

# RoSCAs in Africa: The Case of Egypt

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## Abstract

Rotating Savings and Credit Associations (RoSCAs) are informal lending groups widely found in many developing countries around the globe. This chapter studies the interest-free RoSCAs in Egypt and how it compares to other RoSCAs in Africa. In addition, this chapter examines religiosity and prosociality as possible motives for RoSCA participation using an economic experiment and a questionnaire. While religiosity is found to be correlated with RoSCA participation, prosociality is not.

**Keywords:** RoSCAs - informal savings- religiosity - social preferences - SVO - prosociality

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# 1 Introduction

Rotating Savings and Credit Associations (hereafter RoSCAs) are informal financial institutions widely found in most developing countries, especially in Africa (Aliber, 2001; Anderson and Baland, 2002; Bouman, 1995; Etang, Fielding, and Knowles, 2011; Gugerty, 2007). RoSCAs, however, have different local names depending on the society they are operating in. For example, RoSCAs are named ‘Stokvel’ in South Africa (Aliber, 2001), ‘ma rounds’ in Zimbabwe (Chamlee-Wright, 2002), ‘tontines’ in Cameroon (Bouman, 1995), and ‘gam’ya’ in Egypt (El-Gamal, El-Komi, Karlan, and Osman, 2014). Because RoSCAs are informal, there are no written regulations or contracts, and consequently they vary considerably across societies in their structure and operations depending on the social norms and the unwritten agreements among its participants (Gugerty, 2007). However, the basic function of RoSCAs remains the same, that is, RoSCAs offer an organizational design through which a group of people meets on fixed time intervals to contribute a certain sum to a ‘pot’. This pot is then given to one member of the group at a time and the cycle continues until each contributor receives the pot once (Dagnelie and Lemay-Boucher, 2012; Gugerty, 2007).

RoSCAs play a very important role in their communities. They facilitate resource mobilisation among households with middle to low income (Waweru, 2011), fill the gap left behind by the formal credit market (Etang, et al., 2011, Guha and Gupta, 2005), help women organise the household money in case of conflicts with their partners (Anderson and Baland, 2002), and help women’s entrepreneurial and productive activities (Chamlee-Wright, 2002). Furthermore, RoSCAs are believed to help their participants to commit to savings (Aliber, 2001; Ambec and Treich, 2007; Dagnelie and Lemay-Boucher, 2012; Gugerty, 2007; Tanaka, et al., 2010). In a nutshell, RoSCAs provide savings and credit services to its participants. The nature of the service provided, being saving or borrowing, depends on when the individual gets the pot money in a RoSCA cycle. All but the last receiver of the pot in a given cycle are borrowers. The size of the loan and the repayment period depend also on when the pot is received. The earlier an individual gets the pot, the bigger is the loan size and the longer is the repayment period. The last receiver of the pot is only a saver.

The pot allocation mechanism differs depending on the RoSCA type. In a *random* RoSCA, the pot is allocated by a lottery draw in every periodical meeting excluding those

who have already received the pot once (Klonner, 2008). In a *fixed/discrete* RoSCA, the pot is allocated through a predetermined order agreed upon before the cycle begins. Fixed/discrete RoSCAs are commonly found in Africa such as in Benin (Dagnelie and Lemay-Boucher, 2012), in Kenya (Anderson and Baland, 2002), and in Egypt (Al Ajlouni, 2018). Lastly, the pot can be allocated through an auction (*bidding* RoSCA) such as in India (Klonner, 2008) and in the south of Vietnam (Tanaka, Camerer, and Nguyen, 2010). Bidding RoSCA provides interest on RoSCA loans, but the fixed RoSCA, which is the most common RoSCA type in Africa, is interest free. A question that begs explanation then, is why would someone save in a RoSCA when it pays no interest?

Literature on fixed RoSCAs argues that the interest-free institution is popular because of individuals' religious views against bank interest among Muslim populations (Al Ajlouni, 2018; El-Gamal et al., 2014). Another strand of literature emphasizes the social aspect of RoSCAs where the need to help close kinships derives the participation in RoSCAs (Ntamazeze, 2014; Peterlechner, 2009; Aliber, 2001; Adams, 1995). One way to define individuals' willingness to help others is to look into their social preferences and correlate them with RoSCA participation.

This chapter contributes to the RoSCA literature by examining how religiosity and prosociality correlate with RoSCA participation in a sample of university employees and students in Cairo, Egypt, where fixed RoSCAs are popular. The chapter employs an incentivized economic experiment and a questionnaire to empirically examine RoSCA participation motivations. The experiment elicits individuals' Social Value Orientation (SVO) developed by Murphy, Ackermann, and Handgraaf (2011). This study is, thus, the first, to the best of the author's knowledge, to quantify social preferences and correlate them to RoSCA participation. Furthermore, the experiment elicits trust levels among the respondents and examines if trust correlates with RoSCA participation and/or the timing of receiving the RoSCA pot.

The rest of the chapter is organised as follows. Section 2 provides a background on RoSCAs in Egypt. Section 3 describes the data and the RoSCAs in the sample. Section 4 examines the relationship between RoSCA participation and social preferences. Section 5 examines the importance of trust for RoSCAs and section 6 concludes.

## 2 RoSCAs in Egypt: A Background

A RoSCA in Egypt is called *gam'ya*; a literal English translation is ‘Society’. RoSCAs prevail in rural and urban Egypt since as early as the beginning of the 20th century (Ardenner, 1964) and remain popular despite the relative development of the formal financial market (El-Gamal et al., 2014). Furthermore, the RoSCA tradition has been extended from Egypt to neighbouring Arab countries (Al Ajlouni, 2018). RoSCAs in Egypt are fixed. The pot is allocated by negotiations, consensus or set by the RoSCA manager (the one who organizes the meetings), and the pot size is always equal to the amount of the periodic contributions multiplied by the number of periods that define the RoSCA cycle. Consequently no interest on the pot money is accumulated or paid (Mohieldin and Wright, 2000). El-Gamal et al.(2014) argue further that random and bidding RoSCAs are considered gambling by Muslims and thus are prohibited.

While RoSCAs are considered the most widely prevalent means of informal financing in Egypt (Mohieldin and Wright, 2000), empirical economic literature on its functioning and the individuals’ perceptions about it is very scarce. A relatively early empirical study was carried out by Baydas et al. (1995) via interviewing employees of a special agricultural bank in its Cairo and Suez (north of Cairo) branches. By interviewing 2,320 employees, Baydas et al. (1995) were able to identify 51 separate RoSCA groups with a size ranging from 10 to 150 members, all having access to formal banking. When asked about their motives to participate in a RoSCA, 51% of the interviewed RoSCA participants cited helping others in need as the main reason for participation while only 10% cited savings as the main motive (Baydas, et al., 1995). These findings are more in line with the social preferences argument and less in support with the savings argument.

More recently, in a study of 204 employees, who were identified as RoSCA participants, in Helwan, Cairo, Al Ajlouni (2018) found that 52% of the sample were motivated by an immediate shortage of cash as the main incentive for RoSCA participation, in comparison to only 10% who cited saving as the main reason for participation. Furthermore, Al Ajlouni (2018) argues that the popularity of RoSCAs in Egypt is due to strong religious views against bank interest. The study documents that 58% and 60% of the sample had religious concerns over bank-interest on savings and loans, respectively (Al Ajlouni, 2018). The current study, however, examines this argument in the following section.

### 3 Data Description and RoSCA Characteristics

This study employs novel primary data collected in November 2017 at a private university in Cairo, Egypt. Participants were recruited through on-campus brochures and e-mail invitations that were sent to all employees and students at the British University of Egypt (BUE). All participants voluntarily came to a computer laboratory at the BUE where they completed a computerized questionnaire. The sample is composed of 239 (48% females) employees and 71 (59% females) students. The composition of the sample provides representative variation in socio-economic characteristics given that the employees are academics (50%), administrators (33%), and blue-collar workers (17%).

RoSCA participation was reported by both employees and students, and by both males and females. Among the employees in the sample, 56% were RoSCA participants during the time of, or the year preceding, the questionnaire. In addition, 35% of the students reported that they usually participate in RoSCAs, especially if they want to buy an expensive item. While the empirical literature on RoSCAs document that RoSCAs are predominantly popular among women (e.g. Anderson and Baland, 2002; Chamlee-Wright, 2002; Gugerty, 2007), a high incidence of RoSCA participation by men was found in the sample. This is especially true for the employee subsample where 53% of RoSCA participants are men in comparison to 36% of the student subsample. Furthermore, only 26% of RoSCA participants reported that the RoSCA group they are part of consists mainly of women compared to 13% who said that their group consists of mostly men. This finding is in line with Baydas et al. (1995)’s findings from Egypt where 55% of the participants in their sample were women participating in mixed-gender RoSCAs, and with Degnelie and Lemay-Boucher (2012)’s findings from Benin of no significant differences across genders in RoSCA participation.

Among the employee RoSCA participants in the sample, the majority (69%) allocate up to a quarter of their monthly income to RoSCA contributions, while 31% of the RoSCA participants allocate half or more of their incomes in the RoSCA monthly pots.<sup>1</sup> The average monthly contribution in a RoSCA by employee participants in the sample amounts to EGP 1,622 (equivalent to around 90 USD at the time of the questionnaire) where monthly contributions range from EGP 100 (around 6 USD) to EGP 6,000 (around 336 USD). The average RoSCA cycle’s length is 14 months, where the shortest cycle

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1. Undergraduate students in Egypt do not usually earn labor income.

reported is 4 months and the longest is 60 months. This is equivalent to an average pot size of EGP 22,708 (around 1,270 USD) that is earned by one participant at a time.

Almost 66% of the employees who participate in RoSCAs cited saving or investment (including human capital acquisition) as the main incentive for joining RoSCAs in contrast to student RoSCA participants where 76% reported that they use the RoSCA money for luxuries spending purposes. The finding on the employees subsample contradicts the findings of Mohieldin and Wright (2000) that spending for consumption purposes is the primary motive for RoSCA participation, followed by saving and investment purposes. This is also the case in comparison with Al Ajlouni (2018)'s results of 52% of participants were in need for immediate cash. This contradiction in results may be a matter of the representativeness of the respective samples. Unlike in Mohieldin and Wright, this study is conducted in the city rather than in the countryside. Furthermore, the current study employs a sample with more diverse socio-economic background than that reported by Al Ajlouni.

RoSCA participation is mainly reported in this study, by young individuals where the majority of RoSCA participants (72%) are under the age of 35. The participation by the relatively younger individuals in the sample may be correlated with the RoSCA pot usage; young individuals in their early career focus on saving, investments, and education to secure their future.

Since RoSCAs are informal, and sometimes described as primitive, they are regarded as credit institutions that primarily serve the poor who do not have access to formal banking or credit markets (Chiteji, 2002). The current dataset does not provide data on income, but since the employees in the sample are subject to a strict university salary structure, job category (i.e. academic, administrative, or blue-collar) can be used as a proxy for an individual's monthly salary. The highest salaries are earned by academic staff members, whereas the blue-collar workers earn the lowest salaries. RoSCA participation is therefore expected to be highest among blue-collar workers and lowest among academics. The data confirms this expectation, as shown in Figure 1, where the percentage of RoSCA participants in every job type is inversely correlated with the relative salary. These differences in RoSCA participation percentages per job type are statistically significant (Chi-square p-value = 0.002).

Although blue-collar workers are found to have a high likelihood of RoSCA partic-

ipation, administrative and academic employees are also observed to be very likely to join the informal groups of RoSCAs. This means that even with formal employment and perfect access to the formal banking sector, RoSCAs remain popular. This is in line with Mohieldin and Wright (2000)’s argument that many individuals in Egypt are active participants in both the formal and informal markets.

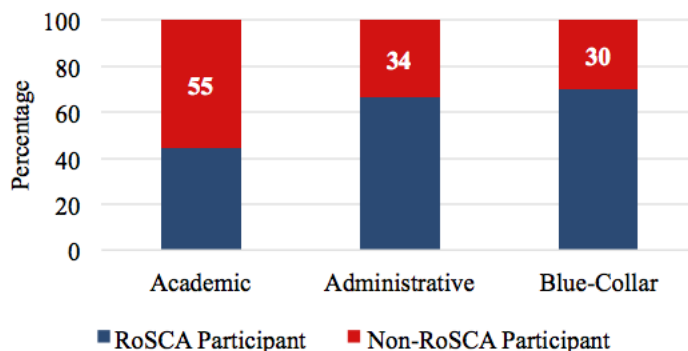


Figure 1 – Percentage of RoSCA and Non-RoSCA Participants by Job Type

To understand the popularity of an informal group over formal banks, one should ask if individuals with different socio-economic characteristics have different incentives to join the RoSCA. Figure 2 presents the percentages of employee RoSCA participants using the pot money for saving/investment versus spending per job category. Academics, being the most privileged in the sample, mostly use the money to save (47%) or invest (23%), including investing in their education. Administrative staff, who earn the second highest income at the university, also report a high percentage of individuals allocating the RoSCA money to savings (34%) and investment (32%) versus 34% who use the money to make purchases or finance holidays. Surprisingly, this pattern of higher savings/investments versus spending also prevails among blue-collar workers, who either have low or no access to the formal banking, except for some very limited savings and credit options provided by the public sector. A quarter of the blue-collar RoSCA participants use the pot money to save, while 18% use the money to finance their own or their children’s education. The insignificant differences in using the RoSCA pot for saving and investment among all job types (Chi-square p-value = 0.495) recommends that the savings/investments incentive in Egypt is much stronger than that stated in Al Ajlouni (2018), regardless of the participant income level.

The high percentages of RoSCA participants citing savings as the main incentive to

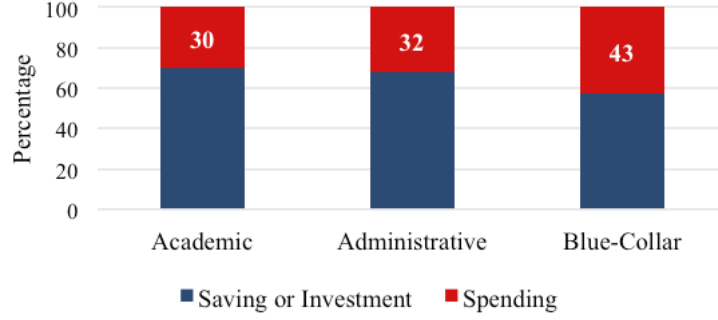


Figure 2 – Percentage of RoSCA Participation Incentive by Job Type

join RoSCAs begs explanation, especially that RoSCAs in Egypt pay no interest. Al Ajlouni (2018) argues that RoSCAs are popular in Egypt because of religious concerns about bank interest which drive individuals to save in a RoSCA rather than in a formal bank. The current study examines this argument by asking respondents about their views on bank interest and the results are shown in Table 1. As shown in the table, only 29.86% of RoSCA participants actively refrain from accepting bank interest because they believe it is forbidden by God, while another 11.11% believe it is forbidden, yet they accept it. These views on bank interest are not significantly different across employees and students nor across employees of different job classification.

While, non-RoSCA participants are, in general, significantly more accepting of the notion of bank interest than RoSCA participants as shown in Table 1, individuals with religious views against bank interest does not exceed one third of RoSCA participants in the sample. This means that the popularity of RoSCAs in Egypt cannot be solely justified by religiosity. But why would individuals save in interest-free RoSCAs when they do not mind receiving bank interest? A plausible incentive could be the desire to help others' in need which is discussed in the following section.

Table 1 – Views on Bank Interest by RoSCA Participation

| View on Bank Interest       | RoSCA Part. (%) | Non-RoSCA Part. (%) | Diff.   |
|-----------------------------|-----------------|---------------------|---------|
| Forbidden, cannot accept it | 29.86           | 20.48               | 9.38*   |
| Forbidden, may accept it    | 11.11           | 7.83                | 3.28    |
| Not forbidden               | 59.03           | 71.69               | 12.66** |
| Total                       | 100             | 100                 |         |

## 4 RoSCA Participation and Social Preferences

RoSCAs depend heavily on kinships and social connectedness for its sustainability and operation. This common observation led several scholars to justify the popularity of RoSCAs in developing countries by it being a means of solidarity among community members (e.g. Al Ajlouni, 2018; Aliber, 2001; Baydas, et al., 1995). In the absence of integrated financial market and solid social security net, those who have excess money join RoSCAs to help those who are in need for immediate cash. For example, a respondent to a questionnaire on RoSCAs in Rwanda cited “selfishness” as the driver for non-RoSCA participation, emphasizing the importance of pro-sociality in relation to RoSCA participation (Ntamazeze, 2014), and in Uganda, 100% of a sample of RoSCA participants said they believe being part of the group provides the feeling of solidarity between the members (Peterlechner, 2009). This section, thus, examines this argument by eliciting respondents’ social preferences and relating them to RoSCA participation.

Social preferences define how an individual prefer others’ benefit relative to one’s own benefit. This study measures social preferences through employing the Social Value Orientation (SVO) index developed by Murphy et al. (2011). The SVO index is measured via 6 decision tasks offered to respondents to decide on allocating various sums of money between oneself and some other anonymous random respondent in the laboratory (see Appendix A for details). At the end of the questionnaire, respondents were randomly matched into (anonymous) pairs and one of the decision tasks was randomly chosen by the computer. Respondents were then paid the amount of money as per the allocation indicated in the chosen decision task. Every respondent received an average of EGP 70 (around 4 USD) as an incentive for participating in the SVO tasks.

Murphy et al. (2011) divide social preferences into four main categories; (1) altruism, (2) pro-sociality, (3) individualism, and (4) competitiveness. An altruistic individual would maximise the payoffs of some other individual without paying much attention to own payoffs. This is an extreme form of social preferences and is totally at odds with the selfish profit-maximising economic agent in the neo-classical theory. In contrast, an individualistic (a typical economic agent) would care only about maximising one’s payoffs without paying attention to others’ payoffs. On the other hand, a prosocial individual is interested in maximising joint payoffs between oneself and some other individual, while a competitive individual cares about maximising the gap between one’s payoffs and the

payoffs of others (Murphy, et al., 2011).

Analysing the data from the current sample shows that the majority of respondents are prosocial (68%), whereas 30% of them are individualistic. The extreme types of altruism and competitiveness are rarely found in the sample (only 1% each). Figure 3 shows the breakdown of social preferences for the students, and the employees as categorized by their job.

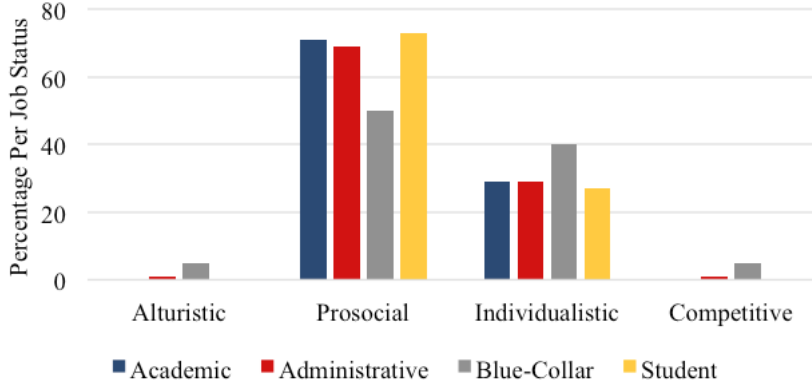


Figure 3 – Social Preferences in Percentages of Every Job Type

More than two thirds of students and academic and administrative employees are prosocial as shown in Figure 3 compared to 50% of blue-collar workers who are prosocial in addition to another 5% of them who are altruistic. However, the differences in prosociality are not statistically significant across the different groups based on job status.

The question now is how different RoSCA and non-RoSCA participants are with respect to prosociality. Unlike what the interviews-based studies on RoSCA suggest (e.g. Ntamazeze, 2014; Peterlechner, 2009), this study finds no significant differences in prosociality among RoSCA and non-RoSCA participants.<sup>2</sup> Prosociality, however, is found to be an important determinant of the RoSCA rank, conditional on RoSCA participation. Specifically, prosocial individuals are found to be more likely to receive the pot late in a RoSCA cycle.<sup>3</sup> This means that helping others in need is rewarding enough for prosocial individuals to forego interest on their savings. However, saving in a RoSCA is not riskless. There is a probability that early receivers of the pot default on their periodical contributions resulting in a loss for the savers in the RoSCA. Individuals, thus, need to be trusting of others to participate in RoSCAs, and this is what the next section examines.

2. Regression results are presented in Appendix C.

3. This applies only to the employees subsample for whom the data on the RoSCA rank is available.

## 5 RoSCA Participation and Trust

Although trust is considered a necessary condition for joining the informal group of RoSCA (Etang et al., 2011; Ito, 2003; Ntamazeze, 2014), empirical studies on this relationship are very limited. Ntamazeze (2014) provides a qualitative evidence from Rwanda that trust, as measured by how attached the RoSCA participants are to each other in terms of the social network, helps the RoSCA formation and sustainability, and consequently helps the individuals' well-being through the pot money. A closer study to the study at hand is that by Etang et al. (2011) who utilize an economic experiment to quantify trust and compare its levels among RoSCA and non-RoSCA participants in a rural village in Cameroon. They find that trust is significantly and positively correlated with RoSCA participation.

This study employs the trust game used by Etang et al. (2011) which was originally developed by Berg, Dickhaut, McCabe (1995). Respondents had to decide on how much money they would send, from an initial endowment provided by the researcher, to an anonymous peer in the laboratory. Whatever money they send would be tripled before reaching the receiver. The receiver would then decide on how much they were willing to send back to the sender. The higher the amount sent to the receiver, the stronger the trust is. The proportion of the money sent back by the receiver implies the level of trustworthiness. Every respondent made the decisions once as the initial sender and then as a receiver. The assignment of roles as sender or receiver and the pairing of the participants were done randomly via the computer, and only one decision per respondent counted towards a monetary reward (see Appendix B for details).

Around 48% of the respondents decided not to send any money, implying a low level of trust in the sample. The most untrusting group in the sample are the students where 58% of them sent nothing to an anonymous peer followed by blue collar workers among which 45% decided to send some money. The most trusting group in the sample are the administrative and the academic employees where 58% and 56% of the respective groups decided to send some money. On the other hand, every group sent back 53%, on average, of the money they received except for the students who returned an average of 45% of what they received, indicating a significantly (Mann-Whitney  $p$ -value = 0.023) lower level of trustworthiness among the students than the other groups in the sample.

Neither trust nor trustworthiness are significantly different among RoSCA and non-

RoSCA participants in the sample (Mann-Whitney  $p$ -value = 0.747 and  $p$ -value = 0.569; respectively), and for all job classifications. That is, the sample at hand does not provide any evidence that trust and trustworthiness are higher among RoSCA than non-RoSCA participants as found in Cameroon by Etang et al. (2011). Neither does the study find that trust is correlated with the RoSCA rank. However, the data shows a significant positive relationship between trust and the RoSCA pot size. Individuals who are more trusting put more money into the informal RoSCA pot.

While the result on trust and pot size is intuitive, the insignificant results on trust and RoSCA participation and rank are intriguing. In Etang et al. (2011) the respondents were members of the same RoSCA whereas the respondents for this study were not paired with individuals of their own RoSCAs but rather different people that they might not have met before. The insignificant results thus mean that RoSCA participants do not need to have universal trust in anonymous individuals to join the informal group, but rather they need to form coalitions of people in their close social network to exercise some form of reputational threat in case of default. In the current sample, 81% of RoSCA participants reported that they know at least some of the members of their RoSCA groups while the remaining 19% reported that they know only the RoSCA manager who serves as the guarantor of those unknown individuals. Trust among RoSCA members is thus created through some sort of guarantee, being it the ability to threaten other members' reputation or the RoSCA manager backing up any defaulting individual in the given RoSCA.

## 6 Conclusion

RoSCAs are widely prevalent informal saving and lending groups in Africa and other developing countries. This chapter studied the case of RoSCAs in Egypt using primary data collected from a sample of employees and students at the British University in Egypt (BUE). While RoSCAs are predominated by women in some African countries such as Kenya, no gender differences with respect to RoSCA participation was found in the Egyptian sample. Furthermore, RoSCAs are found to be popular among students, academics, administrators, and blue-collar workers at the BUE; many of whom primarily join RoSCAs for saving and investment purposes, especially for those with highest incomes in the sample. Using RoSCAs for saving is partially explained by religiosity where 30% of

the RoSCA participants in the sample reported refraining from accepting bank interest because they think it is prohibited by God. In comparison, such a view was reported by 20.5% of the Non-RoSCA participants.

Furthermore, prosociality has long been argued to be the reason why people in developing countries participate in RoSCAs. This chapter elicited individual social preferences for RoSCA and non-RoSCA participants. Despite the results showing high levels of prosociality in the sample, there are no significant differences in prosocial attitudes among RoSCA and non-RoSCA members. Nonetheless, prosocial RoSCA participants are more likely to accept a late rank in the RoSCA cycle, leaving the early positions in the cycle to others who presumably are in need for money. While one would expect the receiver of late RoSCA ranks to be also more trusting than others, the data does not lend support to this argument. This means that prosociality outweighs the potential interest earned on savings as well as the risk exposure for the late receivers of the RoSCA money.

In conclusion, RoSCAs are found to be popular in Egypt among individuals with different demographics and socio-economic characteristics. Religiosity can partially explain the motivation for RoSCA participation in Egypt, but further motivations proposed by the literature including the need to make a lumpy purchase (Besley et al., 1993), or the need for commitment (Gugerty, 2007) are yet to be tested.

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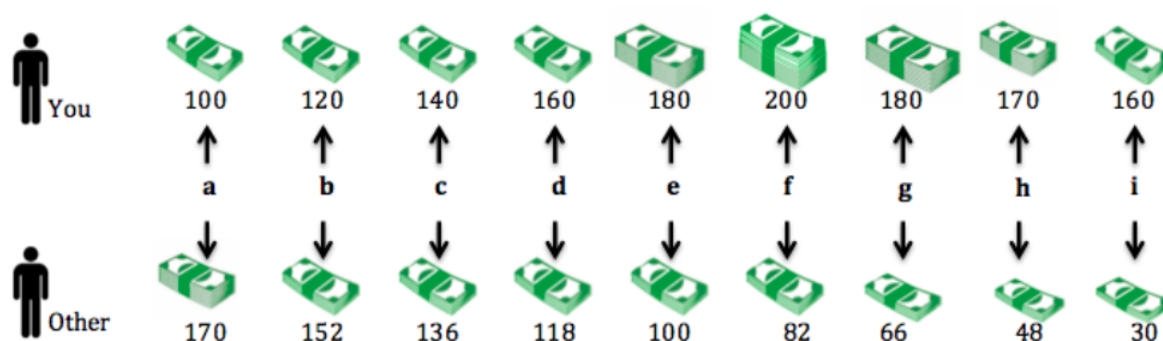
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# Appendix A: Social Preferences

## A1. SVO Instructions

In this section, you are randomly paired with another person, whom we will refer to as the “other”. This other person is someone you do not know and will remain mutually anonymous. You will be making a series of decisions about allocating points between you and this other person. Please read the following example:

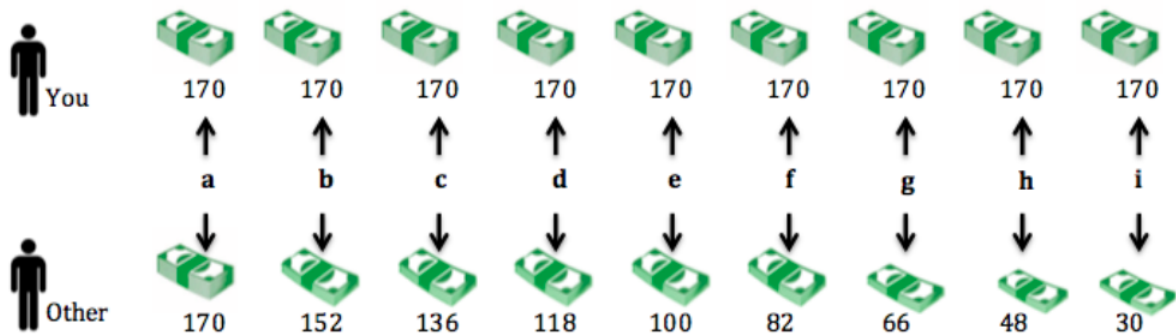
You are given the following possible allocations of points between you and some “other” person:



The upper row represents the potential points you can earn, while the lower row refers to the points the other person can earn. You can only choose one allocation from the given allocations. As you can see, your choices will influence both the amount of money you receive as well as the amount of money the other receives.

**In the following situations, please indicate your preferred allocation. Please note that ONLY ONE situation will be randomly selected for real payments by either you or the other person you are randomly paired with. This means there is a 50% chance none of your decisions is selected for payments and you only receive what the other person chose for you. Please treat every situation as if it is the situation that will be translated into real money.**

Given the following possible allocations of points between you and some “other” person:

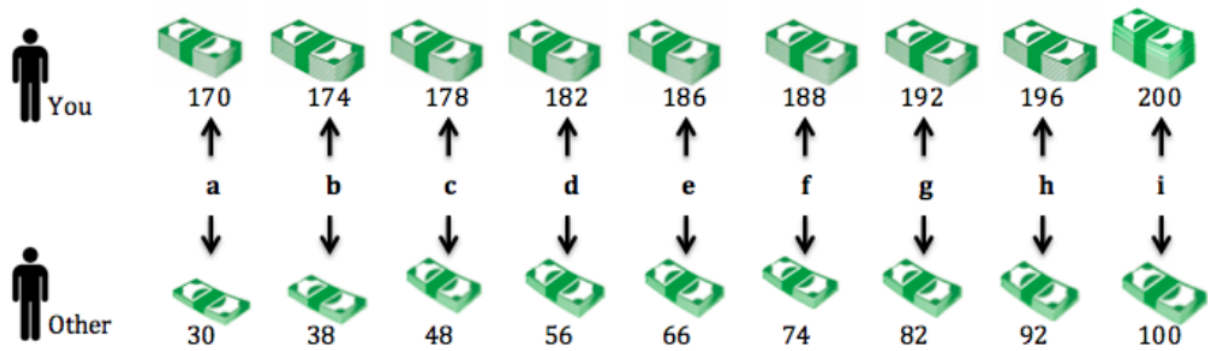


Which allocation do you prefer?

Please choose **only one** of the following:

- a
- b
- c
- d
- e
- f
- g
- h
- i

Given the following possible allocations of points between you and some “other” person:

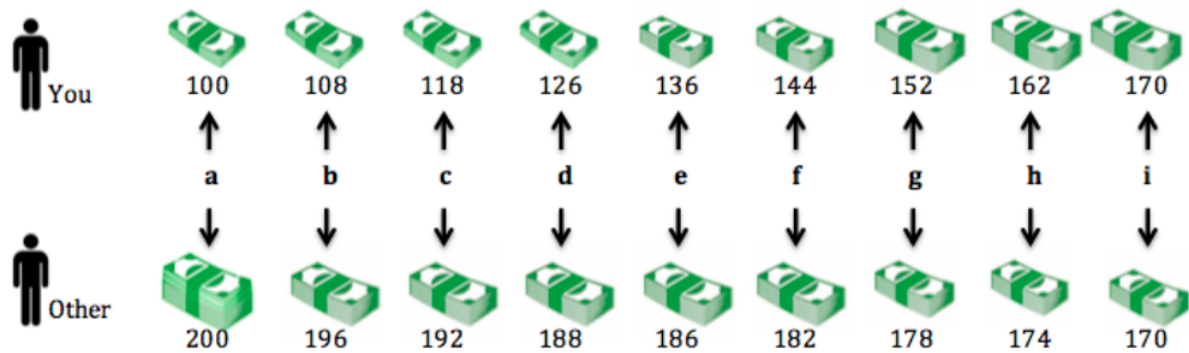


Which allocation do you prefer?

Please choose **only one** of the following:

- a
- b
- c
- d
- e
- f
- g
- h
- i

Given the following possible allocations of points between you and some “other” person:

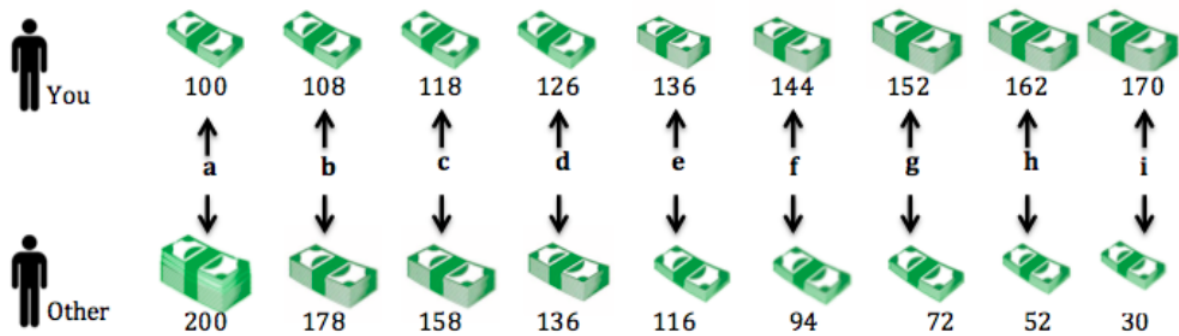


Which allocation do you prefer?

Please choose **only one** of the following:

- a
- b
- c
- d
- e
- f
- g
- h
- i

Given the following possible allocations of points between you and some “other” person:

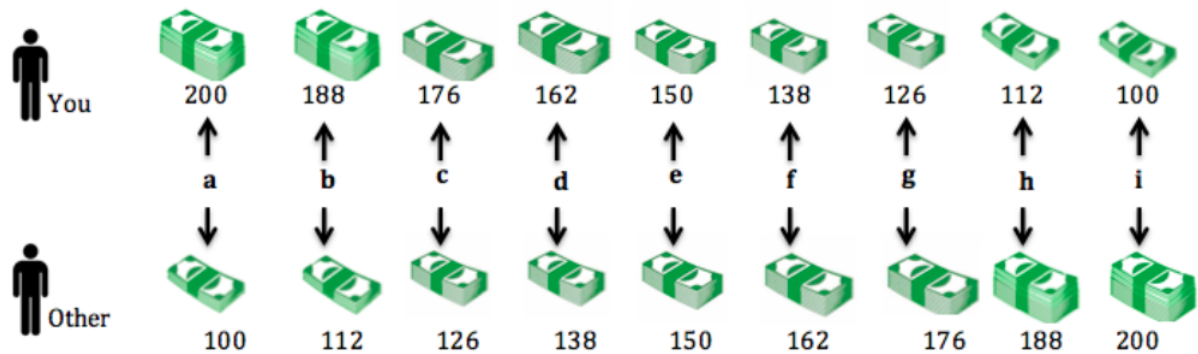


Which allocation do you prefer?

Please choose **only one** of the following:

- a
- b
- c
- d
- e
- f
- g
- h
- i

Given the following possible allocations of points between you and some “other” person:

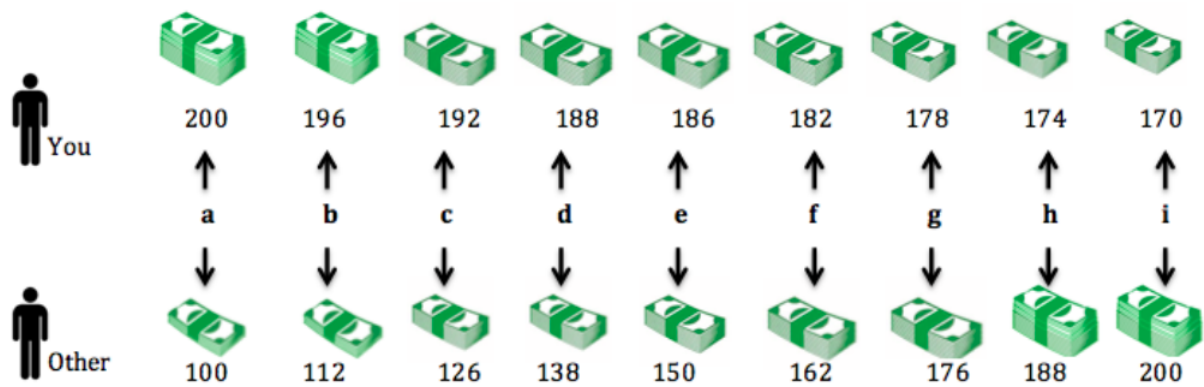


Which allocation do you prefer?

Please choose **only one** of the following:

- a
- b
- c
- d
- e
- f
- g
- h
- i

Given the following possible allocations of points between you and some “other” person:



Which allocation do you prefer?

Please choose **only one** of the following:

- a
- b
- c
- d
- e
- f
- g
- h
- i

## A2. SVO Measurement and Descriptives

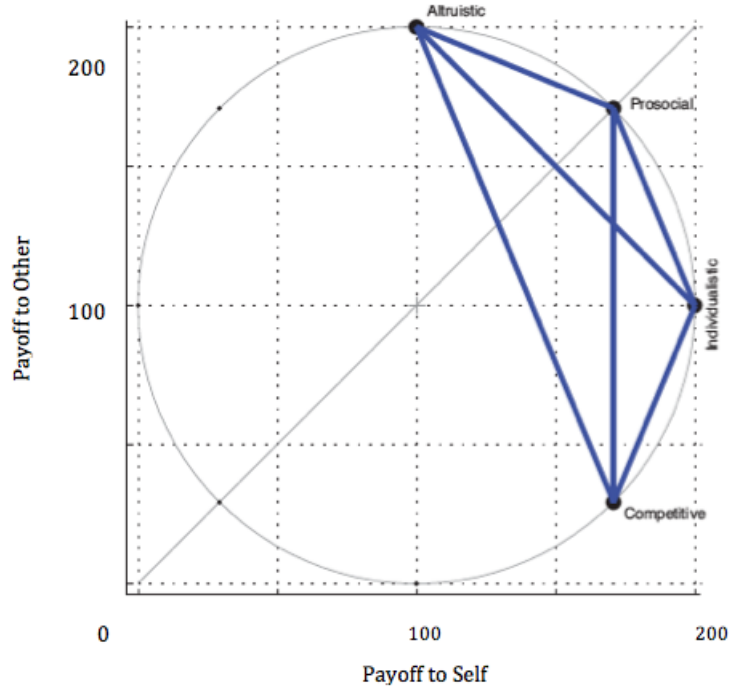


Figure 1A: Social Value Orientation Representation  
Source: Author's adaptation from Murphy et al. (2011).

According to Murphy et al. (2011), respondents choose the allocations that best represent their social preferences. Figure 1A shows how the chosen allocations relate to social preferences through calculating the angle of the respondent's position inside the circle. Specifically, the SVO angle is calculated using the following formula:

$$SVO^\circ = \arctan\left(\frac{(\text{Mean allocation to other} - 100)}{(\text{Mean allocation to self} - 100)}\right)$$

Social preferences are thus defined according to the resulting SVO angle as follows (Murphy et al., 2011):

- Altruists:  $SVO > 57.15^\circ$
- Prosocials:  $22.45^\circ < SVO < 57.15^\circ$
- Individualists:  $-12.04^\circ < SVO < 22.45^\circ$
- Competitive:  $SVO < -12.04^\circ$

Table 1A below provides the descriptive statistics for the SVO measure.

Table 1A: SVO Descriptive Statistics

| SVO            | N   | Mean  | St. Dev. | Min.   | Max.  |
|----------------|-----|-------|----------|--------|-------|
| SVO degree     | 310 | 27.19 | 14.47    | -16.26 | 62.95 |
| Altruists      | 310 | 0.01  | 0.10     | 0      | 1     |
| Prosocials     | 310 | 0.68  | 0.47     | 0      | 1     |
| Individualists | 310 | 0.30  | 0.46     | 0      | 1     |
| Competitives   | 310 | 0.01  | 0.10     | 0      | 1     |

## Appendix B: Trust and Trustworthiness

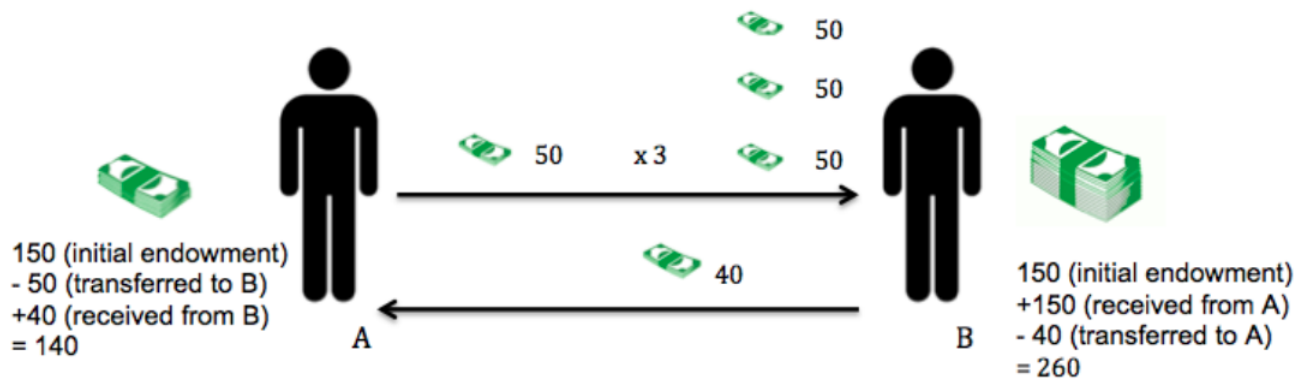
### B1. Trust Game Instructions

In this section, imagine yourself in a situation with any random person. Hence, there are two people (person A and person B).

#### Here are the rules:

Each person receives **150 points** to start with. Person A can give away a share of his points to person B (between 0 and 150 points). We will triple each point sent from person A and then give it to person B (hence if A gives 1 point to B, we will triple it and B receives 3 points. Person B can decide to return any part or all the points he receives.

Please read the following example:



First:

Person A gives person B 50 points. The 50 points are tripled and person B receives 150 points ( $50 * 3$ ). Person A now has 100 points and person B has 300 points.

Second:

Person B sends 40 points back to person A. A receives 40 additional points. Person A now has 140 points and person B has 260 points.

In the following situations, you are once taking the position of person A and another time person B. Please choose how you are going to behave in each situation. After all participants have completed the questionnaire, we will randomly select you and another participant either as person A or person B and pay you accordingly. Please note that **ONLY ONE** of the following situations will be randomly selected for real payments. Please treat every situation as if it is the situation that will be translated into real money.

**How will you behave if you are person A?**

**I give:**

Please choose **only one** of the following:

- 0 points (I then keep 150 points, person B has 150 points)
- 50 points (I then keep 100 points, person B has 300 points)
- 100 points (I then keep 50 points, person B has 450 points)
- 150 points (I then keep 0 points, person B has 600 points)

**How will you behave if you are person B?**

Please write your answer in the space given.

If I have 150 points (person A has transferred 0 points):

If I have 300 points (person A has transferred 50 points):

If I have 450 points (person A has transferred 100 points):

If I have 600 points (person A has transferred 150 points):

## B2. Trust Game Descriptive Statistics

Table 1B: TG Descriptive Statistics

| Variable                | N   | Mean   | St. Dev. | Min. | Max. |
|-------------------------|-----|--------|----------|------|------|
| A sends                 | 310 | 24.95  | 28.78    | 0    | 100  |
| B sends when receiving: |     |        |          |      |      |
| 0 points                | 305 | 27.31  | 42.07    | 0    | 150  |
| 150 points              | 306 | 86.70  | 49.80    | 0    | 300  |
| 300 points              | 309 | 147.30 | 81.61    | 0    | 450  |
| 450 points              | 309 | 218.67 | 120.74   | 0    | 600  |

## Appendix C: Regression Tables

Table 1C: RoSCA Participation, Prosociality and Trust  
Dependent variable equals 1 if RoSCA participant, 0 otherwise

|                 | (1)                 | (2)                | (3)                 | (4)               | (5)                 | (6)              | (7)                 |
|-----------------|---------------------|--------------------|---------------------|-------------------|---------------------|------------------|---------------------|
| accept_interest | -0.125*<br>(0.065)  | -0.115*<br>(0.058) |                     |                   |                     |                  | -0.116**<br>(0.059) |
| prosocial       |                     |                    | -0.104*<br>(0.061)  | -0.042<br>(0.056) |                     |                  | -0.048<br>(0.056)   |
| trusting        |                     |                    |                     |                   | 0.087<br>(0.074)    | 0.027<br>(0.063) | 0.026<br>(0.064)    |
| Constant        | 0.558***<br>(0.057) | 0.126<br>(0.101)   | 0.535***<br>(0.050) | 0.087<br>(0.101)  | 0.449***<br>(0.031) | 0.043<br>(0.091) | 0.169<br>(0.113)    |
| Controls        | No                  | Yes                | No                  | Yes               | No                  | Yes              | Yes                 |
| N               | 310                 | 310                | 310                 | 310               | 310                 | 310              | 310                 |
| Adjusted $R^2$  | 0.009               | 0.198              | 0.006               | 0.190             | 0.001               | 0.189            | 0.195               |

OLS regression. Robust standard errors in parentheses. acceptinterest is a dummy variable that equals one if the individual accepts interest whether or not they think it is forbidden, zero otherwise. prosocial is a dummy variable that equals one if the individual is classified as prosocial by the SVO index, zero otherwise. trusting is a dummy variable that equals one if the individual sent more than 50% of their initial endowment in the trust game, zero otherwise. Controls include gender, age and job dummies. The pearson correlation coefficient between age and job type is -0.116. The correlation coefficient between prosocial and trusting is 0.05. \*\*\*p-value < 0.01, \*\*p-value < 0.05, \*p-value < 0.10.

Table 2C: RoSCA Relative Rank, Prosociality and Trust  
Dependent variable equals relative RoSCA rank

|                | (1)                 | (2)                | (3)                 | (4)                 | (5)                |
|----------------|---------------------|--------------------|---------------------|---------------------|--------------------|
| prosocial      | 0.133**<br>(0.063)  | 0.111*<br>(0.066)  |                     |                     | 0.110*<br>(0.066)  |
| trusting       |                     |                    | 0.068<br>(0.076)    | 0.031<br>(0.076)    | 0.027<br>(0.076)   |
| Constant       | 0.436***<br>(0.050) | 0.290**<br>(0.138) | 0.504***<br>(0.035) | 0.396***<br>(0.125) | 0.293**<br>(0.139) |
| Controls       | No                  | Yes                | No                  | Yes                 | Yes                |
| N              | 119                 | 119                | 119                 | 119                 | 119                |
| Adjusted $R^2$ | 0.028               | 0.079              | -0.002              | 0.056               | 0.071              |

OLS regression. Standard errors in parentheses. prosocial is a dummy variable that equals one if the individual is classified as prosocial by the SVO index, zero otherwise. trusting is a dummy variable that equals one if the individual sent more than 50% of their initial endowment in the trust game, zero otherwise. Controls include gender, age and job dummies. The pearson correlation coefficient between age and job type is -0.116. The correlation coefficient between prosocial and trusting is 0.05. \*\*\*p-value < 0.01, \*\*p-value < 0.05, \*p-value < 0.10.

Table 3C: RoSCA Pot Size and Trust  
Dependent variable equals the potsize (in EGP)

|                | (1)                      | (2)                      |
|----------------|--------------------------|--------------------------|
| trusting       | 561.117**<br>(245.917)   | 464.079*<br>(239.332)    |
| Constant       | 1500.952***<br>(114.402) | 1595.910***<br>(371.274) |
| Controls       | No                       | Yes                      |
| N              | 134                      | 134                      |
| Adjusted $R^2$ | 0.031                    | 0.140                    |

OLS regression. Standard errors in parentheses. trusting is a dummy variable that equals one if the individual sent more than 50% of their initial endowment in the trust game, zero otherwise. Controls include gender, age and job dummies. The pearson correlation coefficient between age and job type is -0.116. \*\*\*p-value < 0.01, \*\*p-value < 0.05, \*p-value < 0.10.