highly significant, showing that demands and beliefs are correlated as expected. In Model (1), the coefficient of D_i has the expected sign but is not statistically different from zero. In Model (2), the coefficient of D_i is positive but significant only at the 10 percent level. Thus, at best we observe weak evidence in favor of that ego's degree positively affects ego's demands as hypothesized. As expected alter's degree has no effect on ego's demands.

¹²We follow Cameron et al. (2008) who show that bootstrapping gives more accurate standard errors than clusterrobust standard errors if the number of clusters is relatively low, as in our case.

¹³We follow the convention to use the significance level of 5 percent to call a result significant. For completeness we also report results at the 10 percent significance level.

To test the relative effect of SD and FD (Hypothesis 1.b and c), we pool the decisions made in all treatments, and use AN as the reference category, employing the following regression specification:

$$y_{ij} = \beta_0 + \beta_1 \operatorname{SD} + \beta_2 \operatorname{FD} + \beta_3 \operatorname{SD} \times D_i + \beta_4 \operatorname{FD} \times D_i + \beta_5 \operatorname{SD} \times D_i + \beta_6 \operatorname{FD} \times D_i + \beta_7 B_{ij} + \beta_8 X_j + \mu_i + \varepsilon_{ij},$$
(3)

where y_{ij} is ego *i*'s demand when matched with alter *j*, SD is equal to 1 if identities of only one participant in a pair are disclosed, 0 otherwise, FD is equal to 1 if identities of both participants in a pair are disclosed, 0 otherwise. As each ego is paired with one alter in AN and two alters in either SD or FD, comparisons between AN and SD, and between AN and FD are within-subject comparisons. This allows us to use individual fixed effects at the level of ego, denoted by μ_i . The other variables are the same as in equation (2). Note that we do not control for the characteristics of ego and we omit D_i , as they are captured by the individual fixed effects. We also omit D_j , as we set its coefficient equal to zero, in line with the non-significant effect of alter's degree in AN reported above. Any remaining idiosyncratic error is captured by ε_{ij} . Standard errors are again estimated with bootstrapping.

Recall that in SD, ego can be in two different roles: being informed in SD-i or being uninformed in SD-u and Hypothesis 1.b makes different predictions for the two roles. As two decisions are taken by each participant in SD and role assignment is randomized for each decision, it could be that the same participant is in the SD-i role for one decision and in the SD-u role for the other. To get a clean separation of between-subjects comparisons (FD vs SD) and within-subject comparisons (FD vs AN, and SD vs AN) we run separate regressions for SD-u and SD-i.

Table 3 presents the results, where Models (1) and (2) show the regressions for SD-i and models (3) and (4) for SD-u, with and without control variables, respectively. In Model (1), the coefficient of $SD \times D_i$ is positive whereas the coefficient of $SD \times D_j$ is negative, and both are statistically significant. These results are robust to the use of controls for alter's characteristics as shown in Model (2). The coefficient of $SD \times D_i$ shows that in SD-i having one more trading partner increases ego's demand by 149 UGX more than in AN. The coefficient of $SD \times D_j$ shows that in SD-i one more trading partner of alter decreases ego's demand by 101 UGX more than in AN. Regarding SD-u, in Models (3) and (4), neither the coefficient of $SD \times D_i$ nor of $SD \times D_j$ is statistically significant. In none of the models, the coefficients of $FD \times D_i$ and $FD \times D_j$ are statistically significant. We summarize these observations related to Hypothesis 1 in the following result.

Result 1. EFFECT OF DEGREE ON DEMANDS.

- a. In AN, neither ego's degree nor alter's degree influences ego's demands.
- b. In SD-i, ego's demand increases with own degree and decreases with alter's degree, relative

to AN. In SD-u, demands depend neither on ego's nor on alter's degree, relative to AN.

c. In FD, demands neither depend on either ego's nor on alter's degree, relative to AN.

The reported result is only partially in line with Hypothesis 1. Hypothesis 1.a predicts a positive effect of own degree and no effect of other's degree on demands. Our analysis supports only the second part of this statement, which should be taken with a pinch of salt as we cannot prove that this is a true null effect. Results for SD-i are fully in line with Hypothesis 1.b which predicts the observed positive effect of ego's degree and negative effect of alter's degree. For SD-u, Hypotheses 1.b predicts no effect of either bargainer's degree which is what we find. Finally, Hypothesis 1.c, which predicts a positive effect of ego's degree and a negative effect of alter's degree is not supported. We discuss the deviations from the predictions and possible reasons in Section 4 below.

We do not have a hypothesis for the difference of degree effects between SD and FD but report the related results here for completeness. When comparing the effects of ego's and alter's degree between SD-i and FD, the effects of D_i differ at p = 0.078 (Wald test: $FD \times D_i = SD$ $i \times D_i$) and the effects of D_j are highly significant (Wald test: $FD \times D_j = SD$ - $i \times D_j$, p-value = 0.004). A comparison of SD-u and FD does not detect any significant effects of D_i or D_j (Wald

	SD =	SD-i	SD =	SD-u
	(1)	(2)	(3)	(4)
SD	-297.739	-209.073	434.872 [*]	454.044 [*]
	(281.713)	(283.906)	(240.791)	(269.436)
$SD \times D_i$	173.277**	149.201**	-85.562	-79.830
	(70.601)	(70.410)	(106.263)	(110.153)
$SD \times D_i$	-89.092**	-101.068**	33.534	34.947
v	(40.294)	(49.196)	(61.289)	(68.329)
FD	373.275	331.387	382.531	365.849
	(537.684)	(489.997)	(514.323)	(503.736)
$FD \times D_i$	-69.459	-74.022	-69.959	-78.605
	(122.130)	(103.748)	(111.116)	(106.458)
$FD \times D_j$	45.752	53.123 [*]	45.498	55.215 [*]
	(31.028)	(27.161)	(27.847)	(30.496)
Belief	-0.618***	-0.617***	-0.637***	-0.647***
	(0.068)	(0.070)	(0.068)	(0.066)
Constant	12495.014***	12545.322***	12651.290***	13136.826***
	(536.830)	(791.747)	(465.991)	(632.524)
R^2	0.467	0.488	0.432	0.444
Observations	394	393	394	392
Controls	No	Yes	No	Yes

Table 3: Effect of Degree on Ego's Demand in SD and FD Relative to AN (treatments pooled)

Notes: OLS regression with ego's demand as dependent variable. Decisions in all information treatments pooled, with fixed effects for ego. Standard errors in parentheses, estimated with bootstrapping (with 2000 repetitions) clustered at session level: ***, ***, * indicate two-sided significance levels at 1, 5, and 10%, respectively. Controls include education, age, wealth, gender, risk aversion, agreeableness and trust of alter. AND-ties of the trade network used.

tests: $FD \times D_i = SD \cdot u \times D_i$, p-value = 0.994; $FD \times D_i = SD \cdot u \times D_i$, p-value = 0.789). In summary, comparing SD-i and FD, ego's demand tends to increases more strongly with ego's degree and decreases more strongly with alter's degree in SD-i than in FD. There is no difference between the influence of degree on demands between SD-u and FD.

3.4. Earnings

Before testing how degree is related to earnings we provide some descriptive statistics. The asymmetric NBS stipulates that bargainers should agree on an efficient division of the resource. Unsurprisingly, this is not the case. In total, 45% of bargaining pairs in the experiment failed to reach an agreement. Participants in these pairs earn the disagreement payoff of 2000 UGX, whereas in the 55% of pairs where an agreement was reached earnings are identical to demands. Of those pairs, 59.9% leave some of the resource unclaimed (which amounts to 32.9% of all pairs).

Figure 3 shows the distribution of individual earnings. The figure includes disagreements and the mode at 2000 UGX indicates those 45% of bargaining pairs that failed to reach an agreement. The rest of the histogram displays earnings in case of agreement. There is a second mode at 8000 (30% of all pairs; 54.6% of those pairs that reached an agreement), which is the equal split of the resource.

Table 4 reports descriptive results of earnings including disagreements (Earnings), frequency of agreements (Agreements in %), and earnings conditional on agreement (Agreement Earnings) separate by treatment as well as total. Overall, participants earn on average 5056 UGX with some variation between treatments. There is a tendency that an uninformed ego in SD-u earns less whereas an informed ego in SD-i tends to earn more than participants in the other treatments, but



Notes: N = 480. The x-axis denotes earnings. The y-axis shows percentages.

Figure 3: Earnings Distribution

none of the pair-wise comparisons is significant (Mann Whitney U and Wilcoxon signed rank tests, p-value ≥ 0.281 , two-sided).

Also the frequency of agreements is similar in the different treatments, with the rate being lowest in SD-u (52.3) and highest in SD-i (58.1). Pair-wise comparisons do not detect any significant differences between treatments (Chi-square tests, p-value ≥ 0.544). Earnings conditional on agreement amount to 7557 UGX over all treatments and are thus slightly below the equal split. This also holds separately for each treatment and these earnings do not vary substantially across treatments. They are lowest in SD-u (7311) and highest in FD (7725) but there are no significant differences between treatments (Mann Whitney U and Wilcoxon signed rank tests, p-value ≥ 0.508 , two-sided).¹⁴

Table 4: Earnings, Frequency of Agreements, and Agreement Earnings

		Earnin	gs	Agreements			Agreement Earnings		
	Ν	mean	st.dev.	Ν	percent	Ν	mean	st.dev.	
AN	160	5075	2988	160	55.6	89	7528	1553	
SD -u	86	4779	2972	86	52.3	45	7311	1819	
-i	86	5233	2973	86	58.1	50	7560	1459	
FD	148	5095	3069	148	54.1	80	7725	1507	
Total	480	5056	3001	480	55.0	264	7557	1568	

Notes: Pair-wise comparisons between treatments (AN, SD-i, SD-u, FD). Earnings: SD-i vs. FD: p = 0.668; SD-u vs. FD: p = 0.525; both Mann-Whitney U tests, two-sided. FD vs. AN: p = 0.281; SD-i vs. AN: p = 0.873; SD-u vs. AN: p = 0.372; all Wilcoxon signed-rank tests, two-sided. Agreement: SD-i vs. FD: p = 0.544; SD-u vs. FD: p = 0.798; FD vs. AN: p = 0.782; SD-i vs. AN: p = 0.704; SD-u vs. AN: p = 0.620; all Chi-square tests with one degree of freedom. Agreement Earnings: SD-i vs. FD: p = 0.760; SD-u vs. FD: p = 0.532; SD-u vs. AN: p = 0.898; all Wilcoxon signed-rank, two-sided. FD vs. AN: p = 0.736; SD-i vs. AN: p = 0.532; SD-u vs. AN: p = 0.898; all Wilcoxon signed-rank, two-sided.

We now test Hypothesis 2 and thus examine how ego's and alter's degree affect ego's earnings, agreements, and agreement earnings, respectively, in, first, AN and, second, SD and FD relative to AN. To analyze the effect of degree in AN, we estimate equation (2), substituting ego's demand as dependent variable with the respective variable of interest.

Table 5 reports the results, where Models (1), (3), (5), and Models (2), (4), (6) are run without and with control variables, respectively. The regression results show that in AN earnings decrease significantly with alter's degree (D_j in Models (1) and (2)) and that this decrease appears to be driven by a significantly negative effect of alter's degree on the likelihood of reaching an agreement (D_j in Models (3) and (4)). The coefficients of ego's degree D_i is also negative for both earnings and agreement but do not reach significance. Finally, agreement earnings are significantly affected neither by ego's nor by alter's degree.

After having established the effect of degree on agreements and earnings in AN we next analyze how the effect of degree changes in SD and FD relative to AN when bargainers have more

¹⁴For detailed p-values of all pair-wise comparisons, see note of Table 4.

	Earnings		Agre	ement	Agreement Earnings		
	(1)	(2)	(3)	(4)	(5)	(6)	
D _i	-84.038	-89.873	-0.018	-0.020	26.804	36.231	
	(66.315)	(93.219)	(0.011)	(0.015)	(45.777)	(94.782)	
D _i	-123.654**	-140.716**	-0.024**	-0.028***	3.788	52.948	
	(58.805)	(63.882)	(0.009)	(0.010)	(58.717)	(96.092)	
Beliefs	1011.632***	960.313***	0.199***	0.203^{***}	-119.486	-146.105	
	(186.182)	(234.928)	(0.030)	(0.043)	(366.818)	(363.377)	
Constant	2577.092^{***}	3689.048	0.096	0.150	7579.658***	8613.966***	
	(619.142)	(2451.469)	(0.134)	(0.438)	(1125.396)	(1757.164)	
<i>R</i> ²	0.165	0.201	0.208	0.254	0.007	0.223	
Observations	142	141	142	141	71	70	
Controls	No	Yes	No	Yes	No	Yes	

Table 5: Effect of Degree on Earnings, Agreement, and Agreement Earnings in AN

Notes: OLS regression with as dependent variable, ego's earnings (Models (1) and (2)), agreement (Models (3) and (4)), and ego's agreement earnings (Models (5) and (6)). Standard errors in parentheses, estimated with bootstrapping (with 2000 repetitions) clustered at session level: ***, **, * indicate two-sided significance levels at 1, 5, and 10%, respectively. Controls include education, age, wealth, gender, risk aversion, agreeableness and trust of ego and alter. AND-ties of the trade network used.

information. We take the same approach as for demands and employ regression equation (3) but use as dependent variable ego's earnings, agreements, and agreement earnings instead of ego's demand.

Table 6 reports the results, where Models (1), (3), (5) and Models (2), (4), (6) are run without and with control variables, respectively. Note that for SD we have to distinguish between the informed and uninformed role and we therefore run separate regressions for SD-i and SD-u. Table 6 shows the results for SD-i but the results are qualitatively the same for SD-u (see Appendix Table A.14). As can be seen from the table none of the degree coefficients is significant. Thus, the revelation of information and thus the network position of participants does not significantly affect earnings and agreements beyond the effect it has when there is no information about the bargainers identity. We summarize these observations in our next result.

Result 2. EFFECT OF DEGREE ON AGREEMENTS AND EARNINGS

- a. In AN alter's degree negatively affects agreements and earnings but not agreement earnings, and ego's degree has no significant effect on any variable.
- b. In SD, neither own nor alter's degree influence ego's earnings, agreement, or agreement earnings, relative to AN.
- c. In FD, neither own nor alter's degree influence ego's earnings, agreement, or agreement earnings, relative to AN.

This result is partially supporting Hypothesis 2. We hypothesized that in AN both ego's and alter's degree will have a negative effect on agreement but find it only for the latter. It is in line

Table 6: Effect of Degree on Ego's Earnings, Agreement, and Agreement Earnings Relative to AN(treatments pooled, SD=SD-i)

	Earn	ings	Agree	ement	Agreeme	ent Earnings
	(1)	(2)	(3)	(4)	(5)	(6)
SD	-1048.088	-1139.365	-0.195	-0.195	283.845	464.617
	(1221.138)	(1296.405)	(0.209)	(0.221)	(296.495)	(833.043)
$SD \times D_i$	80.459	103.555	0.022	0.023	36.977	-37.398
	(196.746)	(211.279)	(0.034)	(0.037)	(84.184)	(202.272)
$SD \times D_i$	146.628	194.967	0.025	0.031	-26.130	-22.694
v	(161.158)	(166.449)	(0.027)	(0.028)	(90.187)	(117.212)
FD	-343.379	-296.135	-0.100	-0.096	236.274	403.164
	(793.812)	(914.291)	(0.115)	(0.135)	(482.893)	(529.638)
$FD \times D_i$	168.274	184.755	0.029	0.033	-34.618	-88.249
	(139.072)	(150.204)	(0.025)	(0.026)	(123.385)	(144.631)
$FD \times D_i$	-48.322	-69.008	-0.008	-0.012	-22.469	-20.070
v	(141.291)	(132.584)	(0.024)	(0.022)	(127.088)	(165.469)
Beliefs	1041.912***	1058.603***	0.229^{***}	0.229^{***}	-692.025^{*}	-538.759
	(252.873)	(279.484)	(0.051)	(0.055)	(416.149)	(346.614)
Constant	1585.119**	632.058	-0.171	-0.358	9697.748***	9366.890***
	(705.121)	(1340.227)	(0.154)	(0.239)	(1432.214)	(1105.589)
R^2	0.118	0.143	0.181	0.209	0.243	0.378
Observations	352	351	352	351	177	176
Controls	No	Yes	No	Yes	No	Yes

Notes: OLS regression with as dependent variable, ego's earnings in Models (1) and (2), agreement in Models (3) and (4), and ego's agreement earnings in Models (5) and (6). Observations in all information treatments pooled, with fixed effects for ego. Standard errors in parentheses, estimated with bootstrapping (with 2000 repetitions) clustered at session level: ***, **, ** indicate two-sided significance levels at 1, 5, and 10%, respectively. Controls include education, age, wealth, gender, risk aversion, agreeableness and trust of alter. AND-ties of the trade network used.

with Hypothesis 2.a that only alter's degree affects earnings. However, the predicted effects on agreement earnings and the effects of ego's degree are not supported by the data for any of the outcome variables.

The comparative predictions for SD and FD formulated in Hypothesis 2.b,c are only supported to the degree where they predict no difference with AN. Thus, the predictions pertaining to the likelihood of reaching an agreement and to overall earnings are not supported by our data, whereas the results of our analysis are consistent with the predicted null effect on agreement earnings. An interesting aspect of he null result for SD is that the effect detected for demands apparently does not carry over to the analyzed bargaining outcomes. We note that as for the consistent null results for demands the null results reported here should be taken with a pinch of salt as it is difficult to say if they are true null results or due to noise.

4. Discussion

We investigate how individuals' network degree in a real-world small-scale trade network affects bargaining in a two-person one-shot Nash demand game. Based on theoretical accounts we as-

sume that degree is positively correlated with bargaining power and derive hypotheses for how degree affects bargaining demands as well as bargaining outcomes (earnings, agreements, agreement earnings). Importantly, we investigate bargaining behavior in real-existing networks and thus could not exogenously vary individual network degree. To identify effects of degree we vary in a controlled way the information bargainers in a pair have about the identity of the other bargainer with complete anonymity (AN) as the benchmark case. In SD-i, one bargainer (ego) knows the identity of the other bargainer (alter) who does not know the identity of ego. In SD-u, we implement the opposite case where ego does not know the identity of alter but alter knows the identity of ego. In the full information disclosure case, FD, both bargainers know each others' identity.

For bargaining demands, our results partially support the hypothesized effects of bargainers' degrees. In AN, demands should increase with ego's degree which we find, but only at the 10 percent significance level. That the observed effect is weak is not so surprising as bargainers can base their behavior only on their own degree and some, likely imprecise, estimate of the average degree in their network which they can use as a proxy for the other bargainer's degree. When comparing the effect of degree in SD-i to AN we find that ego's degree has a positive and alter's degree a negative effect on demands, which is fully in line with the hypothesis. Thus, when bargainers' know the degree of the other side and know that the other side does not know their own degree (and identity) then the network position is a significant predictor of bargaining behavior. In SD-u, where ego does not know the degree of the other bargainer we do not see an effect of degree relative to AN, which is also as predicted. Finally, we do not observe any effect of bargainers' degrees in FD relative to AN in contrast to the prediction that they should have similar effects as in SD-i.

That there is no effect of degree in FD compared to AN is interesting and perhaps surprising as one may expect the strongest effect when information is most complete. In contrast, our results show that the degree effect is strongest when information is asymmetric. A speculative interpretation of this observation is related to the small-knit nature of the networks we investigate and the fact that the experiment is embedded in the real-life of participants and may thus be viewed as one encounter in a larger system of repeated interactions. When information is asymmetric, as in SD-i, ego can use its degree induced bargaining power without any expectation of consequences after the experiment because her identity is not revealed to the other bargainer. In contrast, in FD both bargainers' identities are known which may restrain them from fully exploiting their bargaining power induced by the degree in the one-shot encounter of our experiment. There are several potential reasons for why that could be the case. For instance, claiming too much might be viewed as negative and exploitative behavior and may decrease future trading opportunities. More generally, when higher degree is associated with good reputation exploiting the bargaining power associated with degree may have negative consequences for the general standing in the village.

The analysis of agreements and earnings revealed that in AN alter's degree has a negative effect on earnings and that this is induced by a decreased likelihood of agreement, which is in line with the hypothesis. The effect of ego's degree is in the expected direction but does not reach significance. Besides this we do not find any significant degree effects when comparing the other information conditions to AN. This is partly in line with hypothesized null effects and to be expected in FD where we also do not see an effect of degree on demands (as discussed above). However, it may be seen as surprising that also in SD where we find strong effects of degree on demands, agreements and earnings are not affected by degree. A possible reason could be that the positive effect of ego's degree and the negative effect of alter's degree on demands cancel each other out when both are taken into account for bargaining outcomes.

5. Conclusion

We conducted a bargaining experiment in the field to investigate if and how network degree in a real-existing trade network affects bargaining behavior and outcome. We combined experimental variation in identity disclosure in bargaining pairs with the naturally occurring variation of network positions in the investigated networks. We derived hypotheses about the effect of individuals' degrees on bargaining demands and outcomes. Our empirical analysis partially confirms the hypothesized effects of degree on bargaining. Most notably, we find a significant effect of network degree on demands when only one bargainer in a pair is informed about the network positions. This effect vanishes when both sides are informed. Moreover, we observe that higher network degrees of bargainers tend to decrease the likelihood to reach an agreement.

Importantly, we use the revelation of identity as a proxy of revealing the degree which is a reasonable assumption given the small-knit nature of the investigated networks. However, it is not unlikely that participants do not know the exact degree of others. Moreover, in the instructions presented to the participants the term network or network degree was never used. Therefore, we consider any effects of degree we identify as lower bounds of actual effects.

Naturally many open questions remain. First, we used a very simple one-shot Nash demand game to examine bargaining behavior. The use of this game has the advantage of simplicity and is easily explained which is important in a lab-in-the-field setting as the one we implemented. However, it would be interesting to investigate if our results carry over, or may even be strength-ened, in more complex bargaining environments. Second, as mentioned in the discussion the role of reputation and anticipated post-experiment behavior requires further scrutiny. Bargaining (and other behaviors) on networks are embedded in a larger system of repeated interactions and a better understanding of the role of network positions in this larger setting appears to be an important step towards increased external validity compared to pure laboratory studies. Observing real, non-stylized trade interactions and the way bargaining power is obtained in such interactions could be an interesting next step.

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Online Appendix

A. Additional information

A.1. Networks

This part provides further detail on the trade networks that were elicited for this study. We first provide more detail on the network elicitation, including the way in which we dealt with attrition. Then we highlight the construction of trade ties, focusing particularly on the underlying buyer and seller roles of the survey participants. Finally, we consider village differences and provide details on coverage rates.

A.1.1. Elicitation

Overall, the survey had 537 participants. We ran two different experiments parallel on this sample, leaving us with 225 participants in the present experiment. The divergence in numbers between our set of participants and the full set of participants is interesting for two different reasons.

First, it allows us to use the full information of the 537 participants to construct the network measures. The more nodes of a network can be included in the measurement, the lower possible biases on the network measures. On the other hand, the more people are surveyed the higher are costs for the field work. Our structure of running two parallel experiments is hence desirable in two different ways. Beyond an efficiency argument, in rural villages of developing countries, it is often not easy to exclude people from an experiment. If an invite to an experiment with monetary incentives is extended to some survey participants but not to others it might produce feelings of spite and envy, creating social unease that cannot be desirable from an ethical perspective. Hence, running two parallel experiments that both access the same networks allows us to limit biases in our network measure, while being both cost efficient and ethically preferable over inviting only a subset of survey participants to the experiment.

We first went into villages to take pictures of all participants that were subsequently taken back to each individual to ask about social ties. We initially approached a set of 655 participants, but when returning to do the survey, we were only able to locate 537 of them. The structure of our social tie survey did not allow us to replace participants (as we needed their picture). However, we were able to partially extrapolate from the answers of our 537 final participants to the full set of 655 initial participants. Specifically, if one of the 537 people reports not having a tie with somebody in our attrition set, we know for sure that the two cannot have an AND-tie. This logic allows us to induce (partial) information about the set of participants we lost due to attrition.

Second, it is informative to see whether the characteristics exhibited by our subsample of participants are in line with those exhibited by the villages in general. Assignment to the two experiments was done at random, so no selection effects are to be expected. Nevertheless, checking for consistency with the larger village network is in order. Figure A.1 replicates the general degree distribution for the subset of participants, while figure A.3 indicates the distribution of buyer and seller roles (and the degree within each of these network directions) for the full sample. In line with expectation, all of these network characteristics are very similar to those observed based on the subsample of participants in the experiment.



Figure A.1: Networks (full sample)

A.1.2. Buyer and Seller Roles

Trading links connect buyers and sellers. However, this far we have ignored the distinction of buyer and seller roles that underlies a trade network. To understand if this undifferentiated perspective is valid, we will in the following take a closer look at the distribution of roles in our sample. Table A.1 shows that out of our 225 participants, 142 act as sellers and 148 act as buyers. Importantly, 130 of our participants assume both roles, leaving only 12 pure sellers and 18 pure buyers. This suggests that the community networks exhibit a strong overlap of roles, where buyers are usually also sellers and vice versa.

		Bı	ıyer	
		0	1	Total
Callar	0	65	18	83
Sellel	1	12	130	142
	Total	77	148	225

Table A.1: Buyer and Seller Roles (experiment sample)

Figure A.2 provides further detail on the relation between buyer and seller roles. The left panel presents a scatter plot with the amount of trading partners a participant sells to (the degree in the seller network) on the y-axis, and the amount of trading partners that a participant buys from (degree in the buyer network) on the x-axis. We see that the two dimensions are almost perfectly correlated, with the prediction line having a slope just below 1. Hence, beyond the mere overlap in buyer and seller roles, a higher degree in one network goes along with a higher degree in the other network. This is illustrated also by the histogram in the right panel, which displays the difference between degree in the seller and buyer networks. The mode of the distribution is at 0, indicating that for roughly a third of participants (that are included in their village's trade network) there is no difference in degree.¹⁵ Moreover, the difference in degree is never more than 4, a

¹⁵To avoid confounds regarding the origin of zeros in the data, the histogram only includes participants who are part of the trade network.

number that seems rather small compared to the maximal degree of 17.



N=160. Left side shows a scatter of degree in the seller network against degree in the buyer network. Right side shows a histogram of the difference between the degree in the seller network and in the buyer network, including a (gaussian) kernel density estimate. Both panels comprise only participants that are active in the trading network.





Notes. N = 655 upper row and N = 399 bottom row. Left side shows a scatter of degree in the seller network against degree in the buyer network. Right side shows a histogram of the difference between the degree in the seller network and in the buyer network, including a (gaussian) kernel density estimate. Both panels comprise only participants that are active in the trading network.

Figure A.3: Buyer and Seller Roles (full sample)

A.1.3. Village Differences

			Degree		Cent	rality
Village	Ν	Inclusion	mean	st. dev.	mean	st.dev.
1111	24	54.2	2.75	3.12	0.11	0.13
1112	26	84.6	5.00	4.50	0.19	0.17
1121	27	85.2	4.15	3.28	0.15	0.12
1131	21	66.7	1.43	1.33	0.07	0.06
1141	16	62.5	3.88	3.58	0.24	0.22
1142	24	50.0	1.50	2.04	0.06	0.09
1151	14	50.0	1.14	1.41	0.08	0.10
1152	27	66.7	4.22	3.95	0.16	0.15
1161	14	78.6	3.71	2.67	0.27	0.19
1412	34	61.8	1.65	1.74	0.05	0.05
1432	27	59.3	3.11	3.37	0.12	0.12
1511	18	61.1	1.78	1.96	0.10	0.11
1521	26	61.5	2.46	2.75	0.09	0.11
1522	24	91.7	8.33	5.04	0.35	0.21
1531	20	55.0	1.50	1.85	0.08	0.09
1542	26	50.0	2.15	2.71	0.08	0.10
1561	24	66.7	2.58	2.70	0.11	0.11
1562	23	73.9	2.87	2.78	0.12	0.12
1563	23	34.8	0.96	1.58	0.04	0.07
1621	32	62.5	2.88	3.36	0.09	0.10
1622	20	55.0	1.50	1.79	0.08	0.09
1623	10	80.0	1.80	1.69	0.18	0.17
1624	25	44.0	1.20	1.73	0.05	0.07
1631	28	39.3	1.14	1.82	0.04	0.06
1642	15	60.0	3.07	2.96	0.20	0.20
1721	29	51.7	2.00	2.65	0.07	0.09
1742	29	58.6	2.28	2.63	0.08	0.09
1751	29	55.2	1.79	2.32	0.06	0.08
Overall	655	60.9	2.62	3.16	0.11	0.14

Table A.2: Village Networks (full sample)

Notes. Number of households that our network data covers in each village, percent of households included in the trading network, average absolute degree, and average degree centrality (degree adjusted for number of households) for each village.

The tables and figures presented here are intended to complement the information outlined in the main text to provide a thorough picture of the villages in our sample. To that end, table A.2 further displays network characteristics for each village separately.

There is substantial heterogeneity in the amount of households per village, with a minimum at 14 and a maximum at 34. On average, 60.9% of households take part in the trading networks of our sampled villages. In the least connected village, trading takes place between only 34.8% of households, while in the most connected village 91.7% of households are involved in trading activities. The average degree across villages is 2.62, indicating that households have an average of 2 to 3 trading partners. However, in the village with

the least inclusive trading network, the average household only has a degree of 0.96. In the village with the most inclusive trading network, on the opposite, households have an average degree of 8.33. This translates into an average centrality of 0.11 across villages, indicating that 11% of possible trading links exist, with a minimum of 4% and a maximum of 35%.

Village	Extrapolation	participants	True Size	Coverage 1	Coverage 2	Difference
1111	24	21	27	88.9	77.8	11.1
1112	26	22	30	86.7	73.3	13.3
1121	27	24	27	100	88.9	11.1
1131	21	19	25	84.0	76.0	8.0
1141	16	12	16	100	75.0	25.0
1142	24	18	30	80.0	60.0	20.0
1151	14	10	15	93.3	66.7	26.7
1152	27	22	28	96.4	78.6	17.9
1161	14	13	20	70.0	65.0	5.0
1412	34	32	34	100	94.1	5.9
1432	27	20	27	100	74.1	25.9
1511	18	15	20	90.0	75.0	15.0
1521	26	20	31	83.9	64.5	19.4
1522	24	22	25	96.0	88.0	8.0
1531	20	16	22	90.9	72.7	18.2
1542	26	17	32	81.3	53.1	28.1
1561	24	21	27	88.9	77.8	11.1
1562	23	23	32	71.9	71.9	0
1563	23	16	26	88.5	61.5	26.9
1621	32	27	33	97.0	81.8	15.2
1622	20	14	20	100	70.0	30.0
1623	10	10	10	100	100	0
1624	25	21	25	100	84.0	16.0
1631	28	20	29	96.6	69.0	27.6
1642	15	13	19	78.9	68.4	10.5
1721	29	20	31	93.5	64.5	29.0
1742	29	25	34	85.3	73.5	11.8
1751	29	24	32	90.6	75.0	15.6
Overall	655	537	727	90.9	74.4	16.5

Table A.3: Coverage per Village

Notes. Network coverage per village. Participants is actual number of people who participated in the survey. Extrapolation included those for whom we were able to partially reconstruct the network based on the responses of the people who participated. True size is actual number of households per village. Coverage 1 = Extrapolation/True Size, Coverage 2 = Participants/True Size. Difference = Coverage 1 - Coverage 2. Last three columns in %.

A.2. Socioeconomic Characteristics

This subsection provides details on the socioeconomic characteristics of the sample.

All study participants belong to the Bugisu tribe, which is the dominant ethnic group of the study area. Most of them report working on their own household farm as their main occupation. This is reflective of a strong subsistence culture, where a lot of value is placed on having own land and on being able to make a living from (consuming or trading) the goods produced by that land.

A.2.1. Full Sample

Table A.4 provides information on the participants' socioeconomic characteristics for the full set of survey participants.

	Ν	mean	st. dev.
Education	535	5.55	3.57
Age	537	41.61	13.78
Wealth	537	-0.00	2.27
Gender	537	0.51	0.50
Risk aversion	537	2.06	0.93
Trust	537	-0.00	1.36
Agreeableness	537	-0.00	1.71

Table A.4. Characteristics (1011 Sample	Table A.4:	Characteristics	(full sample
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Notes. Education in years of schooling. Gender is fraction male. Wealth, trust, and agreeableness are indices. Risk aversion measured on 4 point scale, higher number means more risk averse. Two-sided pvalue is based on a Mann-Whitney U test.

The survey participants have, on average, enjoyed 5.55 years of schooling, and they are, on average, 41.61 years old. Roughly equal fractions of men and women participated, with 49% of participants being female. Risk aversion is measured on a 4 point scale, with higher numbers indicating higher risk aversion. The average value of this variable is 2.06. Wealth, Trust and Agreeableness are calculated as indices based on the first component of a principal component analysis. Hence, the mean is not informative but the spread is. All three variables display considerable individual variation.

A.2.2. Experiment Sample

Table A.5 provides information on the participants' socioeconomic characteristics for the set of survey participants that participated in the experiment. The experiment participants have, on average, enjoyed 6.06 years of schooling, and they are, on average, 41.37 years old. Roughly equal fractions of men and women participated, with 51% of participants being female. 68 of our participants report taking a lot of risk, 105 take risk but not a lot, 37 avoid risk but not a lot, and 15 avoid risk a lot, leading to an average of 2.00. These values are very similar to those for the full sample, indicating that the experiment sample does not differ from the full set of people living in the surveyed villages in any extraordinary way. Further, Wealth, Trust,

and Agreeableness indeces displayed here are calculated based on the full population of 537 participants. The mean close to 0 in Table A.5 hence indicates that our participants in the experiment do not differ from the general population average with regard to these characteristics either.

	Ν	mean	st. dev.	min	max
Education	224	6.06	3.57	0.00	14.00
Age	225	41.37	14.16	18.00	74.00
Wealth	225	-0.14	2.00	-3.00	10.37
Gender	225	0.49	0.50	0.00	1.00
Risk aversion	225	2.00	0.86	1.00	4.00
Trust	225	-0.04	1.30	-3.36	2.67
Agreeableness	225	0.02	1.69	-8.30	3.64

Table A.5: Characteristics (experiment sample)

Notes. Education in years of schooling. Gender is fraction male. Wealth, trust, and agreeableness are indices. Risk aversion measured on 4 point scale, higher number means more risk averse. Two-sided p-value is based on a Mann-Whitney U test.

Table A.6 displays characteristics for the set of experiment participants who are included in the trade network relative to those that are excluded. No major differences show, indicating that network inclusion does not depend on other socioeconomic characteristics.

		Excluded				Includ		
	N	mean	st. dev.	-	N	mean	st. dev.	p-value
Education	64	5.84	3.39		160	6.15	3.65	0.655
Age	65	44.37	15.77		160	40.16	13.31	0.089
Wealth	65	-0.43	1.85		160	-0.02	2.05	0.135
Gender	65	0.51	0.50		160	0.48	0.50	0.720
Risk aversion	65	2.17	0.99		160	1.93	0.79	0.134
Trust	65	-0.09	1.38		160	-0.02	1.27	0.647
Agreeableness	65	-0.26	1.88		160	0.13	1.60	0.141

Table A.6: Participants' Characteristics by Inclusion

Notes. Education in years of schooling. Gender is fraction male. Wealth, trust, and agreeableness are indices. Risk aversion measured on 4 point scale, higher number means more risk averse. Two-sided p-value is based on a Mann-Whitney U test.

A.2.3. Degree and Wealth

We further want to know if high degree coincides with being wealthy. Indeed, one might assume that people who are very central in the trade network also belong to the wealthier part of the population. To get a better understanding of this relation, we take a closer look at the link between wealth and degree. Spearman's rho is 0.138 (p-value = 0.039), indicating that the correlation between the two variables is significant but not overly large. Figure A.4 paints a similar picture. Potentially most interestingly, the nodes with a degree of at least 11 which we excluded for the above part of the analysis are actually not the richest ones. Vice versa,

the nodes with the highest wealth index are actually not particularly central. They form part of the trade network, but they do not appear to trade with exceptionally many people.



N=160. Correlation of wealth index and degree.

Figure A.4: Wealth and Degree

If we exclude the most central nodes, that is, nodes with degree of at least 11, Spearman's rho increases to 0.153 (p-value = 0.023). On the contrary, if we exclude the most wealthy nodes, that is, nodes with a wealth index above 5.5, Spearman's rho decreases to 0.119 (p-value = 0.077). This indicates that the relation between these variables is influenced by the outliers on either dimension, though not to an overly large extent.

A.3. Additional Tables

		SD			FD		
	N	mean	st. dev.	N	mean	st. dev.	p-value
Education	97	6.58	3.69	97	5.75	3.58	0.158
Age	98	42.29	14.72	97	41.78	13.28	0.964
Wealth	98	-0.03	1.96	97	-0.27	2.02	0.265
Gender	98	0.46	0.50	97	0.53	0.50	0.354
Risk aversion	98	1.99	0.91	97	1.98	0.79	0.857
Trust	98	-0.15	1.41	97	-0.07	1.14	0.434
Agreeableness	98	-0.23	1.82	97	0.24	1.61	0.074

Table A.7: Socioeconomic Characteristics by Between Treatment

Notes. Education in years of schooling. Gender is fraction male. Wealth, trust, and agreeableness are indices. Risk aversion measured on 4 point scale, higher number means more risk averse. Two-sided p-value is based on a Mann-Whitney U test.

Degree	Freq.	Percent	Cum.	Degree	Freq.	Percent	Cum.
$SD \times Di$				$\overline{FD \times Di}$			
0	40	31.75	31.75	0	46	23.71	23.71
1	19	15.08	46.83	1	22	11.34	35.05
2	17	13.49	60.32	2	18	9.28	44.33
3	12	9.52	69.84	3	24	12.37	56.70
4	11	8 73	78 57	4	22	11 34	68.04
5	11	8 73	87.30	5		4 12	72.16
6	6	4 76	92.06	6	10	5.15	77 32
7	4	3 17	95 24	7	14	7 22	84 54
, Q	2	1 50	96.83	8	12	6 19	90 72
10	2 4	3.17	100.00	9	6	3.00	93.81
10	т	5.17	100.00	10	4	2.06	95.81
				10	- -	1.03	06.01
				12	2	1.03	90.91
				12	2	1.03	97.94
				10	2	1.05	90.97
				17	2	1.05	100.00
$SD \times Di$	× Tie			$FD \times Di$	< Tie		
2	2	11.11	11.11	1	1	2.70	2.70
3	3	16.67	27.78	2	3	8.11	10.81
4	2	11.11	38.89	3	4	10.81	21.62
5	2	11.11	50.00	4	3	8.11	29.73
6	3	16.67	66.67	5	5	13.51	43.24
7	1	5.56	72.22	6	2	5.41	48.65
9	1	5.56	77.78	7	4	10.81	59.46
10	4	22.22	100.00	8	5	13.51	72.97
				9	3	8.11	81.08
				10	1	2.70	83.78
				11	2	5 41	89.19
				12	- 1	2 70	91.89
				16	1	2.70	94 59
				17	2	5 41	100.00
						5.41	100.00
$SD \times D_1$	× NoTie	;		$FD \times D_1$	< NoTie		
0	39	36.45	36.45	0	46	29.30	29.30
1	19	17.76	54.21	1	21	13.38	42.68
2	15	14.02	68.22	2	15	9.55	52.23
3	9	8.41	76.64	3	20	12.74	64.97
4	9	8.41	85.05	4	19	12.10	77.07
5	9	8.41	93.46	5	3	1.91	78.98
6	3	2.80	96.26	6	8	5.10	84.08
7	3	2.80	99.07	7	10	6.37	90.45
9	1	0.93	100.00	8	7	4.46	94.90
				9	3	1.91	96.82
				10	3	1.91	98.73
				12	1	0.64	99.36
				16	1	0.64	100.00
				·			

 Table A.8: Degree by Between Treatment

	(1)	(2)
Di	61.319	90.624*
	(57.532)	(51.580)
D_i	-30.984	12.528
5	(40.108)	(40.306)
Belief	-0.558***	-0.591***
	(0.098)	(0.102)
Education ego		52.432
-		(64.089)
Age ego		-32.794
		(20.785)
Wealth ego		40.904
-		(78.864)
Gender ego		333.892
		(418.820)
Risk ego		-440.221**
		(223.371)
Trust ego		-79.921
		(128.222)
Agreeableness ego		282.468^{**}
		(139.074)
Education alter		-5.385
		(46.542)
Age alter		13.900
		(13.035)
Wealth alter		10.093
		(59.902)
Gender alter		370.885
		(300.266)
Risk alter		-345.281
		(236.903)
Trust alter		69.614
		(170.619)
Agreeableness alter		-141.885
~		(54.299)
Constant	11960.006***	13515.329
	(811.934)	(1629.384)
R^2	0.285	0.417
Observations	160	159
Controls	No	Yes

Table A.9: Effect of Degree on Ego's Demand in AN

Notes: OLS regressions, dependent variable is ego's demand in AN. Standard errors in parentheses, estimated with bootstrapping (with 2000 repetitions) clustered at session level: ***, ** indicate two-sided significance levels at 1, 5, and 10%, respectively. Controls include education, age, wealth, gender, risk aversion, agreeableness and trust of ego and alter. AND-ties of the trade network used.

	SE	D-u	SI	D-i	F	Ď
	(1)	(2)	(3)	(4)	(5)	(6)
Di	-69.475	-48.132	165.148***	139.105	24.235	25.746
	(114.505)	(92.262)	(49.120)	(105.114)	(25.892)	(25.509)
D_j	-33.506	-5.677	-152.448***	-153.833***	4.714	4.456
•	(37.420)	(66.935)	(47.791)	(53.905)	(16.717)	(34.391)
Belief	-0.751***	-0.700***	-0.628***	-0.567***	-0.755***	-0.816***
	(0.144)	(0.126)	(0.050)	(0.104)	(0.070)	(0.074)
Education ego		-140.400^{*}		13.113		-12.938
		(74.827)		(86.943)		(44.055)
Age ego		-51.667		-36.583*		-10.099
		(36.829)		(22.136)		(6.912)
Wealth ego		170.660		-12.425		16.354
		(158.275)		(144.744)		(84.747)
Gender ego		-81.519		-283.279		590.322
		(387.155)		(518.941)		(426.767)
Risk ego		526.830**		-578.994^{*}		70.868
-		(256.154)		(317.168)		(158.985)
Trust ego		-215.992		-157.237		-36.751
		(144.296)		(116.078)		(215.187)
Agreeableness		-34.274		220.310		-7.199
ego						
		(156.532)		(192.768)		(99.448)
Education alter		21.450		81.629		51.310^{*}
		(73.689)		(80.923)		(30.995)
Age alter		-3.503		-25.041*		1.913
		(19.707)		(13.824)		(6.332)
Wealth alter		-64.498		-0.898		50.220
		(108.147)		(104.412)		(48.662)
Gender alter		-116.442		533.819		197.152
		(567.077)		(468.948)		(166.864)
Risk alter		-86.826		55.581		102.386
		(236.855)		(218.401)		(147.409)
Trust alter		-9.590		86.802		20.708
		(167.626)		(164.539)		(96.070)
Agreeableness al-		-239.386		-111.665		-153.283***
ter						
		(189.537)		(121.936)		(50.554)
Constant	13997.157***	15499.153***	12348.448***	14873.798***	13556.184***	13377.697***
	(873.182)	(2244.645)	(499.857)	(1919.148)	(655.374)	(798.665)
<i>R</i> ²	0.502	0.605	0.446	0.643	0.565	0.622
Observations	86	85	86	86	148	148
Controls	No	Yes	No	Yes	No	Yes

Table A.10: Influence of Degree on Ego's Demand in SD and FD

Notes: OLS regressions, dependent variable is ego's demand in SD-u/SD-i/FD. Standard errors in parentheses, estimated with bootstrapping (with 2000 repetitions) clustered at session level: ***, ** , indicate two-sided significance levels at 1, 5, and 10%, respectively. Controls include education, age, wealth, gender, risk aversion, agreeableness and trust of ego and alter. AND-ties of the trade network used.

	SD =	: SD-i	SD =	SD = SD-u		
	(1)	(2)	(3)	(4)		
FD	373.275	331.387	382.531	365.849		
	(537.684)	(489.997)	(514.323)	(503.736)		
$FD \times D_i$	-69.459	-74.022	-69.959	-78.605		
	(122.130)	(103.748)	(111.116)	(106.458)		
$FD \times D_i$	45.752	53.123*	45.498	55.215*		
U U	(31.028)	(27.161)	(27.847)	(30.496)		
SD	-297.739	-209.073				
	(281.713)	(283.906)				
$SD \times D_i$	173.277**	149.201**				
	(70.601)	(70.410)				
$SD \times D_i$	-89.092**	-101.068**				
5	(40.294)	(49.196)				
SD			434.872^{*}	454.044^{*}		
			(240.791)	(269.436)		
$SD \times D_i$			-85.562	-79.830		
			(106.263)	(110.153)		
$SD \times D_i$			33.534	34.947		
U U			(61.289)	(68.329)		
Belief	-0.618***	-0.617***	-0.637***	-0.647***		
	(0.068)	(0.070)	(0.068)	(0.066)		
Education alter		20.279		2.217		
		(30.188)		(22.820)		
Age alter		-2.642		-7.615		
		(5.307)		(6.627)		
Wealth alter		-6.274		-32.126		
		(28.125)		(40.324)		
Gender alter		263.090^{*}		85.969		
		(156.336)		(252.830)		
Risk alter		-88.152		-81.269		
		(110.767)		(123.456)		
Trust alter		-18.226		27.612		
		(62.680)		(85.842)		
Agreeableness alter		-56.215		-46.832		
		(45.907)		(51.306)		
Constant	12495.014***	12545.322***	12651.290***	13136.826***		
	(536.830)	(791.747)	(465.991)	(632.524)		
R^2	0.467	0.488	0.432	0.444		
Observations	394	393	394	392		
Controls	No	Yes	No	Yes		

Table A.11: Effect of Degree on Ego's Demand in SD and FD Relative to AN (treatments pooled)

Notes: OLS regression with ego's demand as dependent variable. Decisions in all information treatments pooled, with fixed effects for ego. Standard errors in parentheses, estimated with bootstrapping (with 2000 repetitions) clustered at session level: ***, ** , * indicate two-sided significance levels at 1, 5, and 10%, respectively. Controls include education, age, wealth, gender, risk aversion, agreeableness and trust of alter. AND-ties of the trade network used.

	Earnings		Agre	ement	Agreement Earnings	
	(1)	(2)	(3)	(4)	(5)	(6)
D _i	-84.038	-89.873	-0.018	-0.020	26.804	36.231
	(66.315)	(93.219)	(0.011)	(0.015)	(45.777)	(94.782)
D _i	-123.654**	-140.716**	-0.024**	-0.028***	3.788	52.948
5	(58.805)	(63.882)	(0.009)	(0.010)	(58.717)	(96.092)
Beliefs	1011.632***	960.313***	0.199***	0.203***	-119.486	-146.105
	(186.182)	(234.928)	(0.030)	(0.043)	(366.818)	(363.377)
Education ego		-103.279		-0.017		-31.251
-		(82.594)		(0.016)		(92.849)
Age ego		-0.597		0.000		-7.125
		(15.948)		(0.003)		(20.330)
Wealth ego		76.942		0.002		139.930
		(135.370)		(0.023)		(115.693)
Gender ego		158.922		-0.015		300.239
		(403.508)		(0.071)		(429.876)
Risk ego		227.085		0.055		-101.120
-		(290.910)		(0.054)		(336.813)
Trust ego		-163.297		-0.012		-138.271
		(141.877)		(0.027)		(160.008)
Agreeableness ego		48.678		0.006		38.013
		(85.751)		(0.015)		(131.955)
Education alter		-70.694		-0.016		49.180
		(99.240)		(0.015)		(86.073)
Age alter		-14.124		-0.001		-18.756
		(12.418)		(0.002)		(18.141)
Wealth alter		158.634		0.025		19.098
		(157.837)		(0.026)		(117.537)
Gender alter		-128.430		-0.021		-25.352
		(377.178)		(0.081)		(532.483)
Risk alter		151.812		0.048		-33.883
		(320.413)		(0.051)		(257.020)
Trust alter		97.971		-0.016		389.892^{**}
		(247.255)		(0.042)		(193.569)
Agreeableness alter		24.090		0.020		-240.719**
		(133.564)		(0.022)		(104.210)
Constant	2577.092^{***}	3689.048	0.096	0.150	7579.658***	8613.966***
	(619.142)	(2451.469)	(0.134)	(0.438)	(1125.396)	(1757.164)
R^2	0.165	0.201	0.208	0.254	0.007	0.223
Observations	142	141	142	141	71	70
Controls	No	Yes	No	Yes	No	Yes

Table A.12: Effect of Degree on Earnings, Agreement, and Agreement Earnings in AN

Notes: OLS regression with as dependent variable, ego's earnings (Models (1) and (2)), agreement (Models (3) and (4)), and ego's agreement earnings (Models (5) and (6)). Standard errors in parentheses, estimated with bootstrapping (with 2000 repetitions) clustered at session level: ***, **, * indicate two-sided significance levels at 1, 5, and 10%, respectively. Controls include education, age, wealth, gender, risk aversion, agreeableness and trust of ego and alter. AND-ties of the trade network used.

	Earnings		Agre	ement	Agreeme	Agreement Earnings	
	(1)	(2)	(3)	(4)	(5)	(6)	
SD	-1048.088	-1139.365	-0.195	-0.195	283.845	464.617	
	(1221.138)	(1296.405)	(0.209)	(0.221)	(296.495)	(833.043)	
$SD \times D_i$	80.459	103.555	0.022	0.023	36.977	-37.398	
	(196.746)	(211.279)	(0.034)	(0.037)	(84.184)	(202.272)	
$SD \times D_i$	146.628	194.967	0.025	0.031	-26.130	-22.694	
5	(161.158)	(166.449)	(0.027)	(0.028)	(90.187)	(117.212)	
FD	-343.379	-296.135	-0.100	-0.096	236.274	403.164	
	(793.812)	(914.291)	(0.115)	(0.135)	(482.893)	(529.638)	
$FD \times D_i$	168.274	184.755	0.029	0.033	-34.618	-88.249	
	(139.072)	(150.204)	(0.025)	(0.026)	(123.385)	(144.631)	
$FD \times D_i$	-48.322	-69.008	-0.008	-0.012	-22.469	-20.070	
5	(141.291)	(132.584)	(0.024)	(0.022)	(127.088)	(165.469)	
Beliefs	1041.912***	1058.603***	0.229^{***}	0.229^{***}	-692.025*	-538.759	
	(252.873)	(279.484)	(0.051)	(0.055)	(416.149)	(346.614)	
Education alter		10.442		-0.004		51.140	
		(50.770)		(0.008)		(44.715)	
Age alter		15.810		0.004		-6.712	
		(13.843)		(0.002)		(9.647)	
Wealth alter		-11.086		-0.004		10.086	
		(80.290)		(0.014)		(51.356)	
Gender alter		-374.248		-0.023		-33.392	
		(361.921)		(0.059)		(359.498)	
Risk alter		157.251		0.026		-53.059	
		(212.742)		(0.033)		(111.630)	
Trust alter		199.343		0.011		129.865	
		(175.595)		(0.025)		(120.927)	
Agreeableness al-		-10.561		-0.001		-139.756*	
ter							
		(95.317)		(0.016)		(79.076)	
Constant	1585.119**	632.058	-0.171	-0.358	9697.748***	9366.890***	
	(705.121)	(1340.227)	(0.154)	(0.239)	(1432.214)	(1105.589)	
R^2	0.118	0.143	0.181	0.209	0.243	0.378	
Observations	352	351	352	351	177	176	
Controls	No	Yes	No	Yes	No	Yes	

Table A.13: Effect of Degree on Ego's Earnings, Agreement, and Agreement Earnings Relative toAN (treatments pooled, SD=SD-i)

Notes: OLS regression with as dependent variable, ego's earnings in Models (1) and (2), agreement in Models (3) and (4), and ego's agreement earnings in Models (5) and (6). Observations in all information treatments pooled, with fixed effects for ego. Standard errors in parentheses, estimated with bootstrapping (with 2000 repetitions) clustered at session level: ***, ***, * indicate two-sided significance levels at 1, 5, and 10%, respectively. Controls include education, age, wealth, gender, risk aversion, agreeableness and trust of alter. AND-ties of the trade network used.

	Earnings		Agre	ement	Agreem	ent Earnings
	(1)	(2)	(3)	(4)	(5)	(6)
FD	-344.173	-320.819	-0.101	-0.101	193.008	386.997
	(791.655)	(934.025)	(0.115)	(0.138)	(442.341)	(591.796)
$FD \times D_i$	167.998	179.206	0.029	0.033	-25.884	-39.662
	(138.695)	(146.258)	(0.025)	(0.025)	(117.817)	(153.914)
$FD \times D_i$	-48.322	-61.124	-0.008	-0.011	-22.146	-58.898
5	(141.709)	(139.573)	(0.025)	(0.024)	(111.884)	(144.619)
SD	-433.916	-875.777	-0.102	-0.176	468.687	806.597
	(1365.158)	(1404.523)	(0.202)	(0.210)	(1581.970)	(2302.554)
$SD \times D_i$	40.609	111.806	0.025	0.033	-147.690	-277.641
	(293.173)	(284.827)	(0.048)	(0.046)	(383.118)	(537.862)
$SD \times D_i$	-114.140	-56.759	-0.034	-0.025	224.720	189.643
	(208.711)	(205.953)	(0.036)	(0.038)	(405.680)	(432.403)
Belief	0.489^{***}	0.505^{***}	0.000^{***}	0.000^{***}	-0.353**	-0.292*
	(0.117)	(0.121)	(0.000)	(0.000)	(0.159)	(0.169)
Education alter		68.910		0.006		33.504
		(47.664)		(0.007)		(56.507)
Age alter		13.293		0.004		-7.812
		(14.963)		(0.003)		(18.622)
Wealth alter		-49.210		-0.005		61.051
		(80.827)		(0.013)		(148.448)
Gender alter		-866.055***		-0.092^{*}		-635.014
		(295.125)		(0.052)		(495.215)
Risk alter		203.160		0.041		-34.603
		(233.821)		(0.039)		(201.053)
Trust alter		95.489		-0.010		214.655
		(173.267)		(0.027)		(135.303)
Agreeableness al-		51.171		0.011		-180.799
ter						
		(125.714)		(0.021)		(138.055)
Constant	1450.092**	337.300	-0.202	-0.482**	9899.872***	10021.897***
	(714.241)	(1361.537)	(0.139)	(0.220)	(1223.642)	(1491.370)
R^2	0.102	0.141	0.159	0.200	0.263	0.425
Observations	353	351	353	351	173	171
Controls	No	Yes	No	Yes	No	Yes

Table A.14: Effect of Degree on Ego's Earnings, Agreement, and Agreement Earnings Relative toAN (treatments pooled, SD=SD-u)

Notes: OLS regression with as dependent variable, ego's earnings in Models (1) and (2), agreement in Models (3) and (4), and ego's agreement earnings in Models (5) and (6). Observations in all information treatments pooled, with fixed effects for ego. Standard errors in parentheses, estimated with bootstrapping (with 2000 repetitions) clustered at session level: ***, **, * indicate two-sided significance levels at 1, 5, and 10%, respectively. Controls include education, age, wealth, gender, risk aversion, agreeableness and trust of alter. AND-ties of the trade network used.

B. Creation of wealth, trust and agreeableness indices

Question	Variable(s)
Does your household own the house that you live in?	owned
How many rooms does your house consist of (or	
does your household occupy if the house is shared)?	rooms
What is the major material of the floor?	
If earth	floorearth
If a mix of earth and dung	floorearthdung
If cement	floorcement
What is the main source of water for your	
dwelling?	· · · · · ·
	waterprivate
	waterpublictap
If porchole	waternole
If protected well	waterprowell
If unprotected well	waterunprowell
	waterriver
	watergravity
What is the main latrine used by inhabitants of your dwellin	ng?
If private covered pit	covpitprivate
If shared covered pit	covpitshared
If uncovered pit	uncovpit
What is the main source of lighting in your	
dwelling?	
If electricity	electricity
If lantern	lantern
How many [] are owned by your household now (present	at the farm or elsewhere)?
Indigenous heifers, cows, bulls, oxen, or calves	cattleindigenous
Non-indigenous or cross-bread heifers, cows,	cattleevocross
bulls, oxen, or calves	catheexoeross
Goats	goats
Sheep	sheep

Table B.1: Wealth Index

Pigs	pigs
What is the total size of the land owned by your household?	land
How many [] does your household own? Bicycles	bicycles
Motor-vehicles (motorcycle, car, van, truck/lorry or tractor)	motorvehicles
Generators/inverters	generator
Stoves	stove
Sofas	sofas
Modern beds	beds
Radios	radios
Televisions	televisions
Pieces of jewellery/watches	jewellerywatches
Phones	phones
Computers	computers
Household appliances	HHappliances
Storage facilities (e.g. granary, storage room etc)	storage
Lifestock stalls	stalls
Watering cans	watercans
Irrigation tubes	irritubes
Insecticide pumps	insecpumps
Coffee pulping machines	pulpchines
Grain grinders	grinders
Hand-held threshers	handthreshers
Wheel barrows	wheelbarrows
Animal pulled ploughs	animalplough

Table B.2: Trust Index

Question	Variable(s)
Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people? (most people can be trusted; some can be trusted, some not; can't be too careful)	q8a1
Do you think most people would try to take advantage of you if they got a chance, or would they try to be fair? (most try to take advantage; some take advantage, some	q8a2

Dige

Question	Variable(s)
"When I've been insulted, I just try to forgive and forget"	q8b1rev
"If someone starts a fight, I'm ready to fight back"	q8b2
"I hesitate to express my anger even when it's justified"	q8b3rev
"I'm hard headed and stubborn"	q8b4
"I would rather cooperate with others than compete with	alb5rou
them"	qabbiev
"I can be sarcastic and cutting when I need to be"	q8b6
"If I don't like people, I let them know it"	q8b7
"I sometimes get into arguments"	q8b8
"I'm not known for my generosity"	q8b9
"I go out of my way to help others if I can"	q8b10rev
"Some people think of me as cold and calculating"	q8b11
"I generally try to be thoughtful and considerate"	q8b12rev
"Some people think I'm selfish and egoistical"	q8b13
"Most people I know like me"	q8b14rev
"I think of myself as a charitable person"	q8b15rev
"I try to be courteous to everyone I meet"	q8b16rev

Table B.3: Agreeableness Index

Answer options: strongly agree/agree/neutral/disagree/strongly disagree (rev indicates that the answer scale was reversed)

C. Experimental instructions

[When people enter the meeting room, they are asked for their name. We have a list of invited candidates. Their name is marked and they are given a sticker with an identity number, which we ask them to stick on their shirt. It is explained that this identity number is unique and allows us to identify them during the experiment while treating their decisions confidentially. This is important, as they are able to earn real money in the exercise. They are asked to take a seat in the meeting room in order of their ID and keeping sufficient distance among them. Explain them that it is best to go to the toilet before the start of the session, as leaving the venue during the session might be disturbing. Further instructions are given once sufficient people have shown up.]

FORMAL INTRODUCTION

"Welcome. Thank you for taking the time to come today. [Introduce Experimenters and Assistants]. We are working for the University of East Anglia. Later, you can ask any of us questions during today's programme. For this raise your hand so that we can come to you and answer your question in private. We have invited you here today because we want to learn about how people take decisions. With your decisions you can earn money. The money that results from your and others' decisions will be yours to keep."

"What kind of decisions we ask you to make will be explained fully in a few minutes. Before that we want to clarify a couple of things. First, the money you can earn is not our money. We belong to a university and this money has been given to us for research. Second, your participation is voluntary. You can still choose not to participate in today's programme. Third, this research is about your private decisions. Therefore you cannot talk with others. This is very important. I'm afraid that if we find you talking with other participants, we will have to send you home, and you will not be able to earn any money here today. But if you have questions, you can of course ask one of us. We also ask you to switch off your mobile phones."

"Make sure that you listen carefully to us. You have the chance to make a good amount of money here today, and it is important that you follow our instructions. During today's programme, you will be asked to make 8 decisions in total. These decisions are divided in 2 parts and you will only be paid if you make all decisions in both parts. Only one decision will be selected for payment. Which decision this is will be decided randomly at the end of the experiment. For this, one volunteer will draw a slip of paper from a bag with his/her eyes closed. This slip of paper states a number that refers to the selected decision. The selected decision determines your final payment. As each of your decisions has an equal chance to be selected it is important that you take each single decision very seriously. Any money you earn will be paid out to you privately and confidentially after all parts of today's programme have been completed."

"Before we explain to you what you need to do precisely, it is important to bear one more thing in mind. You will be asked to take decisions that are not a matter of getting it right or wrong; they are about what you prefer. However, it is important to think seriously about your decisions because they will affect how much money you can take home."You will be paired with one other person in this room. Both of you will be asked to make a decision. Your decision as well as the decision of the other person will determine how much you can earn. These earnings depend on your own decision and the decision of the other person. Your earnings will be determined in the following way. In each pair we have two persons: person 1 and person 2. There are 16000 UGX on the table [put 16 notes of 1000 UGX on the table] and person 1 and person 2 can demand as much as they want of it. If the total person 1 and person 2 demand is not higher than the money on the table (that is 16000 UGX) each will get the amount demanded.

THE GAME

However, if the total is more than 16000 UGX none will get the amount demanded and person 1 will get 2000 UGX and person 2 will receive 2000 UGX. For example, imagine person 1 demanded 10,000 UGX and person 2 demanded 6,000 UGX. What do they demand in total? (16,000 UGX). Do we have enough on the table? (yes). As there is enough on the table each person will get what he/she demanded. Person 1 gets 10,000 UGX and person 2 gets 6,000 UGX.

Imagine now that person 1 demanded 11,000 UGX and person 2 demanded 7,000 UGX.

- What do they demand in total? (18,000 UGX).
- Do we have enough on the table? (no).

As there is NOT enough on the table person 1 would get 2,000 UGX and person 2 would get 2,000 UGX.

Let me check whether you understood [Ask the following questions in public and ask the participants to respond.]

- How much income would person 1 get if he demanded 5,000 UGX and person 2 demanded 11,000 UGX? (5,000 UGX). How much would person 2 get? (11,000 UGX)
- How much income would person 2 get if he demanded 8,000 UGX and person 1 demanded 11,000 UGX? (2,000 UGX). How much would person 1 get? (2,000 UGX)

It is important to remember that at the time you make your decision you do not know the decision of the person you are paired with. Similarly, the other person does not know your decision, when making his/her own decision. You can of course have beliefs about what the other will demand. [Ask the following questions in public and ask the participants to respond.]

- 1. Imagine that person 1 believes that person 2 will demand 9,000 UGX. How much would person 1 get if he demanded 9,000 UGX as well? (2,000 UGX). How much would person 2 get? (2,000 UGX)
- 2. Imagine that person 1 believes that person 2 will demand 9,000 UGX. How much would person 1 get if he demanded 6,000 UGX? (6,000 UGX). How much would person 2 get? (9,000 UGX)
- 3. Imagine that person 2 believes that person 1 will demand 6,000 UGX. How much would person 2 get if he demanded 6,000 UGX as well? (6,000 UGX). How much would person 1 get? (6,000 UGX)
- 4. Imagine that person 2 believes that person 1 will demand 6,000 UGX. How much would person 2 get if he demanded 11,000 UGX? (2,000 UGX). How much would person 1 get? (2,000 UGX)

[Stick poster of decision card to the wall and distribute empty decision card] To make decisions, we will proceed in the following way. First, we will ask you to specify on the decision card what you believe the other would choose.[Use the poster to explain how to use the decision card] After this, you will be asked to mark your decision on your decision card. [Use the poster to explain how to use the decision card]

PAIRING

You will make several decisions in which you will be paired with different persons in this room. At the end of today's programme we select one pair for your payment and you will get to know the identity of the other person in the selected pair and the other person in this pair will get to know your identity. However, at the moment when you will be asked to make a decision, you won't always know the identity of the person you are paired with.

In some pairs you wont know the identity of the other person, and neither will the other person know your identity. In this case the two boxes under YOU and Other person will be empty. The other person could be from the same village where you live or from another village. This will be indicated on the decision card [Show on the poster of the investment decision card where it will be indicated whether same/different village]. Semi-disclosure treatment: In other pairs, one person will know the identity of the person s/he is paired with, while the other person will not know the identity of the person s/he is paired with. The person who will know the identity of the other person will find the name and photograph of the other person on his/her decision card. If you get to see your photograph on the decision card, the other will know your identity. [Show on the poster of the decision card where they can find the names and photographs of both persons]

In other words, if you get to see a photograph and name in the box under Other person, you get to know the identity of the person you are paired with. If you see your photograph on your decision card, the other will know your identity and name. If your photograph/name does not appear on your decision card, the other wont know your identity.

For each of the pairs you are involved in you will receive a new decision card. You may make the same decision or you may make a different decision.

CONTROL QUESTIONS

We will now ask some questions to see whether you understood the instructions.

- 1. How much would you get if you demanded 10,000 UGX and the other person demanded 10,000 UGX as well? How much would the other person get?
- 2. How much would you get if you demanded 4,000 UGX and the other person demanded 12,000 UGX? How much would the other person get?
- 3. How much would you get if you demanded 8,000 UGX and the other person demanded 10,000 UGX? How much would the other person get?
- 4. How much would you get if you demanded 10,000 UGX and the other person demanded 6,000 UGX? How much would the other person get?

[For each of the questions, record on the control question card whether they answered it correctly. If the participant gave a wrong answer for at least one of the questions, ask him/her to have a careful look at it once more and ask what was not clear. Answer their questions as clearly and accurately as possible. If necessary, clarify the instructions; but not more than once. Write down additional comments if you think the participants did not get enough understanding. Retain their decision cards.]

DECISIONS

[Give each participant a pen.] If you have no further questions, we will now begin. Remember, there are no wrong decisions, so you should choose the option as you prefer. We emphasize that it is important that you make your decision in private. Do not show your decision card to the other participants. If you need assistance, please raise your hand so that one of us can come to assist you. Once you have made your decision, please fold the decision card and raise your hand so that we can come by to collect your decision card.

[The participants remain seated. We give decision card with pair no 1 to the participants. Clarify publicly the treatment (same/different village, anonymous/non-anonymous). After the participants have made their decision, they fold their decision card. When collecting the decision cards we check whether their answer is readable and consistent. Add comments if the participant was struggling (e.g. if he/she was helped with filling in the decision card). After all cards have been returned, we give them the decision card for pair no 2. Explain that it is a new pair and clarify publicly important elements such as the name/photograph of the involved participants (if relevant) including whose identity is known to whom, and whether they belong to the same village. Follow the same procedure for the other pairs. Make sure that distribution cards are distributed in the correct order 1 4.]

[When all participants have made their 4 decisions, the experiment is complete. Control that all decision cards have been returned. Collect pay-off table cards and remove poster]

ID no		YOU	Other person
Pair no Session no	<u>SAME</u> village		

Expected decision of the other:

Your decision: _____

Figure C.1: Decision Card in FD