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By

CHUKWUONE, Nnaemeka A

UNIVERSITY OF NIGERIA
NSUKKA

A comparative analysis of credit use and repayment performance of group and non-group women farmers under the community banking system in Enugu State,

SEPTEMBER 2000

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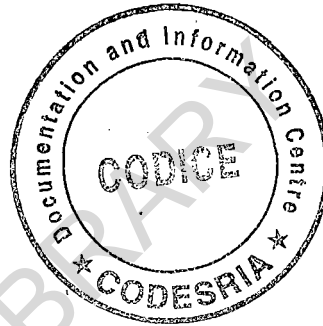
BY

CHUKWUONE, NNAEMEKA A.
PG/M.Sc/96/22935

DEPARTMENT OF AGRICULTURAL ECONOMICS
UNIVERSITY OF NIGERIA
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A COMPARATIVE ANALYSIS OF CREDIT USE AND REPAYMENT PERFORMANCE OF GROUP AND NON-GROUP WOMEN FARMERS UNDER THE COMMUNITY BANKING SYSTEM IN ENUGU STATE, NIGERIA

A DISSERTATION SUBMITTED TO THE DEPARTMENT OF AGRICULTURAL ECONOMICS, UNIVERSITY OF NIGERIA, NSUKKA, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE (M.Sc) IN AGRICULTURAL ECONOMICS
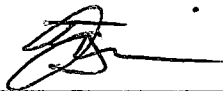
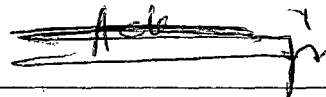BY

CHUKWUONE, NNAEMEKA A.

PG/M.Sc/96/22935

SEPTEMBER 2000

CERTIFICATION

CHUKWUONE, NNAEMEKA ANDEGBE, a postgraduate student in the Department of Agricultural Economics, University of Nigeria, Nsukka, with Registration Number PG/M.SC/96/22935 has satisfactorily completed the course and research work for the award of Masters of Science (M.Sc) in Agricultural Economics.

The work embodied in this dissertation is original and has not been submitted in part or in full for any other diploma or degree of this or any other University.

DR. C. J. ARENE
SUPERVISOR

PROF. E. C. OKORJI
HEAD OF DEPARTMENT

Date 29/11/2000

Date 29/11/2000

DEDICATION

Dedicated to my family members, my parents, Mr. A.T. Chukwuone and Mrs. Gladys Chukwuone and to my brothers and sisters Ikenna, Chiedozie, Chikaodili and Nwamaka.

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ABSTRACT

The study compared the credit use and repayment performance of group and non-groups women farmers under the community banking system in Enugu State. The specific objectives included to: describe the characteristics of the women farmers and their use of credit, determine the factor that influence their loan repayment performance, compare the credit use and repayment performance of group and non group women farmers, predict the credit risk position of the group and non-group women farmers and identify the problem faced by loan beneficiaries and bank officials in credit administration. Multistage random sampling technique was used in selecting respondents.

The respondents used credit mainly for either crop or animal farming. In crop farming, they used credit in a decreasing order, from buying of inputs, increasing the number of hectares under cultivation, hiring of labour to storing of their products. On the other hand, in animal farming, the trend was in a decreasing order from increasing stock, buying more drugs (medication) buying more feeds to hiring labour.

Regression analysis for group and non-group women farmer borrowers combined showed that age, household size, net cash income group or non-group

membership and size of loan had significant effect on loan repayment, whereas age and net cash income were positive, household size, group or non-group membership and size of loan were negative. The regression analysis for group women farmer borrowers only showed that age, household size, number of farmers per group and net cash income had significant effect on loan repayment while regression analysis for non-group women farmers showed that age, household size and net cash income had significant effect on loan repayment.

Repayment rate of group and non-group women farmer borrowers was significantly different, with group women farmer borrowers repaying more than non-group women farmer borrowers. Their net cash income and credit use were not significantly different.

Discriminant analysis for group and non-group women farmer borrowers combined, showed that good credit risk was directly related to age and net cash income and inversely related to household size. Percentage of group cases correctly classified was 88.75%. Also, discriminant analysis for group women farmers showed that household size and number of women farmers per group was directly related to bad credit risk while net cash income was inversely correctly classified was 95%. On the other hand, discriminant analysis for non-group women farmer borrowers showed that age, farming experience and net

cash income was directly related to good credit risk. The percentage of grouped cases correctly classified was 90%. Net cash income was the highest discriminator of good credit risk in all the three discriminant analysis contributing 99.8%, 97.2% and 99.9% for group and non-group combined, group only and non-group only, respectively.

The major problem encountered by the women farmer borrowers was adequacy of loan fund. Non-group women farmers had more problems. Natural hazards that resulted in crop failure also affected loan repayment. On the side of the bank officials, the major problem was that borrowers spent money on unapproved project and also lacked collateral security and knowledge of banking procedures.

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1.0 INTRODUCTION

1.1 Background of the Study

Rapidly growing population combined with reduced agricultural output in Nigeria has aggravated economic and social dislocation especially in rural areas where the majority of the population resides. The latest statistics concerning agricultural output in Nigeria show that the contribution of agriculture to gross domestic product was only 39% in 1996 (FOS, 1996). Improving agricultural output and hence rural farmers income will provide an immediate amelioration to the present poor condition of the vast majority of Nigerians.

Availability and provision of credit facilities are indispensable means of achieving a sustained increase in agricultural output and increased income for the farmers. This is because technical progress requires investment and increased spending on means of production. In an agricultural sector oriented towards subsistence, these expenses can seldom be financed without credit facilities. Therefore, a farmer's ability to invest hinges on continued access to credit (Calomiris, 1993). In addition, since production is seasonal and a considerable lag occurs between the outlay of major expenditure and the resultant flow of income, farmers cannot survive without credit facilities.

Experience from Operation Feed the Nation in the 1970s and the Green Revolution Programme in 1980s have shown that supplying subsidized inputs to farmers without adequate credit to purchase the subsidized inputs did not lead to sustainable increased in agricultural output (Federal Ministry of Agriculture, 1997). Credit could reduce inefficiency in resource utilization in production processes since the use of loans involves an increase in the use of resource inputs; the managerial skill of the farmer is increased (Adegeye and Ditto, 1986). Credit helps to improve the economic well being of the rural population, promote development generally and increase agricultural output (Ijere, 1976). It gives the poor who are mainly women, access to a wide range of new technologies and inputs (Berger, 1989).

Smallholder farmers use credit for either crop or animal farming. In crop farming, credit can be used to purchase inputs, hire labour, increase hectarage under cultivation or enhance storage of products. In animal farming, farmers use credit for a wide range of activities, which include increasing stock, hiring of labour and purchasing of feed and drugs/medication.

Among smallholder farmers, women are the majority. They represent about 70 percent of those who engage in farming in Nigeria (FAO, 1975). They are involved in almost all phase of food production from land preparation to harvesting. They execute certain farm operations that are thought to belong to men

(Okorji, 1985; Ogungbile et al, 1991). The distribution of labour for maize by type of activity shows that 87 percent of women work regularly in planting, weeding and harvesting compared to 54 percent of men (Saito et al, 1994). On the whole, about 80 percent of food and 65 percent of cash crop are produced by women (UNDP, 1996).

Farming among women is done individually or in groups. Sometimes, groups are formed solely for farming purposes while sometimes women groups, which may be clubs, or village associations help their members in farming. Group farming is important especially in the following areas, namely; relieving labour bottlenecks during peak labour demand periods, reducing the drudgery in many women stereotyped farm duties like weeding, providing an avenue for socializing and for capital mobilization for agricultural and social purposes (Directorate for Social Mobilization, 1990). These functions are performed through rotating work practice, thrift savings and credit operations. Credit operations are, sometimes, carried out through financial institutions located in the rural areas. Community banks serve as one of the financial institutions located in rural areas, which help in financial intermediation for rural women.

According to National Board for Community Banks (1994), a community bank is a self sustaining financial institution owned and managed by a community or group of communities for the purpose of providing credit, deposit banking and

other financial services to members largely on the basis of their self-recognition and credit worthiness. They were established in order to help alleviate the constraints that are associated with access to credit for rural dwellers with a view to increasing their income generating capacity through increased agricultural production (UNDP, 1997). They have some features of informal financial sources for example lack of total reliance on viable and negotiated collaterals as a basis for giving credit. As a result, women who ordinarily prefer informal sources of finance are encouraged to obtain credit from them.

1.2   Problem Statement

In spite of women's effort in agricultural production and their need for credit to facilitate production processes, there is still lack of an efficient credit delivery method to them. They are severely disadvantaged in the credit market. They usually do not own marketable land rights and hence have no collateral and if subordinates in the household, they may not have the capacity to establish reputations for credit worthiness as independent agents. The majority of them lack access to formal financial services. Formal credit programs are usually channeled to household heads and are commonly based on non-food crops in which men tend to specialize. Saito et al (1994) noted that only five percent of the female farmers surveyed in Nigeria had obtained credit from a commercial bank while 14 percent were men and that a replicable model of credit delivery to women is not available.

Some women farmers obtain credit from community banks, individually and in groups. These women are able to obtain credit from community banks because of the fact that community banks, due to their mode of formation, do not place much emphasis on strict financial rules observed by formal financial intermediaries. For example, community banks do not rely entirely on viable and negotiated collaterals as a basis for giving credit.

For women to continue obtaining credit from community banks, they must be seen as good credit risks. Accessibility of credit from community banks to women farmers may dwindle with concomitant decline in agricultural output and perpetuation of poverty and malnutrition if loan repayment performance is poor. This is because maintenance of a high repayment rate among borrowers is an indispensable means of ensuring that loans revolve and hence increased access to loan. Poor loan repayment may lead to bank collapse. Already, the National Board for Community Banks has withdrawn the operating licence of over 30 community banks because of poor performance.

Therefore, in order to help in developing a replicable model and improve women access to formal financial sources, there is need to compare the credit use and repayment performance of group and non-group women farmers under the community banking system.

1.3   Objectives of the Study

The broad objective of this study is to compare the credit use and repayment performance of group and non-group women farmers under the community banking system in Enugu State, Nigeria.

The specific objectives are to:

(1)   describe the characteristics of the women farmers and their use of credit;

(2)   determine the factors that influence loan repayment performance;

(3)   compare the credit use and repayment performance of group and non-group women farmers;

(4)   predict the credit risk positions of the group and non-group women farmers;

(5)   identify the problems faced by loan beneficiaries and bank officials in credit administration; and

(6)   make policy recommendation based on the result of the findings.

1.4   Research Hypotheses

Based on the above specific objectives, the following hypotheses will be tested.:

(1)   loan repayment is not influenced by borrowers socio-economic characteristics.

(2)   group and non-group women farmers are not different as regards credit use
        and repayment performance.

(3)   the borrowers are not good credit risks.

1.5   Justification for the Study

This study is justified by the fact that women are the majority of
smallholder farmers in Nigeria. These smallholder farmers produce the greater
part of food consumed in Nigeria and are the major focus of government
agricultural policies. Since some women smallholder farmers obtain credit from
community banks, there is need to ensure that the credit is well utilized in order to
guarantee continued and increased food production. This can be done through the
evaluation of credit impacts. Continued use and repayment of credit is an indicator
of impact (Berger, 1989). Also, repayment is the key factor in lending if funds are
to be recycled from year to year and if increasing number of borrowers is to be
assisted. Good repayment record indicates that loans are being allocated to
productive activities (Vogel, 1981).

Furthermore, community banks are located mainly in the rural areas and
women are the majority of the rural population. Invariably, the success or failure
of community banks depends on them. The result of this study will enable
community banks to determine potential good borrowers before giving loans so

that loan recovery will not be much problem. Also, the result of this study will be of immense benefit to the poverty alleviation initiatives of the present Nigerian government. It will be of help to community banks, National Board for Community Banks, non-governmental organizations and agencies concerned with gender studies. Finally, it will be beneficial to researchers and students as a reference material.

2.0   LITERATURE REVIEW

2.1   Theoretical Framework

The word credit comes from the Latin word credo meaning "I believe". Hence, credit is based on the belief that the borrower will repay his or her loan. The term credit means the capacity to borrow (Lee et al, 1980). It can be defined as unused borrowing capacity or the difference between maximum potential borrowing and amount already loaned (Barry, P.L, C.B. Baker and L.R. Sanint, 1981). Credit is a resource that can either be used or held in reserve (Gustafon, 1989). When credit is exchanged for a loan, interest charges and financial risk result. Often times, credit and borrowing are used interchangeably. However, the word borrow means to receive something with the understanding that it or its equivalent will be returned as agreed upon (Lee et al, 1980).

In smallholder farming, credit use and repayment performance is determined by households' socio-economic characteristics. Age is the single most important factor associated with households' use of credit (Berthoud and Kempson, 1992). In addition, patterns of credit use or credit use potential vary with size and nature of the asset structure and economic flows managed by different individuals, household or firm (Von Pishke, 1975). There has never been any clear explanation of the relationship between income and the use of credit

(Berthoud and kempson, 1992). Households with low income were almost as likely as others to make use of credit facilities.

Furthermore, the ultimate ability of a farmer to repay the loan is dependent on the income per hectare under cultivation (Rwegasira, 1992). This income, in fact, depends on prices and on farm productivity. The farm productivity constitutes the physical relationship between inputs and output on a farm, for example, bag of maize per hectare of land. Farm productivity has been shown to depend on seasonal investment, operational efficiency, the farmers industry, motivation and suitability of land (Rwegasira, 1992). Operational efficiency on the farm is affected by factors like farming knowledge or experience possessed by the peasant about crop or agricultural business he is involved in, as well as on the degree to which he relies on expert advice and activities towards innovation. In addition, seasonal investment per hectare will depend on the level of material possession of a household and the total available family labour. The industry of a household, that is, the intensity of labour utilization on a farm, will most probably depend on the family labour in man-hours spent on the farm as determined by the size, sex and age composition of the family as well as the motivation. Motivation depends on formal educational level, level of material possession and local sub-culture values of the household.

Moreover, peasant credit risk is dependent not only on the ability to pay, but also on the willingness to pay, which depend on the debt responsibility (Igben, 1978). An individual's debt responsibility will fundamentally depend on one's attitudes towards indebtedness and one's ability to achieve as evidenced by a record of past achievements, ability to think through one's activities before they are done, zeal for independence as reflected by attempts and ability to determine one's life pattern and living within one's own means (Rwegasira, 1992).

2.2   Role of Women in Food Production and their Constraints

Women involvement in agriculture is not a new phenomenon. Cross-cultural accounts of women and their work show that women have been important providers of food for much of human history (Blumberg, 1978; Friedl, 1975; O'Kelly, 1980). In haunting and gathering societies, women provided about 60 to 80 percent of the food mostly through their gathering activities (Aronoff and Crano, 1975). Many social scientists e.g., Blumberg (1978) speculate that women, not men, discovered how to cultivate plants through the knowledge they accumulated while gathering. In horticultural societies, women were often the primary farmers (Razenfield, 1985).

In Africa today, women provide the bulk of agricultural labour. Africa is a region of female farming par excellence (Boserup, 1970). Women head about 40%

of African households, supply on the average, 70 percent of the labour for food production, 50 percent in domestic food storage, 60 percent in food marketing and 100 percent in on-farm processing (Morris-Hughes, 1994). The United Nations (1975) estimates that rural women contribute two-thirds of all the time that is put into traditional agriculture in Africa. They grow about 60 percent of foodstuff and also provide a large share of the family budget (Brande, 1991). Although women certainly controlled their work in the household, it was clear that farm work took precedence over house work whenever labour demands conflicted; given the precedence of farm work, women would cross over to do "men's work" but not vice versa (Rozenfield, 1985). Women farmers in sub-Saharan Africa dominated the smallholder section and accounted for more than three quarters of the food produced in the region (Saito et al, 1994). In short, Africa especially, sub-Saharan Africa depends on the labour of women to feed the people (Urdang, 1979).

The degree of women participation in agriculture varies from country to country. In Iran, women are exclusively responsible for preparation of nursery beds, sowing, transplanting, weeding, harvesting as well as sun drying (Ingrid, 1985). In India, the proportion of women employed in agriculture particularly as cultivators has increased as men moved into non-farm employment (World Bank, 1992). In Cameroon, a woman spends 62.5 percent of the year on her farm and 37.5 percent engaged in matters other than farm work (Kabbery, 1952). In Nigeria,

they are involved in all phases of food production from land preparation to harvesting. According to Okorji (1998), women perform tasks like land clearing, planting, weeding, harvesting and some of the male stereotyped farming operations.

Although women are mostly responsible for food production, they have little access to productive resources especially credit. According to Gallin and Ferguson (1991), the development of women's capabilities and potentials have been hindered by their lack of access to resources, that is, land and credit facilities which are vital to agricultural production. In Nigeria, most of the recipients of agricultural loans and extension services are male "progressive" farmers while women, incapacitated by lack of access to credit facilities, are not able to purchase implements and inputs to enhance their work in food production and processing (Saito et al, 1994).

The conditions could be attributed to educational level of the rural women, lack of collateral security and social norms among others. Because of poor education, women are less able to comply with requirements of formal banks such as completing application forms or formulating investment or cash projections. In Ghana, for example, women preferred informal group loans with higher interest rates to formal bank loans partly because raising loans required no big formalities

such as filling out several application forms (Gabianu, 1989). A further impediment is that women generally lack clear title to land or other property that lenders will accept as collateral. UNDP (1997) notes that in Nigeria, although several banking institutions have been established to provide for the capital needs of the peasantry, they have invariably excluded the poor farmers, mainly women because of their inability to meet the stiff and demanding conditionality for eligibility for loans. The conditions include: possession of certificate as evidence of tax payments, etc. As a result of these, women resort to informal sources of loan despite exorbitant interest rates. In Nigeria, the main source was relatives, about 56 percent (Saito et al, 1994). However, participation in informal institutions does not link women directly to the mainstream financial system; continued reliance on them is one means of perpetuating the marginalization of women (Berger, 1989). To overcome this, some banks, for example, community banks, have adopted some features of informal sector lending.

2.3   Credit Use and Repayment

Low rate of delinquency and default often have been the primary criterion used to measure the success of agricultural credit programme in developing countries (Dale, 1971). Low default and delinquency rates are said to be

particularly praiseworthy because they indicate that lenders are careful in their selection of borrowers and forceful in their collection of loans (Vogel, 1981). A lender's willingness to lend money hinges on being sure that the borrowers will use the borrowed funds wisely since the effectiveness of the borrower in utilizing the fund determines loan repayment.

Generally, farmers demand credit in order to promote production. However, it has been observed that most farmers divert their credit to consumption mainly. In Sudan, available evidence on loan utilization shows that a large percentage of Agricultural Bank of Sudan loans extended for purchase of current production inputs are diverted to food consumption; no more than 20 percent of the loan granted was utilized for the purchase of current agricultural inputs and cost of labour (Tekku, 1993). This leads to poor loan repayment.

In Nigeria, the operators of the supervised agricultural credit scheme in Anambra State identified common causes of low repayment to include diversion of funds, poor marketing opportunity, low price of farm products, low yield and negative attitude of farmers towards government-owned credit agencies (Arene, 1990). Default in loan repayment is sometimes attributed to risk of income shocks, a special feature of agriculture (Besley, 1994). Poor management, ill will, individual hazard such as illness, accidents and deaths may result in default in loan

repayment. In group lending, where the social cost of individual default exceeds its private cost due to joint liability, default may be high if group cohesiveness is limited and mechanisms for enforcement and penalization fail to operate effectively (Yawn, 1994; Huppi and Feder, 1990).

Successful use of credit requires adjusting the repayment schedule to the debt-servicing capacity of the farm business (Lee et al, 1980). To guarantee repayment ability, farmers credit demand should be based on the need to make incremental investment (Balogun et al, 1991). Repayment rates is also influenced by staff attitudes towards the importance of high repayment, transport available, the ease with which women can reach repayment offices, viability of projects chosen, general and cultural attitudes toward repayment including the honesty of government officials (Due et al, 1990). Arene (1993) notes that the socio-economic attributes that affect loan repayment mostly include income, age of farmers, number of years of farming experience and distance between farmer's home and source of loan. In terms of repayment between group and non-group women borrowers, Due et al (1990) notes that many Rural Enterprise Programme reported that there was no difference in repayment between individuals and groups.

2.4.0 Group: Meaning, Theories and Characteristics

A group is two or more individuals who influence each other through social interaction (Forsyth, 1983). Groups play a crucial role in human affairs. They dramatically shape our perception and attitudes, provide support in times of distress and affect our performance and decision making (Baron et al, 1993). Theorists have offered a number of reasons why groups play such a major role in human affairs. These theories according to Baron et al (1993) include: the social learning perspective which says that since most people are raised in a family setting, we learn to depend on others for aid, information, love, friendship and entertainment. Secondly, social comparison theory which says that human beings feel very strong pressure to have accurate view both about their abilities and their environment and this can be obtained in groups. Further, the exchange theory, which argues that groups, which provide the greatest "gains", will be most desired as group membership, involves exchange of both rewards and cost. Finally, the socio-biology theory, which draws heavily on Darwin's work, argues that, on balance, grouping together has survival value for humans as well as many other species.

Groups are characterized by their size, structure and leadership. These affect the actions of a group not minding the type. According to Baron et al (1993), larger groups are more likely to include individuals with a wide range of

skills; as a result, specialization of labour is more likely to occur. However, larger groups allow people to feel more anonymous thereby leading to less task involvement, lower morale and poor communication. Group structure on the other hand, refers to the way groups are organized and how various positions in the group are related (Baron et al, 1993). Many writers describe group structure as being comprised of several key elements. These are roles, status, cohesion, communication and group norms. Roles influence people actions often leading them to act contrary to their private feelings. People are very reluctant to confront authority when they are placed in a subordinate role (Milgram, 1974). Status differences have a number of important effects on group process. High status individuals are likely to be valued by the group and, as a result, treated more tolerantly; they will often be less affected by group norms and peer pressure than lower status members in part because they are less likely to expect punishment for their actions (Harvey and Consalvi, 1960). In addition, those high in status generally have a disproportionately strong impact on group decisions and judgments whereas those low in status tend to be ignored even when they offer intelligent and creative advice (Torrence, 1954). Cohesion is the sum of all pressures acting to keep individuals in a group (Back, 1951). Cohesion may be high simply because group members like each other. The nature of group norms,

also affect a wide range of judgments. Individuals are more strongly influenced by the opinion of people around them especially to avid conflict (Sherif, 1936).

Moreover, the style of leadership the group leader adopts is another important group characteristic. Leadership could be people oriented or task oriented. People oriented leadership generally produces better morale than a task oriented leadership (Shaw, 1981). However, despite poor effect on morale, a strong task orientation is useful in times of stress, time pressure or lack of structure as it produces superior performance (Fiedler, 1967).

2.4.1   Farmer Groups: Initiative for Setting and Functions

Farmers group together in many ways and for many functions. Often times, farmer groups are set up at government initiative or, where a group already exists, incorporated by government in order to carry out particular functions, for example, agricultural extension, credit delivery and repayment (Oxby, 1983). Hunter (1978) observed the use of farmer groups as part of a new "total approach" to rural development in India, Pakistan. He argues that a "whole village, officially-inspired primary co-operative" is no longer an automatic choice for grouping farmers, and that governments, as well as voluntary organizations and industry are tending to use small groups of directly concerned farmers. Huppi and Feeder

(1990) also observed that government organizations such as extension agencies have borne the cost of group formation and technical assistance in many countries.

In Nigeria, the extension authorities, the Agricultural Development Programme (ADP) help in forming farmer groups. The Women in Agriculture Project of the ADP organise group women farmers (ENADEP, 1997). Some of these groups are later registered as women co-operative farmer groups. The implication for forming these groups is that farmer groups, by giving a certain amount of autonomous responsibility or decision-making powers to farmers, will help to provide the motivation for farmers to co-operate in their work and produce higher levels of production and thus incomes (Oxby, 1983). Sometimes, farmers group themselves so that they can form a common front in their bid to get favours from government, for example, the Congress of Nigerian Farmers and the Nigerian Farmers Council. Farmer groups facilitate credit delivery and credit repayment; the credit is usually for fertilizer, seed, pesticide or agricultural equipment or for the construction of boreholes and irrigation structures and other shared facilities (Oxby, 1983). She also observed that farmer groups are sometimes set up to raise money from members, for example, members of farmer's councils in Nigeria organize savings and credit clubs in order to buy fertilizer or for small-scale marketing.

2.4.2 Women Groups in the Society

Women groups have existed in Nigerian traditional society from time immemorial. Besides complementing the roles played by men, they serve the interest of their women members. They are known to be active in agricultural production, provision of social services, social security, religious practice and adjudication of legal issues (DSM, 1990). Often times, women organize themselves into co-operative groups in order to carry out these functions.

2.4.3 Group Lending

The failure of agricultural development banks and other rural lenders to reach low-income producers with affordable credit has led to a search for other arrangements (Braverman and Guasch, 1989a, 1989b). Group lending is a popular alternative. In recent years, lending through groups is the institutional arrangement most discussed (Adams and Ladman, 1979; Bhatt, 1988; Huppi and Feder, 1990). In group lending, a lender may provide funds to the group as a whole which then disburses according to agreed criteria (Huppi and Feder, 1990). In such a case, the group is jointly liable for the entire amount of the loan. Most rural financial institutions whose credit portfolio is characterized by very small average loan size have extended loans to groups relying on joint liability mechanisms without collateral (Yaron, 1994). Joint liability implies that all group members are

sanctioned if anyone member does not repay his or her loan (Zeller, 1994). That is, members are responsible for the cost of default by any member. Social and economic links give group members the option of applying sanctions to pressurize the peers to perform. With group lending, the lenders transaction cost is saved as groups distribute, monitor and often times collect loans (Feder and Huppi, 1990; Due et al, 1990). Participating members improve their access to credit and obtain better terms than they would qualify as individuals.

The homogeneity and size of the group is a crucial feature for adequate performance. Yaron (1994) noted that using a small homogenous group did not pose the "free rider" problem and that joint liability can be effective only within a small homogenous group in which peer pressure can be brought to bear. Free riders are members who do not fully bear the individual costs of participating in group activities, knowing that they will be able to reap all or most of the benefits associated with group membership (Yaron, 1994). Small groups foster closer ties among members and can reduce the cost of information thus loan supervision is easier. However, the members of the peer group must be provided with incentives to monitor the actions of their peers (Stiglitz, 1990).

2.4.4 Previous Record of Group Lending

The bulk of research studies on group credit appear to originate from the Asian continent. The two rural financial institutions that have been associated with group lending are the Bank for Agriculture and Agricultural Cooperatives (BAAC) in Thailand and the Gameen Bank (GB) in Bangladesh (Tohtong, 1988; Hossain, 1988; Yawn, 1994). The GB and the BAAC have leaned heavily on self-held groups to promote and deliver loans. In some African countries, group lending has been used to extend credit to the able poor. Due et al (1990) reported the use of group lending to extend credit to mostly women groups in three African countries, namely; Kenya, Malawi and Tanzania where credit was administered through existing government parastatals as in Tanzania, government ministry as in Malawi and non-governmental organizations as in Kenya, Tanzania and Malawi altogether. Owusu and Tetteh (1982) reported group lending in Ghana.

In Nigeria, some credit institutions have extended credit to farmers via groups. Some of them which their activities have already been studied include, the Fund for Agricultural and Industrial Development (FAID) scheme in the eastern Nigeria (Uzo, 1983), the Western Nigeria Agricultural Credit Co-operatives (WNAC) loan scheme (Osuntogun, 1973; Ijere and Abaelu, 1973) and the Nigerian Agricultural and Co-operative Bank (NACB) Limited loan scheme (Arene, 1993).

2.5.0 Rural Banking in Nigeria

Rural banking scheme was introduced in Nigeria in 1977 by the Central Bank of Nigeria in order to meet the credit needs of people at the grassroots especially in the suburban and rural areas of Nigeria (Chordia, 1984). In the scheme, commercial banks, which have been reluctant to open up branches in the rural areas, were compelled to expand their branch network in the rural areas. The project was carried out in phases. The first phase ended in June 1980, the second phase in December 1984 and the third phase in July, 1989. Today, there are 756 such rural bank branches across the country (NBCB, 1993).

2.5.1 The Community Banking System

Following the poor participation of the rural people in commercial bank branches located in rural areas due to the complex, sophisticated and often times cumbersome banking operations and for the fact that they have less education and that these banks demand collateral security which they cannot afford, the federal government introduced the community banking system (NBCB, 1993). This was done in order to alleviate the suffering of the masses through the creation of an enabling environment and needed financial delivery system that could fuel economic growth. A community bank is a bank, which can be established by a community or a group of communities to collect on behalf of its customers, money

and proceeds of banking instrument (Decree No.46, Section 1 of 1992 of the Federal Republic of Nigeria). Financial services are provided to the members largely on the basis of their self-recognition and credit worthiness (NBCB, 1994). The community banking system was launched with the opening of Alheri Community Bank, Kaduna by the then President, General Ibrahim Babangida on Monday, 31st December, 1990. Since then, the community banking system has grown very rapidly from 9 community banks in 1991 to about 1,358 community banks in 1996 (Chawai, 1996). Owners of a community bank include community development associations, trade associations, farmer groups, age grade and corporate bodies operating within the community and indigenes of, and individuals within the community, except that no single individual shall hold more than 5 percent of the share of a community bank (NBCB, 1993).In Enugu State presently, there are twenty-six community banks.

2.6 Analytical Framework

The nature and purpose of a study determines the types of analysis that can be employed. While the calculation of rates, means, frequency distribution and percentages may be adequate for some exploratory studies, more detailed and higher level analysis will be required for case studies and sample surveys especially those that deal with quantitative data (Eboh, 1998).

For analyzing dependence, regression analysis is the most commonly used technique. Specifically, the regression model can be stated thus: $Y = f(X_1, X_2 \ldots X_n) + u$, which states that Y, the dependent variable is a function of various explanatory variables represented by X (Koutsoyiannis, 1981). Arene (1990) used this method to determine the loan repayment indicators that affect the repayment performance of farmers under the supervised agricultural credit scheme.

In predicting credit risk position of the borrowers, credit-scoring models are used (Chhikara, 1989). This could be by behavioural or performance scoring or application scoring. According to Berthoud and Kempson (1992), in behavioural/performance scoring; information is gathered on each behavioural dimension and then used judgmentally to determine the applicants score on each dimension on a scale of 0 – 10. Once the scores of the individual have been determined on all the relevant factors, the next issue to consider is to derive one summary score. A summary score is a way of combining the scores on different behavioural dimensions into one convenient index. The index facilitates interpretation. However, this method does not give reliable information because human behaviour is characteristically dynamic and sometimes volatile so that exact measurement and rating of such behaviour may therefore still be more of an art than a science.

On the other hand, application-scoring technique is essentially an actual exercise (Berthoud and Kempson, 1992). Credit scorecards are built upon a statistical analysis of the characteristics of previous borrowers. Characteristics, which are associated with good chances of timely repayments, are given high scores; those associated with bad paying are assigned low scores. A total score is calculated by adding up the characteristic scores for a particular applicant, and compared with a pass mark; above which the application will be accepted and below which it will be refused.

Statistical techniques used include discriminant analysis, logit and probit models (Chhikara, 1989). Discriminant analysis will be used for this study. It applies relevant loan customer attributes in order to assign them to various risk groups, reflecting their relative credit worthiness (Chhikara, 1989; Arene, 1993). It has been used in farm loans as in Arene (1993), Reinsel and Brake (1966), Hardy and Weed (1980).

Discriminant analysis begins with the desire to statistically distinguish between two or more groups of cases. These "groups" are defined by the particular research situation. For example two groups of borrowers, one with good account (G_1) and the other with bad account (G_2) or a group of experimental laboratory animals given drug A versus a group given drug B versus a group given no drugs at all.

To distinguish between the groups the researcher selects a collection of discriminating variables that measure characteristics on which the groups are expected to differ. For instance, in that of those with good or bad account, a set of socio-economic properties may have been collected or in that of laboratory animals, the various physiological features of the animals may have been observed. The mathematical objective of discriminant analysis is to weigh and linearly combine the discriminating variables in some fashion so that the groups are forced to be as statistically distinct as possible (Klecka, 1975). In other words, we want to be able to "discriminate" between groups in the sense of being able to tell them apart. For instance, if our groups were those with good account (G_1) and those with bad account (G_2), we would probably find that some socio-economic attributes like household size and occupation would discriminate between the two groups. Hence, by taking several qualities or attributes and mathematically combining them, we would hope to find a single dimension on which those with good account (G_1) are clustered at one end and those with bad account (G_2) at the other.

Discriminant analysis attempts to do this by forming one or more linear combinations of the discriminating variables. These "discriminating functions" are of the form:

$Di = di_1Z_1 + di_2Z_2 + ... + di_pZ_p$ where Di is the score on discriminant function i, and d's are weighting coefficients, and the Z's are the standardized values of the p discriminating variables used in the analysis. The classification coefficients are optimal output in subprogram Discriminant (Klecka, 1975). The discriminant scores (D's) for the cases within a particular group will be fairly similar. At any rate, the functions are formed in such a way as to maximize the separation of the groups. Once the discriminant functions have been derived, we are able to pursue two research objectives of this technique: analysis and classification.

The analysis aspects of this technique provide several tools for the interpretation of data. Among these are statistical tests for measuring the success with which the discriminating variables actually discriminate when combined into the discriminant functions. The statistical tests include Canonical correlation, which tells us how closely the function and the "group variable" are related that is another measure of the function's ability to discriminate among groups. Lambda is an inverse measure of the discriminating power in the original variables which has not yet been removed by the discriminant functions -- the larger lamda is, the less information remaining. Furthermore, the weighting coefficients can be interpreted much as in multiple regressions. In this respect, they serve to identify the variable, which contribute most to differentiation along the respective dimension (function).

The use of discriminant analysis as a classification technique comes after the initial computation. Once a set of variable is found which provides satisfactory discrimination for cases with known group memberships, a set of classification functions can be derived which will permit the classification of new cases with unknown membership. Thus, if we find characteristics that do well in predicting borrowers with good or bad accounts, we can use these to predict likely individuals with good or bad account if they had gone to borrow. As a check of the adequacy of our discriminant functions, we can classify the original set of cases to see how many are correctly classified by the variables being used.

Often, the researcher is faced with the situation in which there are more discriminating variables than necessary to achieve satisfactory discrimination. To select the most useful ones, a stepwise procedure is used. Further evidence about group differences can be derived from the group centroids. The centroids summarize the group locations in the space defined by discriminant function.

3.0   RESEARCH METHODOLOGY

3.1   The Study Area

Enugu State was the study area. The selection of the state was purposive. The state which is one of the 36 states in the federation is located between latitude $5^o56'N - 7^o06'N$ and longitude $6^o53'E$ and $7^o55'E$ (Ezike, 1998). Enugu State is bounded on the northeast by Ebonyi State, on the north by Benue State and Kogi State, on the south by Abia State, in the east by Cross River State and in the west by Anambra State (Government Printer, Enugu, 1996). The state occupies an area of about $8,022.95km^2$ (Ezike, 1998) and has a population of 2,452,996 (NPC, 1991). The vegetation is derived Savannah with ferralitic soils.

According to the State ADP (1997), Enugu State with seventeen local government areas, is divided into 3 major agricultural zones, namely: Awgu zone – comprising Awgu, Aninri, Oji river, Nkanu East, Nkanu West and Enugu South; Enugu zone – comprising Enugu North, Enugu East, Ezeagu, Igbo-Etiti and Udi, and Nsukka zone – comprising Nsukka, Igbo-Eze North, Igbo-Eze South, Izi-Uzo, Udenu and Uzo-Uwani. Figure 1 shows the map of Enugu State.

The major occupation of women in the state is farming. Vegetables, root crops, e.g. cassava, yams, cocoyam, potatoes and cereals e.g. maize and rice are mostly cultivated. They also rear domestic animals like poultry, sheep and goat and pigs. The vegetation is derived savannah.
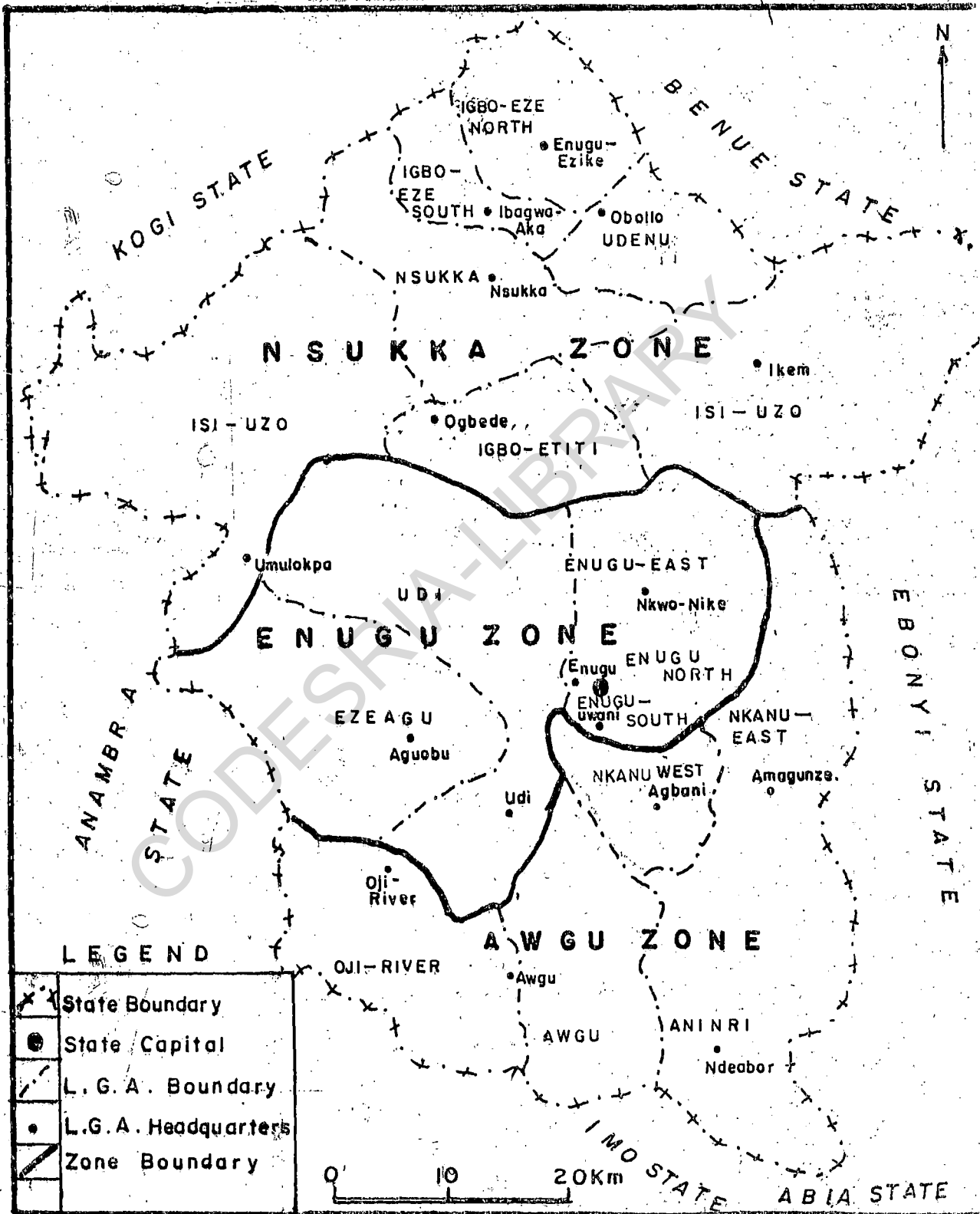
Fig. I: Map of Enugu State showing Study Locations

3.2   Sampling Procedure

Multistage random sampling technique was used. Two agricultural zones, Nsukka and Awgu zones were selected randomly. A list of some women groups and individuals that borrowed from community banks in the two zones was compiled with the help of the members of ADP staff responsible for women in agriculture programme in each zone. Then 10 groups, 5 from each zone, were random selected from among the ones identified as those where members share loan among themselves. Then 5 individual beneficiaries were randomly selected from each group giving a total of 50 group women farmers. On the other hand, 50 non-group women farmers were randomly selected from the list, 25 from each zone.

A total of 100 group and non-group women farmers were used for the study. Nine community banks from which they borrowed were used. Nine officials were interviewed. This gave a total of 109 respondents.

3.3   Data Collection

Data used for the study were collected from both primary and secondary sources. Two sets of detailed structured questionnaires were used in collecting data from primary sources. The primary sources were the group and non-group women farmers and the bank officials. Data on socio-economic attributes of the farmers and their experience in the loan transaction were collected. Data from

bank officials included date of establishment, number of group and non-group women farmer loan beneficiaries, number of applications received, amount of money disbursed, timeliness of disbursement, term of loan, purpose for which the loan was granted, amount repaid and problems associated with the loan transaction. The data were collected from the month of August to December 1998. The researcher interviewed some respondents while enumerators employed by the researcher interviewed some.

However, because of some limitations, data were collected from eighty-eight respondents, 45 group women farmers and 43 non-group women farmers. Out of the 45 from group women farmers, some useful information were not supplied in 5 while for the non-group, 3 was not completed well so that eight respondents were used, 40 group and 40 non-group women farmer borrowers. Data were also collected from nine community banks used by the farmers.

Secondary data were sourced from National Board for Community Bank reports.

3.4   Data Analysis

Objectives 1 and 5 were realized using descriptive statistics, means, percentages and frequencies.

Objectives 2, 3 and 4 were realized using multiple regression analysis, t-test and discriminant analysis respectively.

The regression analysis measured loan repayment (Y) as a function of some variables, which affected its behaviour (Koutsoyiannis, 1981). Three regression analysis was run, one each for group and non-group women farmer borrowers combined, group women farmer borrowers and non-group women farmer borrowers.

The forms showing the number of variables for each of them are:

(1)   For group and non-group women farmer borrowers:

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_8, X_9, X_{10})$$

(2)   For group women farmer borrowers:

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_7, X_8, X_9, X_{10})$$

(3)   For non-group women farmer borrowers:

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_8, X_9, X_{10})$$

Where Y   =   loan repayment (%)

X_1 =   Age of Respondents (Years)

X_2 =   Household size of respondents

X_3 =   Farming experience (Years)

X_4 =   Level of formal education (Years)

X_5 = Type of farming (dummy variable, 1 for crop and 2, for animal farming).

X_6 = Group or Non-group (dummy variable, 1, for group and 2, for non-group).

X_7 = Number of farmers per group

X_8 = Size of loan (₦)

X_9 = Distance from home to source of loan (km)

X_{10} = Net cash income (₦)

e = Error term.

Three functional forms, the linear, log and double-log forms were tried. The linear form was:

$$Y = b_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 + b_7 X_7 + b_8 X_8 + b_9 X_9 + b_{10} X_{10} + e.$$

The log form was:

$$Y = b_0 + b_1 l_n X_1 + b_2 l_n X_2 + b_3 l_n X_3 + b_4 l_n X_4 + b_5 l_n X_5 + b_6 l_n X_6 + b_7 l_n X_7 + b_8 l_n X_8 + b_9 l_n X_9 + b_{10} l_n X_{10} + e.$$

While the double log form was

$$LnY = b_0 + b_1 l_n X_1 + b_2 l_n X_2 + b_3 l_n X_3 + b_4 l_n X_4 + b_5 l_n X_5 + b_6 l_n X_6 + b_7 l_n X_7 + b_8 l_n X_8 + b_9 l_n X_9 + b_{10} l_n X_{10} + e.$$

The formula used in performing the t-test and achieving objective 3 was:

$$t = \frac{\overline{X}_1 - \overline{X}_2}{\sqrt{\dfrac{S_1^2}{n_1} + \dfrac{S_2^2}{n_2}}} \qquad\qquad S_n^2 = \sum \frac{(X_n - \overline{X})^2}{n}$$

Where $\overline{X}$ =   Mean score

S^2_n =   Variance

n   =   Sample size

The discriminant analysis was used to classify the respondents. Three discriminant analysis were done, one for group and non-group women farmer borrowers combined, another for group women farmer borrowers, and a third for non-group women farmer borrowers. The set of variables used for the regression analysis was also used.

The borrowers were grouped into two. Those who repaid 100% were grouped as good credit risks (Group 1), while those who repaid less than 100% were grouped as bad credit risks (Group 2). Stepwise discriminant analytical procedure was used in selecting the discriminating variables.

The discriminant analysis model was presented explicitly as (equation for one group).

$$Ci = Ci1V_1 + Ci_2V_2 + Ci_3V_3 + Ci_4V_4 + Ci_5V_5 + Ci_6V_6 + Ci_7V_7 + Ci_8V_8 + Ci_9V_9 + Ci_{10}V_{10} + Ci_0$$

Where,

Ci = the classification score for group i.

$Ckj's$ = classification coefficients

Cio = Constant

$V's$ = Raw scores on the discriminating variables.

Statistical test of significance of the discriminant function was done using Canonical Correlation, Wilks' Lambda and Chi-square statistic.

3.5   Scope/Limitations of the Study

This study compared the credit use and repayment performance of group and non-group women farmers under the community banking system in Enugu State. Individuals under the group and those not under the group were used. It did not consider the borrowers that used credit as a group. Also, community bank was the only financial institution used.

The research was carried out where illiteracy was widespread and farmers kept little or no records of their farming activities. In most cases therefore, information given were based entirely on what the respondents were able to remember at the time of the interview. More so, many of the respondents were reluctant to give answer to questions especially when it relates to their income. Some doubted the motive behind the study despite some explanations as regards the aim of the study.

Furthermore, the community bank officials were not always ready to give information regarding their loan transactions and customers. This posed some problems. Also, the ADP staff who helped in locating some of the women groups and individuals who borrowed from community banks also found problems in locating them.

However, in spite of these limitations, the results of the study are good approximation of the credit use and repayment performance of group and non-group women farmers under the community banking system in Enugu State.

4.0   RESULTS AND DISCUSSION

4.1   Socio-Economic Characteristics of the Respondents

The effect of various socio-economic attributes that could influence credit use and repayment rate of the women group and non-group farmer borrowers was studied. Berthoud and Kempson (1992) noted that, in smallholder farming, credit use and repayment performance is determined by household's socio-economic characteristics. The socio-economic attributes studied included age, household size, farming experience, level of formal education, type of farming, group or non-group membership, number of farmers per group, size of loan, distance from home to source of loan and net cash income.

4.1.1   Age of Respondents

The age distribution of group and non-group women farmer borrowers is shown in Tables 4.11 and 4.12 respectively

Table 4.11   Distribution of women group farmer borrowers according to age, credit use and repayment rate.

	Age Range		Use of Credit		Repayment Rate	
Years	Frequency	Percentage of Respondents	Type of Farming (frequency) Crop	Animal	No with full Repayment	%With full Repayment
30-39	14	35.0	12	2	5	35.70
40.49	18	45.0	13	5	14	77.80
50-59	8	20.0	6	2	8	100.00
Total	40	100.0	31	9	27	
%			77.5	22.5	67.5	

Source: Field survey data, 1998.

Table 4.12   Distribution of women non-group farmer borrowers according to age, credit use and repayment rate.

	Age Range		Use of Credit		Repayment Rate	
Years	Frequency	Percentage of Respondents	Type of Farming (frequency) Crop	Animal	No with full Repayment	%With full Repayment
< 30	1	2.5	1	0	0	0.00
30-39	14	35.0	10	4	4	28.57
40.49	22	55.0	9	13	17	77.27
50-59	3	7.5	3	0	3	100.00
Total	40	100.0	23	17	24	
%			57.5	42.5	60.0	

Source: Field survey data, 1998.

The tables show that the majority of the respondents, 45% of the women group farmers and 55% of the women non-group farmers fell within the age ranged of 40 – 49 years. The age range of less than 30 years had the lowest with 2.5

percent for non-group women farmer and zero for group women farmers. In addition, the majority of the women group farmers who practice either crop or animal farming fell within the age range of 40 – 49 years while for non-group women farmers, the majority of crop farmers fell within the age range of 30 – 39 years while the majority of animal farmers fell within the age range of 40 – 49 years. Percentage of full repayment increased with age for both group and non-group women farmers, with those within the age range of 50 – 59 years having the highest repayment rate. This suggests that older ones had a higher degree of moral suasion and is more willing to repay.

4.1.2 Household Size of the Respondents

. The results are presented in Tables 4.13 and 4.14.

Table 4.13 **Household size of group women farmers by use and repayment rate.**

Household Size			Use of Credit		Repayment Rate	
Range	Frequency	Percentage of Respondents	Type of Farming (frequency)		No with full Repayment	%With full Repayment
			Crop	Animal		
1 – 3	4	10.0	4	0	4	100.00
4 – 6	18	45.0	15	3	18	100.00
7 – 9	17	42.5	11	6	5	29.41
Above 9	1	2.5	1	0	0	0.00
Total	40	100.0	31	9	27	
%			77.5	22.5	67.5	

Source: Field survey data, 1998.

Table 4.14   Household size of non-group women farmers by use and repayment rate.

	Household Size		Use of Credit		Repayment Rate	
Range	Frequency	Percentage of Respondents	Type of Farming (frequency)		No with full Repayment	%With full Repayment
			Crop	Animal		
1 – 3	2	5	2	0	2	100.00
4 – 6	20	50	12	8	12	60.00
7 – 9	17	42.5	8	9	10	58.82
Above 9	1	2.5	1	0	0	0.00
Total	40	100.0	23	17	24	
%			57.5	42.5	60.0	

Source: Field survey data, 1998.

The results show that the household size of the majority of the respondents ranged from 4 – 6 and 7 – 9 members. Among the group women farmers, 45% had a household size of 4 – 6 and 42.5% had a household size of 7 – 9. On the other hand 50% of the non-group women farmers had 4 – 6 members while 42.5% had 7 – 9. Also, the majority of the respondents who invested in crop farming had a household size ranging from 4 – 6 members while the majority of the respondents who invested in animal farming had a household size ranging from 7 – 9 members.

As regards percentage of full repayment, the result showed that it decreased as the number of dependants increased for both group and non-group women farmer borrowers. This suggests that the higher the number of dependants, the more the household expenses and hence the less the repayment rate.

4.1.3 Farming Experience of the Respondents

Tables 4.15 and 4.16 show the farming experience of the group and non-group women farmer borrowers respectively in relation to their credit use and repayment rate.

Table 4.15: Distribution of group women farmers according to farming experience, credit use and repayment rate.

Farming Experience			Use of Credit		Repayment Rate	
Range (Years)	Frequency	Percentage of Respondents	Type of Farming (frequency)		No with full Repayment	%With full Repayment
			Crop	Animal		
10 – 15	5	12.5	5	0	3	60.00
16 – 20	20	50.0	14	6	13	65.00
21 – 25	6	15.0	5	1	3	50.00
26 – 30	7	17.50	5	2	6	87.71
> 30	2	5.0	2	0	2	100.00
Total	40	100.0	31	9	27	
%			77.5	22.5	67.5	

Source: Field survey data, 1998.

Table 4.16: Distribution of non-group women farmers according to farming experience, credit use and repayment rate.

	Farming Experience		Use of Credit		Repayment Rate	
Range (Years)	Frequency	Percentage of Respondents	Type of Farming (frequency)		No with full Repayment	%With full Repayment
			Crop	Animal		
10 – 15	8	45.0	9	9	8	44.44
16 – 20	12	30.0	6	6	6	50.00
21 – 25	4	1.0	3	1	4	100.00
26 – 30	6	15.0	5	1	6	100.00
> 30	0	0.0	0	0	0	
Total	40	100.0	23	17	24	
%			57.5	42.5	60.0	

Source: Field survey data, 1998.

The majority of the group women farmer borrowers (50%) fell within the range of 16 – 20 years of farming experience while the lowest (2%) were within the range of greater than 30 years of farming experience. On the other hand, the majority of the non-group women farmer borrowers (45%) fell within the range of 10 – 15 years of farming experience while the lowest number, (1%) fell within the range of 21 – 25 years. None of the non-group women farmer had number of years farming experience greater than 30 years. On use of credit, the majority of the g5roup women farmers who invested in crop or animal farming had 16 – 20 years of farming experience while the majority of non-group women farmers who invested in crop or animal farming had 10 – 15 years of farming experience.

As regards percentage of full repayment, there was no clear relationship in that of group women farmers, however, those with the highest number of years of farming experience had the highest repayment rate. For non-group women farmers, percentage of full repayment increased as the number of years of farming experience increased.

4.1.4 Educational Level of Respondents

The educational level of respondents in number of years of schooling in relation to credit use and repayment rate is shown on Tables 4.17 and 4.18, for group and non-group women farmer borrowers respectively.

Table 4.17: Distribution of group women farmers by years of schooling, credit use and repayment rate.

Years of Schooling			Use of Credit		Repayment Rate	
Range (years)	Frequency	Percentage of Respondents	Type of Farming (frequency)		No with full Repayment	%With full Repayment
			Crop	Animal		
< 6	15	37.5	12	3	13	86.67
6 – 12	22	55.0	18	5	11	50.00
13 – 17	3	7.5	2	1	3	100.00
Total	40	100.0	30	9	27	
%			77.5	22.5	67.5	

Source: Field survey data, 1998.

Table 4.18: Distribution of non-group women farmers by years of schooling, credit use and repayment rate.

	Years of Schooling		Use of Credit		Repayment Rate	
Range (years)	Frequency	Percentage of Respondents	Type of Farming (frequency)		No with full Repayment	%With full Repayment
			Crop	Animal		
< 6	7	17.5	7	0	7	100.00
6 – 12	22	55.0	16	6	8	36.36
13 – 17	11	27.5	0	11	9	81.82
Total	40	100.0	23	17	24	
%			57.5	42.5	60.0	

Source: Field survey data, 1998.

The data show that 37.5% of group women farmers had less than 6 years of schooling, 55% had 6 – 12 years of schooling while 7.5% had 13 – 17 years of schooling. For non-group women farmers, 17.5 percent had less than 6 years of schooling, 55 percent had 6 – 12 years of schooling while 27.5 percent had 13 – 17 years of schooling. Percentage of full repayment of credit by the respondents did not follow a defined pattern. For group women farmer borrowers, those with 13 – 17 years of schooling had the highest repayment rate while those with 6 – 12 years had the lowest repayment rate. For non-group women farmer borrowers, those with less than 6 years of schooling had the highest repayment rate while those with 6 – 12 years of schooling had the lowest repayment rate. The highest repayment rate recorded by those with 13 – 17 years of school among group women farmer borrowers could suggest that they were the leaders of the groups because, ordinarily those with lowest number of years of schooling repay more as in the findings of Nwankwo (1996).

4.1.5 Type of Farming by Respondents

Results of the study show that 77.5 percent of group women farmers invested mainly in crop farming while 22.5 percent invested mainly in animal farming (Table 4.19). On the other hand, 57.5 percent of the non-group women farmers invested in crop farming while 42.5 percent of them invested in animal farming (Table 4.20). Percentage of full repayment was higher for crop farmers than animal farmers among group women farmers while it was higher for animal farmers than crop farmers among non-group women farmer borrowers.

Table 4.19: **Distribution of group women farmers by type of farming and repayment rate.**

Type of farming	No of Respondents	Percentage respondents	No with full Repayment	%With full Repayment
Crop	31	77.5	21	66.74
Animal	9	22.5	6	66.67
Total	40	100.0	27	

Source: Field survey data, 1998.

Table 4.20: **Distribution of non-group women farmers by type of farming and repayment rate.**

Type of farming	No of Respondents	Percentage respondents	No with full Repayment	%With full Repayment
Crop	23	57.5	10	43.48
Animal	17	42.5	14	82.35
Total	40	100.0	24	

Source: Field survey data, 1998.

4.1.6 . Credit Use by Group and Non-Group Members

As regards specific use by crop and animal farmers, the result showed that the trend was the same for both group and non-group women farmers. Most of the respondents who invested in crop farming used credit, in a decreasing order, from buying of inputs, increasing the number of hectares under cultivation, hiring of labour to storing of their products. Also, most of the respondents who invested in animal farming used credit, in a decreasing order, from increasing stock, buying more·drugs (medication), buying more feeds to hiring of labour (Tables 4.21 and 4.22).

Table 4.21: Credit use and repayment rate of the crop farmers.

Category	Frequency	No of Crop Farmers	Percentage of Crop farmers	Specific Use								Repayment Rate	
				i		ii		iii		iv		No with full Repayment	%With full Repayment
				No	%	No	%	No	%	No			
Group	40	31	77.5	22	70.97	30	96.77	20	64.50	11	35.48	21	66.74
Non-Group	40	21	57.5	19	82.61	23	100	18	78.26	7	30.43	10	43.48
Total	80	54		41		53		38		18		31	

Key: For Crop Farmers

i   =   To increase hectares under cultivation

ii   =   To buy inputs

iii   =   Hire Labour/Machine

iv   =   Store products

Source: Field Survey data, 1998

Table: 4.22   Credit use and repayment rate for animal farmers.

Category	Frequency	No of Animal Farmers	Percentage of Animal farmers	Specific Use								Repayment Rate	
				i		ii		iii		iv		No with full Repayment	%With full Repayment
				No	%	No	%	No	%	No	%		
Group	40	9	22.5	9	100	6	66.67	6	66.67	1	11.11	6	66.67
Non-Group	40	17	42.5	7	100	12	70.59	17	100	2	11.76	14	82.34
Total	80	26		26		18		23		3		20	

Key: For Animal Farmers

i   =   To increase stock

ii   =   To buy more feeds

iii   =   To buy more drugs/medication

iv   =   To hire labour

Source: Field Survey data, 1998

Percentage of full repayment of group women farmers was higher than that of non-group women farmers. Percentage of full repayment was 67.5 percent for group women farmers and 60 percent for non-group women farmers.

4.1.7 Number of Farmers Per Group.

Table 4.23 shows the number of farmers per group in relation to credit use and repayment rate.

Table 4.23: **Distribution of women farmers by number per group, credit use and repayment rate**

	Group Women Farmers		Use of Credit		Repayment Rate	
Range of Group Number	Number of Respondents	Percentage of Respondents	Type of Farming (frequency) Crop Animal		No with full Repayment	%With full Repayment
10 – 20	15	37.5	10	5	13	86.67
21 – 30	10	25.0	10	0	7	70.00
31 – 40	5	12.5	5	0	3	60.00
41 – 50	5	12.5	1	4	2	40.00
> 50	5	12.5	5	0	2	40.00
Total	40	100.00	31	9	27	
%			77.5	22.5	67.5	

Source: Field survey data, 1998.

The greatest number of respondents (37.5%) fell within the range of between 10 – 20 women farmers per group while the lowest number of respondents (12.5%) fell within the ranges of between 31 – 40, 41 – 50 and greater than 50 women farmers per group. The greater number of those who invested in crop and animal farming also fell within the group number range of 10 – 20 women farmers per group.

Percentage of full repayment decreased with an increase in the number of farmers per group, that is, as the number of farmers per group increased, percentage of full repayment decreased. This suggests that peer pressure was more effective in groups with lesser number of farmers thus ensuring better repayment rate.

4.1.8 Size of Loan to Respondents

Tables 24 and 4.25 show the distribution of size of loan offered to the respondents in relation to credit use and repayment rate.

Table 4.24: Distribution of women group farmers by size of loan, credit use and repayment rate

Range (₦)	Size of Loan		Use of Credit		Repayment Rate	
	Number of Respondents	Percentage of Respondents	Type of Farming (frequency)		No with full Repayment	%With full Repayment
			Crop	Animal		
1,000-5,000	1ᶰ	25.0	10	0	6	60.00
5,001–10,000	20	50.0	17	3	13	65.00
10,001-20,000	10	25.0	4	6	8	80.00
> 20,000	0	0.0	0	0	0	
Total	40	100.00	31	9	13	
%			77.5	22.5	67.5	

Source: Field survey data, 1998.

Table 4.25: Distribution of women non-group farmers by size of loan, credit use and repayment rate

| | Size of Loan | | Use of Credit | | Repayment Rate | |
| Range (₦) | Number of Respondents | Percentage of Respondents | Type of Farming (frequency) | | No with full Repayment | %With full Repayment |
			Crop	Animal		
1,000-5,000	0	0.0	0	0	0	
5,001–10,000	1	2.5	1	0	1	100.00
10,001-20,000	10	25.0	10	0	6	60.00
> 20,000	29	72.5	12	17	17	58.62
Total	40	100.00	23	17	24	
%			57.5	42.5	60.0	

Source: Field survey data, 1998.

For group women farmers, 50% of the respondents received between ₦5001 – ₦10,000, 25% received between ₦1000 – ₦5000 and ₦10,001 – ₦20,000 while none of the respondents received above ₦20,00. The reverse was the case for non-group women farmer borrowers. The majority of them, 75.5%, collected above ₦20,000; 25% got amounts between ₦10,001 – ₦20,000, 2.5 percent got amount between ₦5001 – ₦10,000.

As regards credit use, the majority of the group women farmers who received amounts between ₦10,001 – ₦20,000 invested in animal farming while the majority of those who received between ₦5001 – ₦10,000 invested in crop farming. Also, the majority of the non-group women farmers who received loans above ₦20,00 invested in Animal farming while those who received less invested

in crop farming. These results suggest that animal farming was more capital intensive.

On percentage of full repayment, for group women farmers, the higher the size of loan, the higher the percentage of full repayment while for non-group women farmer borrowers, the higher the size of loan, the lower the repayment.

This suggests that non-group women farmer borrowers tend to default when the size of loan is high while group borrowers, probably due to higher peer pressure, repay more when the size of loan is high.

4.1.9 Distance From Home to Source of Loan

The distance from home to source of loan of 50 percent of the group women farmers was in the range of 6 – 10km. That of 37.5 percent of them ranged from 1 – 5km while that of 12.5 percent was from 11 – 15km (Table 4.26). On the other hand, the distance from home to source of loan for 52.5 percent of the non-group farmers was 1 – 5km, while that of 45.5 percent was from 6 – 10km while that of the remaining 5 percent was 11 – 15km (Table 4.27).

Table 4.26: Distribution of group women farmers by distance to source of loan, credit use and repayment rate

Range (km)	Number of Respondents	Percentage of Respondents	Type of Farming (frequency) Crop	Animal	No with full Repayment	%With full Repayment
1 – 5	15	37.5	6	9	11	73.33
6 – 10	20	50.0	20	0	13	65.00
11 – 15	5	12.5	5	0	3	60.00
Total	40	100.00	31	9	27	
%			77.5	22.5	67.5	

Source: Field survey data, 1998.

Table 4.27: Distribution of non-group women farmers by distance to source of loan, credit use and repayment rate

Range (km)	Number of Respondents	Percentage of Respondents	Type of Farming (frequency) Crop	Animal	No with full Repayment	%With full Repayment
1 – 5	21	52.5	13	8	16	76.19
6 – 10	17	42.5	9	8	18	47.06
11 – 15	2	5.0	1	1	0	0.00
Total	40	100.00	23	17	24	
%			57.5	42.5	60.0	

Source: Field survey data, 1998.

Percentage of full repayment for the respondents decreased with increase in distance. Generally, the majority of non-group women farmers were closer to their sources of loan than the group women farmer borrowers.

As regards credit use, the majority of those who invested in crop farming among group women farmers fell into the distance range of 1 – 6km while the majority of those who invested in animal farming, among them, are in the distance range of 1 – 5km. On the other hand, the majority of both crop and animal farmers among the non-group women farmer borrowers were in the distance of 1 – 5km.

4.1.10 Net Cash Income of the Respondents

Tables 4.28 and 4.29 show the distribution of group and non-group women farmers by net cash income, credit use and repayment rate.

Table 4.28: Distribution of group women farmers by net cash income, credit use and repayment rate

	Net Cash Income		Use of Credit		Repayment Rate	
			Type of Farming		**Frequency (full repayment)**	**Percent of full Repayment**
Range (₦)	Number of Respondents	Percentage of Respondents	Crop (No)	Animal (No)		
< 5,000	3	7.5	2	1	1	33.00
5,000–20,000	27	67.5	26	1	18	66.67
> 20,000	10	25.0	3	7	8	80.00
Total	40	100.00	31	9	27	
%			77.5	22.5	67.5	

Source: Field survey data, 1998.

Table 4.29: Distribution of non-group women farmers by net cash income, credit use and repayment rate

| Net Cash Income | | | Use of Credit | | Repayment Rate | |
Range (N)	Number of Respondents	Percentage of Respondents	Crop (No)	Animal (No)	Frequency (full repayment)	Percent of full Repayment
< 5,000	3	7.5	3	0	0	0.00
5,000–20,000	23	57.5	17	6	11	47.83
> 20,000	14	35.0	3	11	13	92.86
Total	40	100.00	23	17	24	
%			57.5	42.5	60.0	

Source: Field survey data, 1998.

The results show that the net cash income of 7.5 percent of the group women farmer borrowers was between N5000 – N20,000; 25 percent had net cash income of greater than N20,000 while 7.5 percent had net cash income of less than N5000. Also, the net cash income of 57.5 percent of the non-group women farmers was between N5000 and N20,000; 35 percent had above N20,000 while 7.5 percent had less than N5000.

As regards use, the majority of the respondents who had net cash income of between N5000 and N20,000 were those who invested in crop farming while the majority of those who had net cash income of more than N20,000 were those who invested in animal farming. This suggests that animal farming was more lucrative than crop farming. This, also, explains why the majority of those who had the highest number of person per household engaged in animal farming. Percentage

of full repayment of the respondents increased with increase in net cash income, however, none of the net cash income groups had 100 percent full repayment.

4.2.1 DETERMINANTS OF LOAN REPAYMENT BY GROUP AND NON-GROUP WOMEN FARMER BORROWERS

In order to determine the factors that influence loan repayment performance of the women farmer borrowers, group and non-group members, a regression analysis of the data from group and non-group women farmers was done. Membership of group or non-group was included as a dummy variable, X_6. Of the three models tried, the linear model was chosen. The linear model proved better than the double log considering the number of significant variables, the R^2 and its conformity with a priori expectations with respect to sign of the coefficients.

Results of the analysis showed that R square was 0.641337(64%). This implied that the proportion of variation, in Y explained by the independent variables was 64%. Adjusted R square was 0.595222 (60%). F-test was significant at 0.05 probability levels so that the null hypothesis that no socio-economic attribute rejected. Table 4.30 shows the regression results.

Table 4.30:   Determinants of loan repayment amongst the respondents

Independent Variables	Regression Coefficients	Standard Error	T-Stat	Level of Significance (0.05)
X_1	0.67126	0.21919	3.0635	
X_2	-2.30326	0.46915	-4.9094	
X_3	0.08064	0.27732	0.2908	N.S
X_4	-0.13231	0.22042	-0.6002	NS
X_5	3.13980	2.31505	-1.3563	N.S
X_6	-5.99858	2.62449	-2.2856	
X_8	-0.00027	0.00012	-2.2137	
X_9	-0.18534	0.34205	-0.5419	N.S
X_{10}	0.00055	0.00012	5.6277	

F – cal   =   13.90767

Source: Calculation from Field Survey Data, 1998.

From Table 12 above age of borrower, household size, group or non-group, size of loan and net cash income were significant at 0.05 level of probabilities. As a result the null hypothesis was rejected.

4.2.2   DETERMINANTS OF LOAN REPAYMENT BY GROUP AND NON-GROUP WOMEN FARMERS SEPARATELY.

In order to determine the factors that influenced the repayment performance of group and non-group women farmers separately, a separate regression analysis was run for each of them. The linear model was chosen because it gave the best fit

to the data considering the number of significant variable, the R^2 value and the sign of the coefficients.

Results of the analysis showed that for group women farmers, R^2 was 0.75539 and adjusted R^2 was 0.68201 while for non-group women farmers, R^2 value 0.72577 and adjusted R^2 was 0.6550. Their values were significant 0.05 probability level so that the null hypothesis was rejected. Tables 4.31 and 4.32 show the regression results for group and non-group women farmers respectively.

Table 4.31: **Determinants of loan repayment for group women farmers**

Independent Variable	Regression Co-efficient	Standard Error	T – stat	Level of Significance (0.05)
X_1	0.747996	0.31646	2.3636	
X_2	-1.44.0490	0.63849	-2.2561	
X_3	0.061738	0.38231	0.16149	N.S
X_4	-0.183262	0.23006	-0.7966	N.S
X_5	-6.498352	3.27564	-1.9838	N.S
X_7	-0.197619	0.05948	-3.3222	
X_8	0.000319	0.00038	0.8299	N.S
X_9	-0.336756	0.64820	-0.5195	N.S
X_{10}	0.000593	0.00018	3.2812	

Source: Calculations from 1998 field survey data.

Table 4.32: **Determinants of loan repayment for non-group women farmers.**

Independent Variable	Regression Co-efficient	Standard Error	T – stat	Level of Significance (0.05)
X_1	0.71672	0.28936	2.47688	
X_2	-1.88167	0.76982	-2.44428	
X_3	0.05992	0.42745	0.14018	N.S
X_4	-0.07400	0.51886	-0.14262	N.S
X_5	0.02530	4.32852	0.00584	N.S
X_8	-1.98075E.05	0.00019	-0.10545	N.S
X_9	-0.542022	0.53158	-1.01964	N.S
X_{10}	0.00071	0.00018	3.87778	

Source: Calculations from 1998 field survey data.

From Table 4.31 age, household size, number of farmers per group, net cash income were significant at 0.05 level of probability. As a result, the null hypothesis that the factor did not have significant effect on loan repayment rate (Y) was rejected.

On the other hand, from Table 4.32 age of women farmers, household size, and net cash income were significant. Based on this, the null hypothesis that the factors did not have any significant effect on loan repayment rate (Y) was rejected.

4.2.3 EFFECTS OF THE DETERMINANTS ON LOAN REPAYMENT

Age of Women Farmers

Age had a positive relationship with loan repayment in all the three regression analysis. This showed that the higher the age of the women farmer, the

higher the loan repayment rate. This agreed with the findings on Table 4.11 and 4.12. It also agreed with that of Orgler (1975) who observed that the pay off probability of an applicant who was fifty years was twice as high as that whose age was twenty-five years.

It had a negative relationship with loan repayment in all the three analysis. This agreed with the findings on Tables 4.13 and 4.14, which showed that loan repayment decreased with, increase in household size. This also larger household size would have more financial commitments as regards consumption and hence less balance for repayment.

Membership of Group or Non-Group

It had a negative relationship with loan repayment. This showed that loan repayment rate decreased with belonging to non-group and increased with belonging to a group. This agreed with the findings on 4.5, which showed that the group women farmers had higher repayment rate than non-group women farmers.

Number of Farmers Per Group

It had an inverse relationship with loan repayment. This agreed with the findings on Table 4.6, which showed that loan repayment rate decreased with the increase in the number of farmers per group. This finding is also in agreement with a priori expectation because it is said that too many cooks spoil the broth. Yaron (1994) had noted that joint liability could be effective only within a small

homogenous group in which peer pressure can be brought to bear.

It was found to be significant 0.05 levels of probability. This lead to the rejection of the null hypothesis, that it had no significant effect on loan repayment.

Loan Size

When subjected to t-test, it was found significant at 0.05 level of probability for group and non-group women farmer borrowers combined. As a result, the null hypothesis was rejected. It was not significant in the separate analysis for group and non-group women farmer borrowers. The null hypothesis that it had no effect on loan repayment in each of the analysis, was retained. Arene (1990) and Mejieha (1991) had found out that loan size was significant in loan repayment.

It had a negative relationship with loan repayment rate in the analysis for group and non-group women farmer borrowers combined and that of non-group women farmer borrowers only. This showed that repayment decreased with increase in loan size. On the other hand, it had a positive relationship with loan repayment in the analysis for group women farmer borrowers only, showing that repayment increased with increased in loan size. The findings as regards the sign of the coefficients agreed with the findings on Tables 4.24 and 4.25.

Net Cash Income of Borrowers

It had a positive relationship with loan repayment in all the three analysis, which showed that loan repayment increased with increase in net cash income of the borrowers. This agreed with the findings in Tables 4.28 and 4.29. The finding is also in agreement with a priori expectation since a borrower who had more disposable income would be better placed to repay a loan, other things being equal.

Net cash income was significant at 0.01 and 0.05 probability levels for all the regression analysis. The null hypothesis was, thus, rejected. Arene (1990) also found net income to be significant in loan repayment. Rwegasira (1992) also noted that the ability of a farmer to repay a loan is dependent on income per hectare under cultivation.

4.3   RESULTS OF THE DISCRIMINANT ANALYSIS

4.3.1   Results of the Discriminant Analysis for Group and Non-Group Women Farmer Borrowers Combined

The most useful variables selected when stepwise discriminant analytical procedure was applied were age of women group and non-group farmer borrowers (X_1), household size (X_2) and net cash income (X_{10}). The estimated discriminant function coefficients are given in Table 4.33 below (Appendix IV). Appendix V shows the individual discriminant scores.

Table 4.33: Standardized canonical discriminant function co-efficient – 80 group and non-group women farmer borrowers.

Variables	Discriminant Co-efficients
Age of farmers (Years)	0.63869
Household size	-0.76430
Net cash income (₦)	0.86123

Source: Calculation from 1998 Field Survey Data.

The estimated centroid for good credit risk farmers was 0.88139 while that of bad credit risk farmers was –1.55004. This means that the higher the composite score of any farmer the higher the probability that the farmer will be classified as being good credit risk and vice versa.

The percentage contribution of the discriminant variables to the total discriminant score was estimated. Table 4.34 shows the result.

Table 4.34: Percentage contribution of individual variables to the total discriminant scores (80 group and non-group women farmer borrowers).

Variables	Co-efficient	Mean Difference	Product	% Contribution
Age	0.63869	6.9067	4.411	0.0102
Household	-0.76430	-2.01217	1.538	0.036
Net cash income	0.86123	5021.907	4325.017	99.862

Source: Calculation from Field Survey Data, 1998.

From Table 4.34 above, two variables age and net cash income of women group and non-group farmers made positive contribution to the farmers' creditworthiness while household size made negative contribution. The positive contribution implies that a farmer's chance of belonging to the group of good credit risk farmers increases as her age and net cash income increases while the negative sign obtained for household size implies that the farmer's chance of belonging to the group of good credit risk farmers decreases as her household size increases. Net cash income alone accounted for 99 percent of the total contribution to the discriminant score.

The estimated function was subjected to a statistical test of significance. The results are presented in Table 4.35 below.

Table 4.35: **Results of Statistical test of significance for the discriminant function (80 group and non-group women farmer borrowers).**

Test	Result
Canonical Correlation	0.7639
Wilks' Lambda	0.416455
Chi-Square (Calculated)	67.012
Degrees of Freedom (D.F)	3
Chi-Square (Tabular) 0.05	7.81473

Source: Computed from 1998 Field survey Data.

The high canonical correlation co-efficient of 0.7639 and low Wilks' Lambda value of 0.416455 indicated that the discriminant function developed in

this study provided a highly significant amount of information required for measuring good credit riskiness of group and non-group women farmers. Also, the value of the Chi-square calculated, 67.012 were higher than that of the tabular Chi-square at 0.05-probability level. As a result, the hypothesis that all the discriminant co-efficient was equal to zero was rejected. This means that the estimated function could be used to discriminate between good credit risk and bad credit risk group and non-group women farmer borrowers.

The classification results for the 80 group and non-group women farmer borrowers are presented in Table 4.36 below.

Table 4.36: Classification results of the estimated discriminant function – 80 group and non-group women farmer borrowers.

Actual Group	No. of cases	Predicted Group Membership	
		1	2
Group 1	51	45	6
		88.2%	11.8%
Group 2	29	3	26
		10.3%	89.7%
Percentage of grouped cases correctly classified: 88.75%			

Source: Computed from 1998 Field Survey Data.

The proportion of good credit risk farmers erroneously classified as being bad credit risk forms about 10 percent of the 29 bad credit risk farmers subjected to

the classification while 12% of bad credit risk farmers were wrongly classified as being good credit risk. The 12% bad credit risk farmers might default in repayment of loan and interest. However, the other 10% good credit risk farmers could help strike a balance.

In order to confirm the classification performance, a fresh sample of 40 group and non-group women farmers were used. The results are shown in Table 4.37 below.

Table 4.37: **Classification performance of the estimated discriminant function (40 group and non-group women farmer borrowers).**

Actual Group	No. of cases	Predicted Group Membership	
		1	2
Group 1	21	19	2
		90.5%	9.5%
Group 2	5	0	5
		0%	100.0%
Ungrouped cases	14	7	7
		50%	50%
Percentage of grouped cases correctly classified: 92.31%			

Source: Computed from 1998 Field Survey Data.

. The classification performance of the function approximately 92% was tolerable when compared with 75% obtained by Bauer and Jordan (1971) and that of Matiezo (1998), which was 74% and 69%, by Arene (1993).

4.3.2 Results of the Discriminant Analysis for Group Women Farmer Borrowers

The discriminating variables selected for discriminating group women farmer borrowers when the stepwise discriminant analytical procedure was applied were, household size, number of farmers per group and net cash income of the group women farmers. The estimated discriminant function co-efficients are given in Table 4.38.

Table 4.38: Standardized canonical discriminant function co-efficients – 40 group women farmer borrowers.

Variables	Discriminant Co-efficients
Household size	1.10387
Number of Women Farmers per group	0.41377
Net cash income (₦)	-0.53681

Source: Calculation from 1998 Field Survey Data.

The estimated centroid for good credit risk farmers was –0.97267 while that of bad credit risk farmers was 2.02017. This implies that the lower the composite score of any farmer, the higher the probability that the farmer will be classified as being good credit risk and vice versa. The percentage contribution of the discriminating variables to the total discriminant score was estimated. Table 23 below shows the results.

Table 4.39: Percentage contribution of individual variable to the total discriminant scores (40 group women farmer borrowers).

Variables	Co-efficient	Mean Difference	Product	% Contribution
Household size	1.10387	-2.969	3.277	1.02
Number of women farmer per group	0.41377	-15.043	6.224	1.93
Net cash income	-0.53681	582.051	312.45	97.20

Source: Calculation from Field Survey Data, 1998.

From Table 4.39 above, two variables, household size and number of farmers per group made positive contribution to the farmers bad credit riskiness, that is, going from the earlier stated estimated centroid. The positive contribution here implies that a farmer's chance of belonging to the group of bad credit risk farmers increases as her household size and number of women in her group increases. On the other hand, net cash income made a negative contribution to the farmers bad credit riskiness. This implies that a farmer's chance of belonging to good credit risk women farmer borrowers increases as her net cash income increases. Net income accounted for 97% of the total contribution to the discriminant score.

The estimated function was subjected to a statistical test of significance. The results are presented in Table 4.40 below.

Table 4.40: Results of statistical test of significance for the discriminant function (40 group women farmer borrowers).

Test	Result
Canonical Correlation	0.8210
Wilks' Lambda	0.325905
Chi-Square (Calculated)	40.922
Degrees of Freedom (D.F)	3
Chi-Square (Tabular) 0.05	7.81473

Source: Computed from 1998 Field survey Data.

The high canonical correlation of 0.8210 and low Wilks' Lambda value of 0.325905 indicate that the discriminant function developed in this study provided a highly significant amount of information required for measuring good credit riskiness of women farmers. In addition, the value of calculated Chi-square of 40.922 was higher than the tabular Chi-square of 7.81473 at 0.05 probability level. As a result, the null hypothesis that none of the discriminating variables made significant contribution to good credit riskiness of the group women farmers was rejected. This implies that the estimated function can be used to discriminate between good credit risk and bad credit risk group women farmer borrowers.

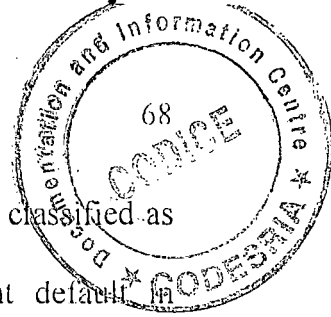The classification results of the 40 group women farmer borrowers are presented in Table 4.41 below.

Table 4.41: **Classification results of the estimated discriminant function (40 group women farmer borrowers).**

Actual Group	No. of cases	Predicted Group Membership	
		1	2
Group 1	27	26	1
		96.3%	3.7%
Group 2	13	1	12
		7.7%	92.3%
Percentage of grouped cases correctly classified: 92.31%			

Source: Calculated from Field Survey Data, 1998

The proportion of good credit risk group women farmer borrowers wrongly classified as being bad credit risks forms about 8% of the 13 bad credit risk farmers subjected to classification while about 4% of bad credit risk farmers were wrongly classified as good credit risk. In this regard, the loss due to default by the 4% of the bad credit risk farmers classified as good credit risk can easily be recovered by the 8% of good credit risk farmers wrongly classified as bad credit risk so that a lot of harm is not done to the loan transaction. The classification performance of the function was 95%.

In order to confirm the classification performance, a fresh sample of 30 group women farmers was used. The percentage of "grouped" cases correctly classified was 96.67%. The result is highly tolerable when compared with 75% obtained by Bauer and Jordan (1971), 74% by Matiezo (1978), 69% by Arene (1993) and 93.68% also by Arene (1993). Table 4.42 shows the result.

Table 4.42: Classification performance of the estimated discriminant function (30 group women farmer borrowers).

Actual Group	No. of cases	Predicted Group Membership	
		1	2
Group 1	19	18	1
		94.7%	5.3%
Group 2	11	0	11
		0%	100.0%

Percentage of grouped cases correctly classified: 96.67%

Source: Calculated from Field Survey Data, 1998.

4.3.3 Results of Discriminant Analysis for Non-Group Women Farmer Borrowers

The discriminating variables selected, for discriminating non-group women farmer borrowers, when the stepwise discriminant analytical procedure was applied, were age of the respondents, farming experience and net cash income. The estimated discriminant function coefficients are given in Table 4.43.

Table 4.43: Standardized canonical discriminant function co-efficients (40 non-group women farmer borrowers).

Variables	Discriminant Co-efficients
Age of Respondents (Years)	0.57450
Farming Experience (Years)	0.85706
Net cash income (₦)	1.27739

Source: Calculation from 1998 Field Survey Data, 1998.

The estimated centroid for good credit risk farmers was 1.06885 while that of bad credit risk farmers was −1.60327. This means that the higher the composite score of any farmer, the higher the probability that the farmer will be classified as being good credit risk and vice versa. The percentage contribution of the discriminating variables to the total discriminant score was also estimated. The results are presented in Table 4.44.

Table 4.44: **Percentage contribution of individual variable to the total discriminant score (40 non-group women farmer borrowers).**

Variables	Co-efficient	Mean Difference	Product	% Contribution
Age of Respondents	0.57450	8.103653	4.656	0.0380
Farming Experience	0.85706	5.16667	4.428	0.0361
Net cash income	1.27739	9.593.75	12254.96	99.93

Source: Calculation from Field Survey Data, 1998.

From Table 4.44 above, all the variables, age, farming experience and net cash income made positive contribution to the good credit riskiness of the women non-group farmer borrowers. This implies that the farmer's chance of belonging to the group of good credit risk farmers increases as her age, farming experience and net cash income increases. Net cash income made the highest contribution of 99% to the total discriminant score.

The estimated function was then subjected to a statistical test of significance. The results are presented in Table 4.45.

Table 4.45: **Results of statistical test of significance for the discriminant function (40 non-group women farmer borrowers).**

Test	Result
Canonical Correlation	0.8393
Wilks' Lambda	0.295502
Chi-Square (Calculated)	32.306
Degrees of Freedom (D.F)	3
Chi-Square (Tabular) 0.05	7.81473

Source: Computed from Field Survey Data, 1998.

The high canonical correlation co-efficient of 0.8393 and low Wilks' Lambda value of 0.295502 indicate that the discriminant function developed for non-group women farmers provided a highly significant amount of information required for measuring good credit riskiness of the non-group women farmers. Also, the calculated Chi-square value of 32.306 was higher than the tabular Chi-square value of 7.81473 at 0.05 level of probability. Therefore the null hypothesis that the discriminating variables made no significant contribution to credit worthiness of the non-group women farmers was rejected. This implies that the estimated function could be used to discriminate between good credit risk and bade credit risk non-group women farmer borrowers.

The classification results of the 40 non-group women farmers are presented in Table 4.46 below.

Table 4.46: **Classification results of the estimated discriminant function (40 non-group women farmer borrowers).**

Actual Group	No. of cases	Predicted Group Membership	
		1	2
Group 1	24	23	1
		95.8%	4.2%
Group 2	16	3	13
		18.8%	81.3%
Percentage of grouped cases correctly classified: 90.00%			

Source: Calculated from Field Survey Data, 1998.

The proportion of the good credit risk respondents wrongly classified as being bad credit risk farmers were 18.8% while 4.2% of the bad credit risk respondents were wrongly classified as good credit risk. The 18.8% misclassification of good credit risk farmers for bad credit worthy farmers will affect, mainly, interest earnings forgone while the 4% bad credit worthy farmers classified as being good credit risk may default in repayment of loan and interest. However, this may not be too high as to reduce the amount of loanable funds available for carrying on the transaction.

In order to confirm the ability of the developed discriminant model to classify the non-group women farmers, a fresh sample of 30 non-group women

farmers was used. The percentage of "grouped" cases correctly classified was 90%. The results are shown in Table 4.47 below.

Table 4.47: **Classification performance of the estimated discriminant functions (30 non-group women farmer borrowers).**

Actual Group	No. of cases	Predicted Group Membership	
		1	2
Group 1	20	19	1
		95.0%	5.0%
Group 2	10	2	8
		20.0%	80.0%
Percentage of grouped cases correctly classified: 90.00%			

Source: Calculated from Field Survey Data, 1998.

The percentage of grouped cases correctly classified which was 90% was large when compared with 75% obtained by Bauer and Jordan 91971), 74% by Matiezo (1978) and 69% by Arene (1993).

4.4 Problems and Benefits from the Exercise

The respondents experienced some problems in the acquisition and repayment of loans. Table 4.48 and 4.49 below show the major problems experienced by the group and non-group women farmer borrowers respectively in securing loan.

Table 4.48: Problems of loan procurement (for group women farmers)

S/N	Problems	Number of Respondents	% of Respondents
1.	Late Disbursement	10	25
2.	Insufficient Loan	40	100
3.	Lack of Security	10	25
4.	High Interest Rate	15	37.5

Source: Computed from Field Survey Data, 1998.

Table 4.49: Problems of loan procurement (non-group women farmers)

S/N	Problems	Number of Respondents	Percentage of Respondents
1.	Late Disbursement	12	30
2.	Insufficient Loan	40	100
3.	Lack of Security	23	57.5
4.	High Interest Rate	15	37.5

Source: Computed from Field Survey Data, 1998.

From the tables, the major problem of the respondents was insufficient loan. Also, more of the non-group women farmer borrowers (57.5%(had the problem of lack of security. Other minor problems listed by the respondents included their inability to cope with paper work initially.

As regards repayment, the majority of the respondents had the problem of crop failure due to poor weather conditions so that they did not realize enough money to enable them repay the loans at the right time. In addition, some reported that they were made to repay when they needed the money.

In terms of benefit, they reported that it enabled them to establish business relationship with the bank. Some also reported that it enabled them to expand and improve on their performance.

4.5   Community Bank Loan Administration

The community banks encountered some problems in loan administration to the women farmers. Table 4.50 shows the problems encountered by the community banks.

Table 4.50:   Problems of loan dispensing

S/N	Problems	Number of Respondents/Banks	Percentage of Respondents/Banks
1.	Lack of Field Staff for Supervision	2	22.22
2.	Money spent on unapproved projects	5	55.56
3.	Default on the part of farmers	3	33.33

Source: Computed from Field Survey Data.

From the table above, the major problems encountered by the community banks were loan diversion. Other problems reported included poor banking habit, lack of good knowledge of accounting/banking procedure, lack of collateral security and feasibility studies.

5.0 SUMMARY, RECOMMENDATIONS AND CONCLUSIONS

5.1 Summary

The study was on credit use and repayment performance of group and non-group women farmer borrowers under the community banking system in Enugu State.

The specific objectives included to: describe the characteristics of the women farmers and their use of credit, determine the factor that influence their loan repayment performance, compare the credit use and repayment performance of group and non-group women farmers, predict the credit risk positions of the group and non-group women farmers and identify the problems faced by loan beneficiaries and bank officials in credit administration.

Enugu State was purposively selected for the study because the majority of the population lives in the rural areas and it has large number of community bank.

Multistage random sampling technique was used for selecting the respondents. Eighty group and non-group women farmers and community banks were used for the study. Information collected was mainly on the last farming season that was 1997 farming season because at the time of data collection, the 1998 farming season had not ended.

Results of the study showed that the respondents used credit mainly for either crop or animal farming. In crop farming, they used credit, in a decreasing order, from buying of inputs, increasing the number of hectares under cultivation, hiring labour to storing of their products. On the other hand, in animal farming, the trend was in a decreasing order from increasing stock, buying more drugs (medication), buying more feeds to hiring of labour. Percentage of full repayment of the respondents increased with age, farming experience and net cash income and decreased with household size, number of women farmers per group and distance from home to source of loan. Percentage of full repayment was higher in group than in non-group respondents while percentage of full repayment of those that invested in animal farming was higher than that of those that invested in crop farming. Percentage of full repayment increased with increase in size of loan for group women farmer borrowers but decreased with size of loan for non-group women farmer borrowers. That of educational level did not follow a particular trend.

Regression analysis for group and non-group women farmer borrowers combined show that age, household size, net cash income, group or non-group membership and size of loan were significant determinants of loan repayment. Age and net cash income were positive while household size, group and non-group membership and size of loan were negative. Furthermore, the regression analysis

for group women farmers showed that age, household size, number of farmers per group and net cash income were significant determinants of loan repayment. The regression analysis for non-group women farmers showed that age, household size and net cash income were significant determinants of loan repayment.

When the performance of the respondents was compared, repayment rate was significant with group women farmer borrowers performing better than non-group women farmer borrowers while their net cash income and credit use were not significantly different.

Discriminant analysis for group and non-group women farmer borrowers combined showed that among all the independent variables, age, household size and net cash income were the discriminating variables when stepwise discriminant analytical procedure was applied. Good credit risk was directly related to age and net cash income and inversely related to household size. Statistical test of significance showed high canonical correlation and low Wilks' Lambda. Chi-square was also significant. During classification, 51 borrowers were classified as good credit risk while 29 were classified as bad credit risk. However, statistically, 48 were classified as good credit risk and 32 as bad credit risk. Percentage of "grouped" cases correctly classified was 88.75%. Further test of classification performance showed that percentage of "grouped" cases correctly classified was 92.3%.

Furthermore, discriminant analysis for group women farmer borrowers showed that household size, number of women farmers per group and net cash income were the discriminating variables. Household size and number of women farmers per group was inversely related to good credit risk, while net cash income was directly related to good credit risk.

Statistical test of significance showed that canonical correlation was high while Wilks' Lambda was low. Chi-square was also significant. Twenty-seven cases were classified as good credit risk while 13 cases were classified as bad credit risk. Percentage of "grouped" cases correctly classified was 95%. Further test of classification performance showed that the percentage of "grouped" cases correctly classified was 96.7%.

On the other hand, discriminant analyses for non-group women farmer borrowers showed that age, farming experience and net cash income were the discriminating variables. They all showed positive relationship with good credit risk. Statistical test of significance also, showed that canonical correlation was high while Wilks' Lambda was low. Chi-square was significant. During classification, 24 cases were classified as good credit risk while 16 cases were classified as bad credit risk. However, statistically, 26 cases were classified as good credit risk and 14 as bad credit risk. Percentage of grouped cases correctly classified was 90%. Further test of classification performance showed that P.C.C

was 90%. The results obtained from all the discriminant analysis can be improved by searching for the discriminating variables.

The major problem encountered by group women farmers in securing loan was inadequate volume of loan. The other was high interest rate. The major problems encountered by non-group women farmers were inadequate volume of loan, lack of collateral security and high interest rate. As regards repayment, the majority of the respondents reported that there were some natural mishap (weather condition) so that they did not have enough money to repay at the right time and secondly, that they were made to repay when they needed money. Bank officials reported that the major problem was that borrowers spent money on unapproved projects and also defaulted. Others included poor banking habit, lack of collateral security and poor knowledge of accounting/banking procedures.

5.2   Recommendations

Based on the results, the following recommendations could be made.

Firstly, to ensure full repayment, some socio-economic attributes, which include age, household size, income, size of loan and distance from home to source of loan should be considered. Credit should be extended more to women with higher age, net cash income and low household size. Loans extended to younger women and with higher number of dependants should be monitored closely since

they tend to default easily. When credit is given to women groups only, the number of women farmers per group should be considered. Also credit should be given more to women farmers who use credit for animal farming than for crop farming.

Secondly, in extending loans to women farmers, women groups should be considered first since group members repay more than non-group members. Community banks should form women groups in the communities where they are located, solely for extending financial services especially credit to women farmers. The groups should be small and homogenous in order to ensure full repayment. Members should be encouraged to use loan individually but the group should be liable for repayment. This strategy will be doubly beneficial and a more effective way of credit recovery since it will make for easier access to loan on the part of the farmers and a high recovery rate for the bank. For example, instead of applying for loans separately, the farmers can form groups, decide how much each individual needs and submit an application for the total, and in this way instead of processing a total of 40 applications for say, ₦2,000.00 each, the bank can process one application for ₦80,000.00 and follow it up through the group leader rather than having to keep track of 40 individuals.

Thirdly, considering the immense benefits that can be derived from a well administered credit scheme, major policy recommendations are to consider

strongly the credit risk position of the borrowers especially women farmer borrowers. Credit should only be extended to the customers certified as being of good credit risk. Some characteristics of the women farmers, which include income, age and household size, should be combined in discriminating between good and bad credit risk borrowers. Age and income should be considered as making positive contribution to good credit risk while household size should be considered as making negative contribution to good credit risk. The number of women farmers in a group should also be used in discriminating good and bad credit risk for group women farmers. To ensure that this is done properly, loan application forms issued to the farmers should be well structured placing more emphasis on these farmer characteristics.

Fourthly, community banks should ensure that they increase the women farmers' access to credit since the majority of them repaid fully. Increased credit will be essential to provide working capital and also meet consumption needs. As a result, productivity will be increased. Community banks can only lend effectively to poor rural women farmers if they develop a client led approach, which entails removing procedural barriers, improving outreach and adapting loan conditions. This will help to ensure that the women farmers use the best technology available in farming so as to guarantee high productivity and income and hence high repayment. They should also provide additional credit facilities to

women farmers whenever they experience severe crop failure due to natural hazard, so as to enable them recoup losses and hence repay. The women farmers should also be educated in some banking procedures so as to remove some hitches in loan acquisition. Finally, the women farmer borrowers should be encouraged to acquire some financial assets with a part of their income so that the problem of collateral security can be reduced.

5.3   Conclusions

Improving women farmers' access to formal financial services is invaluable to improving agricultural production in the country since they are the majority of smallholder farmers. The standard of living of rural families will also be increased since women spend more on family necessities when earnings accrue to them directly. The Community banks that have not started giving credit to rural women should be encouraged by the results of this study, which has confirmed that women are bankable and are good credit risks.

5.4   Suggestions for Further Research

Further studies could be directed towards comparing the performance of group women farmers using different financial intermediaries. The transaction cost to the financial intermediaries could be considered.

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Appendix 1: Community Banks in Enugu State.

	Community Bank	Local Government Area
1.	Abakpa Nike	Enugu East
2.	Aguobu-Umumba	Nzeagu
3.	Aku Diewa	Igbo-Etiti
4.	Awgu	Awgu
5.	Coal Camp	Enugu North
6.	Egede	Udi
7.	Eha Alumona	Nsukka
8.	Ekulu	Enugu East
9.	Emene	Enugu East
10.	Iwolo	Ezeagu
11.	Kenyetta	Enugu South
12.	Mgbowo	Awgu
13.	Nd fia	Enugu North
14.	Nnebuife	Enugu South
15.	Nsukka Township	Nsukka
16.	Oghe	Ezeagu
17.	Ohha	Enugu North
18.	Ogige	Nsukka
19.	Ogui Urban	Enugu South
20.	Orie Orba	Udenu
21.	Umuchinemere	Igbo-Eze south
22.	Umu-Ozzi	Igbo-Eze South
23.	United Uwani	Enugu South
24.	University of Nigeria	Nsukka
25.	Mmaku	Awgu
26.	Nkpologu	Uzo-Uwani

Source: National Board for Community Banks, Enugu Zone.

Appendix II: Summary of Test of Hypothesis on Repayment Rate for Independent Variable.

	Hypothesis	Group or Non-Group		Group		Non-Group	
		Level of Significance	Remark	Level of Significance	Remark	Level of Significance	Remark
1	Loan Repayment is not affected by age of borrower	0.01 & 0.05	Rejected	0.05	Rejected	0.05	Rejected
2	Loan Repayment is not affected by household size	0.01 & 0.05	Rejected	0.05	Rejected	0.05	Rejected
3	Loan Repayment is not affected by farming experience	N.S	Accepted	N.S	Accepted	N.S	Accepted
4	Loan Repayment is not affected by level of formal education	N.S	Accepted	N.S	Accepted	N.S	Accepted
5	Loan Repayment is not affected by type of farming	N.S	Accepted	N.S	Accepted	N.S	Accepted
6	Loan Repayment is not affected by Group or Non-Group membership	0.05	Rejected	-	-	-	-
7	Loan Repayment is not affected by number of farmers per group	-	-	0.01 & 0.05	Rejected	-	-
8	Loan Repayment is not affected by Loan Size	0.05	Rejected	N.S	Accepted	N.S	Accepted
9	Loan Repayment is not affected by Distance from Home to Source of Loan	N.S	Accepted	N.S	Accepted	N.S	Accepted
10	Loan Repayment is not affected by Net cash income of borrowers.	0.01 & 0.05	Rejected	0.01 & 0.05	Rejected	0.01 & 0.05	Rejected

APPENDIX III: DISCRIMINANT SCORES FOR GROUP AND NON-GROUP WOMEN FARMERS COMBINED.

Discriminant Scores

Nos 1 – 40 = Group 1 100%		Nos 41 – 80 = Group 2 < 100%	
1.	1.92805	41.	-0.45088
2.	1.11459	42.	0.03844
3.	1.71098	43.	1.60293
4.	2.51466	44.	-0.41391
5.	1.15167	45.	1.11888
6.	2.22575	46.	0.09032
7.	2.88267	47.	1.63365
8.	0.17292	48.	2.03609
9.	-0.22854	49.	3.10654
10.	-0.55816	50.	0.85189
11.	0.53303	51.	2.22575
12.	-0.31114	52.	0.80023
13.	0.60509	53.	-2.93588
14.	0.40404	54.	-0.76074
15.	-0.48104	55.	-1.01654
16.	2.03609	56.	0.55321
17.	-0.60982	57.	-0.36302
18.	0.60509	58.	-2.27709
19.	0.12104	59.	-1.39706
20.	1.41328	60.	-1.80378
21.	1.23317	61.	-1.15552
22.	-0.20309	62.	-0.75890
23.	-0.69241	63.	-1.2221
24.	0.6879	64.	0.14649
25.	0.57866	65.	-1.02375
26.	1.19621	66.	-0.61509
27.	0.65577	67.	-2.17047
28.	0.06389	68.	-1.55676
29.	1.76791	69.	-0.69241
30.	1.09343	70.	-1.06239
31.	1.11888	71.	-2.38727
32.	1.71098	72.	-2.46772
33.	1.49039	73.	-1.72119
34.	-0.04415	74.	-2.14886
35.	0.7795	75.	-1.69886
36.	0.92922	76.	-3.15745
37.	1.00655	77.	-2.21994
38.	1.70648	78.	-3.03339
39.	-0.11621	79.	-2.76641
40	0.91804	80	-3.2293

Appendix IV: Capital structure of group women farmers and their loan repayment rate.

S/No	Size of Loan (₦)	Total Expenses on Farming (₦)	Cash Income (₦)	Net Cash Income (₦)	& Repayment
1.	5,250	8,00	15,000	7,000	100
2.	5,250	10,000	25,000	15,000	76.19
3.	4,200	10,000	35,000	25,000	100
4.	5,250	9,500	30,000	20,500	76.19
5.	11,360	24,000	40,000	16,000	100
6.	11,360	20,000	32,000	12,000	100
7.	11,360	18,000	20,000	2,000	96.83
8.	11,360	12,000	22,000	10,000	100
9.	11,360	22,000	45,000	23,000	100
10.	5,250	7,000	20,000	13,000	85.71
11.	5,250	6,000	15,000	9,000	100
12.	5,500	12,000	30,000	18,000	83.64
13.	5,500	14,000	35,000	21,000	87.27
14.	7,700	15,000	35,000	20,000	100
15.	3,150	5,000	14,000	9,000	100
16.	3,150	5,000	14,000	9,000	100
17.	8,830	15,000	32,500	17,500	100
18.	8,830	10,000	19,000	9,000	100
19.	5,164	8,000	15,000	7,000	100
20.	8,830	16,000	30,000	14,000	100
21.	8,830	10,000	19,700	9,700	100
22.	8,830	20,000	36,300	16,300	100
23.	5,164	8,600	15,000	6,400	100
24.	5,164	6,500	20,000	13,500	100
25.	5,1644	11,900	30,000	18,100	100
26.	13.230	22,000	20,000	-2,000	100
27.	13,230	20,000	45,000	25,000	100
28.	3,150	9,000	20,000	11,000	88.89
29.	3,150	7,200	22,000	14,800	85.71
30.	5,500	12,000	18,000	6,000	78.18
31.	5,500	15,300	30,000	15,300	100
32.	2,515	12,400	23,000	10,600	100
33.	2,515	7,000	15,400	8,400	100
34.	5,164	15,00	25,000	10,000	89.08
35.	2,515	8,000	20,000	12,000	100
36.	2,515	10,500	20,000	9,500	79,52
37.	2,515	7,000	10,000	3,000	67,59
38.	13,230	22,000	53,500	31,500	100
39.	13,230	22,000	47,000	25,000	96.75
40.	13,230	17,000	45,000	28,000	100

Appendix V: Capital structure of non-group women farmers and their repayment rate (in %)

S/No	Size of Loan (₦)	Total Expenses on Farming (₦)	Cash Income (₦)	Net Cash Income (₦)	& Repayment
1.	36,300	38,000	60,000	22,000	80,90
2.	24,200	38,000	55,000	17,000	70.84
3.	29,040	36,000	60,000	24,000	100
4.	36,300	40,000	65,000	25,000	100
5.	42,350	50,000	75,000	25,000	100
6.	32,750	38,000	68,000	30,000	100
7.	33,000	35,000	48,000	25,000	100
8.	11,000	15,000	25,000	10,000	100
9.	29,700	35,000	40,000	15,000	87.54
10.	55,000	56,000	80,000	24,000	100
11.	22,000	25,000	43,000	20,000	100
12.	18,000	30,000	38,000	13,000	100
13.	11,000	20,000	25,000	8,000	100
14.	11,000	18,000	30,000	12,000	100
15.	21,000	30,000	35,000	10,000	64.71
16.	26,250	30,000	32,000	5,000	61,90
17.	31,500	40,000	58,000	20,000	85.24
18.	21,000	23,000	30,000	7,000	66.19
19.	29,400	42,000	57,000	15,000	64.63
20.	38,500	49,000	75,000	30,000	100
21.	31,500	39,400	75,000	35,600	100
22.	33,000	34,800	60,000	25,200	100
23.	42,350	50,000	70,000	20,000	100
24.	32,750	34,000	56,400	22,400	100
25.	24,200	32,000	40,000	8,000	62.64
26.	12,100	15,000	25,000	10,000	80,91
27.	48,400	68,000	98,000	30,000	100
28.	15,730	20,400	30,000	9,600	100
29.	44,000	60,000	79,000	19,000	100
30.	33,000	38,000	52,000	14,000	100
31.	16,500	18,000	30,000	12,000	100
32.	22,400	25,000	36,000	11,000	85.33
33.	8,960	10,000	18,000	8,000	100
34.	11,000	17,000	22,000	5,000	60.73
35.	15,400	20,000	26,400	6,400	60.67
36.	24,200	26,000	35,000	9,000	60.91
37.	11,000	16,500	23,500	7,000	81.82
38.	22,400	30,000	48,000	18,000	100
39.	48,400	50,000	69,300	19,300	79.17
40.	33,000	40,000	64,000	25,000	100

*The size of loan includes interest on loan.

en group and non-group farmers by Respondent Community Banks.

S (1997)			ANIMAL FARMERS (1997)					
pay	Actual Repayment		Total Loan Issued to Women Farmers		Total Due to Repay		Actual Repayment	
	IN	GP	IN	GP	IN	GP	IN	GP
)0	126,500	342,00	157,000	233,000	157,000	233,000	157,000	233,000
	11,000	0	181,500	0	181,500	0	110,000	0
	0	0	55,000	0	55,000	0	55,000	0
)00	0	200,000	0	264,000	0	264,000	0	226,000
)00	98,000	142,000	48,400	0	48,400	0	48,400	0
)00	187,000	116,000	174,100	0	174,100	0	174,000	0
)0	0	55,000	215,900	170,400	215,900	170,400	191,700	159,040
	0	0	98,060	0	98,060	0	60,000	0
	0	0	63,930	0	63,930	0	63,930	0
)00	521,500	855,000	993,890	667,400	993,890	667,400	860,030	618,040

Appendix VII: Number of Women group and non-group farmers given loan by the respondent community banks in 1997.

Respondent Community Bank	Number of Women Farmers			
	Group		Non-group (Individuals)	
	Crop	Animal	Crop	Animal
1	5	3	8	4
2	0	0	5	6
3	0	0	0	1
4	3	3	0	0
5	2	0	5	0
6	3	0	10	5
7	1	2	0	13
8	0	0	0	4
9	0	0	0	2
Total	14	8	28	36

Appendix VIII
QUESTIONNAIRE FOR WOMEN FARMERS

Department of Agric. Economics
University of Nigeria
Nsukka.

24 September 1998.

Dear Sir/Madam,

I am a postgraduate student in the Department of Agricultural Economics, University of Nigeria, Nsukka. I am currently carrying out a research study on "A Comparison of Credit Use and Repayment Performance of Group and Non-Group Women Farmers Under the Community Banking System in Enugu State".

I will be grateful if you supply me with the inf rmation contained in this questionnaire. This will aid me in completing the research work. All the information supplied will be strictly confidential. Non-group members should not fill Section B. Thanks for your anticipated co-operation.

Yours faithfully,

Nnaemeka Chukwuone

SECTION A: **SOCIOECONOMIC CHARACTERISTICS**

1.   Name of farmer:_____

2.   Local Government Area:_____

3.   Community: _____

4.   Age of farmer: _____

5.   Marital status: (i) Single: _____ (ii) Married: _____

6.   Are you the head of your family"

       (i)   Yes _____   (ii)   No _____

7.   How many children do you have? _____

8.   How many dependents do you have? _____

9.   What are their ages?

Age	Children	Dependents

10.   Number of years of farming experience: _____

11.   How many years did you spend in formal education? _____

12.   What qualification did you obtain?

       (i)   First School Leaving Certificate _____

       (ii)   Junior Secondary Certificate _____

       (iii)   Senior Secondary Certificate _____

       (iv)   OND ——————— (v) NCE ———————

       (vi)   B.Sc. or HND ——————————— (vii) Others (specify):

_____

13.   Are you a full-time farmer? (i) Yes _____ (ii) No _____

14.   What type of farming do you do more?

       (i)   Crop farming _____

       (ii)   Animal farming _____

15.   If crop farming, what type of crops do you grow?

_____

16.   If animal farming, what type of animals do you rear?

_____

17. How many years have you been involved in farming? _____

18. What is your farm size? _____

19. What is your other occupation?

    (i)   Trad'ng _____

    (ii)   Civil servant _____

    (iii)   Tailoring/Seamstress _____

    (iv)   Others (specify) _____

SECTION B: **GROUP CHARATERISTICS (DO NOT ANSER THIS SECTION IF YOU ARE NOT A GROUP MEMBER)**

20. Do you belong to a women group that is involved in farming?

    (i) Yes _____ (ii) _____

21. If yes, how old are you in the group? _____

22. How many are you in the group? _____

23. Is your group registered? (i) Yes _____ (ii) No _____

24. What are you registered as? _____

25. Do you have executive members (i) Yes _____
(ii) No _____

26. Are you an executive member? (i) Yes _____ (ii) No _____

27. If yes, what is your position? _____

28. How do you farm?

    (i) Individually _____ (ii) Collectively _____

29. Did you borrow from a community bank? _____

    (i) Yes_____ (ii) No _____

30. If yes, what is the name of the community bank?

_____

31a. Is your group a member of the bank?

    (i) Yes _____ (ii) No _____

31b. How did you loan funds?

    (i) Individually _____ (ii) Collectively _____

32a. Was the community bank management aware that you used the funds individually? (i) Yes _____ (ii) No _____

32b. OR collectively (i) Yes _____ (ii) No _____

32c. Was it the bank that made it so?

(i) Yes _____ (ii) No _____

SECTION C: **CREDIT USE AND ADMINISTRATION**

33. Did you get the community bank loan?

(i) Yes _____ (ii) No _____

33b. What did you use it for?

(i) Crop farming _____ (ii) Animal farming _____

34. If crop farming, what did you use it for?

(i) To increase hectares under cultivation _____

(ii) To buy inputs _____

(iii) Hire labourers/machines _____

(iv) Store products _____

35. If animal farming, what did you use it for?

(i) To increase stock _____

(ii) To buy more feeds _____

(iii) To buy more drugs _____

(iv) To hire more labourers _____

36. What was the size of loan you collected in the last farming season?

_____

37. Was the amount lent to you sufficient for your objectives?

(i) Yes _____ (ii) No _____

38. What is the distance from your home to the source of loan? _____

39. How much did you spend on farming? _____

40. How much did you realize that was your cash income _____

40b. How much of the loan did you repay? _____

41. How did you find the lending exercise?

(i) Time consuming _____

(ii) Cumbersome _____

(iii) No problems at all _____

42. For crop farmers, when did the actual handing-over of approved loan come up?

    (i)   Before planting _____

    (ii)   During planting _____

    (iii)   After planting _____

    (iv)   Before harvesting _____

    (v)   During harvesting _____

    (vi)   After harvesting _____

43. For animal farmers, when did the actual handing-over of approved loan come up?

    (i)   Before stocking _____

    (ii)   During stocking _____

    (iii)   After stocking _____

    (iv)   Before clearing of stock _____

    (v)   During clearing of stock _____

    (vi)   After clearing of stock _____

44. How was the loan given to you?

    (i)   In cash _____

    (ii)   In kind _____

    (iii)   In both cash and kind _____

45. How would you have preferred the loan?

    (iv)   In cash _____

    (v)   In kind _____

    (vi)   In both cash and kind _____

46. If in both cash and kind, in what proportion?

    (i)   More cash than kind _____

    (ii)   More kind than cash _____

    (iii)   Equal cash and kind _____

47. What was the rate of interest? _____

48. How do you see the interest rate?

    (i)   Too big _____

    (ii)   Too low _____

    (iii)   Moderate _____

49.   If your answer to the above is (ii), what would you prefer?

_____

50.   What did you offer as security for the loan(s)?
        (i)   Land _____
        (ii)   House(s)/property _____
        (iii)   Guarantors _____
        (iv)   Good character _____
        (v)   Others (specify) _____

51.   Have you repaid all the loan fund?
        (i) Yes _____ (ii) No _____

52.   If no, how much have you repaid? _____

53.   How much is left? _____

54.   How did you repay your loan?
        (i) In bulk _____ (ii) Instalmentally _____

55.   If your answer is (ii) why?
        (i)   Lack of profit _____
        (ii)   Crop or animal failure _____
        (iii)   Adverse natural condition (specify) _____

56.   What benefits do you think you have derived from the loan?
        (i)   _____
        (ii)   _____
        (iii)   _____
        (iv)   _____
        (v)   _____

57.   What problems did you encounter in securing the loans?
        (i)   _____
        (ii)   _____
        (iii)   _____
        (iv)   _____
        (v)   _____

58.   What problems did your encounter in repaying the loans?
        (i)   _____
        (ii)   _____
        (iii)   _____
        (iv)   _____
        (v)   _____

Appendix IX
QUESTIONNAIRE FOR BANK OFFICIALS

Department of Agric. Economics
University of Nigeria
Nsukka.

24 September, 1998.

Dear Sir/Madam,

I am a postgraduate student in the Department of Agricultural Economics, University of Nigeria, Nsukka. I am currently carrying out a research study on "A Comparison of Credit Use and Repayment Performance of Group and Non-Group Women Farmers Under the Community Banking System in Enugu State".

I will be grateful if you supply me with the information contained in this questionnaire. This will aid me in completing the research work. All the information supplied will be strictly confidential. Thanks for your anticipated co-operation.

Yours faithfully,

Nnaemeka Chukwuone

FOR COMMUNITY BANK OFFICIALS

1. What is the name of your Community Bank?

   _____

2. What is your designation? _____

3. When was the bank established? _____

4. Have you ever lent money to women farmer?

   (i) Yes _____ (ii) No _____

5. If yes, what type of women farmers have you lent to?

   (i) Group farmers _____

   (ii) Individuals _____

   (iii) Both group and individuals _____

6. How do you give to group to use?

   (i) Individually _____ (ii) Collectively _____
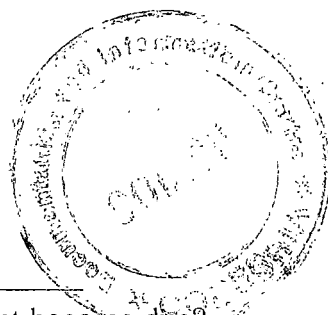
7. Please complete the table below:

7a.

Type of farm enterprise	No. of women farmers given					
	1998		1997		1996	
	IN	GP	IN	GP	IN	GP
Crop						
Animal						

7b.

Type of farm enterprise	Amount of Loan given					
	1998		1997		1996	
	IN	GP	IN	GP	IN	GP
Crop						
Animal						

8. What months do you receive the greatest request for loans?
   (i) February to April _____
   (ii) May to July _____
   (iii) August to October _____
   (iv) November to December _____
   (v) January _____
9. What was the number of applications received? _____
10. What is the duration of time (grace period) before repayment become due?
   (i) After 3 months _____
   (ii) 6 months _____
   (iii) After 1 year _____
   (iv) Greater than 2 years _____
11. Are repayments made in one bulk?
   (i) Yes _____ (ii) No _____
12. If no, then for how long do they continue? _____
13. Do you require collateral security for your loan?
   (i) Yes _____ (ii) No _____
14. If yes, please list them.
   (i) _____
   (ii) _____
   (iii) _____
15. How long does it take to process and approve/reject loan request from the date of application?

   _____

16. Where loans have been approve, are there provision for appraisals, follow-up, evaluation and supervision of project?
   (i) Yes _____ (ii) No _____
17. If answer to (16) above is no, what are the reasons?
   (i) Few staff available _____
   (ii) Farmers are too many and scattered _____
   (iii) There is no need for it _____
   (iv) Others (specify) _____

18. What problems do you encounter in dispensing loans?

    (i) Supervisory field staff not enough _____

    (ii) Money usually spent on unapproved project _____

    (iii) So many default on the part of farmers _____

    (iv) Others (specify) _____

19. Please complete the table below:

Loan default measure (crop)	YEAR					
	1998		1997		1996	
	IN	GP	IN	GP	IN	GP
Total loans issued to women farmers						
Total due to repay						
Actual repayment						

Loan default measure (animal)	YEAR					
	1998		1997		1996	
	IN	GP	IN	GP	IN	GP
Total loans issued to women farmers						
Total due to repay						
Actual repayment						

KEY: IN = Individual; GP = Group

20. Why did you choose to lend to group women farmers?

_____

_____

21. Why did you chose to lend to individual women farmers?

_____

_____

22. Why did you choose to lend to both group and non-group women farmers?

_____

_____

23. What problems did you encounter in the lending exercise?
   (i)   _____
   (ii)   _____
   (iii) _____
   (iv)   _____