Using Economic Experiments to predict engagement in informal non market land transactions amongst refugees and host community

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First Draft

Abstract

Does trust, trustworthiness and altruism signal previous engagement and willingness to engage in informal non-market land transactions amongst members of the host community and refugees? We use experimental games and survey data in refugee settlements and surrounding local communities in Northern Uganda to answer this question. Our results show that high levels of trust exhibited by members of the host community signals their willingness to engage in informal non market land transactions with refugees while high expectations of trustworthiness is associated with previous engagement in informal non market land arrangements with refugees. Altruism on the other hand is associated with unwillingness or no previous engagement in non-market land transactions with refugees. The results reiterate the need for trust in informal institutional settings such as non-market land transactions. Other factors associated with host community engagement in informal non market land transactions is the perceived relative economic social status of host community to refugees and the value off total assets including land. For refugees, high levels of reciprocity does not signal previous engagement in any informal non market land transaction showing failure of non-market transactions to segregate trustworthy refugees from untrustworthy ones. Other factors such age and years of schooling of the household head do predict engagement in informal non market land transaction. Our results provide evidence of how economic experiments relate to day to day economic outcomes such as informal non market land transactions. From a policy perspective, the study is important for thinking about banking on existing behavioral attributes for refugee integration into host communities in developing context.
1.0 Introduction

Most studies reveal that non-selfish behavior does exist among participants in an experiment (Andreoni & Miller, 2002; Charness & Rabin, 2002; Rabin, 1993). Participants will show concerns of fairness beyond selfish desires of utility maximization which is crucial to many economic settings (Charness & Rabin, 2002; Rabin, 1993). If as theory suggest people are concerned about fairness such that they are willing to sacrifice their own payoffs to increase the payoffs of others, how such behavior relates to economic settings such as informal non-market land transactions between refugees and hosting communities is of interest to explore.

In many parts of the developing world, the structure of land ownership and land use is driven to a large extent by non-market transactions such as inheritance, allocation by village chiefs, and informal rentals among kin (Deininger & Feder, 2001). Informal land arrangements usually don’t require documentation or written contracts but rather rely on indigenous forms of verification or evidence (Martiniello, 2010). The absence of enforceable and observable contracts forces people to embark on informal contracts that rely to a greater extent on existing relationships (Karlan, 2005). Examples of informal land arrangements include fixed rentals, sharecropping arrangements, pledges, accessing rights over perennial crops without land and the use of numerous forms of payment or compensation. We explore if land arrangements between refugees and host communities are driven by social preferences and trust relationships. Host communities are usually the owners of productive inputs such as land which refugees do not have and informal non-market land transactions provides an opportunity for exchange between the two groups.

Most of the research on social preferences has only been limited to individual attitudes and relations (Bauer et al., 2016; Bauer, Fiala, & Levely, 2018) and have not explored how these relate with real economic outcomes. As Karlan (2005) suggest, individual attitudes and relationships are not usually the real outcomes of interest but correlates to overcome market failures and enforce contracts. In this regard, we explore if social preferences of reciprocity, altruism and trust predicts the willingness and previous engagement in different forms of land arrangements including free land arrangements, exchange of labor for land and land renting arrangements. We hypothesize that the more “trusting” hosting communities and more trustworthy refugees are the ones more likely and willing to engage in land arrangements. We also hypothesize that other intrinsic
motives such as altruism and expectations of trustworthiness explain willingness and previous engagement in non-market land transactions between refugees and hosting communities.

We study the context of refugees and hosting communities in Adjumani district in Northern Uganda. Internal conflict has been ongoing in Southern Sudan since 2013 displacing a multitude of people into Uganda. Currently, Uganda is third to Pakistan and Turkey as refugee recipient country and receives refugees coming from Democratic Republic of Congo and South Sudan. The Government of Uganda has been instrumental in supporting the resettlement of the refugees and has been applauded for its progressive policy on refugee resettlement. Refugees are given small plots of land to stay and cultivate. Despite the good gesture, plots of land allocated to refugees is of poor quality that refugees can hardly earn a living through farming to be self-reliant (Bohnet & Schmitz, 2019). Having no access to land suitable for cultivation, puts refugees in the Uganda in a destitute position. The problem is further aggravated by the inability to engage in costly formal land transaction such that non-market land transactions relying on trust and good will of hosting communities is therefore a potential solution to this poorest segment of the population (Deininger & Feder, 2001).

The contribution of this paper is threefold. First it provides an opportunity to examine whether experimental economic games can predict non laboratory decisions such as land acquisition; it answers an important question in behavioral economics on whether findings from experiments can provide reliable inferences externally. Secondly, it’s of great policy relevance in addressing refugee integration into hosting communities. If concerns for fairness or social preferences are high amongst a docile population of refugees and hosting communities, non-market land transactions might provide an alternative sustainable approach for land acquisition. Ignoring positive behavioral attributes through government provision may crowd out such private provision (Andreoni, 1990). Behavioral heterogeneity should be taken into consideration in the design of policies specifically interventions or incentives to promote positive behavior. External motives in terms of incentives has an opposing effect of either increasing intrinsic motives such as altruism or crowding them off (Frey & Jegen, 2001). Third, we also use experiments which measure preferences, behavioral propensities and other individual attributes much more convincingly than other measures used in surveys (Glaeser, Laibson, Scheinkman, & Soutter, 2000). Understanding social preferences and how they relate to informal land transactions contribute to literature on how to link behavioral economics to informal institutions and economic development.
We find that high levels of trust is associated with willingness to engage in non market land transactions with refugees and high expectations of trustworthiness is associated with members of the host community who have previously engaged in non market land transactions with refugees. What this means is that people with a high level of trust are the ones willing to engage in non market land transactions with refugees and indeed this is as expected as trust is crucial in many transactions which remain informal and non contractual. One might argue that the willingness to engage in non market land transactions is dominated by those who had previously engaged in non market land transaction with established relationships and hence high trust. Nonetheless, results also show that trust is more associated with members of the host community who have never been engaged but are willing to engage in non-market land transaction with refugees than with those who have never engaged and are not willing to engage in a non-market transaction with refugees. We also find that engagement in non market land transactions does not signal altruism. We do not claim a causal link given the likelihood of reverse causality between measures of trust and social preferences and engagement in non market land transactions but our findings are important in verifying whether findings from experiments can provide reliable inferences to important economic outcomes such as non market land transactions. Its also important in thinking about how we can relate behavioural economics to institutional economics. Our empirical strategy is similar to Karlan (2005) who explores whether creditworthiness in microfinance institutions signal trustworthiness.
2.0 Literature review and Theory

2.1 Literature review

Various literature shows the deviation from text book knowledge of Homo economicus where people don’t only care about their own monetary payoffs but about fairness, equity and reciprocity (Levitt & List, 2007; List, 2007; R, 1999; Rabin, 1993). A person is inequity averse if they care less or dislike equity concerns and an action is viewed as fair if the intention behind that action is kind and unfair if the intention behind that action is unkind (Rabin, 1993). From standard economic theory, motivations are manifestations of underlying preferences and psychological literature differentiates it into intrinsic and extrinsic motives (Frey, 1997; Frey & Jegen, 2001). External interventions can either crowd in or crowd out extrinsic motivates if they are viewed as supportive or controlling respectively (Frey & Jegen, 2001). Motives behind altruistic behavior are driven by reciprocity behavior, social welfare preferences and difference aversion concerns (Andreoni & Miller, 2002; Charness & Rabin, 2002; Rabin, 1993) and these preferences for giving are heterogeneous ranging from perfect substitutes to leontiff (elasticity of substitution between payoffs to persons self and other is smaller than -1) (Fisman, Kariv, & Markovits, 2007). Subjects, nevertheless display a pronounced emphasis on increasing aggregate payoffs rather than reducing differences in payoffs (elasticity of substitution is greater than -1) (Fisman et al., 2007).

A number of studies show how such behaviors predict or are associated to a number of outcomes of economic interest. Karlan (2005) explore whether creditworthiness in microfinance institutions signal trustworthiness and use investment games. They indeed find that trustors give significantly more to (and believe they will receive more from) microfinance borrowers. He argues that by testing whether the act of giving credit is a signal which triggers trustworthiness, their approach is not affected by endogeneity concerns from preexisting conditions of trustworthiness created after the loan concession.

Using a modified dictator game which allows one to decompose distributional preferences into fair mindedness and equality efficiency tradeoffs, Fisman et al., (2007) study whether fair minded people may disagree about the extent to which efficiency should be sacrificed to combat inequality. They use the case of the American political allegiance to Democratic party which is tailored more towards ensuring fairness measure by redistributive tax policies compared to the Republicans who lean more towards efficiency benefits. They find that equality efficiency tradeoffs predict political decisions.

Jakiela, (2011) examines the relationship between market integration and individual choices using dictator games conducted in several rural communities in western Kenya. She finds that giving in the dictator game is significantly associated with market
integration proxied by proximity to roads. She ascertains the failure of their paper to clearly isolate out the causal mechanism between market integration and individual preferences because market integration may be correlated with other variables such as community group participation, numeracy, comprehension of the structure of the experiment, the desire to conform to the experimenter's expectations, access to credit and unobserved innate abilities. In addition, their study is not able to distinguish between whether integration into markets leads to greater generosity or markets arose in those locations initially characterized by altruism and interpersonal trust. A related paper by Henrich et al., (2010) find that market integration measured differently as the percentage of purchased calories, positively varies with fairness. They also find that community size positively varies with punishment and participation in world religion is associated with fairness although not across all measures. They conclude that norms and institutions that have emerged over the course of human history could perhaps also explain observed prosociality.

Engelmann, Friedrichsen, & Kübler, (2018) study the relevance of fairness in market experiments for the fairness in actual markets by investigating whether the willingness of consumers to pay a higher price if a firm pays a higher wage in the experimental markets correlates with fair behavior in natural markets. They find that the likelihood of consumers to buy from the firm that pays a higher wage and asks for a higher price is correlated at the individual level both with the likelihood to choose a fair trade chocolate before the lab experiment and willingness to pay a positive fair trade premium after the market experiment.
2.2 Theory

Social preference models incorporate fairness concerns that arise when individuals not only care for their payoffs but also in the payoffs received by others (R, 1999). Individual preferences are heterogeneous with not a particular notion of fairness or inequality aversion that people follow (Charness & Rabin, 2002). Preferences range from utilitarian\(^1\) to Rawlsian to perfectly selfish motives. Different models of fairness concerns are discussed in literature ranging from difference aversion, social welfare concerns and concerns for reciprocity. Difference aversion motivations are driven by the desire to reduce differences in payoffs (Fisman et al., 2007). Social welfare concerns are driven by the need to increase social surplus particularly through helping those with low payoffs (Charness & Rabin, 2002) and reciprocity behavior is driven by concerns to raise or lower payoffs depending on how fairly others are behaving (Rabin, 1993). In this study, we don’t attempt to distinguish these three different motives behind social preferences and adopt a general model that incorporates fairness concerns as likely reasons to explain some of the observed land arrangements between refugees and members of the host community.

In our model, we largely adopt the framework by Charness & Rabin (2002) and Rabin, (1993) to provide a conceptual way of understanding social preferences using two person games. We model the motives of giving based on assumptions of social preferences which can literally be disentangled into distributional preferences and concerns for reciprocity.

Let \( \pi_i \) represent monetary payoffs for person \( i \) and let \( \pi \) be a set of possible payoffs for a game. Incorporating fairness concerns means that choices made by an individual has consequences for his own pay off as well as the pay of others. Given two persons \( A \) and \( B \), in a non strategic setting, \( A \) can be thought of choosing \( (\pi_A, \pi_B) \in \pi \) that maximizes utility. If the individuals maximize utility then \( U_A = \pi_A \). Consideration altruistic concerns, a more general form of utility suffices in which players B’s utility is modelled as a weighted sum of her own material payoff and partners \( B \) material payoff shown below

\[
U_B(\pi_A, \pi_B) = U_B(\pi_A, \pi_B) \equiv (p \cdot r + \delta \cdot s + \theta \cdot q) \cdot \pi_A + (1 - p \cdot r - \delta \cdot s - \theta \cdot q) \cdot \pi_B
\]

Where \( r = 1 \) if \( \pi_B > \pi_A \) and \( r = 0 \) otherwise

\( s = 1 \) if \( \pi_B < \pi_A \) and \( s = 0 \) otherwise

\(^1\) Utilitarian: A principle of social welfare that requires maximizing the sum of the utilities of society’s individuals. Rawlsian a principle that asserts that if one or more persons have higher payoffs, decreasing their payoffs would improve the payoffs of the least favored (Tulu, 2009)
\[ q = -1 \text{ if } A \text{ has misbehaved and } q = 0 \]

Or more intuitively, when \( \pi_B \geq \pi_A \), then \( U_B(\pi_A, \pi_B) \equiv (1 - p - \theta q)\pi_B + (p + \theta q)\pi_A \)

When \( \pi_B \leq \pi_A \) then \( U_B(\pi_A, \pi_B) \equiv (1 - \delta - \theta q)\pi_B + (\delta + \theta q)\pi_A \)

The weight \( B \) places on \( A \)'s payoff depends on several factors including equity concerns (whether \( A \) is getting a higher or lower payoff than \( B \)) (Loewenstein & Thompson, 1989; R, 1999) reciprocity behavior (whether \( A \) has behaved unfairly or not), worm glow giving and simply altruistic concerns (Rabin, 1993). Parameter \( \theta \) allows for incorporating preferences due to reciprocity behavior while \( p \) and \( \delta \) allows for distributional outcomes other than reciprocity (Charness & Rabin, 2002). Other complexities and social variables likely to affect outcomes of the game including: the level of anonymity, gender of the other player or the framing of the game (Andreoni & Miller, 2002), psychological equilibrium-belief dependent emotions like anger and surprise (Geanakoplosand, Pearce, & Ennio, 1989) also enter the utility function \( U_A = u_A(\pi_A, \pi_B; \gamma) \) where \( \gamma \) is a vector of all these attributes. Nevertheless, we dwell less on these other social variables and concentrate on distributional preferences including reciprocity.

If player \( B \) always prefers to have a competitive advantage although maintains fairness concerns for \( A \) then the assumption \( \delta \leq p \leq 0 \) holds. This is true for competitive preferences in which people always want their payoffs to be better off than for others. For difference aversion (Loewenstein & Thompson, 1989), in which people are concerned in ensuring that disparities in monetary payoffs is minimized then \( \delta < 0 < p < 1 \). In such scenarios, \( B \)'s actions may include lowering \( A \)'s payoff if he perceives that \( A \) is better off and increasing \( A \)'s payoff if they perceive that \( A \) is worse off. This is similar to theories of equity in which individual who feel overworked or underworked experience some form of distress which affects their preferences towards ensuring that equity is achieved (Huseman, Hatfield, & Miles, 1987; R, 1999). In such a scenario, \( B \)'s preferences are towards equity and their actions may include lowering \( A \)'s payoff when \( A \) does better than \( B \).

Nevertheless, experiments in the dictator game show that people still make some transfers even when they expect nothing and are not certain of the partner’s status (Andreoni & Miller, 2002). In such scenarios, then \( 1 \geq p \geq \delta > 0 \) which literally means that although people care for a greater payoff for themselves, this preference is more when they have a lesser payoff than when they have more payoff than the other player (Charness & Rabin, 2002).
Lastly, if the players care about the reciprocal behavior (motivations to treat those who are fair better than those who are not) (Rabin, 1993), then $B'$'s value for $p$ and $\delta$ vary with $B'$'s perception of player $A'$'s intentions. Reciprocity behavior is captured when $\theta > 0$; when $q = -1$ indicating that $A$ is not fair in behavior. The assumption is that $B$ lowers both $p$ and $\delta$ by amount $\theta$.

2.2.1 Conceptual framework and model specification

Following theory and literature that shows that people deviate from homoeconomus assumptions of selfishness and show concerns for fairness, reciprocity and inequity aversion, we think that these attributes are likely to explain a number of observed land engagements between hosting communities and refugees. We hypothesize that trust, trustworthiness and altruism are important components for ensuring that non-market land transactions occur between refugees and hosting communities. In otherwise trusting and altruistic individuals are more willing to engage or have previously engaged in land arrangements than non-trusting and selfish individuals. We employ equation 3 in our regression.

$$ Y_h = \beta_0 + \beta_1 T_{ih} + \beta_2 R_{ih} + \beta_3 A_{ih} + \beta_4 X_h + \beta_5 D_i + \beta_6 E_h + \epsilon_h $$

Where $Y_i$ is the willingness and or previous engagement for household $h$ in informal non-market land transactions with refugees. $T$ is measure of trust of individual $i$ from household $h$ depending on who played the experimental games (usually the household head) and coefficient $\beta_1$ is the measure of the association of trust and willingness or previous engagement in non-market land transactions with the refugees. $R_{ih}$ is the measure of reciprocity or expected reciprocity, coefficient $\beta_2$ is therefore the association between reciprocity or expected reciprocity and willingness to engage in informal non-market land transactions with refugees. $A_{ih}$ is variable for altruism which we measure as a dummy variable on whether a household transferred positive amounts or not in the dictator game, coefficient $\beta_3$ is therefore the association between reciprocity or expected reciprocity and willingness to engage in informal non-market land transactions with refugees. $X_h$ is a matrix of household characteristics including household size, size of land held by the household, wealth status, educational level of the household head etc. $D_i$ are characteristics of player, usually the household head characteristics. $E_h$ is a variable that measures the perceived ratio of the socio economic status of members of the host community to refugees. $D_i$ are characteristics of player, usually the household head characteristics. Lastly $\epsilon_h$ is the error term in the model. As a robustness check, we also run analysis that excludes those members of the host community who have ever engaged in any non-market land transactions. One might argue that those members of the host community who have engaged in informal non market land transactions with
refugees already have prior reasons for trusting or not trusting introducing bias. Excluding them from our analysis may limit this possibility.

To explore the association between measures of social preferences and the combined decision of previous engagement and current willingness to engage in informal land transactions, we constructed four alternative choices from our responses. First, are members of the host community who have ever had a non-market land transaction with refugees and are also willing to have a non-market land transaction, second are members of the host community who have ever been engaged in non-market land transactions with refugees but are not willing to engage in non-market land transaction at the time of the survey, third, are members of the host community who have never had any non-market land transactions with refugees but are willing to engage in non-market transactions at the time of the survey and lastly are members of the host community who have never had any non-market land transactions with refugees and are not willing to engage in any non-market transactions with refugees at the time of the survey. The dependent variable had four choices and so we used the multinomial logit model for estimation of the likelihood for a household to be associated with one option over the other.
3.0 The Experiment

3.1 Trust and Dictator games

We conducted the trust and dictator game following procedures by Bauer et al., (2018). Both the dictator and trust games were played separately by refugees and hosting communities. Refugees played as trustees/receivers in the trust game and also played the dictator game. Members of the hosting communities on the other hand played as trustors in the trust game and also played the dictator game. Trustors were endowed with slips equivalent to UGX 2000 and had the opportunity to send either UGX 0, 1000 or all the endowment. This amount was tripled and given to the trustees who had the opportunity of sending back up to UGX 3000 if the trustor sent UGX 1000 and up to UGX 6000 if the trustor sent them UGX 2000. Hosting communities were asked to place in the envelopes, how much they expected from their partner if they transferred UGX 1000 (tripled amount 3000) and if they transferred UGX 2000 (tripled amount UGX 6000). Both groups played separately in different demarcated areas. To control for learning effects from playing the game in the same order, we randomly assigned individuals to which game (either trust or dictator game) that they played first. A detailed procedure for the games are in Appendix.

Before the start of the game, all rules were explained to the group of refugees and hosting communities for example: (i) that the game would remain anonymous, (ii) that the cards or slips used represent UGX 1000 shilling notes which will be replaced with real money after the game (iii) payments from the Game will be from one of the two games played and will be completely by random, (iv) expectations shall be paid for UGX 500 for every correct prediction, (v) envelopes of different colors will be used for the amount of money that the players decides to transfer, retain and one for expectations.

Refugees were divided into two groups; one group was informed in advance that their partners were refugees and another group was informed in advance that their partner were members of the host community. Similarly each group of hosting communities was divided into two groups; one group was also informed in advance that they play the game with refugees while another group was informed in advance that they play the games with fellow members of the hosting communities. Instructions for playing the game were provided first at group level and subsequently at individual level. Players’ comprehension and understanding of the game was tested and those who did not seem to understand were dropped from the experiment and replaced.
3.2 Sampling procedure and sample size

The games were conducted in eleven refugee settlements in Adjumani district situated in Northern Uganda namely Elema, Boroli, Mugula, Oliji, Olua, Alere, Agojo, Maji, Merieyi, Ayilo Pagirinya settlements. Out of five surrounding local hosting communities within a 10 km radius, two local councils were randomly selected for the study. We surveyed 619 households; 288 refugee households and 331 host communities in April 2018. In 2019, we conducted experimental games of trust and dictator with 273 refugee households and 316 members of the households. 30 of the respondents could not either be traced or were dropped off because of failure to comprehend the game.

3.3 Data

The data used in this study comes from three sources: a household survey, focus group discussion and the experimental games. Refugees played as receivers in the trust game while members of the host community played as trustors or senders in the trust game. Both groups played the dictator game. Therefore, we are in position to determine the extent of trust that members of the host community have and the level of trustworthiness that the refugees have and for both groups the level of altruism given the dictator game. The average amount transferred by the host community in the trust game was UGX 981.1 while the average amount transferred in the dictator game by all players (both refugees and host community) is UGX 787.7. Beliefs of the average amount to be reciprocated by members of the host community is 50.76 percent while the actual average percentage amounts reciprocated by refugees in the trust game is 37.29 percent. Beliefs of the amount refugees expect host to send in the trust game is on average UGX 1092. Other summary statistics for age, years of schooling, district to district headquarters and other variables is shown in in Table 1 below. Our previous treatment in playing the dictator and trust game was the knowledge given to the players that they play with a either refugee or member of the host community. We find that it does not predict whether one has ever engaged in non-market land transaction in the past or their willingness to engage in land arrangements, so it should not affect our analysis.
Table 1: Summary statistics if variables used

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>(1) N</th>
<th>(2) Mean</th>
<th>(3) Standard Deviation</th>
<th>(4) Minimum</th>
<th>(5) Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ratio of perceived economic social status of given household to refugee</td>
<td>619</td>
<td>1.072</td>
<td>0.893</td>
<td>0.100</td>
<td>9</td>
</tr>
<tr>
<td>2. Ratio of perceived economic social status of given household to refugees</td>
<td>619</td>
<td>0.925</td>
<td>0.844</td>
<td>0.100</td>
<td>10</td>
</tr>
<tr>
<td>3. Gender of the player/Household head</td>
<td>589</td>
<td>0.628</td>
<td>0.484</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>4. Age of player/Household head</td>
<td>624</td>
<td>38.48</td>
<td>14.86</td>
<td>2</td>
<td>98</td>
</tr>
<tr>
<td>5. Amount transferred in trust game</td>
<td>317</td>
<td>981.1</td>
<td>578.9</td>
<td>0</td>
<td>2,000</td>
</tr>
<tr>
<td>6. Amount transferred in dictator game</td>
<td>589</td>
<td>787.8</td>
<td>626.1</td>
<td>0</td>
<td>2,000</td>
</tr>
<tr>
<td>7. Beliefs of average amount expected to be reciprocated (Host community)</td>
<td>318</td>
<td>50.76</td>
<td>19.53</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>8. Average percentage reciprocated in trust game (Refugees)</td>
<td>272</td>
<td>37.29</td>
<td>18.45</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>9. Beliefs of the amount refugees expect host to send in trust game</td>
<td>272</td>
<td>1.092</td>
<td>525.0</td>
<td>0</td>
<td>2,000</td>
</tr>
<tr>
<td>10. Years of schooling of the household head</td>
<td>585</td>
<td>4.844</td>
<td>4.104</td>
<td>0</td>
<td>17</td>
</tr>
<tr>
<td>11. Distance to district headquarters</td>
<td>619</td>
<td>8.572</td>
<td>4.795</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>12. Number of shops in the locality</td>
<td>619</td>
<td>6.596</td>
<td>3.412</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>13. Logarithm of total productive assets</td>
<td>624</td>
<td>2.967</td>
<td>4.418</td>
<td>0</td>
<td>13.62</td>
</tr>
<tr>
<td>14. Ever participated in land arrangement with refugees</td>
<td>628</td>
<td>0.253</td>
<td>0.435</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>15. Ever participated with land arrangement with host community</td>
<td>628</td>
<td>0.347</td>
<td>0.476</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>16. Willingness to offer refugees land freely</td>
<td>628</td>
<td>0.347</td>
<td>0.476</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>17. Willingness to rent land to refugees</td>
<td>628</td>
<td>0.121</td>
<td>0.326</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>18. Willingness to engage in land labor arrangements</td>
<td>628</td>
<td>0.0701</td>
<td>0.255</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>19. Willingness to engage in other land arrangements</td>
<td>628</td>
<td>0.0303</td>
<td>0.171</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>20. Ever engaged in any land arrangement</td>
<td>628</td>
<td>0.473</td>
<td>0.500</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>21. Willingness to engage in any non-market land transactions</td>
<td>628</td>
<td>0.433</td>
<td>0.496</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>
4.0 Results and Discussion

4.1 Descriptive statistics

We asked members of the host community and refugees if they had ever participated in any non-market land transaction with either refugees, members of the host community or both. We further asked if they were willing to engage in the following non market land transactions: free land arrangements in which one provides their land for free, exchange of land for labor, exchange of land for rent and other land arrangements. From the summary statistics in Table 1, 34.7 percent and 25.3 percent had ever participated in any land arrangement with the host community and refugees respectively. Regarding willingness to engage in non-market land transactions, 34.7 percent were willing to engage in free land arrangements to refugees, 12.1 percent were willing to rent land to refugees, 7 percent were willing to engage in land labor arrangements and 3 percent were willing to engage in other land arrangements. Overall, 47.3 percent had engaged in any non-market land transaction and 43.3 percent were willing to engage in any non-market land transaction like giving out land for tilling for free for a specified period of time, renting out land, exchange of land for labor and other arrangements.

4.1.1 Host community previous participation in non-market land transactions

We asked households of host communities if they had ever engaged in non-market land transactions with refugees. 46.2 percent of members of the host community had had some form of land arrangement with refugees. The first graph in Figure 1 shows the amounts transferred in the trust game by members of the host community. The highest proportion of layers who transferred all their endowments (UGX 2000) were those who had ever engaged in some form of non-market land transactions in the past. Although those who had previously engaged in land transaction also had the highest proportion of players that had transferred zero in the trust game (18.75 percent), there was only a margin difference of 1.5 percent with those players who have never engaged in any non-market land transaction (17.3 percent).
Figure 1: Graphs showing amount sent in the trust game based on whether host community has previously engaged in non-market land transaction with refugees or not.

Figure 1 shows the amount of money transferred in dictator game based on whether a member of the host community had ever engaged in any land arrangements with refugees or not. More host communities who had never engaged in any land arrangements with refugees transferred an equal split of the initial endowment (50/50 split) compared to those who had ever engaged in some form of non-market land transactions with refugees. On the other hand, 10.69 percent of communities who had ever engaged in any land arrangement with refugees transferred all their endowment in the trust game although the differences are not statistically different as shown in Table 2.
Measuring altruism, Figure 2 shows the amount of money transferred in dictator game based on whether a member of the host community had ever engaged in any land arrangements with refugees or not. More members of the host community who had ever engaged in any form of non-market land transaction transferred nothing to their partners compared to their counterparts who had never had a non-market land transaction with the refugees showing a high level of selfishness with the former. Instead, more of the host community who had never engaged in non-market land transactions with refugees transferred either an equal split of the endowment (UGX 1000) or all of the endowment (UGX 2000). Nevertheless, results in Table 2 show no statistical difference in the amounts transferred in the dictator game by host communities who have ever had land arrangements with refugees and those who have not.

Table 2 shows characteristics of members of the host community based on whether they have ever had any land arrangements with refugees or not. There are no significant differences in trust, expectations of reciprocity or trustworthiness and altruism between those who had any land arrangements with refugees and those that did not have any land arrangements. Regarding other characteristics, females are statistically less likely to have engaged in any land arrangements with refugees than males. 34.9 percent of females had had land arrangements with refugees compared to 58.8 percent of the male
household head of hosting communities. There are also statistical differences in years of schooling between those household heads that have engaged in any land arrangements with refugees and with those that have not. Perceived economic status of self (host community) to refugees and to fellow members of the host community and the value of productive assets are not statistically different between members of the host community who are willing to engage in informal land arrangements and those not willing to engage in informal land arrangements.

Table 2: Characteristics of members of the host community based on whether they have ever had any land arrangements in the past with refugees or not

<table>
<thead>
<tr>
<th>Had any Land arrangements with refugees (%)</th>
<th>Yes (46.2 %)</th>
<th>No</th>
<th>All</th>
<th>t value of the difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust: transfer in the trust game</td>
<td>1037.5 (645.211)</td>
<td>962.02 (554.86)</td>
<td>981.07 (578.86)</td>
<td>-1.008</td>
</tr>
<tr>
<td>Expected trustworthiness: belief of average percentage returned</td>
<td>54.219 (20.88)</td>
<td>49.61 (18.96)</td>
<td>50.76 (19.53)</td>
<td>-1.823</td>
</tr>
<tr>
<td>Altruism: transfer in the dictator game</td>
<td>739.726 (643.85)</td>
<td>788.24 (617.19)</td>
<td>765.82 (629.11)</td>
<td>0.683</td>
</tr>
<tr>
<td>Gender of the household head</td>
<td>0.349 (0.478)</td>
<td>0.588 (0.494)</td>
<td>0.477 (0.500)</td>
<td>4.351</td>
</tr>
<tr>
<td>Age of the household head</td>
<td>38.06 (14.22)</td>
<td>37.33 (14.46)</td>
<td>37.67 (14.33)</td>
<td>0.452</td>
</tr>
<tr>
<td>Years of schooling</td>
<td>6.234 (3.815)</td>
<td>4.953 (3.496)</td>
<td>5.543 (3.696)</td>
<td>3.109</td>
</tr>
<tr>
<td>Ratio of perceived economic status of self to refugees</td>
<td>1.14 (1.095)</td>
<td>1.01 (0.791)</td>
<td>1.074 (0.945)</td>
<td>-1.156</td>
</tr>
<tr>
<td>Ratio of perceived economic status of self to host community</td>
<td>1.088 (0.694)</td>
<td>1.032 (0.802)</td>
<td>1.058 (0.753)</td>
<td>-0.661</td>
</tr>
<tr>
<td>Value of productive assets</td>
<td>8294.521 (28626.95)</td>
<td>10305.88 (43181.2)</td>
<td>2011.36 (37129.79)</td>
<td>0.479</td>
</tr>
</tbody>
</table>

4.1.2 Host community willingness to participate in non-market land transactions

In Table 3, we show the characteristics of members of the host community based on whether they are willing to engage in land arrangements or not. 71.5 percent of members of the host community were willing to engage in land arrangements with refugees and specifically 61.4 percent were willing to engage in free land arrangements, 12.34 were willing to engage in land labor exchange and another 5 percent willing to engage in other non-formal land arrangements. There are significant differences in trust between members of the host community willing to engage in any informal land arrangements and those not willing to engage. Members of the host community willing to engage in informal non market land transactions with refugees transfer UGX 1090 to their partner, almost an equal split while their counterparts who are not willing to engage in any of the land arrangements prefer to transfer UGX 1000.
arrangement with refugees transfer a less amount of about UGX 913.26. Other measures of behavior such as expectations of average percentage trustworthiness and beliefs of expected trust are not significantly different between members of the host community who are willing to engage in informal land arrangements and those not willing to engage in informal land arrangements. Other variables such as gender of the household head and the ratio of perceived socio economic status of oneself to refugees show statistical difference between those willing to engage in land arrangements and those not willing. For example those who are willing to engage in non-market land transactions have a higher ratio of perceived socio economic status of self to refugees compared to their counterparts who are unwilling to engage in non-market land transactions.

Table 3: Characteristics of members of the host community based on whether they are willing to engage in non-market land transactions with refugees or not.

<table>
<thead>
<tr>
<th>Willing to have any land arrangement with refugees</th>
<th>Yes (N=226)</th>
<th>N=(90)</th>
<th>N=(316)</th>
<th>t value of difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust: transfer in the trust game</td>
<td>1090.9(562.73)</td>
<td>913.26(579.67)</td>
<td>981.07(578.86)</td>
<td>-2.68</td>
</tr>
<tr>
<td>Altruism: Transfer in dictator game</td>
<td>769.91(632.57)</td>
<td>755.56(623.71)</td>
<td>765.82(629.11)</td>
<td>-0.183</td>
</tr>
<tr>
<td>Expected average percentage trustworthiness</td>
<td>52.92(19.28)</td>
<td>49.45(19.60)</td>
<td>50.76(19.53)</td>
<td>1.53</td>
</tr>
<tr>
<td>Beliefs in expected trust</td>
<td>1108.33(498.67)</td>
<td>1070.7(498.78)</td>
<td>1084.9(498.28)</td>
<td>0.652</td>
</tr>
<tr>
<td>Gender of the household head</td>
<td>0.39(0.49)</td>
<td>0.68(0.47)</td>
<td>0.47(0.50)</td>
<td>4.625</td>
</tr>
<tr>
<td>Age of the household head</td>
<td>36.69(13.69)</td>
<td>40.11(15.63)</td>
<td>37.66(14.33)</td>
<td>1.92</td>
</tr>
<tr>
<td>Years of schooling</td>
<td>5.897(3.64)</td>
<td>4.66(3.69)</td>
<td>5.54(3.69)</td>
<td>-2.72</td>
</tr>
<tr>
<td>Ratio of perceived socio economic status of self to refugee</td>
<td>1.08(1.01)</td>
<td>1.057(0.752)</td>
<td>1.074(0.945)</td>
<td>0.195</td>
</tr>
<tr>
<td>Ratio of perceived socio economic status of self to refugee</td>
<td>1.12(0.837)</td>
<td>0.893(0.436)</td>
<td>1.05(0.753)</td>
<td>-2.445</td>
</tr>
<tr>
<td>Total value of productive assets</td>
<td>10995.58(10995.58)</td>
<td>(12255.38)</td>
<td>9376.58(37129.79)</td>
<td>-1.229</td>
</tr>
</tbody>
</table>

4.1.3 Host community combined motivations of previous engagement and willingness to engage in non-market land transactions

When we categorize previous engagement and willingness to engage in non-market land engagements, 187 households (29.78 percent) had ever engaged and were willing to engage in non-market land transaction. 110 households (17.52 percent) had ever engaged in a non-market land transaction and were not willing to engage in non-market land transaction while 85 (13.54 percent) had never engaged in non-market land transactions.
transaction but were willing to engage in non-market land transaction and lastly 246 (39.17 percent) had never engaged in any non-market land transaction and were not willing to engage in any non-market land transaction. These last category of people that had never engaged in any non-market land transaction and were not willing to engage in any were mainly refugees who lack the land resource and who probably were unsure on how to respond to this. For host 162 households (51.27 percent) had ever engaged and were willing to engage in non-market land transaction. 40 households (17.52 percent) had ever engaged in a non-market land transaction and were not willing to engage in non-market land transaction while 64 (20.55 percent) had never engaged in non-market land transaction but were willing to engage in non-market land transaction and lastly 50 (15.82 percent) had never engaged in any non-market land transaction and were not willing to engage in any non-market land transaction.

**Figure 3: Graph of amount transferred in the trust game by host communities based on previous engagement and willingness to engage in non-market land transactions.**

Considering only members of the host community who played the trust game, the highest proportion of players who sent all their initial endowment of UGX 2000 in the trust game were those who had engaged and were willing to engage in non-market land transactions as shown in **Figure 1.** This indicates the possibility that those host communities who trust are the ones who engage in non-market land arrangements. The highest proportion who
give a 50/50 split of the endowment (UGX 1000) are form players who have never engaged in any land arrangement but are willing to engage in non-market land transaction (79.1 percent). It’s probable to think that these are individuals who care for inequity aversion, an area for further research. Lastly, the category of players who may be regarded as selfish because they have the highest proportion of players who transfer zero in the trust game are those who engaged in non-market land transactions in the past but are unwilling to engage in any further non market land arrangements (27.12 percent). They are closely followed by those who have never engaged and are unwilling to engage in non-market arrangements with refugees. Overall, those not willing to engage in any land arrangements with refugees show the highest degree of selfishness (transfer zero in the trust game).

**Figure 4** : **Graph of amount transferred in the trust game by host communities based on previous engagement and willingness to engage in non-market land transactions**

Figure 4 illustrates graphs of the amount sent in the dictator game as a measure of altruism by whether a household has never engaged in any non-market land transaction and is not willing to engage, whether they have never engaged in any non-market land transaction but is willing to engage, engaged in the past but is not willing and lastly,
engaged in the past and is willing to engage in non-market land transaction. The figures show no remarked differences between the different categories with those households who have never engaged and are not willing to engage sending the highest percentage of all the endowment that they received followed by households who have never engaged but are willing to engage in land arrangements. Although the differences may not be significantly different, the figures illustrate the possibility that those who have never engaged with refugees in any land arrangement may be more altruistic than those who have engaged with them in the past. This could probably be because those who have engaged with refugees perceive them to be relatively worse off socially and economically than they are. Indeed the median and mean of the perceived ratio of economic and social status of self to refugees is slightly higher for individuals never engaged and not willing to engage in any land arrangements (mean is 1.10 and median is 0.937) and never engaged but willing to engage in land arrangements (mean is 1.13 and median is 1). On the other hand, the mean and median of the perceived socio economic status of self to refugees for households that have previously engaged but not willing to engage in any land arrangements and for households that have previously engaged and are willing to engage in any land arrangements with mean ratio of 1.01 and median ratio of 0.8 and mean ratio of 1.03 and median ratio of 1 respectively.

Due to the informality of non-market land transactions, reciprocity of trust is crucial. Figure 5 shows the average percentage expectations of reciprocity by members of the host community based on whether they had ever engaged or are willing to engage in any non-market land arrangements. The highest proportion of players whose beliefs about expected reciprocity or trustworthiness of their partners is zero are those who have previously engaged in non-market land transactions but are unwilling to engage in any non-market land transactions with refugees. In otherwise, their beliefs of reciprocity by refugees is low in the trust game, perhaps given their previous engagement. On the other hand, those members of the host community who have engaged and are willing to engage with refugees and those who have never engaged and are willing to engage have their graphs more to the right showing higher beliefs in reciprocity of trust by refugees. The survey results on trust also shows that the highest proportion of people that do not trust refugees are those who have previously engaged in non-market land transactions and are not willing to engage with them anymore (20.5 percent) followed by those who have never engaged and are not willing to engage (11.96 percent) and then those who have engaged in the past and are willing (9.28 percent) and lastly those who have not engaged in the past but are willing (8.33 percent). Clearly the results from the trust game and the

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2 Our previous treatment in playing the dictator and trust game was the knowledge given to the players that they play with a either refugee or member of the host community. We find that it does not predict whether one has ever engaged in non-market land transaction in the past or their willingness to engage in land arrangements, so it should not affect our analysis.
survey questions on whether one trusts or does not trust refugees are similar and show that members of the host community who are not willing to engage in informal land arrangements with refugees don’t trust them.

**Figure 5:** Graph of average percentage expected trustworthiness by host communities based on previous engagement and willingness to engage in non-market land transactions

![Graph of average expected trustworthiness by land arrangement](image)

4.2 Econometric estimation

We test the hypothesis that trust, trustworthiness and altruism are associated with engagement in non market land transactions by members of the host community or simply that engagement in non market land transactions signals members of the host community who trust and are altruistic and refugees who are trustworthy. We use the probit model for the binary dependent variable of whether a member of the host community has previously engaged in non market land transaction with refugees or not and whether they are willing to engage in a non market transaction or not. We also use the probit model to examine the association between engagement in non market land transactions and refugees and their level of trustworthiness. When we compare the likey
factors associated with members of the host community decision amongst four alternative
decisions of, (1) willing to engage in non market land transactions with refugees having
previously been engaged, (2), unwilling to engage having previously engaged, (3) willing
to engage having previously not engaged, and lastly (4) unwilling to engage at the time
of the survez having previously not engaged, we use the multinomial logit model. We
provide the economic estimations in the next subsections.

4.2.1 Association between host community’s trust and altruism and previous
engagement in non-market land transactions

Table 4 shows a regression of factors likely to explain the likelihood of members of the
host community to have participated in land arrangement with fellow members of the host
community and with refugees. The measure of altruism, amount sent in the dictator game
is positive and marginally significant factor in explaining the likelihood of members of the
host community to have engaged in non-market land transactions with fellow refugees. A
member of the host community who sends a positive amount (altruistic) in the dictator
game (irrespective of whether it is to a refugee or member of the host community) is 12
percent more likely to have engaged in non-market land transaction than one who sends
nothing (selfish individual). On the other hand, altruism by members of the host
community (irrespective of whether it is to a refugee or member of the host community)
is associated with a reduced likelihood of engaging in non-market land transactions with
refugees. Transfer of money in the trust game is positive and insignificant factor in
explaining the likelihood of members of the host community to have engaged in land
arrangement with both members of the host community and the refugees. For host
communities to engage with fellow members of the host community, an important factor
is the total value of productive assets that the household owns. If the total value of the
assets that the household owns increases by 10 percent, the likelihood for a household
to engage in land arrangement increases by 0.02 percent.
Table 4: A probit regression of factors that influenced the likelihood of members of host community to have non-market land transaction with refugees (Margins)

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>Ever had a land arrangement with fellow host community</th>
<th>Ever had a land arrangement with refugees</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>Transferred in dictator game (Dummy; 1=Yes)</td>
<td>0.070</td>
<td>0.108</td>
</tr>
<tr>
<td></td>
<td>(0.061)</td>
<td>(0.068)</td>
</tr>
<tr>
<td>Transferred in trust game (Dummy; 1=Yes)</td>
<td>-0.078</td>
<td>-0.062</td>
</tr>
<tr>
<td></td>
<td>(0.053)</td>
<td>(0.052)</td>
</tr>
<tr>
<td>Average expected trustworthiness (percentage)</td>
<td>-0.001</td>
<td>-0.002</td>
</tr>
<tr>
<td></td>
<td>(0.001)</td>
<td>(0.001)</td>
</tr>
<tr>
<td>Gender of household head</td>
<td>-0.094</td>
<td>-0.086</td>
</tr>
<tr>
<td></td>
<td>(0.065)</td>
<td>(0.063)</td>
</tr>
<tr>
<td>Age of the household head</td>
<td>-0.0002</td>
<td>-0.000</td>
</tr>
<tr>
<td></td>
<td>(0.002)</td>
<td>(0.002)</td>
</tr>
<tr>
<td>Years of schooling household head</td>
<td>0.010</td>
<td>0.010</td>
</tr>
<tr>
<td></td>
<td>(0.010)</td>
<td>(0.011)</td>
</tr>
<tr>
<td>Log of total assets</td>
<td>0.016***</td>
<td>0.016***</td>
</tr>
<tr>
<td></td>
<td>(0.004)</td>
<td>(0.005)</td>
</tr>
<tr>
<td>Log of ratio of perceived socio economic status of self to refugees</td>
<td>0.023</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.040)</td>
<td></td>
</tr>
<tr>
<td>Log of ratio of perceived socio economic status of self to host community</td>
<td></td>
<td>-0.062*</td>
</tr>
<tr>
<td></td>
<td>(0.034)</td>
<td></td>
</tr>
<tr>
<td>Pseudo R squared</td>
<td>0.003</td>
<td>0.009</td>
</tr>
<tr>
<td>Observations</td>
<td>312</td>
<td>314</td>
</tr>
</tbody>
</table>

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1
Perceived ratio of socio economic status of host community to fellow member of the host community is also marginally (significant at 10 percent) associated with the likelihood to engage in an informal non market land transaction with fellow members of the host community. In other words, if member of the host community perceives that their socio economic status has increased by 10 percent relative to that of fellow member of the host community, then there is a 0.6 reduced likelihood of them participating in an informal land arrangement with fellow members of the host community.

Exploring the factors likely to explain the likelihood of non-market land transactions occurring between members of the host community with refugees, our results in Table 4 show that members of the host community expectations of trustworthiness irrespective of whether it is a refugee or members of the host community does matter a lot and is significant across all specifications in columns Y8, Y9 and Y10 when we subsequently control for other variables such as age, gender and value of productive assets for households. A 10 percent increase in the average percentage expected trustworthiness by members of the host community is associated with 0.02 percentage increase in the likelihood for the host community to engage in an informal non market land transaction with refugees. Gender of the household head and the perceived ratio of the socio economic status of host community to a refugee is also associated with the likelihood of engagement with refugees in an informal land non market transactions. Male headed households are 15 percent more likely to have engaged with refugees in an informal land arrangements compared to female members from the household. Also members of host community who perceive that they are relatively better off socio economically than refugees are also more likely to have engaged with refugees than their counterparts who don’t. Specifically, if members of the host community perceive that they are 10 percent socially and economically better off than refugees, then there is an associated 0.8 percent probability that they have ever engaged in an informal land arrangement with refugees.

4.2.2 Association between trust and altruism and willingness of members of the host community to engage in non-market land transactions with refugees

In this section, we explore whether preferences of altruism, reciprocity and trust is associated with willingness of members of the host community to engage in free land arrangements, rental agreements and arrangements involving exchange of free labor for land with refugees. Table 5, provides a probit analysis of factors associated with the willingness of members of the host community to engage in a land arrangement with refugee using a full sample which also includes households that have ever engaged in any non-market land transaction with refugees and a reduced sample in which those who have ever engaged in any informal land arrangement with refugees is excluded. If the argument is that previous engagement of members of the host community with refugees
in non-market land transactions sparks off trust between the two groups such that trust is a result of the interaction or engagement in land transaction between the two, excluding those who have previously been engaged may reduce this bias. This allows us to test for the robustness of our findings.
Table 5: A probit analysis of factors associated with willingness for host communities to engage in informal land arrangements with refugees (margins)

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>Willingness to engage in land arrangements (Full sample)</th>
<th>Willingness to engage in land arrangement (Sample excludes those who have ever)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>Transferred in dictator game (Dummy; 1=Yes)</td>
<td>-0.003</td>
<td>-0.092*</td>
</tr>
<tr>
<td>Transferred in trust game (Dummy; 1=Yes)</td>
<td>0.183***</td>
<td>0.166**</td>
</tr>
<tr>
<td>Average expected trustworthiness (percentage)</td>
<td>0.001</td>
<td>0.001</td>
</tr>
<tr>
<td>Household size</td>
<td>-0.019**</td>
<td>-0.014</td>
</tr>
<tr>
<td>Gender of household head</td>
<td>-0.204***</td>
<td>-0.160**</td>
</tr>
<tr>
<td>Age of the household head</td>
<td>-0.002</td>
<td>-0.002</td>
</tr>
<tr>
<td>Years of schooling</td>
<td>0.005</td>
<td>0.001</td>
</tr>
<tr>
<td>Log of total assets</td>
<td>0.016***</td>
<td>0.013**</td>
</tr>
<tr>
<td>Log perceived ratio of socio economic status of self to refugees</td>
<td>0.183***</td>
<td></td>
</tr>
<tr>
<td>Log perceived ratio of socio economic status of self to host community</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pseudo squared</td>
<td>0.000</td>
<td>0.017</td>
</tr>
<tr>
<td>Observations</td>
<td>312</td>
<td>314</td>
</tr>
</tbody>
</table>

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1
Transfers of positive amounts in the trust game is associated with willingness to engage in non-market land transactions with refugees particularly when the full sample is considered. Transfers of positive amounts (UGX 1000 or UGX 2000) is associated with 20 percent increased likelihood of willingness to engage in non-market land transactions compared to making no transfers in the trust game. Although marginally significant at 10 percent, a positive transfer in the trust game is associated with a 1.3 percent increased willingness to engage in non-market land transaction with refugees. This suggest that trust is a crucial factor on whether households are willing to engage non market land transactions. In the full sample, gender of the household head and the total value of assets of the household are also associated with willingness to engage in non-market land transactions with refugees. Specifically females are less willing to engage in non-market land transactions with refugees compared to the male counterparts and a 10 percent increase in the value of total assets that the household owns is associated with a 0.01 percent increase in the willingness to engage in non-market land transaction with refugees. The perceived ratio of socio economic status of members of the host community to refugees is also associated with increased likelihood to engage in non-market land transactions with refugees. If members of the host community perceive that the refugees are better off than they are, then it is associated with reduced willingness by members of the host community to engage in non-market land transactions with refugees.

4.2.3 Association between social preferences and combined decisions of previous engagement and willingness to engage in non-market land transactions

In this section, we compare whether preferences of altruism and trust explain the different choices that members of the host community make regarding previous engagement and current willingness to engage in non-market land transactions with refugees. We asked members of the host community if they have ever had any non-market land transaction with refugees and whether they are willing to have any non-market land transactions with refugees. We constructed four alternative choices from our responses: first are members of the host community who have ever had a non-market land transaction with refugees and are also willing to have any non-market land transactions with refugees. We are unable to distinguish between whether it is trust towards refugees or trust towards members of the host community due to limited sample that is associated with increased likelihood of the willingness of members.
the time of the survey and lastly are members of the host community who have never had any non-market land transactions with refugees and are not willing to engage in any non-market transactions with refugees at the time of the survey. Table 6 provides a multinomial logit model comparing factors associated with previous engagement and current willingness for host communities to engage in non-market land transactions with refugees. The base outcome are households who have never had any non-market land transactions with refugees and who are unwilling to engage in any non-market land transactions with refugees.

The results show that people who transfer positive amounts in the dictator game are associated more with the option of not having engaged or willing to engage compared to the alternative of never engaged but with the willingness to engage in any non-market land transactions with refugees. Specifically, there is a 10 percent likely association of households that transfer positive amounts in the dictator game to be households that have never engaged and are not willing to engage in any non-market land transactions with refugees than to be households who have never engaged in any non-market land transactions with refugees but are willing to engage in non-market land transactions with refugees. This perhaps suggest that altruistic members of the host community are not necessarily the ones engaged in non-market land transactions with refugees. Regarding trust, individuals who transfer positive amounts in the trust game are more likely to be associated with members of the host community who have never been engaged in any non-market land transaction but are willing to engage in non-market land transaction with refugees than in the category of never have engaged and are not willing to engage in a non-market transaction with refugees at the time of conducting experiments. Specifically, there is a 15 percent likely association of individual that transfer positive amounts in the trust game to be from households that have never engaged but are willing to engage in any non-market land transactions with refugees than to be from households who have never engaged in any non-market land transactions with refugees and are not willing to engage in non-market land transactions with refugees at the time of conducting the experiments. Although marginally significant, trust is less associated with individuals from households who have ever had a non-market land transaction with refugees and not willing to engage with refugees. This perhaps suggest that trust is crucial for members of the host community to start to engage in non-market land transactions with refugees.

Apart from trust and altruism, the results also show that female headed households are less likely be in the category of having ever had a land engagement and are willing to engage with refugees in non-market land transactions at the time of the survey but are more likely to be in the category of never been engaged in a non-market land transaction
and are unwilling to engage in one. On the other hand, a 10 percent increase in the total assets of a household is associated with a 0.002 percentage increase in the likelihood of households being associated to the category of having ever had a land engagement with refugees and are willing to engage in non-market land transaction with refugees than to the category of never having had a land engagement with refugees and not willing to engage with refugees. This suggests that wealthy households are perhaps more likely to engage in non-market land transactions with refugees.
Table 6: A multinomial logit model comparing factors associated with previous engagement and current willingness for host communities to engage in informal land arrangements with refugees (margins)

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>Ever had a land engagement and will to engage with refugees (N=162)</th>
<th>Ever had a land engagement and not willing to engage with refugees (N=40)</th>
<th>Never had a land engagement and willing to engage with refugees (N=64)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>Transferred in dictator game (Dummy; 1=Yes)</td>
<td>-0.013 (0.065)</td>
<td>-0.002 (0.037)</td>
<td>0.012 (0.041)</td>
</tr>
<tr>
<td>Transferred in trust game (Dummy; 1=Yes)</td>
<td>0.056 (0.058)</td>
<td>0.067 (0.066)</td>
<td>0.093 (0.073)</td>
</tr>
<tr>
<td>Gender of household head</td>
<td>-0.247*** (0.056)</td>
<td>-0.211*** (0.045)</td>
<td></td>
</tr>
<tr>
<td>Age of the household head</td>
<td>-0.001 (0.056)</td>
<td>0.002 (0.045)</td>
<td></td>
</tr>
<tr>
<td>Years of schooling</td>
<td>0.006 (0.003)</td>
<td>0.010* (0.004)</td>
<td></td>
</tr>
<tr>
<td>Log of total assets</td>
<td>0.018*** (0.006)</td>
<td>0.001 (0.006)</td>
<td></td>
</tr>
<tr>
<td>Pseudo R squared</td>
<td>0.002 (312)</td>
<td>0.014 (314)</td>
<td>0.055 (314)</td>
</tr>
<tr>
<td>Observations</td>
<td>312 314 314 314 310 310 312 314 314 314 310 312 314 314 314 314 310 310</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Base outcome is “Never had a land arrangement with refugees and not willing to engage in any land arrangement” (N=50)

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
4.2 Refugees and engagement in non-market land transactions

After conducting the experiments with participants, we asked refugees if they had ever had any land arrangement with either fellow refugees or members of the host community. 34.8 percent of refugees had ever engaged in a non-market land transaction with either members of the host community or with fellow refugees. Although in Figure 6, there are no observed differences in the average percentage reciprocity in trust by refugees, the average percentage reciprocity is higher for those refugees who have never engaged in any form of non-market land transaction with either refugees or members of the host community (Table 7).

Figure 6: Graph of average percentage reciprocity by refugees based on non-market land engagements

Expectations of trust and transfers in the dictator game which signals altruism are also higher for those refugees who have never participated in any land engagements. The differences are nevertheless not statistically different. One factor that is statistically different between refugees engaged in non-market land transactions and those that have not is the years of schooling. Those who have ever engaged in any non-market land arrangement have on average 4.9 years of schooling compared to 3.5 years of schooling for those households who have never engaged or participated in any non-market land transaction.

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Table 7: Characteristics of refugees based on whether they have ever participated in a non-market transaction or not

<table>
<thead>
<tr>
<th></th>
<th>Ever participated in a non-market land transaction</th>
<th>t value of difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes (N=95)</td>
<td>No (N=178)</td>
</tr>
<tr>
<td>Average trustworthiness</td>
<td>36.46(17.92)</td>
<td>38.55(19.24)</td>
</tr>
<tr>
<td>Expectations of trust</td>
<td>1072.28(567.46)</td>
<td>1122.64</td>
</tr>
<tr>
<td>Altruism (Amount sent in the dictator game)</td>
<td>736.84(605.12)</td>
<td>853.93(629.78)</td>
</tr>
<tr>
<td>Gender of the household head</td>
<td>0.768(0.424)</td>
<td>0.820(0.385)</td>
</tr>
<tr>
<td>Age of the household head</td>
<td>40.358(12.884)</td>
<td>37.758(15.414)</td>
</tr>
<tr>
<td>Years of schooling</td>
<td>4.915(4.511)</td>
<td>3.548(4.279)</td>
</tr>
<tr>
<td>Total value of productive assets</td>
<td>12384.21(84419.69)</td>
<td>2665.73(8858.54)</td>
</tr>
<tr>
<td>Ratio of perceived socioeconomic status of self to refugee</td>
<td>1.145(0.787)</td>
<td>1.021(0.909)</td>
</tr>
<tr>
<td>Ratio of perceived socioeconomic status of self to refugee</td>
<td>0.831(0.897)</td>
<td>0.731(0.965)</td>
</tr>
</tbody>
</table>

Controlling for all other factors likely to be associated with refugees’ participation in non-market land transactions in a regression analysis in Table 8, shows that social preferences are less associated with refugee’s participation in non-market land transactions. Transfers in the dictator game, a measure of altruism as well as trustworthiness are not associated with refugee’s likely participation in the land market and we reject our hypothesis that non market land transactions signal who the trustworthy refugees are. Gender, age and the years of schooling of the household head are the major factors associated with refugee’s participation in non-market land transactions. Female headed households are less associated with participation in the non-market land transactions by 18.7 percent. An additional year to the household head’s age, is associated with refugees’ likely participation in non-market land transaction by 0.5 percentage points. Also an additional year of schooling for a refugee household’s head is associated with an increase in likely participation in non-market land transaction by 2.5 percent.
Table 8: A probit model of factors associated with engagement in non-market land transactions by refugees (margins)

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>If household has ever participated in non-market land transaction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td>Transferred in dictator game (Dummy; 1=Yes)</td>
<td>-0.069</td>
</tr>
<tr>
<td></td>
<td>(0.057)</td>
</tr>
<tr>
<td>Average percentage trustworthiness</td>
<td>-0.001</td>
</tr>
<tr>
<td></td>
<td>(0.002)</td>
</tr>
<tr>
<td>Gender of the household head</td>
<td>-0.192***</td>
</tr>
<tr>
<td></td>
<td>(0.071)</td>
</tr>
<tr>
<td>Age of the household head</td>
<td>0.006***</td>
</tr>
<tr>
<td></td>
<td>(0.002)</td>
</tr>
<tr>
<td>Years of schooling</td>
<td>0.027***</td>
</tr>
<tr>
<td></td>
<td>(0.010)</td>
</tr>
<tr>
<td>Logarithm of total assets</td>
<td>0.004</td>
</tr>
<tr>
<td></td>
<td>(0.006)</td>
</tr>
<tr>
<td>Log perceived ratio of socio economic status of self to members of the host community</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Log perceived ratio of socio economic status of self to refugees</td>
<td>0.062*</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Pseudo R squared</td>
<td>0.003</td>
</tr>
<tr>
<td>Observations</td>
<td>272</td>
</tr>
</tbody>
</table>
5.0 Conclusion

The main objective of this study is to examine whether there is an association between engagement in non market land transactions and trust, reciprocity and altruism. Specifically, we ask whether engagement in non market land transactions signals trust, reciprocity and altruism measured by experimental games and survey questions. We do not claim a causal link since there is likely to be reverse causality between measures of trust and social preferences and engagement in non market land transactions but our findings are important in verifying whether findings from experiments can provide reliable inferences to important economic outcomes such as non market land transactions. Examples of non market land transactions include giving land for free to cultivate for a specified period of time, exchanging labor for land, land renting for a specified period of time and any other land arrangement for which no market transaction is involved. It’s also important in thinking about how we can relate behavioural economics to economic development. Our empirical strategy is similar to Karlan (2005) who explores whether creditworthiness in microfinance institutions signal trustworthiness.

We asked members of the host community if they had ever engaged in any non-market land arrangement or if they were willing to engage in any non-market with refugees and fellow members of the host community. For refugees, we asked if they had engaged in any non-market land arrangement in the past 12 months. Regarding social preferences, we conduct trust and dictator games amongst the refugees and members of the host community and compare the outcomes with survey questions on trust which simply asked whether members of the host community or refugees trusted fellow members of the host community or refugees. Subsequently, we explore whether trust, reciprocity and altruism are associated with the following decisions: first, whether they are associated with the decision to have previously engaged or not engaged in non market land transactions, second, whether they are associated with the willingness to engage in non market land transactions and lastly, whether it is associated with the combined decision of previous engagement and current willingness to engage in non market land transactions.

We find that high levels of trust is associated with willingness to engage in non market land transactions with refugees and high expectations of trustworthiness is associated with members of the host community who have previously engaged in non market land transactions with refugees. On the other hand, trust by members of the host community is not associated with engagement in informal non market land transactions with members of the host community. This is likely to be the case because of shared cultures and norms such that trustworthiness already preexists unlike with a different ethnic group such as refugees. In the focus group discussions, members of the host community associated refugees with theft. What this means is that people with a high level of trust are the ones willing to engage in non market land transactions with refugees and indeed this is as expected as trust is crucial in many transactions which remain informal and non
contractual transactions. One might argue that the willingness to engage in non market land transactions was dominated by those who had previously engaged in non market land transaction who have already formed relationships and hence high trust. Nonetheless, we also find that trust is more associated with members of the host community who have never been engaged but are willing to engage in non-market land transaction with refugees than with those who have never engaged and are not willing to engage in a non-market transaction with refugees. We also find that engagement in non market land transactions does not signal altruism.

One other factor that is associated with engagement in non market land transactions by both members of the host community and refugees is how they perceive their socio economic status as either a refugee or member of the host community to the other neighbor in this case a refugee or member of the host community. For example, if members of the host community perceive that the refugees are better off than they are, there is a reduced willingness to engage in non-market land transactions with refugees. Other factors affecting the willingness of members of the host community to engage in non-market land transactions include gender with female members of the host community less likely and value of assets. Wealthier members of the host community are more likely to have engaged or are willing to engage in informal non market land transactions with refugees.

In this paper, we have been able to provide evidence that engagement in informal institutions such as non market arrangements is highly associated with trust particularly when communities are distinctly different and not altruism. Nevertheless engagement in non market land transactions is unable to isolate trustworthy refugees from untrustworthy refugees.
Appendix

Figure 7: Players wait for instructions

Figure 8: Enumerator explains the game at group level
Figure 9: Enumerator explains the game at individual level
Figure 10: A player makes her individual anonymous decision