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THE IMPACT OF STRENGTH OF SOCIAL TIES ON THE ECONOMIC
ACTIONS OF ROSCAS:
EVIDENCE FROM NAIROBI, KENYA.

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THE IMPACT OF SOCIAL TIES ON THE ECONOMIC ACTION OF ROTATING AND SAVINGS CREDIT ASSOCIATIONS (ROSCAs)

BY: [Name]

This paper analyzes the factors contributing to the economic action (whether for investment or welfare) of rotating and savings credit associations (ROSCAs). It has its main focus on the strength of the social ties between the members and the impact that this has on the economic action. It has been presumed that the strength of social ties between individuals in the ROSCA has an impact on the economic action they take. Questionnaires were issued out to gather relevant data on ROSCAs which were then ran as variables on a logit regression to establish their impact. The strength of the social tie was seen to be insignificant from the results, hence meaning that it has no impact on the economic action. The control variables used, age of members and amount contributed, were seen to be significant. The paper thus concludes that the economic action taken by ROSCAs has no relationship with the strength of the social ties between its members.

Similar to this, is the Rotating Savings and Credit Associations (ROSCA) that is very common in Kenya, popularly known as a *tonaina*. This is a self-help group, whose degree of formalization, stability and scope of activities vary a lot. With a total adult population of 19,483,435, 2,943,643 in Nairobi, 7.8% of the population informally access funds (FinAccess, 2013). This means that they are able to access finances from social groups who come together mainly for this purpose. Some of the groups formed are registered with the existing micro finance institutions in the country, which are rapidly growing in number and operations. However, a great number still remain unregistered and operate on local arrangements.

Seeing as they are not governed by any financial institution or the government, ROSCAs run on their own constitutions. This includes the purpose of their existence and the use of the finances raised. As a result, different ROSCAs have a different purpose for their existence, which can simply be divided into two: investment and welfare. Most of the ROSCAs that are registered with micro finance institutions do so with an aim to seek finances in the form of credit. This is in form of loans granted to them by the financial institutions. However, other ROSCAs come together simply to raise finances that assist the members financially, commonly referred to as social welfare groups. These are particularly prevalent in India and sub-Saharan Africa and now have over 100 million members worldwide (Greaney Brian, 2013). They involve the members contributing a certain amount of money which is then given to a particular member on a rotational basis. As such, it forms a kind of credit facilities for the members.

The main concept behind ROSCAs is the idea of group lending with joint liability. Whatever the purpose of the group, it requires contribution of money which should eventually benefit all members of the group. Seeing as there are very few legal restrictions, if any, there is need for a certain bond which brings about a needed level of trust among the members. This is greatly brought about by the social ties between them. Social connections can be defined as the links and commonalities that bind a group of people together and determine their social interactions (Karlan, 2007). Possible social ties include: members of a church, school mates, neighbours or even relatives.

RESEARCH OBJECTIVE

ROSCAs were initially started as a source of social meeting with some income smoothing. Economic theories suggest that individuals join ROSCAs to finance the purchase of a lumpy durable good, as a response to intra-household conflict over preferences, or to provide insurance (Gugerty, 2007). Over time, people have used the same model for various uses within their communities which are agreed on by all members and sometimes are even the reason for its formation. There are many possible factors that contribute to the use of finances in the ROSCAs. Seeing as social ties is a key factor in the starting and running of any ROSCA, it indicates may indicate a relationship between it and the economic action of the ROSCA. The strength of the social ties could be attributed to the relations between the members. As a result, the economic action in the ROSCA is assumed to be greatly influenced by the strength of these ties as some opt to invest, while others simply contribute for welfare.

RESEARCH OBJECTIVE

To analyse whether the strength of social ties in a ROSCA, especially in urban areas, has an impact on their economic action and to what extent.

RESEARCH QUESTIONS

1. What factors contribute to the nature of the strength of the social ties in ROSCAs?
2. Does the nature of social ties (whether weak or strong) influence the economic action, for investment or welfare, of the ROSCA?

This research is aimed at assisting the members of the ROSCAs in making more informed decisions on how to form one so as to fulfil ones vision. It aims to do this by providing information on the variables that affect the economic action of a ROSCA and whether the strength of the social ties between members has an impact on the same. This then enables the members to be more strategic in their formation of the ROSCA.

2.1.1.1. Introduction

The potential contribution of the different levels of semi-formal and informal financial institutions and services have been accepted in the academic field. Plenty of research has been done on this field hence there is a lot of academic literature on the same. This includes, among others, issues on social capital, joint liability and even strength of social ties. However, the link between the strength of social ties and the investment decisions of the various ROSCAs in urban areas has not been well established in academic literature.

Joint Liability and group Lending

This analysis contributes to a great amount of research that has been carried out over decades. In the broader sense, micro-finance received a lot of attention with great focus being on the joint liability group lending theory (Lensink, 2007). It has been seen to be a great tool in reducing poverty levels and has especially been seen to be more beneficial in developing countries rather than developed ones (Shubhashis Gangopadhyay, 2005). According to (Ghatak, 2000), joint liability induces positive assortative matching in group formation. That is, safe borrowers are more likely to partner with safe borrowers while the risky borrowers partner with the risky ones as well. It is therefore a simple mechanism that exploits local information to alleviate credit market failures caused by asymmetric information. The model has obtained great popularity over the years as it improves efficiency compared to the more traditional standard debt contracts in presence of asymmetric information about borrower types (Shubhashis Gangopadhyay, 2005).

In Africa, the model has been especially beneficial as it has been observed to have a sustained impact on poverty reduction among the program participants. This is more pronounced in reducing extreme levels of poverty rather than moderate levels (Khandker, 2005). Therefore, it seems to play a greater role in the developing countries (Shubhashis Gangopadhyay, 2005). attributed this to a number of factors. First, collateral is more effective in developed countries because of better titling of property and a more efficient legal system. This thus encourages the more traditional form of lending hence reducing the need for group lending. Second, developed countries have existing institutions that allow better flow of information among

punished and who deserves a second chance. Although this information was mainly used to reflect the repayment rates of groups, it gives deeper insight into how groups are formed and their basis which will eventually shed light on the purpose of use within them.

Economic sector

Different ROSCAs have different uses for the finances that they accumulate over their period of existence. The uses range from a savings plan that enables members to access credit from more formal financial institutions to “merry-go-round” systems. This is a system greatly practised in the Kenyan industry whereby the lump sum of contributions collected over a given period of time is given to a particular member on a rotating basis. Still, others view them as an incubator for income generating activities. The members all make contributions to an agreed upon investment.

The purpose of use of ROSCAs can better be understood by clearly outlining the possible services they offer. These services can be simply divided into savings and credit, from which the members can further derive other uses. (Eggen, 2007).

highlighted the general characteristics of savings and credit as follows:

- General characteristics of savings
 - Savings essentially serve two main purposes. They enable future investments and they can smoothen consumption.
 - In livelihood projects the aim is often to start up new business ventures.
 - Poor people generally want to save and in most cases they can save at least during some parts of the year. However, they don't necessarily save in cash.
 - Trust and accessibility facilitate the intermediation of money.
 - Poor people demand both voluntary and compulsory savings (a level of demand and time deposits).
 - Gaining interests on savings is something everyone wishes for. However since poor people are often used to negative interest on their savings (e.g. fees to participate in ROSCAs or to savings-collectors) the level of interest is generally of less importance than availability and trust.
- General characteristics of credit

- Credit is the most known microfinance service.
- For those without repayment capacity, contracting credit can be a very risky strategy. Microcredit can also be very expensive due to high interest rates, and the benefit of receiving a loan might easily be lost in face of the costs.
- The pivotal question asked by professional providers of loans is whether the potential client possesses the willingness and the capacity for repayment. All other arguments fail if the willingness and repayment capacity cannot be proven.
- Credit is normally not used to start a new business, but rather to expand an existing one. The reason for this is that starting up a new business is very risky, and a sustainable provider of credit cannot afford to lose money. Most new businesses depend upon personal savings or support from family, and friends to get started.
- Credit for business purposes is what most have in mind when microcredit is being discussed. Yet, microcredit can be used for housing, education, health care or consumption as well.
- For credit to be effective it is important that the conditions fit the needs of the client. Similarly, the repayment schedule must be linked to the cash flow pattern. In the microfinance literature it is well known that a major hindrance for improved impact is lack of appropriate credit design.

In addition to this existing academic literature, this paper further seeks to find the link between the social ties and the purpose of use of ROSCAs. This is clearly outlined in the following section.

The paper seeks to find the relationship between social ties and the economic activity of ROSCAs. In order to do this, it is necessary to obtain a measure for the strength of social tie so as to effectively carry out the research. The most common tactic used to measure tie strength has been to use indications of the "closeness" of a relationship: thus, close friends have been said to be "strong" ties, while acquaintances or friends of friends have been called "weak" ties. Sometimes this approach to measurement is

combined with one that presumes that the source of a relationship is an accurate indication of its strength; often, therefore, relatives are assumed to be strong ties, while neighbours or co-workers are treated as weak ones. Numerous other measures of strength have also been used or proposed. These include frequency of contact, with strong ties assumed to be more frequent ones.

Once this strength is established, we will run a logit regression to determine the impact of the strength of social ties to the economic action. However, we are aware that aside from strength of social ties, there are other factors that could possibly affect the economic action in the ROSCAs. These include: the amount being contributed and the age of the members. These factors are therefore also incorporated as controls in the equation.

We will begin by describing the data to be analysed, and the measurements of strength available in those data.

POPULATION AND SAMPLING

The data for our analysis is drawn from a survey carried it out in Nairobi, Kenya. The urban areas were used as the sample region so as to give the effect in urban areas. It is collected through the use of a simple questionnaire that is issued out randomly to members of ROSCAs from different households within the city. The total adult population, age 18 and above, in Nairobi is 2,043,643 with 7.8% being involved in informal financing (FinAccess, 2013). This leaves us with a total population of 159,404 adults. 383 questionnaires are issued, a figure obtained from the following equation (Krejcie V Robert, 1970):

$$S = \frac{X^2 NP(1 - P)}{X^2(N - 1) + X^2P(1 - P)}$$

Where:

S - required sample size

X^2 -table value of chi-square for 1 degree of freedom at the desired confidence level (3.841)

N -population size

P -population portion (assumed to be 0.5 since this could provide the maximum sample size)

d -degree of accuracy, expressed as a portion (0.25)

Two types of variables are included in the measurement models we have formulated: indicators and predictors of tie strength. While previous researchers have not always differentiated between the two, the distinction is an important one. Indicators are actual components of tie strength; those used in this study correspond to Granovetter's definition of tie strength given above. "Closeness" is used as a measure of the intensity of a relationship; duration and frequency of contact index the amount of time values. Three of the predictor variables used were measured as dichotomous variables: kinship, co-worker, and neighbour statuses (in all three cases, a code of "1" indicates that the named friend held the status under consideration, while a code of "0" means that the status is not a potential focus for the relationship).

2.2.2. Data Collection

The data collected in form of questionnaires was collected randomly through the help of friends, family, friends of family and family of friends. Slightly over 400 questionnaires were issued in the search for the data, but only the first 383 were considered as per the sample size given above.

The information was thus collected from people of all ages, ranging from 19 years to 75. The population under consideration was based in the urban areas Nairobi, mainly from universities and offices. It was thus a representation of the urban areas in Nairobi.

Once the data was collected, it was then summarized onto an excel sheer for ease of analysis of the same

Our initial model for measuring tie strength posits that strength is a unidimensional unobserved concept or "point variable" intervening between its predictors (neighbor, co-worker, and kinship statuses), and its indicators (closeness, duration and frequency). Thus in the model, social tie strength is explained by the three indicator variables to different extents. All variables stated are categorical data hence assigned dummy variables. The strength of the social tie is assigned a dummy variable

according to the predictors stated above. These are: kinship, neighbour and co-worker. The social tie can therefore be categorized as a strong or weak tie. Family ties (kinship) and close friends are defined as *strong*, acquaintances or distant friends as *weak* ties (Erikson, 1978); (Granovetter M. S., 1974); (Wilson, 1998). The model is run in the form:

$$Y_1 = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \mu$$

Where Y_1 represents the strength of the social tie and X_1 , X_2 and X_3 represent closeness, duration and frequency respectively.

Further, the model seeks to determine the extent to which the strength of the social tie affects the use of funds in the ROSCAs. This is done by running a logit regression in the form of:

$$Y_0 = \beta_0 + \beta_1 Y_1 + \beta_2 Z_1 + \beta_3 Z_2 + \mu$$

Where:

Y_0 - Economic action

Y_1 - Strength of social tie

Z_1 - Age

Z_2 - Contribution amount

in the model, age and amount contributed are used as control variables so as to determine the extent to which the strength of the social tie affects the economic action and if there are factors that have a greater effect on the same.

The logit regression was run using GRETL. The binary logit regression was preferred due to the nature of the variables under consideration, that is: the strength of the social tie and the economic action taken, which both take one of two dummy variables.

Table 28 (cont.)

The data under consideration was cross-sectional data hence no need to test for stationarity.

The data was then ran and the results were as follows:

Model 4: Multinomial Logit, using observations 1-383

Dependent variable: STRENGTH

Standard errors based on Hessian

	<i>Coefficient</i>	<i>Std. Error</i>	<i>z</i>	<i>p-value</i>	
Const	-0.824634	0.547263	-1.5068	0.13185	
DURATION	0.26624	0.046637	5.7128	<0.00001	***
FREQUENCY	0.0522019	0.169326	0.3083	0.75786	
CLOSENESS	0.488501	0.232855	2.0979	0.03592	**

Mean dependent var	1.812010	S.D. dependent var	0.391215
Log-likelihood	-155.2845	Akaike criterion	318.5691
Schwarz criterion	334.3612	Hannan-Quinn	324.8336

Number of cases 'correctly predicted' = 295 (77.0%)

Likelihood ratio test: Chi-square(2) = 59.3246 (0.000)

The strength of the social tie is thus seen to be affected by the duration of existence and the closeness of the members, that is, whether they are acquaintances, close friends or very close friends. However, it is seen that frequency is insignificant hence does not affect the strength of the social tie.

The results for the economic action are as follows:

Model 0: Multinomial Logit, using observations 1-383

Dependent variable: PROFILEOF1 SE

Standard errors based on Hessian

	<i>Coefficient</i>	<i>Std. Error</i>	<i>Z</i>	<i>p-value</i>	
const	-4.73522	0.739799	-6.4007	<0.00001	***
AGE	0.0407435	0.0123678	3.2943	0.00099	***
AMOUNT	0.642378	0.0949717	6.7639	<0.00001	***
STRENGTH	0.545595	0.356832	1.5290	0.12627	
Mean dependent var	1.375979	S.D. dependent var	0.485008		
Log-likelihood	-223.2549	Akaike criterion	454.5098		
Schwarz criterion	470.3020	Hannan-Quinn	460.7743		

Number of cases 'correctly predicted' = 279 (72.3%)

Likelihood ratio test: Chi-square (3) = 60.6292 [0.0000]

The results obtained, from the p-values, show that the age and the amount contributed significantly affect the economic action taken by the ROSCAs. The age has a higher p-value meaning that it has a greater effect on effect on the economic action taken. The strength is however seen to be insignificant hence has no effect on the economic action taken.

This paper finds no significant relationship between the strength of the social ties and the economic action taken by ROSCAs. Although in previous literature there has been clear evidence on the significance of this strength to the repayment rate within the ROSCAs, it still has not been clear on the relationship between the strength and the economic action. This is against (Granovetter M., 1985) who argued that market transactions should not be viewed as anonymous and impersonal but as embedded in a web of inter-personal relationships. In this case, this relationship was insignificant to the transactions that were taking place within the ROSCA.

The strength of the social tie, however, proved to be in line with (Karlan, 2007) who argued that social ties are formed mainly through cultural similarities and geographic concentration. The closeness and duration of stay together seemed to be significant in the determination of the strength of the social tie.

LIMITATIONS

The research was however subject to a number of limitations, especially in the collecting of the data as follows:

1. The data collected was not a proper random sample as it involved the people around me due to the time constraint. This therefore meant that most of them knew each other and had shared some kind of relationship.
2. The research was based in the urban areas of Nairobi only hence the conclusion can only be based on that. A proper research study should cover both the urban and rural areas for a more conclusive result.
3. The measure of strength of social ties was based on the most common tactic which uses indications of the "closeness" of a relationship; thus, close friend have been said to be "strong" ties, while acquaintances or friends of friends have been called "weak" ties. This is a more general measure and research has been done to establish a more precise measurement for the same.

5. CONCLUSION

From the paper, a number of recommendations can be made as follows:

More research needs to be conducted on how social ties affect the economic actions in ROSCAs so as to empower people on who to form the ROSCAs with

A more precise model needs to be used in the measurement of strength of social tie so as to give a clearer measure hence better results.

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APPENDICES

INDIVIDUAL QUESTIONNAIRE

The information provided during this interview is collected for research purposes only and will be treated with confidentiality. The purpose of this study is simply to gain a better understanding of the impacts of social ties on investment decisions of its members. Therefore, we ask you to feel at ease and to provide frank and honest answers without fearing any persecution or disclosure. Researchers are only interested in analysis of collective feedback and not individual respondent information

1. *What is your age?*

- 18 to 24
- 25 to 34
- 35 to 44
- 45 to 54
- 55 to 64
- 65 to 74
- 75 or older

2. *Has anyone ever been a member of the ROSCA?*

.....

3. *How did you meet?*

.....

4. How many members are in the ROSCA?

Below 10

10-20

20-30

Above 30

5. How often do you meet them? (not necessarily concerning ROSCA matters)

Daily

Weekly

Monthly

Rarely

6. What is the relationship between you and the other members?

Acquaintances

Good Friends

Very Good Friends

7. How often do you make your contributions?

Daily

Weekly

Monthly

Other (please specify)

8. How much do you contribute?

Below 500

501-1000

10001-50000

3001-5000

Above 5000

9. What is the main purpose of the RDP?

- Welfare
 - Investment
 - Other (please specify)
-

Done

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