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DETERMINANTS OF INFORMAL SAVINGS IN SOUTH-WESTERN NIGERIA / LES

DÉTERMINANTS DE L'ÉPARGNE NON INSTITUTIONNELLE DANS LE SUDOUEST DU NIGÉRIA

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# DETERMINANTS OF INFORMAL SAVINGS IN SOUTH-WESTERN NIGERIA

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#### 1. Introduction

Increased modernisation and consequent development of the formal economy not withstanding, the informal financial markets have remained relevant and constituted part and parcel of the domestic economic framework of the African countries. For ages, the traditional/informal financial institutions have been serving, in their own ways, as a mechanism for the accumulation and redistribution of savings in the society. Interests of scholars and policy makers have in recent times been attracted to the economics of the informal sector in Africa. The much vaunted resilience of the Nigerian economy, for instance, is often traced to the expansion and robustness of the informal sector. However, as attention is being drawn to the sectors potential for increased contribution to economic development, so issues are also raised in respect of policy interventions.

Lately, there was a two-day technical workshop on "Conceptual and Methodological Issues in the Informal Financial Sector Research", organised jointly by the Central Bank of Nigeria (CBN) and the Nigerian Institute of Social and Economic Research (NISER). The workshop, held at NISER, Ibadan from 30-31 August 1995, was supposed to be a prelude to a more in-depth research that would be of immense academic and policy relevance and provided the impetus for this study. The research outputs, according to the Director of Research, CBN, were needed on the scope, character and activities in the informal financial market. The overriding aim was to properly articulate the impact of this sector in designing policies that would impact positively on the financial sector (Ojo, 1995).

The motivation for this paper derives from the foregoing considerations. Thus, the paper attempts to make some contribution by presenting empirical facts on the patterns of patronage and savings behaviour in the informal financial sector in Southwestern part of Nigeria. Specifically, the objectives are to determine the factors affecting the disposition towards and the level of informal savings. And, to draw from the findings the policy implications in respect of savings, the process of capital formation and the issue of linkage between formal and informal financial sectors.

## 2. Survey of the Literature

Economic orthodoxy holds the view that savings in the developing countries, and

indeed in the informal sector are generally low. By the hypothesis of vicious circle of poverty, low savings are merely a reflection of low productivity and, consequently, low per capita income. The Lewis model of development with unlimited supplies of labour also lends credence to the low savings ratio in the developing economies (Lewis, 1954). This position has not gone unchallenged in the literature. To Hill (1966), the assertion that savings and investment are rare in the informal sector is only indicative of the ignorance as to where to look for evidence.

There is now mounting evidence that savings in the informal sector typically are not low (Miracle *et al*, 1980; Delancey, 1978; Mauri, 1985). Such savings, according to authors, are to be found outside the formal financial sector. Abundant and rich descriptive details on the financial institutions in the informal sector are in Bouman (1977); Drake (1980); Aryeetey *et al* (1994), Ojo (1995) and Mauri (1988). Other than in cash-variety, savings among the relatively poor are held in form of real assets such as agricultural produce, buildings, land, cattle etc., especially in the rural communities (Soyibo, 1994; Drake, 1980). The existence of relatively untapped savings and credit potential has also been confirmed by the United Nations (1989) while Dasgupta (1979) provides evidence from some developing countries (Jamaica, Libya, Malaysia, Thailand and Uruguay) supporting high savings ratio among the self-employed farmers.

Studies have reported higher patronage of the informal financial institutions among the rural and urban poor, including people with and without a regular income (Ojo, 1974, 1992 and Bouman, 1978). Compared to the formal banking system, these savings organisations are ubiquitous, handling small amount of savings of 'common people' and granting them credits. They have administrative and transactions costs that are much lower, (Miracle *et al*, 1980). According to Delancey (1978:210), the costs involved in opening many branches, in providing access for easy withdrawals throughout the day, and in handling numerous small loans are probably beyond the capability of most banks. Other than the issue of accessibility, explanation for the continual patronage of the informal financial institutions has been found in features such as their effective simple procedures, flexibility, adaptability to local peculiarities and circumstances and multipurpose functions comprising economic and social dimensions (Siebel and Damachi, 1982; Bouman, 1978; and Ojo, 1995).

In respect of motivations, the impression in the literature is that informal savings are not just derived from economic considerations like income, profits and interest on deposits. According to Kindleberger and Herrick (1977:90) savings are a reflection of

the society's value system which attaches so much importance to accumulating wealth, whether for religious or secular reasons. Drake (1980:123) hypothesises that any individual's savings habit are very much subject to the socio-cultural environment which he/she comes from, or finds himself/herself in. Motivation for formal savings has been associated with the prevalence of the traditional savings and credit associations, inculcating in their members savings discipline (Delance, 1977). And in most cases, the participation in the group saving schemes of one sort or another is prompted by the desire to obtain credit (Oladeji and Ogunrinola, 1992).

Lately, the issue of linking the formal and informal financial sectors has become a more prominent subject matter of discussion in the literature. Discussions span such things as the desirability, or otherwise the link, the approaches and the implication for the effectiveness of financial policies. Ojo (1995) has a positive view of the linkage, arguing that such linkage will facilitate effective mobilisation and utilisation of capital resources for economic development. From the viewpoint of Bouman (1978) the link would not necessarily increase the amount of savings. At best, it could imply a transfer of resources from the informal to formal financial institutions which according to him, might not be a guarantee of optimum use of resources. At a more theoretical level, Quarcoo (1979, 1980) provides a model to underscore such integration and discuss the strategies to bring it about. Other contributions in this area of study are empirical, establishing the existence of the links between the two financial sectors and their impact on monetary policy, savings mobilisation and the process of financial intermediation (Acharya and Madhur, 1983, 1984; Cole and Park, 1983; Bell, 1990; Chipeta, 1994).

The brief survey of the literature shows vast but interrelated research areas on savings in the informal financial sector. The attempt in this paper, however, is confined to providing empirical results on the profile of the main savers and how the level of savings in the informal financial market is determined. These are matters of great importance for the analysis of policy intervention aimed at increasing the savings ratio in the economy and stimulating interaction between the informal and formal financial sector in Nigeria.

#### 3. Theoretical Framework

Competing for individual's income (or earnings) are consumption expenditure and

savings, either in the formal or informal financial sector or both. The issue of informal savings, the main concern in this paper, suggests uniqueness in terms of its motivations and determinants. People save for many different reasons, for precautionary purposes, to smooth out predictable variations in income, for old age, to buy certain durables and in fact just for the sake of it. All these have implications for the choice of medium and institutions for savings. According to Bouman (1977), both formal and informal financial institutions exist to serve the interests of different types of clientele in the society. An aspect of the empirical work in this study concerns the calibre of the savers in the informal financial institutions. Savings behaviour in this sector is the other aspect which may not be influenced as much as the variables normally used to describe conventional savings function - the kind associated with the formal sector.

## 3.1 A priori hypothesis

There are no separate theories of informal savings apart from the conventional savings function. Intention in this paper is not to develop one; rather we relate and check how far the available theories of savings can help in explaining the savings behaviour in the informal financial sector.

As far as the informal savings are concerned, no relationship can be assumed between this type of savings and the interest rate. For one thing, savings in the informal financial market in Nigeria attract little or no interest; for another, on both theoretical and empirical grounds, the influence of interest rate on savings is generally suspect (Ackley, 1970:268; Edgmand, 1983:96-97).

Income is commonly considered as the most important determinant of the rate of saving. By the absolute income hypothesis and as established in most budget studies, the ratio of saving to income rises with the level of income. Related is the a priori hypothesis that the marginal propensity to save is higher than the average propensity to save. These are held to be true also for the informal savings, except to posit that a much higher income could prompt greater patronage of the formal market.

Age enters the savings function as an important variable via the life-cycle hypothesis. In this connection, the role of savings is to smooth out fluctuations in income over a life time. The proposition is that the proportion of income saved is relatively low for those in the youngest and oldest age groups. For the working age group, the a priori hypothesis is that people become more thrifty with age. Thus, the

individuals in the middle years, being in the prime of life, have the capability to save and therefore could save-up towards retirement. The consideration for the life cycle hypothesis in the context of informal savings comes to the fore in the light of claims to the effect that the traditional financial institutions could be precursors of modern social security in Africa (see liere, 1967 and Gerdes, 1975).

As indicated in the preceding section, the source of voluntary saving, especially the informal type, is intricately bound up in social attitudes. This, again underscores the relevance of age as a determinant of savings behaviour. Other variables here are socio economic factors, such as education, occupation, place of residence, ethnicity, gender, marital status and religion. These are subjective factors which cannot be reduced to any numerical scale but may change the shape and level of savings function. Inclusion of these variables, apart from the purpose of accounting for savings behaviour, is necessary to provide insight into the profiles of the participants in the informal savings. The informal financial institutions have been founded to serve a broad spectrum of the African population: both men and women, sometimes even children. They extend their services to the poor, white collar, and blue collar workers who may reside in cities and rural areas (Bouman, 1978; Miracle et al, 1980; and Ojo, 1995). By their nature, the informal financial markets are of the local familiar and indigenous type. It can therefore be hypothesised that these institutions would attract more patronage and savings from the less educated, the self-employed and rural dwellers than their other (formal) counterparts.

## 3.2 Mode1 formulation

Savings behaviour in the informal financial market was discussed by analysing factors that influenced the patronage of the market for the market of deposits and the savings rate. The two functions were denoted by PAT and SAV, respectively. Facts from the literature indicate that they share the same set of variables. First there are objective factors, namely cardinal variables given by economic theory. By the reason advanced earlier, interest rate is no factor as far as the informal savings is concerned. Only income/earnings (Y) and age (A) were two cardinal variables incorporated in PAT and SAV. The subjective factors are nominal/qualitative variables which, essentially, are socio-economic variables (z). For the two functions, the list included education (EDU), occupation (OCC), place of residence (RES), ethnicity (ETH), gender (GEN), marital status (MAR) and religion (REL). Expressed mathematically we have:

$$PAT = f(\tilde{Y}, \tilde{A}, \tilde{Z}) \qquad ---- (1)$$

$$SAV = h (Y, A, \tilde{Z}) \qquad ---- (2)$$

where 
$$Z = (EDU, OCC, RES, ETH, GEN, MAR, REL)$$
 --- (3)

Qualitative variables are distinguished by slur placed on them.

Equation (1) has a dichotomous dependent variable, requiring the consideration of a binary-choice model. PAT equals 1, if an individual patronises the informal financial institutions, and 0 otherwise. Of the three commonly used models (the linear probability probit and logit models), we settled for the least demanding of them all the linear probability model (see section 3.5 for the choice). So, the linear informal savings'probability function estimated was of the form:

PAT = 
$$\alpha_0 + \alpha_1 \tilde{Y} + \alpha_2 \tilde{A} + \alpha_3 OCC + \alpha_4 EDU + \alpha_5 RES + \alpha_6 ETH + \alpha_7 GEN + \alpha_8 MAR + \alpha_9 REL + U_1$$
 .....(4)

where  $U_1$  = independently distributed random variable with zero mean.

Equation (2), represents the informal savings function with SAV, the savings rate in the informal financial institutions, as the dependent variable. Using the multiple regression model, we had

SAV = 
$$\beta_0 + \beta_1 Y + \beta_2 A + \beta_3 OCC + \beta_4 EDU + \beta_5 RES + \beta_6 ETH + \beta_7 GEN + \beta_8 MAR + \beta_9 REL + U_2$$
 .....(5)

where  $U_2$  = disturbance term, assumed to have zero mean and constant variance and to be uncorrelated with the explanatory variables.

#### 3.3 Definition and measurement of variables

The informal financial institutions, in the context of this study, consisted of individuals, groups and associations that have saving schemes of one sort or another, or that mobilise savings outside the officially recognised and regulated financial system. Such include mobile bankers, ajo/esusu (rotating social clubs). Of direct concern are the patronage of these institutions, described by the linear savings probability functions (PAT) and the rate of saving which is captured in the informal

savings function (SAV).

PAT is a binary dependent variable that takes the value 1 for patronage at all, and 0 otherwise. SAV is a quantitative dependent variable that pertains to the flow increase (net addition) in the stock of savings. To obtain this quantity on individual basis, questions were asked the respondents how regularly they saved in these institutions (daily, weekly, fortnightly or monthly) and how much was saved per the stated period. All the responses were adjusted to a uniform period of one month. Income/earnings (Y) was also measured in the same way. As indicated earlier PAT and SAV contain the same set of basic variables. The explanatory variables in PAT were all treated on a binary scale of zero and one while in SAV, two of them income/earnings (Y) and age (A) were analysed as quantitative variables, using their actual values. Table 1 contains the definition of the variables in the two functions (PAT and SAV).

## 3.4 Data and the Study - Population

Data were collected by means of personal interview of respondents, drawn from five states in Southwestern Nigeria in October/November 1989. The survey locations were Ibadan, Ile-Ife and Erin-Osun (Oyo State), Akure and Ore (Ondo State), Sagamu (Ogun State), Benin City and Igara (Bendel State) and Ikorodu (Lagos State). In the absence of a sampling frame and given the desire to have fair representation of the ethnic groups in the country, the purposive sampling approach was employed. For the state capitals and towns, having clusters of the ethnic group around certain parts of such towns, enumerators were asked to treat them as survey locations, where respondents were contacted. And for the rural areas, attempt was made to distribute the sample units as widely as possible. The target population was the low income earners, presumably the major patrons of the informal financial market. These were contacted at homes, market places, offices and work places. In all, 2,507 individuals were interviewed on their attitude to savings generally, participation in the informal savings, amount of savings per period and their socio-economic background, etc.

| Variable | 1   | 0         |
|----------|---|-----------|
| PAT      | If patronised informal financial Institutions | Otherwise |
| $Y_1$    | If income < № 200                             | Otherwise |
| $Y_2$    | If income is > № 200 but < № 500              | Otherwise |
| $Y_3$    | If income > N 500 but < N 1000                | Otherwise |
| $Y_4$    | If income > № 1000                            | Otherwise |
| $A_1$    | If age < 20 years                             | Otherwise |
| $A_2$    | If age > 20 but < 50years                     | Otherwise |
| $A_3$    | If age > 50 years                             | Otherwise |
| OCC(I)   | If employed in the Public Sector              | Otherwise |
| OCC(2)   | If employed in the Private Sector             | Otherwise |
| OCC(3)   | If self employed                              | Otherwise |
| EDU(I)   | If no schooling                               | Otherwise |
| EDU(2)   | If attained primary education                 | Otherwise |
| EDU(3)   | If attained secondary education               | Otherwise |
| EDU(4)   | If attained post-secondary education          | Otherwise |
| RES(I)   | If resident in cities                         | Otherwise |
| RES(2)   | If resident in towns                          | Otherwise |
| RES(3)   | If resident in villages                       | Otherwise |
| ETH(1)   | If Yoruba                                     | Otherwise |
| ETH(2)   | If Hausa                                      | Otherwise |
| ETH(3)   | If Ibo  | Otherwise |
| ETH(4)   | If other ethnic group                         | Otherwise |
| GEN(I)   | If male                                       | Otherwise |
| GEN(2)   | If female                                     | Otherwise |
| MAR(I)   | If married                                    | Otherwise |
| MAR(2)   | If single                                     | Otherwise |
| REL(Ì)   | If Christianity                               | Otherwise |
| REL(2)   | If Islam                                      | Otherwise |
| REL(3)   | If others                                     | Otherwise |

Y = Actual income (or earning) per month (Naira)

The Southwestern Nigeria is inhabited predominantly by the Yoruba-speaking people. Thus, about two-thirds of the respondents were Yorubas. Other ethnic group represented in the sampled population were the Edos (15%), lbos (10%) and Hausas (8%). These were migrants whose socio-cultural environment either in their homestates or where they are resident could exercise some influence on their savings habits. As it turned out, the sampled population was mostly poor. The mean monthly income of the population was about N 500; the modal group (27.8%) earned not more

A = Actual age (in years)

SAV = Rate of savings in the informal financial institutions per month (Naira)

than № 100 per month while just about 5 % earned more than № 500 per month.

Over two-thrid of the respondents were in self-employment; one-fifth in the public sector and one-tenth in the paid employment in the private sector. By profession, 36.7% were petty traders, 26.8% artisans, 8.8% teachers and 7.3% were farmers. Among the population, 64.4% were christians, 33.3% were muslims while 2.6% belonged to other religions. Some of them had some primary education (33.7%), 33.5% had secondary education, 18.7% post-secondary education and only 14.2% had no formal education. There were more male respondents (74.3%), and greater percentage, around three-quarters, were married while 20.7% were single. The modal age group was 30-39 years, about 38% of the sampled population. A little over one-quarter were in the age bracket 15-29 years and just one-fifth were in the age group 40-49 years.

## 3.5 Estimation Technique

The method of ordinary least squares was employed to estimate the two functions: PAT and SAV. The stepwise regression procedure was used to look at the data in view of the large number of explanatory variables included in the functions. Many methodological difficulties were associated with the estimation of parameters in models with binary dependent variable like PAT, the 'linear informal savings probability function'. The heteroscedastic disturbance was one of them and also the fact that there is no guarantee that the predicted value of PAT will lie in the (0,1) interval (Pindyck and Rubinfeld, 1984: 276). More efficient estimation methods exist (logit and probit models), but they consume a lot of computer time and have heavy cost implication. So, the estimation technique adopted in this study was a settlement for the 'second best'; nevertheless relatively sufficient as a first approximation (Gunderson, 1972). The loss of efficiency in the predictive value of PAT notwithstanding, we do take satisfaction and place much premium in the fact that the heteroscedastic disturbance does not itself result in either biased or inconsistent parameter estimates.

The consideration in this paper is not just the determinants of PAT and SAV, but also the differential impact between the indicated category of a socio-economic group (receiving a value of 1) and the category that has been dropped from the regression. The intention, by this analysis, was to have some insight into and quantify the pattern of patronage of the informal financial sector and the disparity in the level of informal savings among categories in the socio-economic group.

## 4. Empirical Results and Interpretation

This section first presents a descriptive analysis of the forms and media of savings among the sampled population. This is followed by a discussion of the patterns of patronage of the informal financial sector for savings. And then, by means of estimated informal savings functions, we discuss the savings behaviour in the sector.

## 4.1 Media and Forms of Savings

Evidence from our survey data indicates that savings exist and that attitudes conducive to saving money are widespread among the study-population, mostly low income earners. Majority of them made use of both the formal and informal financial sectors as their savings media. However, in term of principal saving medium, greater percentage of them (56%) patronised the informal financial institutions. About 35 per cent used most of the time commercial banks while only 7 per cent often put their savings at home or with trusted friends.

The preference for informal savings is traceable to the perceived accessibility of the respondent to the formal banking system. About 84 per cent of them considered it much easier joining saving schemes of one sort or another than banks. In respect of saving and withdrawing money, over three-fifths agreed it was much easier with the informal financial institutions. To them the risk of defaults was not particularly high: only about one-quarter of the respondents claimed to have been defrauded at one time or another.

Table 2 shows the breakdown statistics on the patronage of the informal financial institutions as compared to commercial banks, classified by the socio-economic attributes. Greater percentage of the employees in the public sector made use of commercial banks in the occupation-categories; the lbos among the ethnic groups; and those with post-secondary education in the education-categories.

Two forms of informal savings were identified in the course of our investigation, namely the fixed-fund and the rotating-fund systems. In the fixed-fund type, regular contributions are made by members to the collectors (e.g. mobile bankers) for safe keeping. Withdrawal is made after the deposits would have been with the collectors for a period, usually one month.

**Table 2** Patronage of the informal Financial Institutions compared to Commercial Banks (Figures expressed in percentage)

| Socio-Economic Characteristics | Principal Sa | iving Medium |
|--------------------------------|--------------|--------------|
|                                | ISACAS       | Bank         |
| Occupation:                    |              |              |
| Public sector                  | 34.54        | 60.87        |
| Private Sector                 | 46.55        | 40.64        |
| Self-Employment                | 64.84        | 26.42        |
| Sex:                           |              |              |
| Male                           | 49.75        | 40.60        |
| Female                         | 65.61        | 28.20        |
| Marital Status:                |              |              |
| Married                        | 57.59        | 34.54        |
| Single                         | 47.33        | 43.51        |
| Religion:                      |              |              |
| Christianity                   | 54.02        | 39.24        |
| Islam                          | 60.48        | 28.71        |
| Others                         | 62.50        | 20.83        |
| Ethnicity:                     |              |              |
| Yoruba                         | 57.81        | 36.4         |
| Hausa                          | 36.54        | 23.08        |
| lbo                            | 42.63        | 51.05        |
| Edo                            | 71.60        | 21.88        |
| Education:                     |              |              |
| No schooling                   | 67.71        | 14.35        |
| Primary                        | 67.93        | 22.40        |
| Secondary                      | 54.33        | 38.66        |
| Post-secondary                 | 32.56        | 65.13        |

Source: Oladeji and Ogunrinola (1990)

No interest payment on such deposits, instead the collectors collect the last period's (or day's) deposit as commission. The rotating-fund system is such that a group of participants, who make regular contributions to a fund, gives in whole or in part the collected fund to each member in turn. In this arrangement also there is no interest payment on deposits.

About three-fifths of the participants contacted were involved in the fixed-fund savings. While the rest took part in the rotating-fund. Daily saving was the commonest under the former. About 35 per cent were involved, followed by the monthly saving group (26.1 %) while the rest took part in either weekly saving (13.1 %) or fortnightly (4.7%). Most traders, artisans and others in self-employment were involved more in daily saving whose period of collection was generally one month. According to them,

having their savings or contributions back at the end of every month would just be like having their monthly salaries as those in paid employment. Those in paid employment, on the other hand, were much involved in the rotating-fund system, of course making their contributions on monthly basis. In most cases the contribution cycle does not extend beyond one year, depending on the number of participants in the savings group. The commonest cycle period, revealed by our survey, was 6, 10 and 12 months.

## 4.2 Pattern of Patronage

This section presents and interprets the estimated linear informal savings probability function, PAT, with a view to establishing the pattern of patronage of the informal financial institutions. The coefficients of PAT measure for each socioeconomic group the difference between the indicated category (receiving a value of 1) and the category or dummy which has been dropped from the regression. Nine basic variables (socio-economic groups) were incorporated in PAT, yielding 28 dummy variables. The measure of the goodness of fit R2, was low. For a linear probability model like PAT, this is expected more as we are fitting such a model with cross-section data (Pindyck and Rubinfeld, 1984:301). The value of the F-statistic shows that the explanatory power of PAT is satisfactory, even at 1 % level of significance.

As shown in Table 3, Income, Age, Marital Status and Religion exercised insignificant influence on the pattern of patronage. Virtually all their dummy variables were not statistically different from zero at 5% level. Striking differences were found between the excluded category and other categories under occupation, education, residence, ethnicity and gender groupings. The self-employed exhibited greater patronage of the informal financial institutions than those in paid employment. Such pattern of patronage could exemplify the fact that the informal financial markets do play a significant role as sources of capital for those in self-employment (see Ogunrinola, 1990).

Two of the coefficients of the education-dummy variables were statistically significant. Compared to those with no schooling, the respondents with primary education showed greater disposition towards informal savings. Beyond this level of education, such disposition decreased with increased level of education. This trend flows logically from the fact that more education enhances the ability to cope with sophistication and paper work identifiable with the formal banking system. However, the impact of occupation acting as an intervening variable between education and patronage of the informal financial market cannot be discounted in a situation of this

kind. For instance, greater disposition of the less educated towards informal savings might not be unconnected with the fact that most of them are self-employed. Such groups often resort to the informal financial institutions as sources of capital.

Table 3 Linear Informal Savings Probability Function

| Explanatory Variable    |                    | α       | SE(α) | t     |
|-------------------------|--------------------|---------|-------|-------|
| Income: Less than N 200 |                    | (a)     | (a)   | (a)   |
|                         | N 200 - N 500      | -0.032  | 0.033 | 0.97  |
|                         | N 500 - N 1,000    | (b)     | (b)   | (b)   |
|                         | more than N 1,000  | (b)     | (b)   | (b)   |
| Age:                    | Less than 20 years | (a)     | (a)   | (a)   |
|                         | 20 - 40 years      | (b)     | (b)   | (b)   |
|                         | More than 50 years | 0.190   | 0.331 | 0.57  |
| Occupation:             | Public sector      | -0.123* | 0.030 | -4.10 |
|                         | Private sector     | -0.062  | 0.032 | -1.94 |
|                         | Self-Employed      | (a)     | (a)   | (a)   |
| Education:              | No schooling       | (a)     | (a)   | (a)   |
|                         | Primary            | 0.038*  | 0.014 | 2.71  |
|                         | Secondary          | -0.038  | 0.031 | -1.23 |
|                         | Post-Secondary     | -0.151* | 0.038 | 3.97  |
| Residence:              | Cities             | (a)     | (a)   | (a)   |
|                         | Town               | -0.132* | 0.022 | -6.00 |
|                         | Rural Areas        | -0.125* | 0.024 | -5.21 |
| Ethnicity:              | Yoruba             | (a)     | (a)   | (a)   |
| •                       | Hausa              | -0.314* | 0.039 | -8.05 |
|                         | Ibo                | -0.125* | 0.034 | -3.68 |
|                         | Others             | 0.120*  | 0.028 | 4.29  |
| Gender:                 | Male               | -0.125* | 0.020 | 6.25  |
|                         | Female             | (a)     | (a)   | (a)   |
| Marital Status:         | Married            | 0.030   | 0.021 | 1.43  |
|                         | Single             | (a)     | (a)   | (a)   |
| Religion:               | Christianity       | (a)     | (a)   | (a)   |
|                         | Islam              | 0.061*  | 0.023 | 2.65  |
|                         | Others             | -0.002  | 0.060 | -0.03 |
| Intercept               | 0.6                | -       |       |       |
| R <sup>2</sup>          | 0.1                |         |       |       |
| F                       | 22.                | 76      |       |       |
| Degree of Freed         | lom(df) 16         |         |       |       |
| N (Sample size)         | 2,5                | 06      |       |       |

α: SE(α)

Estimated Coefficient in PAT
Standard error of the estimated coefficient
Student's t - statistics
Excluded/dropped category
Not statistically different from zero at the 5% level
Different from zero at the 5% level.

The coefficients of the dummy variables on the place/region of residence were statistically significant and assumed negative values. Thus, compared to the dropped category (city dwellers), those resident in towns and rural areas showed lower inclinations towards informal savings. Hitherto, informal savings and lending used to be associated with the rural economy. But now, the economic crunch and the credit squeeze in the formal banking institutions seem to have prompted the urban population, especially the urban poor and wage earners to increase their patronage of the informal market for savings and credit facilities. The establishment of the government sponsored People's Bank in 1989 is perhaps in recognition of this development. It is basically an attempt by government to reach people with small incomes (e.g peasant farmers, petty traders, artisans, etc.) with credit facilities and to mobilise funds from them. The same consideration holds for the establishment of the Community Banks in Nigeria, also in 1989.

Other regression results indicated that female respondents exhibited greater disposition to informal savings than their male counterparts. As for the factor of ethnicity, all the coefficients of its dummy variables were significant, two of which assumed negative values. Thus, in respect of the patronage of the informal financial institutions, the dropped category (i.e, the Yorubas) ranked higher than either lbos or Hausas. The migrant status of the lbos and Hausas is a probable reason. For instance, lack of familiarity and confidence in these institutions outside their home areas could have biased them against getting as much involved in such savings as the Yorubas.

## 4.3 Saving Behaviour in the Informal Market

Table 4 presents the regression results of the savings functions. SAV(1) came with a constant term and incorporated both significant and insignificant variables. Coefficients on each of dummy variables measure the differential impact between a reference category and the one dropped from the regression. As indicated in section 3.5, results here provided some insight into intra-group variation in respect of the amount of savings in the informal financial markets. On the other hand SAV(2), estimated without a constant term, selected the best set of variables found in the model. The coefficients of the dummy variables measured straightway the intercepts of the categories in each of the socio-economic groups.

The values of R<sup>2</sup> and F-statistics are indicated in the table and suggest that SAV(2) performed much better than SAV(1). This is accounted for by the retention of

statistically 'irrelevant' variables in SAV(1). The loss of efficiency notwithstanding, the fact that the presence of 'irrelevant' variables did not bias parameter estimates made SAV(1) worthy of consideration, especially for the purpose of establishing statistical significance of the intra-group differences on the levels of informal savings.

Table 5 presents further information on the savings condition in the informal financial markets. The data relate to the propensity to save informally. The average propensity to save informally was found to be 0.28, namely, for every \$\mathbb{N}\$100 earned per month, an individual in the study-population put \$\mathbb{N}\$28 in the informal financial institutions. The table shows the breakdown statistics on the average propensity to save informally, classified by categories in each of the socio-economic groups.

By the results in Table 4, the two cardinal variables (income and age) from economic theory played a significant role in explaining the savings behaviour in the informal financial sector. In the context of SAV(2), the two variables accounted for about 26 per cent of the variation in the level of savings, leaving the remaining 3 per cent to be explained by socio-economic factors. But how far do these regression results provide empirical support for the hypotheses of the savings function in economic theory?

Table 4: Informal Savings Function

|                                     |                | SAV(1)           |                |              | SAV(2)           |                |              |  |  |
|-------------------------------------|----------------|------------------|----------------|--------------|------------------|----------------|--------------|--|--|
|                                     |                | β̂               | SE(β̂)         | t            | β+               | SE(β̂+)        | t            |  |  |
| Actia; Age (A)<br>Actual Income (Y) |                | 1.104*<br>0.027* | 0.560<br>0.003 | 1.97<br>9.00 | 1.198*<br>0.027* | 0.336<br>0.003 | 3.57<br>9.00 |  |  |
| Occupation:                         | Public sector  | -78.234*         | 15.938         | -4.91        | (b)              | (b)            | (b)          |  |  |
| (OCC)                               | Private sector | -54.366*         | 17.180         | -3.16        | (b)              | (b)            | (b)          |  |  |
|                                     | Self-Employed  | (a)              | (a)            | (a)          | 71.778*          | 11.891         | 6.04         |  |  |
| Education:                          | No schooling   | (a)              | (a)            | (a)          | -39.813*         | 16.444         | -2,42        |  |  |
| (EDU)                               | Primary        | 17.955*          | 7.918          | 2.27         | (b)              | (b)            | (b)          |  |  |
| ,                                   | Secondary      | 70.633*          | 17.005         | 4.15         | 40.947*          | 11.839         | 3.46         |  |  |
|                                     | Post-Secondary | 76.173*          | 20.701         | 3.68         | 41.100*          | 15.181         | 2.71         |  |  |
| Residence:                          | Cities         | (a)              | (a)            | (a)          | 25.080*          | 11.393         | 2.20         |  |  |
| (RES)                               | Town           | -22.318          | 12.166         | -1.83        | (b)              | (b)            | (b)          |  |  |
| ,                                   | Rural Areas    | 41.218*          | 12.923         | 3.19         | 68.334*          | 13.661         | 5.00         |  |  |
| Ethnicity:                          | Yoruba         | (a)              | (a)            | (a)          | (b)              | (b)            | (b)          |  |  |
| (ETH)                               | Hausa          | -87.347*         | 21.508         | -4.06        | -76.713*         | 20.045         | 3.83         |  |  |
| ` ,                                 | lbo            | 24.419           | 17.869         | 1.37         | (b)              | (b)            | (b)          |  |  |
|                                     | Others         | -29.133          | 15.137         | -1.92        | -38.227*         | 14.679         | -2.60        |  |  |
| Gender:                             | Male           | 9.895            | 10.678         | 0.93         | (b)              | (b)            | (b)          |  |  |
|                                     | Female         | (b)              | (a)            | (a)          | (b)              | (b)            | (b)          |  |  |
| Marital Status:                     | Married        | 22.648           | 11.865         | 1.91         | (b)              | (b)            | (b)          |  |  |
|                                     | Single         | (a)              | (a)            | (a)          | -25.876*         | 12.816         | -2.02        |  |  |
| Religion:                           | Christianity   | (a)              | (a)            | (a)          | (b)              | (b)            | (b)          |  |  |
| (REL)                               | Islam          | 9.178            | 12.287         | 0.75         | (b)              | (b)            | (b)          |  |  |
|                                     | Others         | -46.528          | 32.865         | -1.41        | (b)              | (b)            | (b)          |  |  |
| Intercept                           |                | 32.98            |                |              | 0.00             |                |              |  |  |
| R <sup>2</sup>                      |                | 0.07             |                |              | 0.29             |                |              |  |  |
| F                                   |                | 11.17            |                |              | 83.57            |                |              |  |  |
| N                                   |                | 2,233            |                |              | 2,234            |                |              |  |  |

Coefficients in SAV(1) and SAV(2) respectively.

 $\begin{array}{ll} \text{p, p, p.} \\ \text{SE}(\hat{\beta}); \text{SE}(\hat{\beta}+); \text{Standard error of coefficients in SAV(1) and SAV(2) respectively.} \\ \text{t:} \\ \text{Student-1 statistics} \\ \text{(a)} \\ \text{(b)} \\ \text{Not statistically different from zero at the 5% level} \\ \text{*} \\ \text{Different from zero at the 5% level.} \\ \end{array}$ 

| ocio-Economic     | Category           | Average Propensity to |
|-------------------|--------------------|-----------------------|
| iroup             |                    | Save                  |
| Occupation        | Public Sector      | 0.17                  |
| OCC]              | Private Sector     | 0.26                  |
|                   | Self Employed      | 0.28                  |
| ge [A]            | Less than 20 years | 0.33                  |
|                   | 20 - 49 years      | 0.29                  |
|                   | 50 years and above | 0.20                  |
| Gender            | Male               | 0.28                  |
| GEN]              | Female             | 0.30                  |
| farital Status    | Single             | 0.31                  |
| MAR]              | Married            | 0.28                  |
| thnicity          | Yoruba             | 0.30                  |
| ETH]              | Hausa              | 0.14                  |
|                   | lbo                | 0.29                  |
|                   | Others             | 0.32                  |
| Religion          | Christianity       | 0.27                  |
| REL]              | Islam              | 0.30                  |
|                   | Others             | 0.35                  |
| ducation          | No Schooling       | 0.13                  |
| EDU]              | Primary            | 0.28                  |
|                   | Secondary          | 0.35                  |
|                   | Post-Secondary     | 0.24                  |
| lace of Residence | Cities             | 0.13                  |
| RES]              | Towns              | 0.29                  |
|                   | Rural areas        | 0.43                  |
| Overall Average   |                    | 0.28                  |

Source: Oladeji and Ogunrinola (1990).

Income variable (Y) had the expected positive sign, and its coefficient (0.03) turned out to be the same for SAV(1) and SAV(2). The coefficient represented the marginal propensity to save informally, indicating that out of additional earnings of N100, just N3 would end up in the informal financial sector. Compared to the average propensity to save informally, the marginal propensity to save was much lower. Thus, in contrast to the postulate of the Absolute Income Hypothesis (AIH), as income increases the tendency is for the fraction of income saved informally to decline. Given that average propensity to consume declines or remains the same, this development implies an increased average propensity to save in the formal financial sector.

In the light of the foregoing, informal savings are not just activities identifiable with the relatively poor but also those with declining income or earnings. In a way, therefore,

the increasing popularity of informal savings in contemporary Nigeria may not be unconnected with the economic recessionary situation. For instance, in response to the general decline in real income and increased debt obligations some often resort to informal savings for the purpose of obtaining credit facilities from the informal financial sector. This proves to be one of the bases for participation in the rotating-savings and credit associations in the country (Oladeji and Ogunrinola, 1992).

The other cardinal variable, age (A), also bore a direct and statistically significant relationship with the amount of savings in the informal financial institutions. As age increased, more of earned income would go into informal savings. However, in respect of the average propensity to save, Table 5 shows that a person in the age bracket 20-49 years saved in the informal sector less of income, than did someone less than 20 years. This pattern contradicts the Life-Cycle Hypothesis (LCH) where you would expect an individual in the early stage of life to save less than in the middle years. Hence, for the informal savings the motivation was not really and could not have derived from the reason of saving-up towards retirement. Our survey data, in fact, did show that only 5 per cent embarked on this type of savings for this purpose (Oladeji and Ogunrinola, 1990).

Among the subjective factors, the effects of occupation (OCC), education (EDU), and place/region of residence (RES) proved statistically significant under SAV(1) and SAV(2). In respect of occupation, all the dummy variables in SAV(1) were significant, so also self employment coefficient in SAV(2). The negative signs of the coefficients in SAV(1) indicated that the dropped category (the self-employed) ranked higher than those in paid employment (either in public or private sector) with respect to the level of informal savings. As shown in Table 5, the self-employed recorded the highest average propensity to save informally among the occupational group. It seems likely that becoming self-employed is related to thriftiness which helps to explain the foregoing finding. The resort to the informal financial sector often stands the self employed in good stead to raise capital for entrepreneurship.

The significance of education in the informal savings function is evidenced by statistical significance of all the dummy variables in SAV(1), and all but one in SAV(2). By the positive signs for the coefficients in SAV(1), the suggestion is that the dropped category (those with no schooling) ranked least in the educational group. The results in SAV(2) indicated that the intercepts of the informal savings function of the educational categories increased with the level of education; but between secondary and post-secondary education, the difference in intercept was marginal. Secondary

school leavers ranked highest in respect of the average propensity to save informally, followed by those with primary education and then those with post-primary education. Education *per se* could have accounted for a comparatively lower average propensity to save recorded for those with post-secondary education. As for the secondary school leavers, the ranking could actually be a manifestation of the fact that most of them were in self employment who as a matter of expediency had to be involved in the activities of the informal financial markets, e.g. saving and credit schemes.

Three regional/places of residence identified for analysis were cities (state capitals), towns and rural areas. By the estimated function SAV(1), it turned that between residents in the towns and cities, the differential impact was not as pronounced as between rural residents and city dwellers (see Table 3). Thus, by SAV(2), the intercept of the informal savings function for the rural population was much higher than urban population. The breakdown statistics on the average propensity to save in the informal financial institutions in Table 5 also ranked the rural dwellers above the urban population. Explanation for this pattern can be related to the fact that comparatively, the rural population have restricted accessibility to formal banking institutions. Also, the fact that self employment is part and parcel of the rural economy would again reinforce the importance of the informal savings among the rural dwellers.

Not much variation was evident in the categorisation of the study population's savings behaviour by gender, marital status and religion, as all the coefficients of their dummy variables lacked statistical significance under SAV(1). As far as the consideration of ethnicity was concerned, only the coefficient of the Hausa - dummy variable turned out to be significant. Compared to the dropped category (the Yorubas), the level of informal savings among the Hausas was much lower. In terms of the average propensity to save in the informal financial institutions, they ranked least among the ethnic groups in the country (see Table 5). This is probably some evidence to support the widely held view about the savings behaviour of this ethnic group in Nigeria - that is, their strong preference for consumption now as against the future.

# 5. Policy Implications

By the empirical result in this study, informal saving was identified with those whose accessibility to the formal financial sector appears relatively restricted, on account of small income and savings, low education and remoteness to banking

institutions. These are the self-employed in the informal sector, the less educated and the rural dwellers. A more important point is the central position which the factor of self employment holds among the significant socio-economic determinants of the informal savings. For instance, while education and region of residence *per se* could have exercised a significant influence on the savings behaviour in the informal financial sector, somehow their impact seems to be reinforced by the fact that more of the less educated (up to secondary education) and virtually all the rural population are self-employed in Nigeria.

The foregoing has implications for savings policy and the process of capital formation. In a general way, how much capital is accumulated in an economy depends in the first instance on the savings ratio in the private business sector and then the utilisation of such savings. In the informal sector, the capitalists are the self-employed who resort to the informal financial institutions as sources of capital for entrepreneurship. For this group, the average propensity to save informally of 0.28, reported in Table 5, is the least savings ratio expected from the self-employed. This is because some additional fraction of their income saved may as well be in the formal banking system. As for utilisation, elsewhere we established that informal savings and credits contributed considerably to capital formation and economic development in Nigeria (Oladeji and Ogunrinola, 1993). Hence, savings policy should target not just the entrepreneurs in the modern sector, but also those in the informal sector.

Savings policy is all about influencing incomes and savings ratio with a view to maximising and mobilising savings for economic development. A basic finding in this study is that there exists an inverse relationship between average propensity to save informally and income. Thus, if the country can succeed in achieving accelerated growth in the economy (including the informal sector), thereby bringing about increased earnings all over, then the savings ratio will rise but the average propensity to save informally will tend to decline. This in essence means stimulating, through a spontaneous process, flows of savings into the formal financial sector.

Policy intervention contemplated in recent times appears to favour linking the formal and informal financial sectors. The desirability is anchored on the premise that such integration will enhance financial policy management and promote effective and efficient mobilisation and utilisation of savings from economic development. These are empirical issues which may be difficult to ascertain from our survey data. Nonetheless, the economics of such a linkage as per the efficacy of monetary-credit policy appear evident. In fostering link relationships, the intention presumably is either

to keep down deposits outside the formal financial sector or evolve a more structured and accountable flows of funds between the two financial sectors. These represent indirect/competitive and direct/complementary link relationships, respectively. (Chipeta, 1994).

The scenario articulated earlier is of the indirect deposit links: via increased earnings, the formal financial sector experiences an increase in deposits at the expense of the informal financial institutions. As for the direct link relationships, just as some individuals in the study population patronise both sectors for savings, it is not impossible for savings organisations/societies to have their surplus funds in the formal financial sector (evidence in E. Aryeetey and F. Grocbel, 1990, page 16). The existence of these links needs to be confirmed, the extent and form of linkage determined while empirical facts on the behaviour characteristics are called for. These could be necessary to determine the prospects and modalities of developing a more structured linkage between formal and informal financial sectors in the country.

## 6. Summary and Concluding Remarks

Survey data from the south western part of Nigeria indicate that low income earners have the desire to save and do save. The bulk of their savings are not to be found in commercial banks or recorded in official documents. Rather they patronise the informal financial institutions for such savings. To have useful insights into the process of savings generation in a developing country like Nigeria, empirical testing of hypotheses on patterns and savings behaviour in the informal financial market becomes necessary. For their policy relevance and given available data on savings, the absolute income hypothesis and the life-cycle hypothesis have been investigated in this paper. Socio-economic variables were also considered, following the claims that savings of this kind are bound up in social attitudes and value systems and influenced by the socio-cultural environment of individuals.

The estimated functions fitted into the data show that age and income exercised significant impact on the savings behaviour in the informal sector. However, a significant positive relationship established between age and informal savings in the study provides no empirical support for the life-cycle hypothesis. The break-down statistics on the average propensity to save in the informal financial market in fact suggest that such savings could not serve the purpose of smoothing fluctuations in

income. As for the absolute income hypothesis, the regression results confirm that the marginal propensity to save in the sector is positive, less than one, but the hypothesis that marginal propensity to save is higher than average propensity to save informally is contradicted. Thus, with a rising income, the average propensity to save informally declines while the fraction of income saved in the modern banking sector increases. Flowing from the foregoing is a seeming paradox that any development policy aimed at stimulating growth in the informal sector will invariably favour the development of the formal financial sector at the expense of the informal one.

Among the socio-economic factors, occupation, education and place/region of residence proved significant in explaining the disposition to, and the level of informal savings. It turned out that the self-employed, the less educated and the rural population identified more with this type of savings and also have a higher savings ratio than other groups. However, for capital formation, savings policy should target the self-employed in the informal sector, both in the rural and urban areas. Achievement of accelerated growth in this sector would tend to increase the savings ratio in the economy which, when followed by the declining average propensity to save informally, could again stimulate the development of the formal financial sector.

Although the factor of ethnicity did not come out well as a significant influence on the savings behaviour, we cannot be too conclusive. For a behavioural study of this kind, the socio-cultural background of individuals in their home-states and the environment they find themselves in as migrants could have significant impact on the savings habit. These aspects have not been sufficiently captured in our study. Such needs to be investigated further, using data collected from the other parts of the country i.e, southeastern and northern parts of Nigeria.

Apart from the limited spatial coverage, the limitation of our study is also methodological. The adoption and estimation of the linear informal savings probability model was only a settlement for the second best. In the absence of cost consideration and the strong desire for the predictive value of the model, the logit model is to be preferred. Lastly, in orientation this study only focuses on the savings behaviour in the informal market, which on the empirical fronts permit rather limited discussion of the issue of linkage between the formal and informal financial sector. Research directions in this area need to be focused on the extent, form and the behavioural characteristics of the existing linkage between these sectors.

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#### Abstract

The paper discusses the determinants of informal savings in Southwestern Nigeria using the linear probability model and multiple regression technique. It utilizes cross-section data generated from a survey conducted by the authors between October and November 1989 on the savings habit and utilization in the informal sector. The empirical results revealed that savings behaviour in the informal financial sector is affected by income, age, occupation, education and region of residence. They showed that the self-employed, less educated and rural population identified more with informal savings and had a higher informal savings ratio. The two cardinal variables from economic theory (income and age) accounted for the bulk of the variation in the level of informal savings. The empirical results confirm that marginal propensity to save informally is positive, less than one; but the absolute income hypothesis that marginal propensity to save is greater than average propensity to save in the informal financial sector is contradicted. The result suggests that with a rising income, the average propensity to save informally declines while, presumably, the fraction of income saved increases in the formal sector. Evidence of people becoming more thrifty was also established, but savings of this kind was not really and could not have been motivated by the reason of saving-up towards retirement. In the process of capital accumulation, a conclusion of the paper is that savings policy should target the self-employed in the informal sector. Another conclusion reached by the paper is that any policy that succeeds in achieving increased earnings in the informal sector has a tendency of increasing the propensity to save in the formal financial sector, even at the expense of the informal one.

## Résumé

# LES DÉTERMINANTS DE L'ÉPARGNE NON INSTITUTIONNELLE DANS LE SUD-OUEST DU NIGÉRIA

L'article analyse les déterminants de l'épargne non institutionnelle dans le sudouest du Nigéria sur la base du modèle de probabilité linéaire et avec la technique de la régression multiple en utilisant les données croisées engendrées par une étude menée par les auteurs sur les habitudes en matière d'épargne et l'utilisation de cette épargne dans le secteur non institutionnel. Les résultats empirique revèlent que le comportement en matière d'épargne dans ce secteur est lié au revenu, à l'âge, à l'occupation, à l'éducation et à la région de résidence. Plus précisement, ils démontrent que les travailleurs autonomes, les gens avec moins d'instruction et la population rurale sont ceux qui montrent le ratio le plus élevé d'épargne non institutionnelle. Les deux variables capitales de la théorie économique (le revenu et l'âge) déterminent l'ensemble de la variation du niveau de cette épargne. Les résultats empiriques confirment que la propension marginale à l'épargne de manière non institutionnelle est positive, inférieure à 1, mais l'hypothèse absolue de revenu d'après laquelle, dans le secteur financier non institutionnel, la propension marginale à épargner serait plus élevée que la propension moyenne à épargner est contredite. Il s'avère des résultats qu'avec un revenu croissant, la propension moyenne à l'épargne dans le secteur non institutionnel diminue, tandis que, il y a lieu de croire, la fraction de revenu épargné augmenterait dans le secteur financier institutionnel. En ce qui concerne le processus d'accumulation de capital, une des conclusions des auteurs est que toute politique qui réussirait à augmenter les revenus dans le secteur financier non institutionnel aurait la tendence à augmenter la propension à épargner dans le secteur institutionnel. fût-ce même au détriment du secteur non institutionnel.