

# Pre-analysis Plan

## An economic experiment on institutions and trust

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### 1 Introduction

Developing interpersonal trust outside the close-knit circle of known people and 6 community members is a key determinant for the success of impersonal trade and economic development. In this project, I study how property rights impact on the development of trust and trustworthiness preferences affecting in-group and out-group members of a community.

Specifically, I study the effects of a land tenure reform implemented in a West African country that transformed collective and informal land rights in a system akin to private ownership. I combine the peculiar implementation of the reform with a Trust game designed to elicit trust and trustworthiness preferences both *within* the rural village participants belong to and *between* participants belonging to different villages.

### 2 Research Strategy

The project employs a lab-in-the-field experiment based on a standard Trust game (Berg et al., 1995). The project combines the lab-in-the-field experiment with the setup created a land rights reform that was implemented in Benin, West Africa, approximately in 2011. The reform was implemented as a randomized control-trial across hundreds of rural villages. The peculiar process of implementation of the property rights reform, which was implemented as a randomized control-trial at the village level, makes possible to achieve identification by comparing the results of the Trust game for participants belonging to treated and control villages.

I will collect experimental and survey data on 32 villages (16 treated and 16 control) randomly selected among those included in the lottery pool. Data will be collected from 18 subjects

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(9 male and 9 female) in each village who will volunteer for participating in the incentivized experiment, for a total of 576 expected participants. The data collection will start by the end of January 2020. The pre-analysis plan was completed and registered at the AEA RCT trial before the start of the data collection.

### 3 Design

I implement a standard Trust game with a player in the role of Sender matched with a player in the role of Receiver. A Sender will receive 5 tokens worth XOF 50 each (in total approximately \$ 0,45) and can decide to transfer some or all of the tokens to the paired Receiver. Tokens kept by the Sender are part of his final payoff. Each token sent to the Receiver is tripled by the experimenter. The Receiver has then the possibility to reciprocate the Sender's transfer by sending back some or all of the tokens possessed.

Participants will take decisions both in the role of Sender and in the role of Receiver (Receivers will report their decisions using the strategy method). Participants are informed that at the end of the experiment they will be randomly assigned to either the role of Sender or the role of Receiver for the calculation of final earnings. They will then be matched to a peer of a different role and only decisions taken in the assigned role will be relevant for the determination of final earnings. The other decisions will be discarded.

The game is played once. We randomize whether a village plays the trust game with players matched with participants of the same session or whether the match happens with another village in Benin. As a consequence, in one case, before stating her choices, each participant is informed that the matched participant in the game is a resident of the same village who is taking part to the experimental session (in-group condition). In the other case, each participant is informed that the matched participant is a resident of another village in Benin who will take or has taken part to the experimental session (out-group condition).

The order in which participants are presented the game in the in-group or out-group condition is randomized.

In the Appendix, I report the instructions given to the participants.

### 4 Empirical Strategy

The project is designed to study whether the property rights reform influenced trust and trustworthiness preferences of members of the same close-knit community vis-a-vis the property rights of individuals from a different unknown village. Since theoretical reasoning or existing empirical evidence provide no clear prediction regarding the possible directions of the effects, I will apply two-sided tests of significance.

## 4.1 Hypothesis

As a first step, I test whether interacting with peers within one's own village causes modification in the levels of trust and trustworthiness displayed by subjects compared to interacting with individuals from other villages *both* in treated and control villages.

**Hypothesis 1** *Trust and trustworthiness of individuals within one's own village community vis-a-vis of individuals from another village is the same in treated and control villages.*

### 4.1.1 Comparison of treated and control

Second, we will test whether there are systematic difference in the levels of trust and trustworthiness between treated and control villages. I define a difference in trust or trustworthiness as systematic if the tokens sent by the Trustor or those sent back by the Trustee are higher or lower for both within-village and out-of-village interactions in treated than in control villages.

Moreover, I will test whether out-of-village interactions work differently in villages where the land rights formalization took place compared to control villages.

**Hypothesis 2** *There are no systematic differences in the levels of trust and trustworthiness in villages that experienced the property rights reform compared to control villages.*

**Hypothesis 3** *Trustors' trust levels and Trustees' trustworthiness levels toward individuals from another village are not different in treated than in control.*

### 4.1.2 Heterogeneity

I will also study heterogeneity in trust and trustworthiness levels in the treated and control villages for within-village and out-of-village interactions by using data on the level of market integration. As a proxy for market integration, we will use a village distance from the closest paved road (below and above the median in the sample).

We will additionally test whether background data collected in the survey – gender and income – generate differences.

## 4.2 Specification and analysis

Hypothesis 1-3 will be tested by estimating the following regression equations:

$$S_i = \alpha + \alpha_F F_i + \delta_T T_i + \delta_F F_i T_i + \mathbf{x}_i + \epsilon_i \quad (1)$$

$$R_i = \alpha + \alpha_F F_i + \delta_T T_i + \delta_F F_i T_i + \mathbf{x}_i + \epsilon_i \quad (2)$$

where  $S_i$  and  $R_i$  are the amount of tokens sent by the Trustor and the amount of tokens sent back by the Trustee, respectively,  $F_i$  is a dummy equal to one when the subject takes decisions in the interaction with individuals belonging to a different village,  $T_i$  is a dummy equal to 1 for subjects in treated villages, and  $\mathbf{x}_i$  is a vector the individual characteristics specified in the post-experimental survey.

The heterogeneity analysis will additionally add to specification (3) the interaction terms with the following variables:

- a dummy variable equal to 1 when the distance of the village from the closest paved road is above the median in the sample of villages
- a dummy equal to one for male subjects
- a dummy equal to one for subjects whose income is above the median in the sample

## 5 Appendix: Instructions

Thank you for coming to today's meeting. Please note that, if you do not feel comfortable, you are free to leave this meeting at any point of time. During the meeting, you will be requested to make some decisions and you will have the chance to earn a substantial amount of money. All the decisions you will make will remain strictly anonymous. No one other than me will know what you earn today. The payment will be private. You should know that the money comes from research funds and not from our own pockets or from the pocket of politicians. Please note that there is no right or wrong in making the decisions, this is not a test. During today's session you will receive a code. This ensures that everything you do (your decisions and your answers in questionnaires) will remain anonymous. During the activities, we will speak of tokens. 1 token is worth 50 XOF.

Now you are going to be asked to make some decisions with other people. Your choices, and the choices by others, will be matched when you are finished to determine your earnings. For each decision you make, you have the possibility to collect earnings. Each decision is separated and independent from the other decisions: this means that the choices you make in one decision will affect only the earnings of that specific decision; the earnings of the other decisions are independent.

After you have completed all the decisions for this activity, we will randomly select one. The choices you and other people made in the selected decision will determine your final earnings. This earnings will be paid to you via the mobile-phone account number that you provided at the beginning of the study within one week. The choices made in the other decisions will have no effects on your earnings.

In this decision, participants are matched in couples. You will never know with whom you are playing and the other will not know that he/she is playing with you.

There are two roles: Participant 1 and Participant 2. Both participants receive 5 tokens initially. Moreover, Participant 1 can send some or all the 5 tokens to the other participant. All tokens that Participant 1 sends will be tripled by us before being passed to Participant 2.

After receiving tokens from Participant 1, Participant 2 decides how many of the tokens he/she now possesses would like to send back to Participant 1. Then the decision is over. The earnings in this decision will be the tokens each participant has after Participant 2's decision.

*Which is your role?*

We do not know yet whether you are assigned the role of Participant 1 or the role of Participant 2. For now, you are required to state your decisions both as Participant 1 and as Participant 2. At the end of the game, you will be randomly assigned to either the role of Participant 1 or Participant 2. For determining your earnings in this game we will only consider your decisions taken in one of the two roles.

*Who is the participant matched to you in this decision?*

### **Within-village Condition**

After having assigned you one of the two roles, we will randomly match you with another person from this village who is participating to today's study and who has been assigned the opposite role.

### **Outside-village Condition**

After having assigned you one of the two roles, we will randomly match you with another person who is living in a village in Benin that is not the village where you live, who has participated or will participate to this research project, and who has been assigned the opposite role. Many people have already made their decisions and others are doing the same research this week. The same instructions are being given to the other people in other villages. Everyone is hearing the same things you are. Your choices, and the choices by the person paired with you, will be matched when you are finished to determine your earnings.

*How are your earnings calculated?*

The combination of your choices and the matched participant's choices will determine your final earnings for the decision. Choices that you made in the other role will not affect your earnings.

## References

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