

The Portfolio Behaviour of Employment-Based Cooperative Thrift and Credit Societies

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Abstract

Among the financial institutions in the informal system is the cooperative thrift and credit society which is highly prone to failure. However, some of the successful CTCS coops are employment-based. This paper studies the determinants behind their growth and sustenance in the process of building their portfolio. The paper adopts the primary method of data gathering where 222 coop thrift officials covering 14 organisations were served with the questionnaires. 178 questionnaires were retrieved and analysed. This represented a retrieval rate of 78%. The main variables used to estimate the outputs were loans size, portfolio size and growth as dependent variables while the independent variables were, average savings, membership strength, loan access and portfolio growth other deposits from members. The techniques adopted were the ordinary least squares (OLS) and the Two stage least square (2SLS) regressions. The results indicate that membership strength is significant across the different regressions as well as supporting finance from deposits of members and other sources such as loans. The paper recommends that this type coop should be engrafted into the mainstream workplace and financial institutions and more of this type of coops should be encouraged in the system.

Keywords: Employment based Cooperatives; Average savings; Membership strength; Loans size; Portfolio growth.

JEL: E26, E44, O17

Introduction

One of the veritable institutions that is deeply involved in financial activities within the system of the office environments in West Africa is the cooperative. The Cooperative Thrift and Credit Society (CTCS) is grouped among the non-formal institutions of finance in the nomenclature because its activities are not reported to the regulatory authorities. Cooperatives are generally grouped alongside the producer, marketing and consumer lines and with the credit type set up to provide loans to needy

members in multiples of their savings. There are about seven types of the cooperatives in existence. Other popular ones are the professional types that comprise of the members of a profession. Other than the traditional ones, the class appear not too distinct and thus any type of cooperative may be formed.

The credit and thrift cooperatives have been credited with a measure of success in financial intermediation though beset with some challenges. It is one of the earlier financial institutions reckoned with for the assistance to the poor and for low income earners to accumulate savings in the economy that provide loans and credit to the people at much easier environmental conditions than the traditional banking system would (Otto, 2006). The cooperatives are spawned in virtually every community where interested members can be found. With its simple operations, the CTCS have been known to be of assistance to members in the achievement of goals and fulfilment of dreams (Aribaba, 2013). Otto and Ukpere (2011) allude to the usefulness of the CTCS in the household capital formation process in particular and generally for the economy in addition to the significant impact on poverty alleviation in the country.

The establishment of credit cooperatives among employees in firms, institutions and organisations is gaining popularity among salary or wage income earners who received regular incomes from a particular employer or establishment. However, this credit type have become a more popular as it helps in meeting financial needs of the members and functions to assist the workers to provide loans at convenient terms for the environments where they work. These cooperatives (coop, henceforth) have provided succour at the time of needs for members having good understanding of how the employees fared and are able to tailor credit towards their needs. Ayaggari, Dermiguc-Kunt and Maksimovic (2010) had already intoned that informal financial institutions can be very important in developing countries and especially in emerging economies where they rival formal financial institutions in the intermediation process for the low income and operators in the informal economy. This example is reflected in the Chinese example where reputation and relationship in business are important among many other qualities (Zhang, 2008).

If it is accepted as matter of the fact that cooperatives have assisted needy members with provision of credit and that this institution is significantly domiciled in the informal sector of the financial system and without regulation, their survival rate and increase in portfolio has come under interest of academics to enable the understanding of the causes of growth and sustenance. The thrift and credit cooperatives have been credited with substantial beneficial effects among borrowers enabling the people to borrow when they need funds for investment and consumption purposes. Adetiloye (2006) notes that a major flaw in the thrift and credit cooperative system is the lack of regulation of the institutions and their operation which the members of the cooperative bodies considered as advantage because they do not need to have to bring open their books to any form of scrutiny. As one of the informal financial institutions in the system, the coop is only registered and not supervised nor regulated to meet some specific objectives of the financial system. That the coop is only registered and not regulated or supervised takes it out of the full informal financial system and can be regarded as semi-formal (Adetiloye, 2006).

A number of cooperative bodies have gone under as a result of mismanagement of resources and heightened default risks of the members who cannot be enforced to perform contracts. No re-registration or renewal is done at least in Nigeria. As much as coop members are free to enter on meeting the simple different conditions set by the body, so are they also free to exit the financial system either through insolvency or by any other means. The failure of these types of cooperative is often attributed to some other issues of administration issues and the quantum of bad loan portfolio loan held by them.

The growth and expansion of the coop leads to the question of how and why they have grown over the years and why there is interest to establish these institutions within the place of employment where large numbers of workers exist. Since the credit and thrift presents alternative to utilising banking facilities, the issues of sustenance and growth becomes important point for study. Also, while some attention has been paid to the CTCS coop generally, not much attention, if any, has been given to the employment-based coop. Thus the portfolio behaviour of this type of coop needs to be studied to explain the determinants of their growth and expansion.

There are few studies done on determinants of survival of the coop system in their various forms and why the coop of the CTCS have been embraced by the people a lot more than the other varieties. Basically the attention of this study is focused on the CTCS coop based in the employment domains which encourage membership of the workplace workforce and are not open to outsiders. The membership of the coop enables the staff to save regularly by check-off system from the payroll. Savings of members are aggregated and members can borrow stated multiples of savings as loans. The loans are repaid in the manners agreed by the coop with the member bearing in mind the peculiarity of the employment and the workplace environment. Loans are cross-guaranteed by members for security purposes who meet the conditions to avoid default risks.

The objectives set for this paper is to investigate the portfolio behaviour of the Coop and especially the source and direction of credit and investment behaviour when the members are unable to fully meet the funding requirements. Specific objectives therefore cover the following: to understand the determinants of loan sizes and portfolio size of the employment-based coop CTCS and credit allocation behaviour of the semi-formal institutions.

The paper is divided into five sections. Following after this introduction is the literature review, which is followed by the methodology. Section four discusses the results and model outputs while section five recommends and concludes.

Literature Review

A basic function of financial intermediaries is to aggregate savings from the surplus sector for on-lending to the deficit sector. Thus the gap between the two becomes closed. Empirical studies of the Nigerian coop are available but old and not specific. Studies such as King (1975) and Segynola (1992) presently old practises in the coop movement. Resurgence in studies of the credit and thrift type of coops came on stream recently. Coops are oftentimes classified among the informal financial institutions, and have been (since 1935) under registration in Nigeria even with the IMF (Basu et al, 2004; Huppi and Feeder, 1990). Adebayo (2013) and Alasiri (2013) accept that the cooperatives are registered and could be semi-formal financial institutions. Consequently Obafemi, Oburota and Amoke (2016) had advocated the integration of the Coop system into the mainstream financial system through the regular banking and integration with the financial system. Coops have been noted to compel savings from members in order to take advantage of the facilities and meet the objectives of the coop. Nwankwo, Ewuim and Asoya (2013) discovers that the older members of the coops had more savings than newer members among the rural people studied and that marginal propensity to save (MPS) among the members at 9.3 was significant. Specifically the paper identified significant variables influencing savings to be income, education, age, family size (surprisingly) and length of membership. In the study conducted by Umeball, Agu-Aguiyi and Umuahia, (2014) the major problems with most cooperatives is the repayment of loans borrowed. This is not a problem for this type of coop because repayment of loans is deductible from payroll.

EFInA (2011) had initially found out that individual savings is very significant in the capital formation for the individual. In Nwankwo et al. (2013) the study of the cooperative brought out the idea that membership strength is perhaps the most important variable to the success of any coop. The paper while recommending the increase in numbers of members also provides an ingenious solution to borrowing and repayment by recommending that crops should be used. Taiwo, Udunze and Agbasi (2015) the increase in income and funding is also introduced and confirmed to be due to the membership effect. In addition the study also found that education also plays a key role in the empowerment to women cooperative and has helped to raise their standard of life through empowerment. Innovative solutions were also recommended in the empowerment of the women who were noted to have improved entrepreneurial their skills upon contact with the cooperative. The usefulness and versatility of the coop is quite evident as the system has contributed largely to capital formation for members to build and own houses and homes of their own (Adetiloye, 2013). Coops are known to be very active in some developed financial markets by assisting in the provision of housing and developing the real estate markets (Theurillat, Rérat and Crevoisier, 2013) such as in Switzerland. The usefulness of coops in financial intermediation is also important because it reduces the cost of transaction for people seeking credit (Bhatt 1988). Kareem, Arigbabu, Akintaro and Badmus (2012) are of the opinion that coops have had a significant effect on the capital formation by assisting members in the area studied.

It has also been observed that this type of coop have become alternative to deposit institutions by the acceptance of voluntary savings to the extent that some members prefer to save their funds with them and expect their dividends at the end of the year. Some coops have developed various savings schemes to encourage members to save against retirement and other events. With this scenario some of the members have deposited large amounts of savings which can hardly be sued to borrow if one has to go by the rule of the coop. The preference for the coops as saving outlets rather than the banks is not fully empirically proved, but evidence suggests that the return factor and ownership pride could be major reasons. It is also noteworthy that the dividends from coop are not taxed unlike interest income and dividends from investment in the banks.

Portfolio generally represents the different types of financial assets held by financial institutions. Haas, Ferreira and Taci (2010) report that among financial institutions in emerging and transition financial markets, the determinants of the portfolio composition are collateral law (enforcement), bank ownership, bank size, lending loans to SMEs and large firms. Portfolio loan growth of banks was found to correlate with risk in the study of Foos, Norden and Weber (2010) on three hypotheses and the relation between aggressive loan portfolio growth and bank asset risk. Bank assets risks correlates significantly with abnormal loan growth and asset risk, bank profitability, and bank solvency. For the purpose of this paper, the portfolio of the coop is the total risk assets and the loan it has granted to its members.

Methodology and Measurements

The data sourced for the paper are primary and distributed among 17 coop societies that have been in existence for at least 5 years. The organisations in which the coops are all have at least 20 and up to 1000 employees in the organisation from which they could draw members. Thus membership is not compelled but enough attraction exists. From among a population of 42 coop societies that fit into the sample, 14 were selected for the purpose of the study. The number of the officials who received the questionnaire was 222 cutting across the 14 different coops. These meet all the requirements of the paper. The distribution of the questionnaires was done on purposive basis to ensure the 14 coops and 222 officials were covered. The retrieval rate of the questionnaire was impressive at 78.38%. Table 1 shows the distribution and retrieval rate of questionnaire used for the study.

Table 1 : The Distribution and Retrieval rate of Questionnaires

S/No	Employment type	No of Questionnaires	No Retrieved	% Retrieved	% of total
1	Government	72	64	88.89	36.78
2	Academic	82	60	73.17	34.48
3	Industry	38	30	78.94	17.25
4	Others	30	20	66.67	11.49
	Total	222	174	78.38	100

Source: *Questionnaire on Employment Based-Coop, 2016*

To measure the portfolio behaviour of the coop societies the paper adopts a three dependent variables approach. The variables of interest are: Loans size, Portfolio Growth and Portfolio Size. In this order, the study looks at the portfolio Size of the coops as being influenced by Loans size then leading to growth in funds and then Total portfolio.

The study adopts the linear regression process to discover the impact of each of the variables on the dependent variable that sum up to the behaviour of the coop within the financial system. Questionnaire was divided into five sections. Coop demographics needed direct responses while other sections needed *Likert* scale responses. The answers are in SA to SD format generating scores of 5 to 1 for the responses. Econometric software used in this study includes SPSS 22.5 with particular reference to the techniques of correlations and regressions test of means and one sample tests. All these are used with the aim to discover the significant level of impact of the institutions on the general clientele that they serve and their depth within the financial system.

Thus paper adopts the ordinary least regression to analyse the responses filled by executives of the sampled coop organisations. The questions were structured to elicit answers to the issues of savings, investment and loan activities. Three models were set with OLS set as follows:

$$y = f(\beta_{0i} + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \dots \beta_nX_n)$$

The dependent variables examined in the paper are Loan size portfolio growth and total portfolio. Thus the explicit forms of the regressions are as below:

$$\text{Loan size } f(\text{Memebership, Avesavs, Increase, Access}) \dots \dots \dots (1)$$

$$\text{Portsize } f(\text{Avesavs, Sizeloan, Ltenor, Memebership, Increase}) \dots \dots \dots (2)$$

$$\text{Pgrwth } f(\text{Avesav, Portfsize, Fmembership, Growthsavs, fundabrow, instvset}) \dots \dots \dots (3)$$

A two stage least squares (TSLS) regression is employed to estimate the impact of the main predictor variables on Pgrwth. The explicit form of the regression is as below:

$$\text{Pgrwth } f(\text{Avsavs, Memebership, Insufflend}) \dots \dots \dots (4)$$

As predictors and the following as instrumental variables: *Fundaborw, Ltenor, Growthsavs Increase*.

The variables adopted for this study are: *Membership, Avesavs, Increase, Access Loansize, Ltenor, Portfsize, Pgrowth Fmembership, Growthsavs, fundabrow, instvset* representing, membership strength, average savings, increase in individual savings, loan access, size of loan, Repayment tenor, Portfolio size, portfolio growth, few membership, Savings growth, borrowing to fund lending, investment instrument insufficient fund to lend

Results, Output and Discussions

The results of the regression estimates displays variables which show that growth of the *LoanSize* significantly influenced by *Access*, *Membership*, both beyond 0.01 level of significance. While *Access* shows a negative significance at -2.702, *Membership* indicate a high positive significance at 6.822. Coming up as negative near significance is *Increase* at t -1.533. Individual loans for members indicate that supporting the growth of the loan is the membership strength and insufficient access. Table showing the coefficients are shown below.

Table 2: (a) Coefficients of Model 1 Loans Size

Model		Unstandardized Coefficients		Standardized Coefficients	t	sig.
		B	Std. Error	Beta		
1	(Constant)	2.394	.458		5.226	.000
	AV. SAV	.061	.061	.073	.995	.321
	MEM STR	.430	.063	.502	6.822***	.000
	LONGREPYMTPER	-.081	.056	-.101	-1.439	.152
	GRNTOREFPAYMT	.056	.055	.072	1.011	.313
	INCOMINCRS	-.099	.062	-.103	-1.595	.113
	ACCESS	-.179	.063	-.185	-2.817***	.005

a. Dependent Variable: *LoanSIZE*

Model Summary^b

Table 2(b)

R	R Sq	Adj R Sq	S. E E	F	Sig.	D-W
.596 ^a	.355	.315	.71562	8.961	.000 ^b	1.808

a. Predictors: (Constant AV. SAV MEM STR LONGREPYMTPER GRNTOREFPAYMT INCOMINCRS ACCESS

b. Dependent Variable: SIZE LOAN

Source: SPSS output of the questionnaires

The model summary represented in Table 2(b) shows a fair R^2 but with a good DW given that this is an output form a questionnaire and primary data. The results reflect fact the *LoanSIZE* is influenced greatly by only two of the variables. The F stat and the DW indicators are good. Though secondary data if when obtained from the respective coops would definitely produce a better output.

Table 3: (a) Coefficients Portfolio Size

Model		Unstandardized Coefficients		Standardized Coefficients	t	sig.
		B	Std. Error	Beta		
1	(Constant)	-.111	.499		-.222	.825
	AVSAV	.041	.078	.038	.524	.601
	MEMSTR	.342	.094	.314	3.643***	.000
	SZELOAN	.239	.099	.187	2.415**	.017
	LTENOR	.303	.108	.203	2.810***	.006
	FEWMEMB	.125	.086	.104	1.445	.150
	INCOMINCRS	-.007	.089	-.006	-.082	.935

a. Dependent Variable: PORTFSIZE

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	F Stat	D-W
.573 ^a	.328	.304	.91876	13.571	1.823

The follow up regression estimates' is dependent variable of *Portsize* show that, *Loansize*, *LTenor* and membership strength indicate significant positive influences on the portfolio size. The significant levels of the variables are beyond 0.05 levels with *Membership* and *LTenor* repayment at 0.01 and loan size at 0.05.

From the above tables it can be observed that the *R* is a modest 0.573 and the R^2 0.328. The impact of the primary nature of the data is also observable in this output. The *DW* is respectable at 1.823 and the *F Stat* at 13.571.

Tables 4 below shows the final model where the dependent variable is *portgrwt* which is to show the influences of the various variables on growth of the coop and its size. The variables found significant in the estimates are *avsavs portsize*, *fewmembership*, *growthsavs* and *fundabrow*. The variables that are significantly negative among them are *avesavs* and *portsize* beyond 0.05 while the *fewmembership*, *growthsavs* and are all significant beyond 0.01 while *fundabrow* is significant at 0.05. These results show the variables that are important in the growth of these coops societies of the variety under consideration. A curious output is the significant negative sign indicated by *Avesav* as shown in the Table 4 below.

Table 4 (a) Coefficients Portfolio Growth

Model	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>sig.</i>
	B	Std. Error	Beta		
1 (Constant)	.735	.603		1.219	.225
AVESAV	-.212	.076	-.191	-2.772***	.006
FMEMBERSHIP	.259	.091	.208	2.851***	.005
GROWTHSAVS	.210	.087	.176	2.419**	.017
FUNDABROW	.133	.076	.125	1.753*	.081
INSUFFUNDLEND	.241	.075	.224	3.236***	.001
INSTVSET	-.011	.031	-.024	-.352	.725
ACCESS	.092	.087	.072	1.055	.293

Table 4(b)

R	R Sq	Adj R Sq	S. E E	F	Sig.	D-W
.530 ^a	.281	.250	.98919	9.296	.000 ^a	1.628

Dependent Variable: *PORTF GROWTH*

AVSAV, *FEWMEMBERSHIP*, *GRWTHSAVS*, *FUNDAVBOROW*, *INSUFFUNDLEND*, *INSTVSET*, *EASYLOANACCESS*

Source: SPSS output of the questionnaires

The overall fit of the regression is much like the previous results except for the *DW* and the *F Stat* that record a lower figure with the *Adj. R²* recording lower figure in corresponding fashion to the *R²*.

The final output is the TSLS that displays the result of the both the instrumental and the predictor variables are reported with the coefficients and the model summary below. From the table it can be observed that the earlier variables are not featured as these seem to have paled out of significance leading to the choice of new variables for the model. From the table the following variables are significant *Fundaborw*, *Insuffundlend*, *Grwothsavs*, *Increase* while *Ltenor*, is negatively insignificant. Most significant is the *Grwothsavs* beyond 0.05 and increase at the same level. Most negatively significant is the *insuffundlend*. Also from the above output it is clear that some members have grown their savings aggressively and impacting on the resources available to the coops in the process.

Table 5 (a) Coefficients

	Unstandardized Coefficients		Beta	T	sig.
	B	Std. Error			
(Constant)	.469	.523		.896	.371
Fundaborw	.183	.077	.171	2.363**	.019
Insuffundlend	.236	.076	-.218	-3.091***	.002
Ltenor	-.003	.094	-.002	-.031	.975
Growthsav	.235	.090	.198	2.603**	.010
Increase	.195	.076	.185	2.558**	.011

The model summary below shows the *R* and *R²*.

Table 5 (b) Model Summary

Equation 1	Multiple R	.481
	R Square	.232
	Adjusted R Square	.209
	Std. Error of the Estimate	1.016

DEPENDENT VARIABLE: PORTF GROWTH
FUNDABORW, INSUFFUNDLEND, LTENOR, GRWOTHSAVS, INCREASE

Source: SPSS output of the questionnaires

Direct discussion of the variables and interpretation indicate that *Access* (ease of access to loan) is negatively impactful to the loan size, indicating a kind of competition for access to available fund from the Coop, the more members access credit at the same time the less the size of loan available to individual members. This might lead to insufficient amount being available for needy members for specific projects and subsequent failure of the loan. Significantly impacting the size of loan is the membership strength which shows that more members mean more savings and more aggregate saving indicate higher loans available to individual members on request. The loan size dovetail into the second dependent variable: *Portsize*. The significant variables in this case are: *loan size*, *membership* and *Ltenor*, all are positive. The indication is that for coops to increase the rate of growth these are the main variables. As revealed above, sufficient amount must be made available to members who need such credit for viable investment purposes. The final dependent variable show that other variables not directly linked to individual loans do have influences on the growth of the coop. Significant variables among these are growth individual savs, *fundabrow* and *fewmegrowth*. The three variables mentioned here are all positively influencing the rate of growth of these of Coops.

fmgrowth and *Growthsavs* both are significant beyond 0.01 level. The first variable of significance shows that coop borrows from the other sources to make money available to needy members, the second indicate that there a few members who have significant stake in the coop more than the average members. This group would most likely have savings beyond the average coop members perhaps having saved more than others. The third is that there is a significant competition to grow savings of the coop by members definitely would have impact on the aggregate savings and would then impact the size of the loan granted and increase the portfolio size and them induce growth.

Recommendations and Conclusions

The outcomes of this study have presented that the fact average savings of the members of the Coop are as important as the membership strength. Perhaps more important with the TSLS are the issues of portfolio that the paper sought to address. The single multivariate regressions have brought out that access to loans can be of help o the coop as the variables that are significant in the single stage regressions were no longer significant. Other variables have to be picked to serve the purposes of the model. Therefore the paper recommends as follows:

- a. It is important that the government through the trade unions encourage employee based cooperative organisations as it would be easy to regulate and coordinate. Evidence is yet to be empirically available, but it is known that the employment based coops on the average generally survive longer than the other types of coops especially those that are not employment based.
- b. Access to loans from formal sources should be allowed to the cooperatives by the monetary authority to enable them better serve members' welfare. It is proved the TSLS that the coop does not often have enough funds to lend out to the members. Group guarantees and cross guarantees can be used for security in these cases while the trustees of the cooperative stand guarantee with the organisation or where registered as Limited Liability Company it can be allowed to borrow as such.
- c. The coops ability to grow its portfolio lies more in the members' ability to grow own savings and increase their capacity to increase loans they access each time. This is possible where there are increases in income and retained dividends. Alternatively more members can be encouraged to save the increase in the dividends payable to depositors rather than encouragement for loans. Coops may be generally allowed to run savings schemes that allow deposits form members only to act as funding source to their portfolio.

The paper has investigated the portfolio behaviour of the employment-based coop organisations. The literature though very recent show that the coop CTCS is of tremendous benefit to members' capital formation and welfare across countries. The sources of data remain primary and were obtained through structured questionnaire that had an impressive return rate of 78%. The study adopted the regression estimation process to estimate the three dependent variables and a Two Stage Least Square (TSLS) process to estimate the other variables not directly impacting on membership savings and loans but on total coop portfolio growth of the coop. The findings prove that membership strength of the coop is important tot increase in this growth and ability to grant loans.

Important discoveries of this study include the fact that the coop has members who grow their savings in not necessarily to borrow but to act as deposits for preferring deposits in the coops to the formal banking system. Also important is the fact that there are insufficient resources to lend to members who may want to borrow. From the study the use of TSLS is important because the study was able to isolate the variables that directly impact on individual members' savings and loan activities. Since this type of coop is able to access some of other capital apart from the normal check-

off monthly savings from the members of workforce payroll. Integrating the coop into the mainstream financial system is important in as much as they are able to amass savings and deposits for lending to members. Factors affecting portfolio issues in mainstream banking are presently unobservable in the coop because of its present level of development. This would enable their operations to be captured in the banking system and the available resources would then become known. In addition, the regulation of this type coop is important to ensure there is a record of operations and activities such that the depth can be estimated.

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