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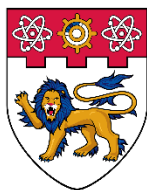
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ABSTRACT

The purpose of the research is evaluating the impact of Rotating Savings and Credit Association (RoSCA) in Indonesia, locally known as *arisan* on household assets of the participants. We use the Indonesian Family Life Survey (IFLS) data collected in 2000, 2007 and 2014 which contains demographic and household data of the *arisan* participants (i.e. affected group) and the non-participants (i.e. control group). We apply the Double Difference (DD) method in order to measure the impact of *arisan* participation on the household assets. The results of the DD estimation show that the participation in the association has a positive impact on the total household assets of the participants, although it has a mixed impact on the different categories of the household assets listed in IFLS data such as house, land, vehicles, appliances, furniture, appliances, jewelleryes and savings. Finally, the implication of the results has been in discussed in the context of this long tradition of *arisan* participation in Indonesia along with its co-benefits. Despite *arisan* being is a special form of informal micro-savings institution prevalent for many centuries in Indonesia, there has not been adequate academic research on its economic implications where this paper intends to contribute.

Keywords RoSCA, *Arisan*, micro-saving, household asset

JEL Classification: D71, O16, O17

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INTRODUCTION

A large population around the world especially in the low income countries and communities do not have access to the services of formal financial intermediaries and in those communities the mobilization of saving in response to the prevalent consumptions and investment demands resulted in different informal microfinance organizations (Bouman, 1995; Donoso, Altunbaş, & Kara, 2011; Van Den Brink & Chavas, 1997). Rotating Savings and Credit Association (RoSCA) is a one of those organizations where usually a self-selected group would meet regularly to contribute a designated fund to the group in each meeting. The collected fund would then be given to the members in rotation. Once everyone has their turn and receive the collected funds the association could be dissolved or another rotation could commence (Gugerty, 2007; Van Den Brink & Chavas, 1997). Once the fund is received by a member there is usually no interest attached to it. It's does not work like a credit received against interest. Thus, the RoSCA could be considered as a special form of micro-saving institution.

The structures, governance and functions of RoSCAs being selected groups who would meet regularly and monitor others' conduct would naturally vary widely across countries and communities according to the community culture and the demographic

characteristic of the participants. In Indonesia RoSCAs are also known as *arisan* and in this paper we use the term frequently referring to the RoSCAs in Indonesia. *Arisan* being widely accepted and practiced, the members often can organize activities like group meetings in the communal spaces such as residential club houses. However, the governance and structure of *arisan* is more informal which give members more flexibility to determine the amount, schedule and rotation for receiving the funds whereas RoSCAs in some other countries are more formal (Schreiner, 2000).

The existence and the prevalence of the tradition of *arisan* for centuries in Indonesia is justified in a sense that the perceived benefit to the participants and society must be convincing. There earlier studies tried to understand *arisan* from a socio-anthropological perspective (Ardener, 1964; Geertz, 1962) and its impacts on social capital and community development (Lasagni & Lollo, 2011). However, the economic impact of joining *arisan* in Indonesia has received inadequate attention especially in terms of its real impacts on income, wealth, entrepreneurship and employment. There have been studies elsewhere on the economic benefit of RoSCAs (Anderson & Baland, 2002; Besley et al., 1993; Handa & Kirton, 1999). Brunie, Rutherford, Keyes, & Field (2017) studied the benefit of joining RoSCA especially in terms of household income in Mozambique. In contrast, here we focus on the impact of joining *arisan* on a wide range of household assets as well as savings and receivables. The findings reflect not only on household asset accumulation but on its pattern. The paper therefore further contributes to the understanding of economic impacts of joining RoSCAs especially in Indonesia. In the following section the relevant literature has been further analysed and the aim of the study has been specified. The data, methodology, results and implications have been discussed and presented in the subsequent sections.

LITERATURE REVIEWS

In this section we further discuss the structure and governance of RoSCAs and the rationale or perceived benefits of joining in the social groups with reference to Indonesia. This would lay down the context of the analysis and expose the gap in literature where this paper intends to contribute. RoSCA is a special kind of informal micro-saving institution where a self-selected group convene periodically to contribute a designated sum to the group which is then given to a member of the group. The convention continues until everyone has a turn to receive the group contribution. Then the group could be dissolved or could go for further rotation (Dagnelie & Lemay-boucher, 2012; Guha & Gupta, 2005). The formation, structure, function and governance of the group could widely vary along the local culture. It is often difficult to obtain specific information and data on each type of RoSCAs which make empirical studies challenging. In the vast literature on microfinance consequently the share of literature on RoSCAs is not significant, especially in terms of empirical research.

Bisrat, Kostas, and Feng (2012) divided the main characteristics of RoSCAs into five aspects: membership, contribution, transferability, fund and enforcement mechanism. First, the membership could dependent on several factors like age, occupation, ethnicity, education level as well as political orientation or social ties. Second, the member contributions can be in the form of cash contributions, goods or a combination of both. Third, the transfer of the funds could dependent on the initial agreement at the start of a RoSCA. Fourth, although the nominal contribution of the participants is the same, the time value and position of the contribution would be different as the creditors and debtors for the earlier and later recipients. For example, the participants who get the earliest turn would become debtors with zero

interest who must return money in subsequent periods. Fifth, the gathering is a social activity managed by the social norms and sanctions could apply for negligence. In terms of allocation of the funds in each meeting three different approaches could be used (Kovsted & Lyk-Jensen, 1999). There could be bidding and someone could pay more than what is required to get an early rotation. The rotation in some cases become important as there is no interest involved and the early receivers therefore receive interest free funds and earlier receivers benefit from more interest saving. The group leader could select the individual on a discrete basis. The person receiving fund could simply be selected randomly through a lottery.

In Indonesia like most countries the structure and governance of *arisan* is informal and relatively flexible whereas in some countries RoSCAs could be more formal or even linked to the formal financial intermediation. The informal social gathering indeed could not be sustainable unless strict sanctions were agreed upon at the beginning of the group formation and carried out eventually during the social gatherings (Anderson, Baland, & Moene, 2009; El-Gamal, El-Komi, Karlan, & Osman, 2014; Schreiner, 2000). The group being self-selected would set the frequency of the meetings and the amount to be contributed while social sanctions or even economic penalties could be agreed by the group participants to prevent the default in payment (El-Gamal et al., 2014). The sanctions given due to participants' negligence would vary depending on the community's background and participants' characteristics.

Geertz (1962) argued that *arisan* represent a transitional arrangement which would ultimately be replaced by more formalized financial institutions as the economy develops. In contrast, RoSCAs can address financial exclusions and market failures with unique economic outcomes (Brunie et al., 2017; Donoso et al., 2011). Besley et al., (1993) also demonstrate that RoSCAs are more efficient than autarchic saving schemes and improve the individual welfare of those excluded by formal credit markets. In a follow-up study (Besley, Coate, & Loury, 1994) the authors compare random ROSCAs against formal credit market solutions; the ROSCAs were more efficient. Klonner (2003) suggests that the binding ROSCAs could be more efficient than formal credit market which is constrained by informational asymmetries, moral hazards and risk.

In many other countries the RoSCA participants could come usually from the low income background with no access to formal credit (Donso, Altunbus and Kara 2017; Guha & Gupta, 2005). However, Varadharajan et al (2004) empirically investigated who participates in *arisan* and why using the Indonesia Family Life Survey (IFLS) - wave 2 data. The results indicate that participation is not limited to the low income households and the participants do not necessarily come from groups who have difficulties in obtaining loan from the formal financial institutions. A large number of *arisan* participants are from well-off households who gather for forming and cherishing social networks among themselves. Using IFLS – Wave III & IV data Lasagni and Lollo (2011) also confirmed these observations.

The rationale and perceived benefit for participating in RoSCAs is multifaceted. The participation in *arisan* could have simply been influenced by the social considerations like reputation, trust and social harmony (Ardener, 1964; Geertz, 1962). Ambec & Treich (2007) emphasized on the role of social pressures and obligations as a rationale for participation. Van den Brik and Chavas (1997) suggest that in developing countries where communities are characterized social intricacies people could prefer flexible social contracts over formal ones. Bisrat et al., (2012) studied the RoSCAs in Euthopia also known as *equb* and found two distinct financial benefits the participants consider. First, individuals consider interest saving as a reason, especially those who get the lottery at the beginning, can get money loans at a

much cheaper cost than when they borrow from formal institutions. Second, the transaction costs associated in joining *equub* could be smaller than that of seeking loan from formal financial institutions. Furthermore, social gathering participants who find difficulties to set aside money to save, RoSCAs impose some financial discipline and help them build some savings.

Nonetheless, the real impacts of RoSCA participation are multidimensional. It has been found that participation in improve social welfare and income generation in India (Guha & Gupta, 2005), increasing income and asset ownership in Mozambique (Brunie et al., 2017), increasing daily food intake in Northern Malawi (Ksoll, Lilleør, Lønborg, & Dahl, 2015), and protect from the vulnerability to poverty in Mexico (Lensink, Servin, & van den Berg, 2015). Rasyid, Satriawan, & Sugiyanto (2015) using the IFLS data found that public transfer programs to households could influence *arisan* participation as small communities have a tendency to participate in social gathering and to volunteers in collecting money from house to house. Lasagni & Lollo (2011) using the IFLS data studied the impact on *arisan* on social capital and community development and found the impacts are more significant in rural communities.

Arisan provides an alternative saving mechanism that allows accumulation and circulation of funds within the self-selected groups and enables the participants to carry out substantial consumption and investment expenses (Anderson & Baland, 2002; Kawagoe, Ohkama, & Bagyo, 1992). When a group member has his/ her turn and receive the designated sum of funds he/she could utilize it for spending on durable consumer goods, personal savings accumulation, funding for small businesses, travel or even immigration (Anderson & Baland, 2002; Handa & Kirton, 1999). Nevertheless, it is worth noting that there has not been any study in Indonesia which simply looks at the impact of *arisan* on the household income or wealth. In this paper we use the IFLS data collected in years 2000, 2007 and 2014 and investigate into the impacts of *arisan* participation especially on the accumulation of household assets. In specific the research question we intend to address is whether *arisan* participation has any impact on total household assets as well as on the combination of the assets.

DATA AND METHODOLOGY

In relation to the above research question our specific interest is to measure the impacts of participating in *arisan* on the total household assets as well on the asset mix. We utilised the longitudinal data of Indonesian Family Life Survey (IFLS) conducted by the RAND Foundation in three periods - 2000, 2007 and 2014. In order to identify whether someone joins *arisan* or not, in the IFLS questionnaires BOOK IIIB Section PM (Community Participation) it has been asked whether the respondents participated in *arisan* in the last 12 months. We construct two models to capture the relevant data and information. Therefore, we first identify the group of respondents who did not join *arisan* in 2000. Then, we track whether they joined *arisan* in the 12 prior to they were surveyed in 2007. In the first model, we compare the assets of people who joined *arisan* at least 12 months prior to the 2007 survey with those who did not participate. Then we consider the assets of those who did not join *arisan* in 2000 but joined at least 12 months before the survey in 2007 and then compare the difference. Finally, we compare the difference between these two differences to estimate impact of *arisan* participation on household assets. In 2007, there were 29,028 IFLS respondents who were included in the study to validate the first model. Among those

respondents we found that 8,160 household heads had the same national identification (ID) numbers in both 2007 and 2014 surveys. These identification numbers were used in identifying the households and their *arisan* participation status.

The second model is essentially similar to the first one where we consider two periods - 2000 and 2014. We first identify and group the households which did not join *arisan* either in 2000 or in 2014 and compare their household assets. Then we consider the assets of the households which did not join in 2000 but joined *arisan* at least 12 months before the 2014 survey and compare the household assets. Finally, we compare the differences between these two differences to estimate the impact of *arisan* participation on household assets. There were 10,425 respondents who did not join *arisan* in 2000 and still became the IFLS respondents in 2014. Among those respondents there were 2,408 household heads with the national identification number which has been the sample of the second model. It is worth noting that the characteristics of the groups participating and not participating in *arisan* are similar in all aspects except the participation variable. In other words, the unobservable variables are also systematically associated with the both groups. Hence, we utilize the Difference in Difference or Double Difference (DD) method as under such conditions this method would produce reliable and objective estimates of the impact of *arisan* participation for these groups.

The DD estimation has been extensively used in the evaluation of program intervention as it in essence would measure the impact of a program participation in panel data by measuring the difference in results from the groups joining (or not joining). In the basic set up there are two similar groups from a population in two period where one group is called the ‘treatment group’ participates in a program and the other is called the ‘control group’ which does not (Huynh, Jacho-Chavez, & Voia, 2011; Lu, Ke, Cheng, & Chen, 2018; Salinas & Solé-Ollé, 2018). The key advantage of this method is its ability to eliminate the possibility of bias results caused by unobserved variables that might affect the outcome (Huynh et al., 2011). The other advantage is that the DD estimation is that it could overcome the problem of missing data by assessing outcomes and covariates for both participants and nonparticipants (Khandker, Koolwal, & Samad, 2010).

The DD estimation reflects on the changes over time resulting from households’ participation in *arisan* programs in terms of specific outcomes. In the first model, let $t=0$ represent the period before joining *arisan* as in the last 12 months before they interviewed in 2007 and $t=1$ after joining as in the last 12 months before they interviewed in 2014. Let Y_t^T and Y_t^C represent the outcomes as the log of specific household assets over time $t = 0, 1$. $T_1 = 1$ if there is participation in *arisan* at $t=1$ and $T_1 = 0$ if there is no participation. The impact of the program participation would be:

$$DD = E(Y_1^T - Y_0^T | T_1 = 1) - E(Y_1^C - Y_0^C | T_1 = 0)$$

Given the characteristics of the IFLS data, it can be assumed that that unobserved heterogeneity is time invariant and uncorrelated over time. Therefore, the DD estimation could be given as follows:

$$Y_{it} = \alpha + \beta T_{i1} t + \rho T_{i1} + \gamma t + X_{it} + \varepsilon_{it}$$

The coefficient β on the interaction between the *arisan* participation variable (T_{it}) and time ($t = 1 \dots T$) produces the average DD effect of the program. Meanwhile X_{it} are explanatory variables. The variables used in this study are listed in Table 1.

TABLE 1. LIST AND DESCRIPTION OF THE VARIABLES

Variables	Type	Description of Variables
THA	Continuous	Log of total household assets
Age	Continuous	Age of head of the household (in years)
Gender	Dummy	Gender of head of head equal to “1” if male and “0” otherwise
Loc	Dummy	Location of residence equal to “1” if in urban and “0” otherwise
YoS	Continuous	Year of school of head of family (in years)
HL	Continuous	House and land asset
OHB	Continuous	Other house/ building asset
Land	Continuous	Land asset not used for farming
Vehicle	Continuous	Vehicles such as cars, boats, bicycles, and motorbike
HA	Continuous	Household appliances such as radio, tape recorder, television, fridge, sewing machine etc.
Save	Continuous	Savings such as certificate of deposit
Receive	Continuous	Receivables
Jewel	Continuous	Jewellery
Furnish	Continuous	Household furniture and utensils
Poultry	Continuous	Poultry
LV	Continuous	Livestock/ fishpond

The demographic characteristics of the respondents have been summarised in Table 2. The participants are mostly in their late 30s and early 40s the average age being 38.33 in 2007 sample and 40.72 in 2014. The majority of them are female in both samples being 85% in 2007 and 92% in 2014. However, the number of respondents living in the city has been reduced from 52% in 2007 to 38% in 2014. There is a clear association between living in the city and the year of schooling year being higher which could be facilitated by the better access to schooling facilities in the city. Furthermore, it is also evident that the respondents’ total asset compared to that of 2000 is higher in both 2007 and 2014.

TABLE 2. CHARACTERISTICS OF THE RESPONDENTS

Variable	First Period (2007)		Second Period (2014)	
	Mean	Std. Dev	Mean	Std. Dev
Age (years)	38.33	12.36	40.72	12.78
Gender (1=male, 0=otherwise)	0.15	0.35	0.08	0.27
Location (1=urban, 0=otherwise)	0.52	0.50	0.38	0.48
Year of school (years)	7.49	4.43	5.33	4.04
The change in total assets compared to 2000	9.38e+07	1.62e+08	6.27e+07	1.32e+08
Number of Observations	8,160		2,408	

THE RESULTS AND DISCUSSION

Table 3 summarizes the impact of participation in *arisan* in the last 12 months before interviewed in 2007 on the household assets listed in IFLS which include total household assets, house and land, other building assets, land not used for farming, vehicles such as cars, boats, bicycles, and motorbikes, household appliances such as radios, tape recorders, television, fridge and sewing machine, savings such as certificates of deposit, receivables, jewellery, household furniture and utensils and poultry. The estimates show that the *arisan* participation in the last 12 months before interviewed in 2007 has a significant positive impact on the Total Household Assets (THA) of the participants, although the impact on different categories of assets is mixed. The participation shows positive impact can be observed in terms of the house and lands, vehicles, household appliances furniture and receivables while negative impact on land, other building assets, jewellery and savings. The households which did not join *arisan* either in 2000 or in the last 12 months before interviewed in 2007 have experienced increase in the total household assets depicting general growth in wealth.

Table 4 summarizes the impact of participation in *arisan* in the last 12 months before interviewed in 2014 on the household assets. Like the previous case *arisan* participation in 2014 shows significant positive impact on the total household asset and mixed effect on different categories assets. The participation has positive impact also on house and lands, other building assets, vehicles, household appliances furniture and receivables while negative impact on land, jewellery and savings. In both instances the demographic variables especially age and gender has positive association with total household assets i.e. relatively older male participants tend to possess higher assets. The year of schooling too has a positive impact on the total and other assets. Certain household assets of the participants such as vehicles, furniture and appliances have increased in both observation period while jewellery and saving have decreased.

The impact of *arisan* participation on household asset accumulation has several other implications worth a discussion. *Arisan* has been a prevalent tradition in Indonesia for centuries and people join the social groups for both social and economic reasons. People often join the social groups to save for substantial expenses like house renovation, vehicles, furniture, family vacation or even migration. Hence, the implication of group participation on the household asset accumulation appears to be direct and obvious, although the implications on different categories of asset is not which reflect rather on the pattern of the household asset accumulation. The other indirect implications of group participation on the household asset would result from the households which use the *arisan* savings in entrepreneurial activities. The participation in social groups could enhance their social capital and access to market networks which in turn result in further income and more assets.

The other implication of group participation in relation to asset accumulation is household saving behaviour and mechanism in place. The households could simply save themselves without participation in the social groups. However, there must be some inherent incentive in joining *arisan* for some households which lack the financial discipline for generating a regular saving for a given purpose. Joining the social groups imposes that discipline. Therefore, *arisan* is an alternative way to manage family finances, especially for people who are reluctant to save as it requires participants to be regular in making the participation fee in each meeting (Gugerty, 2007). Otherwise they could face social sanctions. Thus, social gathering participation could be a potent mechanism for controlling the financial behaviour of its members (Ambec & Treich, 2007). The gathering often being informal and flexible with social enforcement in place could be low in cost to operate and more efficient in

producing outcome compared to more formal micro-credit institutions (El-Gamal et al., 2014).

In the IFLS data, there is a clear indication that *arisan* participation is dominated by women. The earlier socio-anthropological studies by Geertz (1962) and Ardener (1964) and later studies of like studies of Hospes (1992) also finds dominant role of woman in *arisan*. The ROSCAs enable women to deal with a wide variety of economic activities including managing household expenses and savings. It also allows them taking protections against unexpected and sudden expenses of their partners (Anderson & Baland, 2002). The higher level of women participation in socio-economic decision making also has implications on their empowerment and skill development (Stoffle et al., 2009). However, the implications of higher women participation in *arisan* on the accumulation of household assets are not clear. It possible that woman tend to focus on certain family expenses and household assets rather which is different from their male counterparts in the family. The participation of women in decision making about the household expenditure and saving could affect the type of assets households accumulate. Nonetheless, the men of the house could still lead the decision process while the woman becomes the face in the social groups.

The ROSCAs usually appear to egalitarian organizations. As the fund to be raised in each meeting is same for all and agreed by all the group members are likely to come from similar socio-economic background. The social mechanism of accumulating saving could also apply for the partisans who are credible to others. Hence, it appears that middle and high income households tend to form such social groups rather than very poor ones (Levenson & Besley, 1996). In other words, too poor households might require other forms of social safety nets and supports. The other advantage of ROSCA is that the finds are usually spent or invested in the local economy. Hence, it could have greater implications for the community development and welfare. *Arisan* being a prevalent practice in Indonesia could provide social support in implementing other development programs of the government especially with cash assistance (Kharisma, 2018).

TABLE 3. THE EFFECT OF ROSCA'S PARTICIPATION TO HOUSEHOLD ASSETS IN 2007

	THA	HL	OHB	Land	Vehicle	HA	Save	Receive	Jewelry	Furnish	Poultry
Intercept	15.05*** (0.08)	- 9.74e+07*** (6544747)	-3942776*** (891641.1)	-2655438*** (947261.9)	- 1.81e+07*** (1879893)	-2162530*** (273412.9)	- 610775.4*** (176593.7)	-2151485** (898905.3)	-41204.3 (119078)	-2266565*** (397073.2)	-797224.6 (602214.8)
Age	0.02*** (0.00)	1982889*** (125773.7)	112442.6*** (17135.11)	88319.77*** (18204.01)	280910.4*** (36126.85)	39006.08*** (5254.314)	17339.96*** (3393.691)	37885.89** (17274.71)	14237.43*** (2288.382)	59709.9*** (7630.755)	19739.36* (11573.06)
Gender	0.19*** (0.04)	1.52e+07*** (3918445)	-710840.3 (533839.8)	-116703.3 (567140.9)	2702411** (1125522)	482049.4*** (163696.7)	-137999 (105729.5)	1052771* (538189)	1166.675 (71293.92)	396378.2* (237734.1)	511923.6 (360555.7)
Loc	-0.00 0.03	1.64e+07*** (2751016)	789336.2 (374792)	-417282.5 (398171.6)	459665.5 (790193.2)	465990.8*** (114926.2)	107810.7 (74229.32)	-56885.08 (377845.4)	-55605.26 (50053.2)	-205698.8 (166905.5)	301477.3 (253134.7)
YoS	0.10*** (0.00)	7548642*** (360957)	318723.7*** (49175.94)	284776.2*** (52243.55)	1881593*** (103680.2)	346682.2*** (15079.31)	73486.25*** (9739.527)	142935.1*** (49576.57)	75392.41*** (6567.411)	306370.1*** (21899.45)	63362.98* (33213.45)
Participants	0.56*** (0.04)	3.08e+07*** (3423279)	-3255142*** (466379.6)	-2817954*** (495472.5)	5456557*** (983292.1)	1094158*** (143010.7)	- 670934.1*** (92368.69)	671710.7 (470179.2)	-1076241*** (62284.66)	1383764*** (207692.1)	-441591.7 (314993)
Non-participants	0.24*** (0.05)	-1752388 4563173	2839683*** (621676.1)	2123102*** (660456.4)	-481240.2 (1310712)	891.3032 (190630.8)	490904.6*** (123125.9)	26142.74 (626740.8)	272430.5*** (83024.39)	350038.7 (276850.1)	-495114.1 (419880.3)
All	0.15** (0.07)	3.10e+07*** 6076630	-3210021*** (827865.9)	-2303867*** (879508.4)	9447898*** (1745432)	879010.3*** (253856.9)	- 572402.3*** (163962.8)	492338 834610.5	- 322446.4*** (110560.9)	485580.7 (368672.3)	1107294** (559141)
F-test	194.16***	163.24***	27.62***	15.37***	92.72***	143.12***	27.89***	3.69***	87.67***	54.91***	2.06***
R-squared	0.1435	0.1230	0.0232	0.0130	0.0738	0.1095	0.0234	0.0032	0.0700	0.0450	0.0018

Note: * $p < 0.100$; ** $p < 0.050$; *** $p < 0.001$

TABLE 4. THE EFFECT OF ROSCA'S PARTICIPATION TO HOUSEHOLD ASSETS IN 2014

	THA	HL	OHB	Land	Vehicle	HA	Save	Receive	Jewelry	Furnish	Poultry
Intercept	14.38025*** (0.1424614)	- 5.90e+07*** (8973764)	-1807912** (803113.6)	-2090312 (2950794)	- 1.32e+07*** (2583059)	- 3173920*** (1166732)	-106912.8 (147932.3)	-245441.3 (1468026)	-40635.32 (209404.4)	-2337839* (1236166)	69314.7 (101559)
Age	0.0285224*** (0.0032339)	1228089*** (203618.3)	50965.99*** (18222.97)	111879.7* (66954.71)	203695.3*** (58610.65)	56434.37** (26473.62)	6728.135** (3356.644)	13357.59 (33310.1)	10672.32** (4751.47)	58071.7** (28049.11)	5472.609** (2304.416)
Gender	0.3508426*** (0.1167987)	-355138.3 (7369266)	-110711.4 (659517.9)	-808672.7 (2423196)	2752735 (2121211)	-307032.6 (958121.9)	-106958.1 (121482.2)	2296374* (1205545)	-239576.7 (171963.2)	-744288.7 (1015141)	6856.892 (83400.42)
Loc	0.0661531 (0.0662748)	1.44e+07*** (4179528)	855429.8** (374049.9)	-1601247 (1374331)	1765561 (1203059)	843892.3 (543405.1)	125604.5* (68899.43)	-454695.6 (683732.7)	215675.9** (97530.03)	555239.7 (575744)	- 149815.8*** (47301.09)
YoS	0.0826242*** (0.0088286)	4817605*** (557217.3)	196639.3*** (49868.57)	372395.3** (183226.7)	1391103*** (160392.6)	352964.3*** (72447.12)	26122.02*** (9185.715)	-44519.16 (91155.67)	26171.92** (13002.77)	216980.9*** (76758.55)	8215.805 (6306.212)
Participants	1.178253*** (0.0828693)	4.39e+07*** (5233686)	- 1997349*** (468392.6)	-4460448** (1720965)	5978666*** (1506494)	925038.4 (680462.5)	- 393451.2*** (86277.21)	520279.7 (856183.4)	- 679417.1*** (122129)	1423009** (720957.9)	- 155843.2*** (59231.35)
Non-participants	0.0600947 (0.1048864)	-1937800 (6623270)	1080554* (592754.4)	-1703603 (2177894)	-1111360 (1906479)	1864546** (861130.5)	103672.5 (109184.5)	367469.6 (1083507)	-90280.97 (154555.2)	1785779* (912377.7)	-74641.47 (74957.73)
All	0.4858863*** (0.1457831)	3.09e+07*** (9214249)	-1328436 (824636)	1784334 (3029871)	5085382* (2652281)	-976425.9 (1197999)	-142314.4 (151896.7)	2936556* (1507367)	53042.28 (215016.2)	-327682.3 (1269294)	89537.98 (104280.7)
F-test	138.51***	68.82***	7.35***	1.56	28.04***	7.59***	5.84***	2.40**	6.19***	5.42***	2.93***
R-squared	0.2888	0.1672	0.0210	0.0045	0.0756	0.0216	0.0168	0.0069	0.0177	0.0156	0.0085

Note: * $p < 0.100$; ** $p < 0.050$; *** $p < 0.001$

CONCLUSION

The tradition of *arisan* has been passed from generation to generation especially in both urban and rural communities in Indonesia. The formation and function of the social gatherings are usually informal and flexible based on social contracts. This micro-saving institution thus helps households generate savings and undertake capital expenditures at a low transaction cost. The social contracts particularly help households with less financial discipline generate and manage savings better. It is therefore not surprising that the participation in *arisan* would significantly contribute to the accumulation of total household assets. The focus of this research has been the impact of *arisan* participation on household asset while the household assets could reflect on the changing income and living standard. However, it will be useful to find if participation in social gathering enhances entrepreneurial activities, income generation, employment creation or community development. In terms of policy, as the practice of *arisan* participation being an integrated part of the society and culture in Indonesia the government programs could directly engage the social groups and existing social contracts in the communities in designing specific development programs. The social network and infrastructure could also be low cost and efficient vehicles for managing and financing various development activities. Formulation of socio-economic development policies around *arisan* thus requires further attention with further surveys and research.

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