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The influence of group identity on farmer's decision making: an experimental economics approach on a family farming case in Costa Rica.

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Abstract:

A successful family farming sector is strategic for developing rural areas, but is endangered by household-specific market failures, high transaction costs and low bargaining power. Contract farming and collective actions are two common institutional devices for acquiring a level of certainty regarding market information, delivery conditions and procurement prices. Farmers' associations is one of the common form of collective actions, but faces problems of opportunistic behaviour from their participating members. The intensity of group identity felt by an individual member is an essential determinant of the level of commitment and support granted towards the association. This case study analyzes the interdependence between individual identification intensity and revealed commitment for a commodity specific association that is based on individual membership. Members and non-members of the association participated in a questionnaire followed by a natural field experiment concerning their social identity towards the existing pepper association. By manipulating the social identity variable it could be seen that social identity has an influence on the participation of the individual in the association. This effect could be found for members and non-members alike. Strengthened social identity generally increased the participation of the individual in the organisation.

Key words: Collective actions, social identity, willingness to participate, pepper

I. Introduction

A successful family farming (FF) sector is essential for strategic development of rural areas in countries like Costa Rica. FF has recently gained an increased attention in the international working agenda, since it has been said to have a close link with food security, poverty alleviation, sustainable livelihoods and rural development. FF is of particular importance in regions like Central America where 70% of the total food production comes from small family-based agriculture (FAO, 2014). Over the past 30 years, cash crops like Pepper (*Piper nigrum* L.) have been options for these family-based smallholders to diversify production and income sources. Most of the pepper production in Costa Rica is located in peasant settlements created by the State, such as *El Roble* settlement, which was the first place where pepper started as a cash crop¹.

<Insert Map 1 here>

Pepper is a labour intensive crop in Costa Rica, which explains why the average plot is around 0.9 hectare. Spot markets for pepper do not exist in the country; thus, the trade of pepper has been done on the base of contractual agreements between producers and a processor. The pepper market passed through four major developments in the past three decades. In the beginning (1980-2000), there was more than one processor, so that there was price competition. In the second stage (2000-2010) there was only one processor, which created a monopsony and decreased the bargaining power of the farmers. In this period, some pepper farmers from the *El Roble* settlement started a collective action in the form of an association, namely APROPISA SA, to increase their bargaining power and strength farmers market integration. This association bundled the pepper to establish economics of scale in inspection and transportation to the monopsonistic processor. In the third stage (2010 onwards), with some external help, a processing facility was set up to increase the independence of the association. Since 2010 the association is processing pepper and selling it to several agro industries in San Jose, the capital of Costa Rica (Sáenz-Segura et al., 2010).

Generally, the pepper association is regarded by the community as a good collective effort. It provides a higher procurement price and is a source of funds for local development activities, such as the improvement of roads, schools or water supply. However payment difficulties and general dissatisfaction with the board of the association have led members to withdraw, while there have been problems in recruiting new farmers to join the association. For the organization to develop, more fresh pepper is needed. However, even members of the association sell to the competitor if the price is slightly higher than the association price, or they dry the pepper themselves to sell individually on the market in the capital.

¹ *El Roble* lies in the canton of *Sarapiquí*, between the towns of *Puerto Viejo* and *La Virgen*, see Map 1.

Akerlof and Kranton (2005) found that the amount of group identity towards an organization is an essential determination of the amount of effort put into the organization by the individual. The level of group identity towards an association demonstrates the level of identification of the individual with the group. As low participation is a main problem within the pepper association, the purpose of this study is to determine whether there is relationship between the pepper producers' social identity towards the APROPISA association, and the willingness to participate in the association.

The rest of the paper is organized as follows: in the second section we briefly review the importance and difficulties for smallholders' collective actions and discuss the current literature on social identity theory. In the third section we specified methodology and data sources. In the fourth section we describe and discuss major outcomes. We conclude in section V.

II. The challenge from basic collective participation and social identity theory

- Family farming, transactions costs and collective actions for market integration

Family farms are considered an extremely vulnerable group in economic transaction. Due to the small quantity they produce, they face high transaction costs and low bargaining power. They also face limited access to public services and restricted dedication in policy-making. Besides, these family-based farms are very heterogeneous, with large differences in terms of availability and access to productive resources, levels of technology, yields, and managerial skills. These differences are known as household-specific market failures, which make some producers more able to integrate into markets than others (de Janvry et al, 1991; Sadoulet and de Janvry, 1995). These drawbacks are also present in middle income countries like Costa Rica. Therefore, small family-based producers tend to value risk reduction strategies more than profit (Ellis, 1988; Ruben et al., 1994; Sadoulet and de Janvry, 1995), and thus, they look for institutional devices to acquire a level of certainty regarding market information, delivery conditions and procurement prices (Sáenz-Segura, 2006).

Two common institutional devices are contractual arrangements between producers and a certain buyer, and collective actions to organize the production and marketing of a commodity. Over the past 20 years contract farming has been mentioned in the literature as a good institutional device for reducing the negative effect of market and information failures and creating conditions of sustainable trade relationship between the contracting parties. For the producers side there is a risk averseness reduction, in special for those producers at the initial phase of non-traditional agro-production. On the buyers side, there is a continuous flow of product supply, at the right time, under certain quality conditions, and at the needed amount (Glover, 1984; Glover, 1987; Carney and Watts, 1990; Grosh, 1994; Key and Runsten, 1999; Gow *et al.*, 2000; Singh, 2002; quoted by Ruben and Sáenz,

2008). Even when some other authors have warned against the downside effects of contracts due to exclusion of small producers and their unequal bargaining opportunities (Glover and Kusterer, 1990; Grosh, 1994; Little and Watts, 1994; Porter and Phillips-Howard, 1995; Rickson and Burch, 1996; Torres, 1997; Siddiqui, 1998), in practice, a wide variety of contractual arrangements are likely to coexist, where firms specify the type of contract and conditions according to location, type of product, type of producers, and contract enforcement possibilities (Barrett *et al.*, 2011). On the other hand, smallholders may be able to bargain different delivery conditions, according to their particular interests (Key and Runsten, 1999).

Next to that, the strengthening of producers' organizations, such as cooperatives, associations, boards of producers, networks, etc., has been promoted by the Government and private NGOs to counteract an unbalanced bargaining power in market transactions (Welsh, 1997; Paumgarten *et al.*, 2012). Therefore, producer organisations have spread rapidly in the developing world. It can be distinguished between three types of producer organizations: commodity specific organizations, which specialize in a certain commodity; advocacy organizations, which deal with the general interest of producers; and multi-purpose organisations, which are adaptive to the special social or economic needs of their members. The improvement of existing market operations, the innovation in new forms of markets, and the promotion of community participation and distribution of benefits are amongst the most remarked benefits of a producer organization (Knoeber, 1983; Devaux *et al.*, 2009; Kruijssen *et al.*, 2009; Faure *et al.*, 2011).

The most common forms of collective action in Costa Rica are cooperatives, producers associations, corporations (public-private hybrid organizations), industrial chambers and peasants unions (Le Coq *et al.*, 2014). A basic producer association or cooperative may start with a few activities (i.e. organizing the delivery of produce) and progressively become a larger entrepreneurial effort. It is expected that such evolution from a basic collective action up to an inclusive entrepreneurial effort yield social benefits to producers as members of the organization, their families and the community in general. The final result can be a community-based formal enterprise performing inclusive business, at sustainable supply chain development.

- Organizations and individual participation

While producer organisations have expanded noticeably, this does not guarantee their effectiveness as an institutional device. The transition from basic collective actions to a formal enterprise performing a more sustainable business model is uneasy in rural areas. Currently, collective actions are vulnerable at its early stage of performance, when few resources are available, results are difficult to show, and members must dedicate working time to the effort. In terms of trade and business, small producers tend to put their own interests before their organization's interest (Glover, 1987; Rickson and Burch, 1996; Singh, 2002; World Bank, 2008). This is particularly true in cases where new settlers' communities

emerge from the implementation of land reform programs, such like the case in the *El Roble* settlement, where people coming from different regions of the country, with different cultures, are living together and bounded to conduct communal projects.

On the other hand, reality shows that people do not always act in their self-interest. Other factors are influencing their decision making. Good examples for this is that people participate in unions or actually work hard in teams, although the incentives might go in another direction (Eckel & Grossman, 2005). Social Identity Theory (SIT) aims at giving some explanation to these phenomena. It is, as a lot of theories, a patchwork of different ideas and perceptions. The main ideas on social identity theory arose with Tajfel in the 1974 (Akerlof & Kranton, 2005; Eckel & Grossman, 2005; van Knippenberg, 2003). Social Identity Theory (SIT) was developed in the psychological science as the basis of inter-group discrimination. The idea behind social identity theory is that a person does not have a unique identity, but rather several that correspond to a membership in a certain group (Eckel and Grossman, 2005). SIT deals with the concept of social identity as opposed to personal identity. Personal Identity refers to the characteristics that are unique and individual to one's self. Social Identity however refers to characteristics that the self shares with a certain group.

- Social identity (SIT) as an individual's process

Ellemers and Haslam (2012) divide social identity theory in three main processes. These are the psychological processes, the socio-structural characteristics and identity management strategies.

The psychological process explains how the personal identity is different from the social identity. This process consists of three sub-processes: (1) Social categorization, where individuals from the same group are believed to share some common characteristics that outgroup members do not share (Tajfel, 1978); (2) Social comparison, where an individual evaluate and compare the characteristics of a certain group with respect to characteristics of other groups; and (3) Social identification, where a certain individual identifies groups he or she can relate with. It is important here that not only the cognitive process of knowing one can be part of the group, but also the emotional significance for the individual of being part of the group plays a role (Chen & Li, 2009; Tajfel, 1974, 1978). Therefore, an individual can be a member of multiple groups with not all group memberships reflecting equally on the self. The higher the group identity the more the individual will act and think in accordance with the group (van Knippenberg, 2003). According with Ashforth and Mael (1989), the level of an individual's identification with the groups depends on: (1) The individual needs to feel intertwined with the fate of the group; (2) The individual needs to experience success and failure of the group personally; (3) The individual can disagree with the overall prevailing group and still feels group identity towards the sub-group he is associated with; and (4) The individual needs to have the desire to be like the group and its members to identify with it.

The social structure of the group determines which strategy individuals will use to keep or enhance their social identity. The social structure is strictly subjective, which means that each person may have a different view on the structure of the same group. Groups can be perceived to be impermeable, which means that the individual feels that he or she cannot act outside of the boundaries of the group. This implies that the member of the group feels incapable of leaving the group. The stability of the group status refers to the characteristics of the group. Some of these characteristics are seen as fluid and changeable whereas other aspects are believed to be static and unchangeable. While the first two characteristics deal with the opportunity to change within the social structure, the last characteristic deals with the motivation to change (Ellemers & Haslam, 2012).

Given a social structure an individual has 3 possible identity management strategies to maintain or increase his social identity: (1) Individual mobility, where the individual will highlight how he himself is different from the group and with that leave the group in order to increase his own social identity and leaving the status of the group unchanged (permeable group); (2) Social creativity (impermeable group), where the individual redefines the identity of the group by highlighting group positive features, by comparing with worse groups, and by trying to change the whole meaning of the group, inventing a more positive identity; and (3) Social competition (impermeable group), group members try to change the whole status quo of the group. Social competition includes some form of collective action that orients towards a change of the group status (Ellemers & Haslam, 2012).

A core notion of SIT, is that the group membership reflects the self and with that the group status reflects the individual status. And as individual status is evaluated through individual comparison, group status is evaluated through group comparison. A group with higher status reflects better on his members. That is why SIT proposes that individuals strive for a positive social identity (van Knippenberg, 2003).

- Objective and main research question of paper

This research deals with the problem of participation that many smallholder organisations face. Social identity is assumed to play a role in overcoming this problem. In this paper we provide an experimental design where the research focus is on pepper producers associated and not-associated with the pepper association. By manipulating the social identity variable we can assess to what degree social identity is influencing the participation of the individual in the association. This will be done through a proxy.

In this sense, our main research question is: “Does group identity influence farmer’s participation in the association?” Our main hypothesis is:

“Members will participate more than non-members of the association regardless their treatment. And the form of social identity treatment will play a role in their participation.

When the social identity is increased through the treatment, participants will also participate more in the association”.

III. Methods, and data

- Data collection (sample selection)

The participants of this research are 50 active pepper farmers, which are located in 25 households in the settlement of El Roble, Costa Rica, of which 22 are members of the association and the other 28 are not. These 50 people, participated in a survey. The survey consisted of a household questionnaire an individual questionnaire and an experiment. The household questionnaire included several household specific characteristics, such as household size, income from pepper production or size of pepper plots. This questionnaire was conducted only once per family. The individual questionnaire consisted of personal characteristics, such as gender and age, as well as a social identity questionnaire and a trust questionnaire. The experiment consisted of a dictator and a trust game, with two rounds each. The first round was played, with a non-member of the association as an opponent. The second round was played with a member of the association as an opponent. Participants were divided into two groups of equal size. One group faced a treatment to strengthen their identity feeling towards the pepper association, the other group faced a treatment to strengthen their individuality. These treatments are given, regardless whether the participant is a member of the pepper association or not.

The participants were between 18 and 78 years old, with an average of 47 years. 56 percent were male, while 44 percent were female. These 50 people were located in 25 different households.

According to estimation there are around 100 to 150 households in the settlement. Of these households 25 are active in pepper farming, to our knowledge. To gather information on possible participants a list of the association that listed all the members of the association was obtained. Additionally the secretary of the association provided names of pepper farmers that were not part of the association. After that a snowballing method was used.

- Experiment(s) design (treatments)

Next to a general questionnaire each participant receives a treatment followed by the experiment. The treatment was given at the end of the individual questionnaire. For the treatment each participant received 4 questions, in which he either had to state his uniqueness (individuality treatment) or stress his similarity with the association members (group treatment). The treatment was done to increase or decrease the amount of social identity towards the association. Treatment was alternated between participants, not

between families. Participants within the same family faced different treatments. In total four distinctive situations arose. These were:

- o Members of the association facing group identity treatment
- o Members of the association facing individual treatment
- o Non-members of association facing group identity treatment
- o Non-members of the association facing individual treatment

The treatment was developed in accordance with the treatment from Haslam et al. (1999).

After the treatment people handed in their questionnaire and continued with the experiment. The experiments were called games and participants played two different games, the dictator game and the trust game. These games need two players to be played. In the first round of each game, the participant played with an opponent that was not a member of the pepper association. In the second round of each game, the same game was played, just that this time the opponent was a member of the pepper association. This means that each participant played a total of four games. Participants played individually and were matched up after playing, to insure anonymity of the players.

The dictator game is divided into two rounds. In each round the participant divides money between himself and the second player. Each game is separate and as the name suggest the first player has total power about the decision. The participant (first player) decides how much, if any, money he attributes to the other player. This other player is different in both rounds. For both rounds of the game participants received 3.000 Colons. In current exchange rate that equals to around \$6. In terms of purchase power parity 3.000 Colons equates around \$8.20². These 3.000 Colons each player received in two 1.000 Colon bills and two coins of 500 Colons. Additionally to the money each participant received two envelopes in which he had to place the money. One of the envelopes was meant for himself, the other envelope was meant for the other player. Each round was over when the participant divided the total amount of money within the two envelopes.

The trust game in contrast to the dictator game is a two stage game. Participants receive the same amount of money again. In the first part of the game they will distribute this amount of money between themselves and another player. This time the money the second player receives is tripled. At the second stage this second player has the opportunity to return none, some or all of the money to the first player.

At the end of the experiment each participant received the money he or she attributed to him or herself. The money the participant attributed to the other players, was distributed at a later stage. Each player received money twice. Once immediately after he played the games and once later after around a week. The money, the participant received later, was the money that other players attributed to the participant. Each participant would give and

² <http://data.worldbank.org/indicator/PA.NUS.PPP>

receive money from four players. Two of them members of the association and two of them non-members of the association.

IV. Results

- Descriptive statistics

The 50 participants were located in 25 different households. In each household 1 to 4 people were interviewed with an average of 2 people per household. Each household consisted of 1-8 people with an average of 3.5 and a standard deviation of 1.5 people per household.

For 80 percent of the households agriculture is their main source of income. The other sources were employment in agriculture (12 percent) and non-agricultural employment (8 percent). The income of pepper production ranged from no income, to more than an amount equivalent to 4000 dollars per year, which is around 330 dollars per month. Generally speaking these amounts of income are rather low, while pepper was certainly not always the only source of income, for a lot of the households it was the major source of income. To put these amounts in perspective, the GDP per capita in Costa Rica was 10.185 dollar in 2013. 34.4 percent of the Costa Rican population live in rural areas, of these 34.4 percent 26.5 percent live below the country's poverty line compared to only 17.9 in the urban areas. However the people living below the 1.25 dollar poverty line were only 3.1 percent in 2009, newer data were not available³. While the majority of poor people in Costa Rica live in the rural areas, in the international comparison most of these people are still above the poverty line of 1.25 dollar a day.

The experience of pepper farming ranged from new pepper farmers with only 1.25 years of experience, to pepper farmers that have been farming pepper for all their lives (40 years of experience). The average experience with pepper farming is 13 years with a standard deviation of 8.7 years. While pepper seems to be an important source of income only 24 percent are employing workers to help with the harvest and maintenance of the pepper. It is mostly done through family labor. As the wage per hour in pepper production is around 2 Dollars and the reported income from pepper is relatively low, it is logical that people do not employ workers but rely on free family labor.

Observing the association it could be discover, that the social status of the association is generally perceived low. The association has experienced a strong decline in membership and activity. Currently only a handful of members participate actively, almost all of them are part of the board of the association. While 80 percent⁴ indicate that they would like to work with the association in the future, this was often connected to the desire of change

³ <http://data.worldbank.org/indicator/SI.POV.DDAY/countries/CR-XJ-XT?display=graph>

⁴ This question was part of the questionnaire

within the organization. Participants often stated the importance of the association, as did they state their dissatisfaction with the current board of the association.

- Social Identity

To measure social Identity, 19 statements were presented to each interviewee. Each statement was answered on a 6-point-likert scale ranging from strongly disagree to strongly agree. A mid-point was deliberately avoided. As with a midpoint a risk of social desirability bias is faced. People tend to give the answer they see as socially acceptable. Choosing the neutral midpoint when they otherwise would choose to disagree (Garland, 1991).

For the social identity part, two different sources were used in the development of the questionnaire (Ellemers et al., 1999; Hinkle et al., 1989). Hinkle et al. (1989) set up a general Social Identity Measure, while Ellemers et al. (1999) distinguished between three different types of Social identity. The three groups of social identity are self-categorization, group self-esteem and commitment to the group. For this research the 9 items to measure social identity from Hinkle et al. (1989) and the 10 items of Ellemers et al. (1999) were combined and a total of 19 items was used.

Members are believed to have a higher group identity towards their group than non-members (Tajfel, 1974), that is why an independent sample t-test was performed grouping the four variables for membership. The four variables consist of the three factors from Ellemers et al. (1999) and the factor from Hinkle et al. (1989). As we can see in Table 1, members have a significantly higher level of group identity than non-members.

<Insert Table 1 here>

- Games

The last section of the descriptive statistics, deals with the Dictator and Trust Game. The first round of each game was played with a non-member of the association as an opponent and the second round was played with an association member as an opponent. For each round each participants received 3.000 colons. The money could not be divided continuously, but in steps of 500.

This section examines the outcomes of the two rounds of the Dictator Game in the light of membership and treatment. The findings are summarized in Table 2. When participants played with a non-members of the association an average of 1684 colons (56 %) were kept and 1316 colons (44 %) were given away to the other player. In the second round when the opponent was a member of the association 1694 colons (56 %) were kept and 1306 colons (44 %) were given away, which is slightly less. This means that on average the participants gave the same to members and non-members.

<Insert Table 2 here>

When looking at members and non-members separately, one can find that members in general were giving more money away than non-members only taking membership into account. To see whether that assumption was true an independent t-test was carried out. That was significant at a 5 percent significance level, it does not matter whether the receiving player was a member or a non-member of the association. Members gave on average 48 per cent to non-members and members alike, while non-members only gave 41 per cent to non-members and 40 per cent to members.

If treatment is taken into account it can be said that participants that received group treatment significantly, on a five percent level, gave away more money. This can be observed no matter whether they are giving to a non-member or a member of the association. On average they gave away 50 per cent of the money they received. Participants that received the Individual treatment gave away 38 per cent on average to non-members and 37 per cent to members.

However, when taking both membership and treatment into account different results are obtained. The game was played with members and non-members as the first player as well as with members and non-members as the second player. It can be observed that the members give away more money than non-members for both treatment groups. It can also be seen that participants that received the group treatment generally gave more than participants that received the individual treatment no matter if they were members or non-members.

It is observable that the manipulation of the social identity variable through the treatment had an effect on the outcomes of the Dictator Game. That is an interesting preliminary result, which will be further examined in the analysis.

- Trust Game

The trust game can be divided in two distinct parts. The first part, which is most important here, is the part where the participants trust money to another player. The second part deals with the amount that the second player returns to the first player.

In the first round of the trust game with a non-member of the association as an opponent, participants on average kept 1694 colons (56 %) and gave 1306 colons (44 %) away. In the second round, when the opponent was a member of the association participants kept 1745 colons (58 %) and gave away 1255 colons (42 %) on average. This means that non-members on average received more than members. All findings are summarized in Table 3.

<Insert Table 3 here>

When taking membership into account, it can be observed that members and non-members give approximately the same amount of money to non-members. When the opponent is a member, members give significantly more than non-members. This is significant at a five

percent significance level. The general trend is that non-members give more to other non-members while members give more to other members, while in general members give more in comparison to the non-members also if it is to a non-member.

Taking treatment into account, there is a significant difference between participants that received group treatment and participants that received individual treatment in the first round of the trust game, with a non-member as an opponent. Participants that received group treatment gave on average significantly (at ten percent level) more to non-members than participants that received individual treatment. In the second round, when having a member of the association as a second player, the difference between group and individual treatment is very small and not significant.

When looking at both treatment and membership, it can be observed that there are very distinct outcomes for both rounds of the game. In the first round of the game, with a non-member of the association as a second player, treatment seems to have a large effect, while membership seems to be unimportant. In the second round of the trust game, with a member as a second player, membership seems to be more important than treatment.

It can also be observed that participants were most generous with their own group. Members trusted more money to members than to non-members and non-members trusted more money to other non-members than to members. When receiving group treatment, members trusted more money to other members than they did when receiving individual treatment, the same happens to non-members as well. They also give away more money to other non-members when they receive group treatment and less when they receive individual treatment.

- Games results (linear regression)

In this section, linear regression results are displayed. In this analysis we present four different regressions. For each outcome of the games one regression is done. The sample size is small, however as it was a census, the sample size could not have been increased. For each outcome, several regressions are done. For the dictator games, gender and treatment are always used and combined with the social identity variables. Those are membership, self-categorization, group self-esteem, commitment to the group and group identification scale. These variables are not used simultaneously as they are highly correlated to each other. The results for the first round of the dictator game with a non-member as an opponent are displayed in table 4.

<Insert Table 4 here>

As shown in the table, gender and treatment are always significant. This means that women give significantly more than men and participants that receive group identity treatment give significantly more than participants that received individual treatment. From the social identity variable it can be observed that only commitment to the group is significant.

For the second regression (table 5), the dictator game with a member as the second player, again, treatment and gender are always significant. This time group self-esteem is the only significant variable from the social identity variables.

<Insert Table 5 here>

Concerning the trust game, only the regression with a non-member of the association is displayed in table 6, as for the regression with the member of the association as a second player, the model fit was not sufficient. Generally for the trust game only gender was significant.

<Insert Table 6 here>

- Analysis and discussion

Concerning the literature, the findings from Eckel and Grossman (2005) can be confirmed. Also in our case, the participants did not only act out of their self-interest., which could be defined as maximizing the amount (returning) to themselves as individuals. In this study participants were not obliged to give any money away. They were anonymous, which means that the second player did not know who was giving him or her the money, so essentially there was no obligation to give out any of the money. However the average amount of money given away is 44 percent.

A very interesting finding of this research is the non-significance of the membership variable as came out of the regression analysis. A great variety of research in social identity theory is based on the distinction between members of one group and members of another group (Charness et al., 2006; Chen & Li, 2009; Eckel & Grossman, 2005). In all of these papers the membership variable is significant and the main reason for the alteration of behaviour. However, within this research only some social identity variables were significant and not the membership variable. Indicating that it was not the membership but the social identity that influenced the behaviour of the participants. This could be due to the fact that we deal with members and non-members rather than with two different groups of members.

Another interesting point that could be observed in this study is that participants that received group treatment give away more money in the dictator game. They gave away more money than participants that received individual treatment. This itself is not that astonishing, however in this case people did not only give more money to members of the association, but to non-members as well. As the social identity treatment was meant to increase the social identity towards the association, it is reasonable to assume that the amount of money given to a member of the association would increase with the group

treatment. However the group treatment increased overall reciprocity. People just generally gave more and that is an interesting finding.

It is also fascinating that for the dictator game, the social identity variables did play a significant role. Those however were different for the first and second round of the game. For the first round the dictator game, where the second player was a non-member of the association the social identity variable commitment to the group, was significant. For the second round of the dictator game, where the second player was a member of the association the social identity variable group self-esteem was significant. This means that commitment to the group plays a role in the relationship between participants and non-members, while group self-esteem played a role between participants and members of the association. Participants that rated their commitment to the association high, gave away significantly more money to non-members, while participants that rated the group self-esteem of the association high gave more to members.

V. Conclusions

This conclusions need to be looked at in the light of the limitations and strength of this research. In our view, the biggest limitation of this study is the size of the population. With only fifty participants our model is rather limited. However, the study population was naturally limited as only 14 members participated in the association. By including family members, the size could be slightly increased, but it was still very limited. It could additionally be argued that family members were not a good choice, as they did not directly participate in the association and might not have the same level of identification. However, as the results show, family members of members and of non-members of the association also scored significantly different, the same as the real members and non-members of the association. Which by itself is an interesting result of this study as well.

Another very important point to note is that we dealt with in and out-group members in this study. Usually when dealing with Social Identity people either belong to one or the other group. In this case they either belonged or did not belong to the group, this is obviously a difference in study design. Despite that it is very interesting that similar results than in previous studies could be obtained. In the set-up of the game it was decided to play the games individually rather than with two people.

Concerning future research it might be interesting to look closer into the distinction between members vs. non-members rather than members of one group against the members of another group. As in real life there are often situations where a person is a member of an organization and another person is not. It might for example be interesting to look at people that participate in a sport club versus people that do not participate in a

sport club. Instead of looking at two different sport clubs. Another interesting point is the different social identity items and how those relate to membership and non-membership.

Concluding, it can be said that this research dealt with the problem of participation that many smallholder organisations face. Social identity was assumed to play a role in overcoming the problem. This research shows that this is true in the case of the pepper association that this research dealt with. By manipulating the social identity variable it could be seen that social identity has an influence on the participation of the individual in the association. It is interesting to see that this effect was found for members and non-members alike. Additionally it was also found no matter who the second player was. Thus, in general, social identity was found to increase participation.

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Annex



Map 1: Part of the Northern Region of Costa Rica

Source: <http://costa-rica-guide.com/travel-map/northern-lowlands.html>

Table 1: Independent sample t-test

	Social Identity variables ⁵	Mean score (SD)	
		members	non-members
Hinkle et al. (1989)	Group identification scale***	3.75 (0.866)	2.33 (0.924)
	Group self-esteem**	3.62 (1.314)	2.80 (0.926)
Ellemers et al. (1999)	Self categorization***	3.35 (1.088)	2.05 (1.391)
	Commitment to the group***	3.746 (1.115)	2.60 (1.212)

Note *p<.10 **p<.05 ***p<.01

⁵The social identity variables are the mean of the scores for each item

Table 2: Average Outcomes Dictator Game

			Mean amount* given away to a non-member of the association (percentage)	Mean amount* given away to a member of the association (percentage)
	All participants	(N=49)	44	44
Membershi p	Non-members	(N=28)	41	40
	Members	(N=21)	48	48
Treatment	Group treatment	(N=25)	50	50
	Individual treatment	(N=24)	38	37
Members	Group treatment	(N=11)	53	56
	Individual treatment	(N=10)	42	40
Non- members	Group treatment	(N=14)	48	45
	Individual treatment	(N=14)	35	35

*Of total amount received (3000 colons)

Table 3: Average outcomes Trust Game

			Mean amount* given away to a non-member of the association (percentage)	Mean amount* given away to a member of the association (percentage)
	all participants	(N=49)	44	42
membershi p	non-members	(N=28)	43	39
	Members	(N=21)	44	46
treatment	group treatment	(N=25)	47	43
	individual treatment	(N=24)	40	40
Members	Group treatment	(N=11)	47	50
	Individual treatment	(N=10)	40	42
Non- members	Group treatment	(N=14)	48	38
	Individual treatment	(N=14)	39	39

*Of total amount received (3000 colons)

Table 4: Linear Regression of the Dictator Game with a non-member as a second player

	Dictator Game non-member (Y1) N=49	Dictator Game non-member (Y1) N=49	Dictator Game non-member (Y1) N=49	Dictator Game non-member (Y1) N=49	Dictator Game non-member (Y1) N=49
	R ² =0,285 R ² _{adjusted} =0,238	R ² =0,2742 R ² _{adjusted} =0,226	R ² =0,277 R ² _{adjusted} =0,229	R ² =0,278 R ² _{adjusted} =0,230	R ² =0,333 R ² _{adjusted} =0,288
Constant	947*** (106)	859*** (172)	844*** (175)	889*** (141)	696*** (166)
Gender	269** (122)	275** (122)	260** (124)	274** (122)	325*** (118)
Treatment	300** (120)	288** (122)	298** (121)	298** (121)	256** (118)
Membership	157 (118)				
Group Identification Scale		54 (52)			
Group self-esteem			57 (52)		
Self-categorization				48 (42)	
Commitment to the group					101** (44)

Note *p<.10 **p<.05 ***p<.01

Figures in brackets are standard deviations.

Table 5: Linear Regression of the Dictator Game with a member as a second player

	Dictator Game member (Y2) N=49	Dictator Game member (Y2) N=49	Dictator Game member (Y2) N=49	Dictator Game member (Y2) N=49	Dictator Game member (Y2) N=49
	R ² =0,300 R ² _{adjusted} =0,253	R ² =0,268 R ² _{adjusted} =0,219	R ² =0,297 R ² _{adjusted} =0,251	R ² =0,249 R ² _{adjusted} =0,199	R ² =0,264 R ² _{adjusted} =0,215
Constant	914*** (108)	830*** (177)	732*** (177)	955*** (147)	845*** (179)
Gender	236** (124)	248* (126)	217* (125)	257** (128)	280** (127)
Treatment	329*** (122)	314** (125)	310** (123)	326** (126)	306** (127)
Membership	220* (120)				
Group Identification Scale		61 (54)			
Group self-esteem			94* (52)		
Self-categorization				16 (44)	
Commitment to the group					49 (48)

Note *p<.10 **p<.05 ***p<.01

Figures in brackets are standard deviations.

Table 6: Linear Regression of the Trust Game with a non-member as a second player

	Trust Game non-member (Y ₃) N=49	Trust Game non-member (Y ₃) N=49	Trust Game non-member (Y ₃) N=49	Trust Game non-member (Y ₃) N=49	Trust Game non-member (Y ₃) N=49	Trust Game non-member (Y ₃) N=49
	R ² =0,189 R ² _{adjusted} =0,134	R ² =0,186 R ² _{adjusted} =0,132	R ² =0,198 R ² _{adjusted} =0,144	R ² =0,203 R ² _{adjusted} =0,149	R ² =0,193 R ² _{adjusted} =0,140	R ² =0,188 R ² _{adjusted} =0,134
Constant	998*** (168)	1072*** (108)	1180*** (172)	1203*** (175)	1129*** (142)	1118*** (174)
Gender	314** (123)	313** (124)	320** (125)	334*** (124)	318** (123)	302** (124)
Treatment	149 (122)	151 (122)	161 (122)	160 (121)	152 (122)	160 (124)
Trust	30 (68)					
Membership		-35 (120)				
Group Identification Scale			-45 (52)			
Group self-esteem				-51 (52)		
Self-categorization					-29 (42)	
Commitment to the group						-19 (47)
Note *p<.10 **p<.05 ***p<.01						