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Social capital and earnings distribution among female micro-entrepreneurs in rural Nigeria

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Abstract

Purpose – The purpose of this paper is to examine the role that social capital plays in the determination and distribution of business earnings of female entrepreneurs in selected rural communities of Ogun State, Nigeria.

Design/methodology/approach – The theoretical foundation of social capital and its relationship to informal finance was used in a modified Mincer's model to examine the distribution of earnings among a sample of members of informal self-help groups. The study relied on a set of secondary data collected from a survey of 275 female micro-entrepreneurs in five rural communities in Ogun State, Nigeria. The analysis of data was done with the use of SPSS computer software while the ordinary least squares regression technique was used in the models' estimation.

Findings – The findings show that though human capital variables contribute to earnings in the usual Mincer's parlance, social capital as well as neighbourhood effect variables appear much more important determinants.

Originality/value – The study quantified and applied five social capital variables in the estimated earnings function and three of these variables were found to be statistically significant in their effects on earnings distribution among the study sample. The study concluded by advocating a multi-disciplinary approach to the study of enterprise development as well as a coordinated approach by the government to promote self-help organisations among women in the rural areas.

Keywords Nigeria, Women, Entrepreneurialism, Microeconomics, Rural regions, Social networks

Paper type Research paper

Introduction

The move by the Central Bank of Nigeria in 2005 to launch micro-finance banks was directed towards bridging the credit gap between formal and informal entrepreneurs. More importantly, it was an attempt to bring savings and credit mechanisms closer to rural dwellers and urban informal entrepreneurs that were neglected in the distribution of financial intermediation institutions. The rural banking scheme of 1977 and many other government interventions for the provision of micro-credit to micro-entrepreneurs and other disadvantaged groups have not achieved significant impact in business development in particular, and rural development through effective financial intermediation, in general (Olomola, 2002). These and other factors have been responsible for the continued prevalence of informal micro-finance arrangements as well as self-help community-based groups within most rural communities and the urban

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informal sector of Nigeria in spite of the global campaign for the dissemination of credit to the world's poor through the semi-formal mode of financial aid agencies.

Most rural communities in Nigeria are under-banked. Self-help groups (SHGs) and community-based organizations are therefore at the centre-stage of enterprise development finance especially among women and the core-poor. Door-to-door deposit collectors, rotating savings and credit associations (RoSCAs), trade groups formed along business lines and meeting regularly (say, on popular market days) form the core of micro-finance arrangements among rural dwellers (Vonderlack and Schreiner, 2002). Membership (especially of a continued nature) and access to savings and borrowing facilities in these micro-finance arrangements rely heavily on social capital created among the members of the groups concerned.

One important fact gleaned from the literature is that social networks are strong coping strategies among the rural poor, mostly women, who are neglected in terms of necessary governmental assistance. For instance, Kebede and Butterfield (2009) describe the positive effect of social networks among poor women in Ethiopia while Katungi *et al.* (2008) reported agricultural information diffusion through informal channels in rural Uganda. At the macro-economic level, several studies have concluded that "the concept of social capital offers a way to bridge sociological and economic perspectives thereby providing potentially richer and better explanations of economic development" (Woolcook and Narayan, 2000; Fukuyama, 2002).

In spite of the social and economic importance of social networks in the development process both in the developing and developed nations (Bezanson, 2006; Kuada, 2008, 2009; Ssewamala *et al.*, 2006), there are few studies that focus on women micro-entrepreneurs in Nigeria. While it is true that the role of informal micro-finance on rural micro-enterprise has been widely studied (Omorodion, 2007; Ogunrinola and Alege, 2007; Oke *et al.*, 2007; Ogunrinola *et al.*, 2005; Ogunlela and Mukhtar, 2009; among others), no known study has examined the importance of social capital on income distribution of women in both farm and off-farm micro-entrepreneurial activities in Nigeria. Rather, studies attempting to explain factors affecting earnings distribution of rural micro-entrepreneurs have often relied on human capital paradigm alone to the exclusion of the critical importance of social capital and neighbourhood effects. This gap, perhaps, is due to the problematic nature of empirical measurement of social capital and hence its non-inclusion in quantitative analysis of earnings distribution models (Grootaert, 1998; Grootaert and van Bastelaer, 2001). The main objective of this paper, therefore, is to examine the importance of social capital in informal micro-finance arrangements among female micro-entrepreneurs as well as the impact of such informal finance on earnings distribution and welfare of female micro-entrepreneurs in selected rural communities of Ogun State in Nigeria. This paper, therefore, attempts to bridge this yawning gap. The rest of the paper is organized as follows: the issue of social capital and its linkage with informal micro-finance and small-scale business development is the issue of the next section, the following two sections discuss the methodology of study as well as the analysis and interpretation of data and the last section gives the concluding remarks.

Gender, social capital and credit for business development

The concept of social capital

Discrimination in the financial market is in most cases based on factors like the ability to provide collateral security, geographical location, educational attainment and gender,

among others. For instance, the poor without any collateral, the illiterate, women, and those in rural locations are disadvantaged in terms of access to formal financial institutions while micro-entrepreneurs, especially at the start-up stage, and those considered as bad credit risks by the formal financial institutions are denied access. A large proportion of participants in the off-farm micro-business ventures in rural communities are mostly women who engage in trading, small-scale processing of agricultural products, food vending, tailoring, photography and such like. Apart from being illiterate and poor, some of these women suffer domestic violence from uncaring husbands and in-laws who treat them as "things" rather than human beings with emotions and personal basic needs (Mayoux, 2000). Thus, one way of overcoming this situation is in becoming a member of an SHG which provides micro-finance facilities for personal empowerment through the social ties generated among themselves over time.

Therefore, investment in and benefits of social capital are major reasons for the sustenance of informal micro-finance in the traditional setting, upon which modern micro-finance institutions (MFIs) are built. Typical examples in this case are the Grameen Bank of Bangladesh, Bank Rakyat in Indonesia and BancoSol in Bolivia. Sadly, however, in spite of the growing popularity of semi-formal MFIs, many poor women in rural communities in Nigeria have neither heard of, nor benefitted from such credit schemes. Major means of financial intermediation for business and consumer durable purposes still remain the community-based self-help traditional type of micro-finance groups established on gender, enterprise, or other bases. In such financial arrangements, borrowing and lending are not collaterised in the formal sense, as lenders rely on the social capital of borrowers to overcome the problem associated with asymmetric information in such credit markets (Gomez and Santor, 2001).

The concept of social capital is relatively new in economic analysis. According to Fukuyama (2002), the concept re-entered the social science lexicon in the 1980s. The concept has been defined in various ways depending on the discipline of the researcher concerned. While Coleman (1988) sees it as "people's ability to work together in groups", Fukuyama prefers to define the concept more broadly by referring to it as "any instance in which people cooperate for common ends on the basis of shared information and values". According to Putnam (1993), social capital refers to the "features of social organization, such as trust, norms and networks that can improve the efficiency of society by facilitating coordinating actions". Durkin (2000) sees social capital as "those features of relationships that provide individuals/households access to social resources which raises household utility/output for any level of consumption". Portes (1998) argues that social capital enhances the individual's ability to secure benefits by virtue of membership in social networks. Woolcook and Narayan (2000) define social capital as the norms and networks that enable people to act collectively; and using this concept, they identified the possible link between social capital and economic development. Thus, the concept of social capital rests heavily on trust, social norms, networks and trustworthiness required within groups and communities which help to "facilitate exchanges, lower transaction costs, reduce the cost of information, permit trade in the absence of contracts and the collective management of resources" (Fukuyama, 2002).

Using the concept in empirical works, many researchers have argued that social capital influences a wide range of significant political and economic phenomena. For instance, Arrow (1972) and Fukuyama (2002) suggest that the level of trust in a society strongly influence economic performance, while Knack and Keefer (1997) in their

cross-country study of the relationship between economic growth and social capital argue that trust and civic norms (their measure of social capital) are directly related to economic growth. Glaeser *et al.* (1999) used a sample of Harvard undergraduates in two experiments to measure two components of social capital: trusting behaviour and trustworthiness. They conclude that "social capital is a meaningful, individual-level variable that can be studied with the tools of price theory, once it is understood that aggregation will be much more difficult than for other forms of capital". In support of the importance of social capital in economic and entrepreneurship development, Kuada (2008, 2009) argued that rather than focusing on only economic factors for entrepreneurial development, social capital variables like non-kin social ties facilitated through either friendship or common church membership, are important for entrepreneurial development.

Social capital, micro-enterprise development and earnings of female micro-entrepreneurs

Economic literature in the neo-classical tradition links additional streams of personal income to increases in human capital development. The concept of human capital formation relates to the acquisition of education which may be general or specific; improvement in health care and nutrition as well as investment in migration from an area of low opportunity to an area of better social and economic opportunity. Thus, an increase in the level of human capital possessed by an individual is expected, *ipso facto*, to contribute to the level of earnings. The human capital theorists, therefore, posit a positive relationship between human capital development (proxied mainly by the level of education attained and experience) and the level of earnings (Mincer, 1974; Becker, 1975). An augmented version of the Mincer's model later incorporated individual personal characteristics, such as gender, marital status, family background and so on.

As earlier remarked, the relative importance of social capital in the distribution of earnings in particular and economic activities in general was not too obvious in the neo-classical analysis (Grootaert, 1998; Kuada, 2008). However, the seminal work of Granovetter (1985) as well as the pioneering pragmatism of the Grameen Bank established by Mohammad Yunus in Bangladesh brought a combination of the social and economic approach to the issue of poverty alleviation through semi-formal micro-financing of micro-enterprises, especially among women (Hossain, 1984; Dowla, 2005). Professor Muhammad Yunus was said to have disbursed the first semi-formal micro-loan in Bangladesh in 1974 mostly among poor landless women who were considered poor credit risks by the formal banking sector. His principal method of credit mobilization and credit dispersion relied mainly on group lending which is based on social networks among the homogenous indigenes and this enhances an impressive repayment rate among members (Hossain, 1984; Irohi, 2008). The reliance on social capital among the credit group was an attempt to overcome the problems involved in peer screening, monitoring and enforcement in a market characterized by information asymmetries which can result to selection bias and moral hazard (Stiglitz, 1990; Hoff and Stiglitz, 1990; Mohieldin and Wright, 2000).

Therefore, access to micro-credit by the poor rural dwellers (many of who are women) has been made possible principally by the instrumentality of social capital, given the level of their human and physical capital attainment. For instance, access to Grameen Bank facilities and other SHG-based micro-credit would have been impossible but

for the reliance on social capital enhanced by group guarantee (Rankin, 2002). Thus, Woolcook and Narayan (2000) see social capital as "the capital of the poor" because social capital provides the trust and mutual confidence required for credit in an informal credit market. Thus, across the length and breadth of many developing nations, both in the rural and urban sectors, there are a plethora of SHGs and other informal finance associations formed for the purpose of savings and credit mobilization towards the meeting of both personal and business financial needs. Membership of informal self-help finance groups is enhanced through social networks that encourage the establishment of SHGs and also act as a guarantee for informal borrowings for the purpose of personal/household consumption and/or business development.

The issue relating to the impacts of social capital on informal finance on one hand, and the impact of micro-credit on income and welfare of women in general has been extensively discussed in the literature (Omorodion, 2007; Swain, 2007; Kuada, 2009; among others). For instance, Swain (2007) argued that micro-finance has had positive economic impact on the empowerment of women in India. Taking the concept of women empowerment a little further, Swain argued that empowerment of women, especially in the rural areas is not complete until they (the women) are financially free from all forms of cultural domination and can also challenge all existing norms and culture to improve their well being. The SHGs studied in India are made up of about 15 people of homogenous class, who pool funds together which are lent at a low interest rate to members, thus facilitating financial intermediation among themselves. Financial discipline thus achieved facilitated SHG-bank linkage whereby loans are made by banks to SHG that applies for them. The group savings and group guarantee serve as collateral for the loan advanced to the group; while peer pressure as well as members' savings kept with the bank serve as incentives for loan repayment. The studies of Puhazhendi and Badatya (2002) found that the SHGs in India have a positive social impact on members and their businesses, while Kuada (2009) reported positive impacts of social ties on Ghanaian micro-businesses. The SHGs are community-based innovations using the trust and social networks that have developed over time among themselves as the required "collaterals" for generating the required micro-finance among themselves (Ndenecho and Akum, 2009). This study goes a step further by examining, in quantitative terms, the impact of social capital on the earnings of female micro-entrepreneurs in selected rural areas of Nigeria.

Methodology of study

The data for the study

The data for this study were a set of secondary data that were collected and used in an earlier study by Ogunrinola *et al.* (2005) in their study of informal savings among female micro-entrepreneurs in the months of April and May 2005. The study locations were five rural communities in Ado-Odo/Ota Local Government Area of Ogun State, Nigeria. The methodology of the study made use of survey exercise, using a multi-stage sampling technique. The first stage was the selection of rural towns and villages from the local government area, the second stage was the selection of enumeration areas within each town/village, while the third stage was the selection of household units within each enumeration area in the survey locations. From each of the selected households in each survey location, a list of female micro-entrepreneurs willing to take part in the study was generated and from the list, a sample of 300 entrepreneurs were

randomly selected. Any person on the sample list not found at the times of the interview had her name replaced with another one from the original list if not found after a maximum of two callbacks. The data collection exercise was carried out using structured questionnaires administered by trained enumerators. In all, out of the sampled 300 women, 275 of them gave useable responses, and this gave a response rate of 92 per cent.

Model specification and technique of data analysis

In the determination of earnings functions, researchers often rely on the use of human capital models (Becker, 1975) or the augmented type as specified by Mincer (1974). This study differs from previous ones in that social capital variables in addition to human capital variables are posited as affecting earnings distribution. In our earnings distribution model, therefore, the human capital, the social capital as well as the neighbourhood effects variables are integrated into the reduced form of the conventional human capital function. Following Gomez and Santor (2001), we specify our basic model as:

$$Log\ Y = \alpha + \beta_1 \boldsymbol{H} + \beta_2 \boldsymbol{S} + \beta_3 \boldsymbol{N} + \beta_4 \boldsymbol{X} + \varepsilon_i \quad (1)$$

where:

Y is the gross weekly earnings of the micro-entrepreneurs, **H** is the vector of human capital variables, **S** is a vector of social capital variables, **N** is the vector of neighbourhood characteristics, while **X** is a vector of demographic characteristics of the micro-entrepreneurs and their enterprises. For this study, our **H** variables are age of the entrepreneurs (AGE) and the highest formal educational attainment measured as number of years spent in school (EDUCYR). The vector of **X** variables include marital status of respondents (MARSTAT), religion (REL), nativity of respondents (NATIV), type of enterprise (BIZTYPE), village of residence/work (VILLAGE), age of business enterprise (BIZAGE), among others. Following the works of Gomez and Santor (2001) and Putnam (1993), the vectors of **S** and **N** variables have been derived from the fact that they are important aspects of social capital, such as "neighbourhood networks" and "features of social life – which are: networks, norms and trusts – that enable participants to act together more effectively to pursue shared objectives". For the purpose of quantifying social capital, we have derived five measures of S variables which are $SOCAP_M$, $SOCAP_B$, $SOCAP_Y$, $SOCAP_{CN}$ and $SOCAP_L$.

$SOCAP_M$ is a measure of the membership of informal self-help micro-finance organization that meets regularly for personal and collective benefits and through which social ties are formed. This variable is a dummy variable measured as unity if the respondent is a member of an informal micro-finance self-help organization and 0 otherwise. $SOCAP_B$ and $SOCAP_Y$ are variables measuring the quality of impacts which the membership of SHG has on the business enterprise ($SOCAP_B$) and on the income of the respondent ($SOCAP_Y$). Each of these is measured as dummy variable: 1 if membership of SHG is perceived to be beneficial to business or income enhancement, and 0 otherwise. The extent of network among members and the level of trust among SHG members are measured by the variable $SOCAP_L$ and it is constructed using a binary variable (01). If the person that recommended the respondent for SHG membership was either the spouse, friend or the head of the SHG, $SOCAP_L$ takes the value 1, and 0 otherwise. How well a member knows her neighbour is measured by the interactive variable $SOCAP_{CN}$ which is a product of the NATIV variable and the number

of years since joining SHG. NATIV is a dummy variable which takes value 1, if the respondent is a native of the village/rural town in which she has her membership of SHG, and 0 otherwise. The neighbourhood effect variable (NE) measures the locational impact that the type of community one resides in, has on an individual's economic behaviour. In fact, it is a measure of external/community effect "intended to capture the nature and quality of the community in which an individual resides" (Gomez and Santor, 2001, p. 947). For instance, the SHGs located in sparsely populated and relatively infrastructurally poor communities may have difficulties in raising appreciable membership, thereby negatively affecting savings mobilization and hence loans that can be advanced to members. At the micro-enterprise level, the cost of getting product to the markets for poor, low-demand communities may affect the level of production and hence the extent of business prospect. In contrast, SHGs located in communities with improved social infrastructure like those having marketplaces, electricity supply, schools (primary and/or secondary), vehicular access roads and so on; are expected to enhance micro-business prospect and hence the level of entrepreneurial earnings. The NE measure in this study is a dichotomous variable which takes value 1 if respondent lives and maintains her SHG membership in rural town having marketplace and/or primary and/or secondary school and/or electricity supply. The variable takes value 0, otherwise.

The estimation of our basic model is in stages as follows. At first, we introduced the human capital variables "AGE" and the level of formal educational attainment "EDUCYR", such that we have:

$$Log\ Y = \beta_0 + \beta_1 AGE + \beta_2 EDUCYR + \mu \tag{2}$$

In the next stage, we added the social capital and the neighbourhood effect variables such that we have:

$$\begin{aligned} Log\ Y = {} & \alpha_0 + \alpha_1 AGE + \alpha_2 EDUCYR + \alpha_3 SOCAP_M + \alpha_4 SOCAP_B \\ & + \alpha_5 SOCAP_Y + \alpha_6 SOCAP_L + \alpha_7 SOCAP_{NC} + \alpha_8 NE + \varepsilon \end{aligned} \tag{3}$$

The last stage is the addition of the personal characteristic variables of the entrepreneurs as well as those of the enterprises, giving us:

$$\begin{aligned} Log\ Y = {} & \gamma_0 + \gamma_1 AGE + \gamma_2 EDUCYR + \gamma_3 SOCAP_M + \gamma_4 SOCAP_B \\ & + \gamma_5 SOCAP_Y + \gamma_6 SOCAP_L + \gamma_7 SOCAP_{NC} + \gamma_8 NE + \gamma_k \sum X + \varepsilon \end{aligned} \tag{4}$$

Our a priori expectation is that the coefficient estimate of the social capital variables be positive and significant in line with our conjecture of the relative importance of the SOCAP and NE variables in the creation of access to micro-finance and hence, an enhanced opportunity for business development and income generation. The list of variables used in for the estimation of equations (1)-(4) together with the hypothesized relationship between the dependent and independent variables are displayed in Table I.

Data analysis and discussion of results

Brief description of respondents

The micro-credit arrangement studied in this work is the traditional community-based saving and credit schemes that provide micro-finance opportunities for the rural poor. These associations and clubs provide saving and credit channels to finance both the

Variable type	Main variable	Derived variable	Variable label	A priori expectation
Personal characteristics	1. Age of the micro-entrepreneurs	1. Actual age	1. AGE	1. > 0
		2. Age < 30 years	2. AGE1	2-6. Cannot be determined a priori
		3. Age 30-39 years	3. AGE2	
		4. Age 40-49 years	4. AGE3	
		5. Age 50-59 years	5. AGE4	
		6. Age 60+ years	6. AGE5	
	2. Educational attainment	1. Years in school	1. EDUCYR	1. > 0
		2. No schooling	2. EDUC1	2-5. Cannot be decided a priori
		3. Primary education	3. EDUC2	
		4. Secondary education	4. EDUC3	
		5. Other education	4. EDUC4	
	3. Marital status	1. Married	1. MS1	Cannot be determined a priori
		2. Single	2. MS2	
		3. Divorced/separated	3. MS3	
		4. Widowed	4. MS4	
	4. Religion	1. Islamic religion	1. REL1	
		2. Other religion	2. REL2	
	5. Years in SHG		CLUBYR	> 0
	6. Village of residence	1. Alapoti	1. VILLAGE1	
		2. Onibuku	2. VILLAGE2	
		3. Atan-Ota	3. VILLAGE3	
		4. Iju-Ota	4. VILLAGE4	
		5. Alagbaa and environs	5. VILLAGE5	

(*continued*)

Table I.
Summary of explanatory variables and their a priori expectations

Table I.

Variable type	Main variable	Derived variable	Variable label	A priori expectation
Business characteristics	1. Type of business	1. Trading	1. BIZTYP1	Cannot be decided a priori
		2. Farming/processing	2. BIZTYP2	
		3. Catering/food selling	3. BIZTYP3	
		4. Tailoring/fashion designing	4. BIZTYP4	
	2. Age of business	1. Actual age	1. BIZAGE	1. > 0
		2. Age of up to 4 years	2. BIZAG1	2-5. Cannot be determined a priori
		3. 5-9 years	3. BIZAG2	
		4. 10-14 years	4. BIZAG3	
		5. 15 years and over	5. BIZAG4	
Social capital	1. Social capital	1. Membership of SHG	1. $SOCAP_M$	1. > 0
		2. Extent of network and trust	2. $SOCAP_L$	2. > 0
		3. Impact on business	3. $SOCAP_B$	3. < 0
		4. Impact on income	4. $SOCAP_Y$	
		5. Knowledge of neighbours	5. $SOCAP_{CN}$	
	2. Neighbourhood effect	2.1. Type of community lived whether developed or not	2.1 NE	

Source: Author's computation from survey data

consumption and investment needs of members. Tables II and III give some details about the distribution of respondents by enterprise, as well as some other socio-economic characteristics. A total of 275 women entrepreneurs were sampled and they were distributed by enterprises as follows: 135 of them representing 50 per cent are engaged in trading; 83 of them representing 30 per cent are engaged in farming and rudimentary agro-processing activities, such as cassava-flour production, palm oil

		Enterprises				All	
Variables	Variable categories	Trading	Farming and agro-processing	Catering and food vending	Tailoring and fashion design	No.	%
Age of entrepreneurs (years)	AGE1 (<30)	22	18	27	50	62	23
	AGE2 (30-39)	36	36	28	33	95	35
	AGE3 (40-49)	26	29	28	11	70	26
	AGE4 (50-59)	14	11	17	6	35	13
	AGE5 (60+)	2	6	–	–	9	3
	All age groups (no.)	100 (135)	100 (83)	100 (35)	100 (18)	271	100
Educational attainment	EDUC1 (none)	14	39	11	13	58	21
	EDUC2 (primary)	45	50	42	27	123	45
	EDUC3 (secondary school)	33	11	44	53	80	29
	EDUC4 (others)	8	–	3	7	13	5
	All education groups (no.)	100 (137)	100 (83)	100 (36)	100 (18)	274	100
Marital status	Single	11	6	19	7	29	11
	Married	77	86	70	87	216	79
	Divorced/ separated	4	2	8	–	10	4
	Widowed	4	4	3		18	6
	All (no.)	100 (135)	100 (83)	100 (36)	100 (19)	273	100
Religion	Christian	58	33	62	40	138	50
	Muslim	40	65	38	53	132	48
	Traditional	2	2	–	7	5	2
	All (no.)	100 (137)	100 (83)	100 (36)	100 (19)	275	100
Savings mode	Formal	10	7	11	8	21	9
	Informal	79	73	86	69	173	78
	Others	11	20	3	23	28	13
	All	100 (109)	100 (66)	100 (35)	100 (13)	222	100
Savings regularity	Daily	37	31	46	30	68	37
	Weekly/ monthly days	47	57	34	50	88	48
	Fortnightly	3	6	3	10	8	4
	Monthly	12	6	17	10	21	11
	All	100 (91)	100 (49)	100 (35)	100 (10)	185	100

Source: Author's computation from survey data

Table II.
Percentage distribution of entrepreneurs by enterprises and by some selected characteristics of respondents

Variables	Variable categories	Enterprises: Trading	Farming and agro processing	Catering/ food vending	Tailoring and fashion design	All: %	No.
Savings medium used	Bank	10.1	7.6	11.4	7.7	9.4	21
	AJO/ESUSU	78.9	72.7	85.7	89.2	77.6	173
	Home/ friends	11	19.7	2.9	23.1	13	29
	All % (no.)	100 (90)	100 (49)	100 (35)	100 (13)	100	223
Who introduced you?	Friends	47.8	40.8	42.4	40	44.5	81
	Spouse	20	16.3	3	30	16.5	30
	Collector	25.6	30.6	48.5	10	30.2	55
	Others	6.6	12.3	6.1	20	8.8	16
	All % (no.)	100 (90)	100 (49)	100 (33)	100 (10)	100	182
Have you ever been defrauded?	Yes	9.6	11.4	29	–	13.1	22
	No	90.4	88.6	71	100	86.9	146
	All	100 (83)	100 (44)	100 (31)	100 (10)	100	168
Ever asked for loan?	Yes	36.4	46.4	20.8	25	34.9	44
	No	63.6	53.6	79.2	75	65.1	82
	All % (no.)	100 (66)	100 (28)	100 (24)	100 (8)	100	126
Disbursement of last pay-off	Business development	74.7	68.8	66.7	44.4	70.1	115
	Land/ building	8.4	22.9	16.7	11.1	14	23
	Others	16.9	8.3	16.6	44.5	15.9	26
	All % (no.)	100 (83)	100 (48)	100 (24)	100 (9)	100	164
Disbursement of loan received	Business development	69.6	18.2	33.3	50	50	22
	Land/ building	13	36.4	50	50	27.3	12
	Others	17.4	45.4	16.7	–	22.7	10
	All % (no.)	100 (23)	100 (11)	100 (6)	100 (4)	100	44
Planned disbursement of next pay-off	Business development	49.2	45.7	52.2	85.7	50.4	70
	Land/ building	22.2	32.8	21.7	14.3	25.2	35
	Others	28.6	22.5	26.1	–	24.4	34
	All % (no.)	100 (63)	100 (46)	100 (23)	100 (7)	100	139

Table III.
Percentage distribution of entrepreneurs by enterprises and selected savings/loans variables

Source: Author's computation from survey data

processing from fresh fruit oil palm bunches and so on, 35 of them representing 13 per cent are engaged in catering and cooked food vending, while the remaining 18 are engaged in tailoring/fashion designing activities. Many of the respondents are young and in their prime. For instance, among the tailoring entrepreneurs, 50 per cent are less than 30 years; while the traders, farmers/processors and food vendors have the bulk of entrepreneurs within the age group of 30-49 years. Over four-fifths of the entrepreneurs are literate with at least primary school educational attainments; about 80 per cent of them are married while in terms of religion they are almost equally distributed between Christianity and Islamic religions.

Motivation for informal finance among rural micro-entrepreneurs in the survey area
Rural dwellers get involved in informal micro-finance because the scheme makes credit available to them through pay-offs received from past savings and/or loans from SHGs. The availability of a saving vehicle for small savers like the respondents in Ado-Odo Ota local government in Nigeria helps the rural women to save and obtain informal micro-credit through the self-help programme since there are no banks or non-formal micro-finance organizations in the villages they live. In terms of the savings mode used by the respondents, Table III shows that 91 per cent of the micro-entrepreneurs use informal modes of saving and this can be broken down into Ajo/Esusu (78 per cent) and home/trusted friends (13 per cent). Only 9 per cent use the formal mode of saving and these women have to travel a long distance to get to the nearest formal banking institution. Even when a few (13 per cent) of those using the informal mode of saving experienced being defrauded by some "collect and disappear" mobile bankers, or when a member who received a pay-off in RoSCAs refused to honour obligations in making repayment contribution to other members despite the social pressures on such erring member, a good percentage (77 per cent) of those defrauded are not discouraged from continuing in informal micro-finance (Table III).

An important motivational source for the continuance of micro-finance despite temporary setbacks is the fact that it is the principal means of obtaining finance for business and social development. Friends, relations and work associates come together to either patronise the same mobile saving collector who moves from house to house or from one market stall to the other on an agreed day(s) of the week or on popular market days. Alternatively, rotating savings and credit clubs are formed for the purpose of making collective savings and giving out pay-off to a person or group of persons in the same meeting. The introduction of a new member to an existing savings/credit group is mainly by friends/relations who have built up trust and confidence in themselves such that the person introducing another becomes an informal guarantor for all credit transactions of her protégé in the group (Ogunrinola *et al.*, 2005). Introduction by friends constitute 44.5 per cent of new membership, invitation by spouse constitute 16.5 per cent, while the mobile banker or head of other SHG is responsible for 30 per cent of membership enrolment. Thus, given the mode of entry into the savings/credit club, the influence of social capital is strong on obtaining credit either on personal or on group recognition basis.

Two principal sources of credit are available to members of the self-help informal finance groups. The first and in fact the primary source is the pay-off received at the end of the predetermined period of saving. For RoSCAs, a member or group of members receive a pay-off each meeting day(s) and for fixed term savings, all members receive their pay-off at the end of the agreed period. The second source of credit fund for members is the loan that some saving clubs provide. Table III reports that about 35 per cent of sampled entrepreneurs had applied for loans at one time or the other, with the highest percentage of those applying from entrepreneurs in farming and agro-processing (46 per cent), which is closely followed by those in trading activities (36 per cent). Informal micro-finance is therefore a major source of meeting the saving and credit needs of the sampled entrepreneurs.

With respect to the welfare of respondents, average annual income growth measured in nominal terms is found to be highest among the tailoring and fashion designing entrepreneurs (23 per cent); followed closely by those in farming and agro-processing

(16 per cent), while traders and food vendors experience 12.4 and 15.7 per cent income growth, respectively, (Table IV). A statistical comparison of the test of difference in mean income before and after benefiting from the micro-credit offered by the SHG shows a statistically significant difference between current and previous mean income levels. We can therefore conclude that the effect of social networks on the income of women micro-entrepreneurs in the study area is positive in a statistically significant sense.

Determinants of earnings distribution among female micro-entrepreneurs

We have applied the ordinary least squares estimation technique to equations (2)-(4). The results obtained are reported in Tables V-VII (Regressions 1-11). Regressions 1 and 2 show the importance of human capital in earnings distribution. Both the level of formal education attained and age of entrepreneurs contribute to earnings distribution in a statistically significant sense. In Regressions 3-5, we have included the social capital variables as well as those of neighbourhood effects. Regression 3 shows that all the human capital variables remain statistically significant (as in Regressions 1 and 2) at the specified levels; while only one of the social capital variables (i.e. $SOCAP_{CN}$) is statistically significant and has the expected positive sign. This shows that the social capital generated through the interactive knowledge of membership through participation in SHG plus the in-depth knowledge of one another from same nativity (i.e. $SOCAP_{CN} = NATIV^{*}CLUBYR$) is positively and significantly associated with higher business earnings and hence enhanced business success compared to the reference category. The other social capital variables are consistently insignificant in the statistical sense, towards their contributions to earnings variations. However, it is worthy of note that the addition of social capital variables improved the model as R^2 increased from 13.6 to 36 per cent.

In Regression 4, the neighbourhood effect variable NE was added to the human and social capital variables. The model showed an improved fit as NE is statistically significant and exhibits the expected positive sign, while the R^2 increased to 37.8 per cent from 36 per cent in Regression 3. The significance of NE shows that the SHG members who reside and carry out their enterprises in larger communities where there

	Enterprises				
Variables (average)	Trading	Farming and agro processing	Catering/ food vending	Tailoring and fashion design	All enterprises
Years in SHG	5.40	4.8	5.44	3.30	5.08
Weekly income before any loan or payoff in Nigerian Naira[a]	2,104	2,597	1,667	560	2,077
	3,959	5,220	2,746	1,100	3,939
Annual rate of growth[b] (%)	*12.42*	*15.66*	*9.61*	*22.70*	*13.43*

Notes: Italics are meant to give the value of the Nigerian currency (the Naira) exchange rate (Naira to US Dollar) at the time of data collection; [a]the average exchange rate for the year 2005 was N130 = US$1; [b]mean annual income growth is calculated by the formulae: $G_r = (Y_t/Y_o)^{(1/n)} - 1 \times 100$; where Y_t is the current income level, Y_0 is the income in the base year, n is the number of years in informal micro-finance and G_r is the annual rate of growth

Source: Author's computation from survey data

Table IV.
Distribution of income growth by type of enterprise

Variable names	Regression 1		Regression 2		Regression 3		Regression 4		Regression 5	
	B-estimate	*t*-statistic	B-estimate	*t*-statistic	B-estimate	*t*-statistic	B-estimate	*t*-statistic	B-estimate	*t*-statistic
Constant	5.860***	15.507	5.816***	15.264	7.354***	5.646	7.461***	5.891	6.438***	17.633
EDUCYR	0.065**	2.377	0.062**	2.222	0.047****	1.683	0.013	0.437	−0.014	−0.534
AGE	0.037***	4.702	0.036***	4.534	0.020**	2.278	0.015*	1.683	0.016**	2.070
NATIV			0.173	1.047						
$SOCAP_M$					−0.244	−0.266	−0.263	−0.295		
$SOCAP_Y$					−0.525	−0.232	−0.421	−0.678		
$SOCAP_B$					−0.216	−0.184	−0.393	−0.432		
$SOCAP_{CN}$					0.102***	4.314	0.094***	4.049	0.135***	5.593
$SOCAP_L$					−0.031	−0.173	−0.052	−0.298		
NE							0.548**	2.642	0.795**	4.365
R^2	0.129		0.136		0.360		0.378		0.348	
Adj. R^2	0.118		0.119		0.310		0.329		0.325	
F	11.476		7.998		7.115		7.687		15.260	

Notes: Significance at: *10 per cent, **5 per cent or less, ***1 per cent or less and ****15 per cent or less; dependent variable: log of weekly earnings

Table V.
Regression results

Variable names	Regression 6 B-estimate	Regression 6 *t*-statistic	Regression 7 B-estimate	Regression 7 *t*-statistic
Constant	6.906***	13.859	9.361***	6.467
Age (<30)				
Age (30-39)	0.453**	2.219	0.201	0.795
Age (40-49)	0.717***	3.130	0.750**	2.743
Age (50+)	0.542**	2.138	0.352	1.170
Married	−0.076	−0.377	−0.186	−0.809
NATIV	0.078	0.492	−0.546**	−2.395
EDUC1 – no schooling	−0.078	−0.069	−0.317	−0.639
EDUC2 – primary	−0.012	−0.032	−0.258	−0.553
EDUC3 – secondary	0.456	1.196	0.121	0.247
EDUC4 – others				
Farming and processing	0.301****	1.524		
Catering/food vending	−0.322****	−1.510	−0.336****	−1.497
Tailoring/fashion	−0.327	−1.380	−0.683*	−1.715
BIZAGE				
AGE1 – < 5 years	−0.740***	−3.194	−0.244	−0.813
AGE2 – 5-9 years	−0.321	−1.380	0.288	1.017
AGE3– 10-14 years	−0.325	−1.187	−0.282	−0.834
Social capital				
$SOCAP_M$			−0.81	−0.871
$SOCAP_Y$			−0.642	−1.077
$SOCAP_B$			−0.925	−1.054
$SOCAP_{CN}$			0.100***	3.158
$SOCAP_L$			0.206	1.130
NE			0.796**	2.591
RELIGION2 – Islam	0.006	0.035	0.265****	1.503
VILLAGE2	1.146***	3.697	0.600***	2.864
VILLAGE3	0.796**	2.591	(Excl.)	
VILLAGE4	0.039	0.117	(Excl.)	
VILLAGE5	−0.077	−0.227	−0.234	−0.560
R^2	0.415		0.568	
Adj. R^2	0.335		0.542	
F	5.155		4.912	
PROB (F)	0.000		0.00	

Table VI.
Regression results

Notes: Significance at: *10, **5, ***1, ****15 per cent levels; dependent variables: log of weekly earnings

are markets and other social infrastructures not available in thinly populated and remote villages, earned significantly more. An isolation of social capital variables that are not significant in Regressions 3 and 4 give rise to Regression 5, which shows that both social capital and neighbourhood effects are statistically significant determinants of earnings.

One important issue that aroused our curiosity is the change in the behaviour of the human capital variables (age and formal education) as social capital and neighbourhood effect variables are added to the model. For instance, in Regressions 1 and 2, the human capital variables are statistically significant, but with the addition of social capital variables in Regression 3, the level of significance of AGE and EDUCYR worsened from 1 to 5 per cent and from 5 to 15 per cent critical levels, respectively. In Regression 4,

	Regression 8		Regression 9		Regression 10		Regression 11	
	B-estimate	*t*-statistic	B-estimate	*t*-statistic	B-estimate	*t*-statistic	B-estimate	*t*-statistic
Constant	7.339	70.702	6.917	42.858	6.981	43.56	7.114	42.473
$SOCAP_{CN}$	0.130**	6.372	0.116**	5.765	0.115**	5.863	0.098**	4.763
NE			0.630**	3.316	0.602**	3.230	0.696**	3.716
BIZTYPE4 – trading					−0.915	−2.378	−0.903*	−2.392
BIZAGE1 – < 1-4 years							−0.401**	−2.292
R^2	0.273		0.341		0.374		0.404	
Adj. R^2	0.266		0.357		0.357		0.381	
F	0.590		21.140		21.140		17.804	

Notes: Significance at: *5 and **1 per cent levels; dependent variable: log of weekly earnings

Table VII.
Stepwise regression result

where NE variable was added, EDUCYR totally became insignificant while the level of significance of AGE coefficient dropped from 5 to 10 per cent level. In Regression 5, EDUCYR did not just remain insignificant; it turned negative, while the statistical significance of AGE improved from 10 to 5 per cent. In between the two regression estimates, it is observed that the statistical significance as well as the magnitude of coefficient estimate of NE improved, suggesting the importance of social capital and neighbourhood effect variables in earnings distribution of female entrepreneurs within the rural locations studied. This assertion is supported when the same variables were used in a stepwise fashion and the result presented in Table VII.

Table VI presents the regression results for the combination of basic and derived variables of some of the independent variables of our model. These results are shown as Regressions 6 and 7. Regression 6 shows the result of all variables excluding the social capital and neighbourhood effect variables. Regression 7 (still in Table VI) shows the result for all variables. The results show that the micro-entrepreneurs in the age group 40-49 receive the highest earnings as compared to those in the excluded category (age <30 years). Those engaged in farming/agro-processing earn more, while those in catering/food vending earn less than those engaged in trading which is the reference category. The residents of villages 2 and 3 earn more than those in village 1 (the reference category) and villages 3 and 4. In Regression 7, the inclusion of social capital and neighbourhood variables improved the explanatory power of the model as R^2 increased from 41.5 to 56.8 per cent, although there is a slight drop in the absolute value of *F*-statistic but its level of significance is not altered. Out of the five social capital variables used in the model, one of them ($SOCAP_{CN}$), representing the knowledge of neighbours is found to be statistically significant while others are not. The statistical significance of $SOCAP_{CN}$ shows evidence of strong social ties which form the basis for informal financial transactions among members without necessitating the use of material collateral securities for loans obtained in the SHG.

The neighbourhood effect variable (NE) is equally statistically significant, which shows that female micro-entrepreneurs who reside and work in more developed towns/villages have higher earnings than those living in remote and sparsely populated villages without much social infrastructure necessary to promote demand for services

provided. Using a stepwise approach in the estimation of the regression analysis, we have the result presented in Table VII as Regressions 8-11. The results shows that the most important variables affecting earnings distribution are the social capital and neighbourhood effect variables and these are followed by two other variables (BIZTYPE and BIZAGE).

Summary of findings, implications of the study and conclusion

This study examined the impact of social capital on the distribution of income of female micro-entrepreneurs in five villages in the rural area of Ogun State in Nigeria. A combination of five social capital and one neighbourhood effect variables were derived and added to the basic Mincer's human capital model of income distribution. This study has made three important findings. One, the study has shown that social network, among other factors, is an important factor for the formation and running of SHGs which are the main source of micro-finance for rural micro-entrepreneurs. Second, the study has attempted the quantification of the social capital concept and created the variables that were used in measuring their impacts on earnings distribution in the Mincer's model formulated and estimated. Third, the estimation of the basic models has shown in quantitative terms that both the neighbourhood effects as well as social networks among SHG members are statistically significant determinants of earnings distribution among female micro-entrepreneurs. The magnitude, direction and level of statistical significance of the coefficient estimates of the $SOCAP_{CN}$ and NE variables lend credence to this conclusion. It is therefore not surprising that even when some members renege in their loan repayment obligations to the SHG, most members still repose confidence in the social tie among members. Thus, this study has filled an important gap in knowledge regarding the importance of social networks among community-based SHGs and the relative importance of social capital in rural micro-enterprise finance and income distribution among rural women in micro-businesses.

Several implications for policy formulation and further research can be gleaned from this exploratory study. In the first place, our findings suggest that economic factors alone do not totally explain the development of entrepreneurship and earnings distribution through informal micro-credit in female-owned enterprises in the rural areas of Nigeria. Thus, in addition to the well-known human capital theory in economic literature, the concept of social capital and its embedded social values can provide richer and more rigorous explanations of growth of micro-businesses in Nigeria. However, further research efforts are required to analyse both the "upside" and the "downside" effects of social capital among different homogenous groups in rural Nigeria (Kuada, 2008; Woolcook and Narayan, 2000). Another research implication is the need for a larger study covering a wider area (preferably the entire country) than this study. Such a study is expected to give a result that can be generalised for the entire nation.

The second policy implication of this study is the need for motivation from the government to encourage the growth and sustenance of SHGs especially among economically active but poor women in rural areas. Since many rural locations do not have formal banks or semi-formal micro-finance organizations to service their savings and credit needs, efforts should be made by government institutions to support the existing SHGs to continue to function properly. For instance, Government Ministries in charge of social and rural/agricultural development could have extension officers located in the rural areas to help train officers of SHGs in the rudiments of book-keeping

and other basic entrepreneurial development principles and practices. This has the tendency of bridging the trust and confidence gap between the rural dwellers, who enjoy little or no benefit of development, and the government. Such a relationship could, over time, midwife a beneficial relationship between rural-based SHGs and the micro-finance banks and/or Non-Governmental Organisations-financed MFIs. Finally, given the statistical significance of our NE variable in its impact on income distribution, the provision of development inducing infrastructures like schools, rural marketplaces, electricity supply, among others, would help to enhance the income and enterprise development of female micro-entrepreneurs in the rural areas.

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