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**The Long Term Impact of An Innovative Savings Mobilization Program  
on Rural Household Credit in Ghana**

A Report Submitted by Morehouse College

Grant #:PCE-5053-G-00-4016-00

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## TABLE OF CONTENTS

ACKNOWLEDGEMENTS	1
BRIEF SUMMARY OF RESULTS	2
DETAILED STATEMENT OF THE RESEARCH	6
Background and Rationale	6
Specific Research Questions	8
Importance of the Research	10
The Role of Banks in Economic Development	12
Marketing Know-How and Savings Mobilization	14
The Farmers' Savings Mobilization Program in Ghana	16
METHODOLOGY	18
Sample Selection and Design	18
Questionnaire Development and Pretest	18
Data Collection Procedures	20
Study Variables	24
Analysis Approach	24
Personal Characteristics as Correlates of the Bank Savings Adoption Decision	26
Marketing and Bank-Related Variables As Adoption Correlates	29
Determinants of Bank Savings Propensity	32
Determinants of Bank Loan Access	32
DISCUSSION AND CONCLUSION	34
NAMES AND POSITIONS OF INVESTIGATORS	40
PROPOSED PLAN OF FUTURE RESEARCH	40
REFERENCES	42

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## **I. Brief Summary of Results**

Development scholars and planners have long believed that rural societies in developing countries possess adequate savings potential which can be tapped as capital for agricultural lending and development projects. However, strategies for the successful mobilization of such potential are virtually non-existent, especially in Sub-Saharan African countries. Thus, the recent success of the farmers' bank program in Ghana provides a unique opportunity to evaluate the impact of a savings mobilization program in a Sub-Saharan African context.

The study was motivated by the assumption that the conditions which prompted the farmers' bank program in Ghana are replicable in other Sub-Saharan African countries. The aspects of the program's impact assessed in the study are: (1) its impact on bank savings and the determinants of such impact, and (2) its impact on farmers' access to bank loans.

### ***Impact of the Program on Bank Savings***

#### **1. Indicators of Long term Impact**

The study results indicate that the reported success of the farmers' bank program has continued since its inception. As of 1995:

- (a) the proportion of farmers who have adopted banks for savings purposes has reached an all time high of 71%, compared to 49% in 1983 (the year of its inception); and
- (b) the savings ratio has reached 22%, compared to 15% in 1983.
- (c) the results also indicate that the years 1993 and 1994 reflect increasing average savings balances, adjusted for inflation.

#### **2. Determinants of Impact on Bank Savings Adoption Decision**

Several personal characteristics of farmers and program features accounted for the successful adoption of bank savings.

**Personal Characteristics:** Four personal characteristics of farmers were associated with the bank savings adoption decision. They include age, savings propensity (ratio), number of children and

farm size. Of these, age and savings propensity were associated with a) the probability of adoption and b) the timing of adoption, while the number of children and farm size were only associated with the timing but not the probability of adoption. These relationships suggest that a cost effective way to accelerate the diffusion of the bank savings habit is to focus on heavy savers and large farm owners.

**Marketing-Controlled (Innovative) Features of the Program :** Three features of the bank savings program were associated with the savings behavior impact of the program. They include farmers' expectations of service quality, farmers' expectations of bank personnel attitudes, and farmers' satisfaction with service quality.

Farmers were less likely to adopt banks for savings if they expected a positive attitude from the bank personnel or if they were satisfied with the level of the bank's service. This suggests that those farmers who used the bank to meet their liquidity needs were encouraged to do so because of the expectation of and satisfaction with the level of service quality and never intended to save for the long term needs.

### **3. Determinants of Impact on Banks Savings Behavior**

**Personal Characteristics:** It appears that personal characteristics had no significant influence on the proportion of income saved with banks.

**Marketing Controlled Features:** With respect to heavy usage of banks by farmers to save cocoa income, a true measure of bank savings behavior, the study results suggest that marketing-controlled features were the major features associated with the propensity to save with banks. The direction of influence suggests that the propensity to save with banks increased with the level of service quality expectations but decreased with the level of service satisfaction. Farmers saved more

with banks if they expected banks to provide convenient , friendly and prompt service but they saved less if they were satisfied with the level of service, suggesting that farmers may have saved with banks for short-term need, such as liquidity needs during the lean season.

#### ***Overall Impact of The Program on Farmers' Access to Bank Loans***

##### **4. Impact on farmers access to bank loans**

The study results suggest that approximately 11 percent of the farmers have received loans from their designated farmers' bank for the period covered by the study.

##### **5. Determinants of farmers' access to bank loans**

Two individual characteristics and two marketing-controlled features of the program were associated with the probability of a farmer receiving a bank loan. The individual characteristics include farm size and number of children, while the marketing controlled features include level of satisfaction with the attitude of bank personnel and level of satisfaction with the quality of bank service. These relationships with the individual characteristics suggest that larger farmers were less likely to receive a bank loan than smaller farmers, while farmers with larger number of dependents were more likely to obtain a bank loan than farmers with smaller number of dependents. Of the two marketing variables, the direction of influence of service expectations indicate that the higher the expectations the more likely farmers were to apply for and receive bank loans. However, the influence of the second marketing variable, satisfaction with bank attitude, was negative, suggesting that the more satisfied farmers were with the attitude of bank personnel, the less likely they were to obtain bank loans. Perhaps, this relationship may be an indication that the marketing orientation of bank people may have encouraged farmers to apply for loans who would otherwise not apply for loans.

## *Implications And Conclusions*

The ultimate goal of rural savings mobilization is mainly to increase the number of rural households with savings accounts and access to bank credit. Given the limited resources of many developing countries, the most efficient way to pursue this goal is to focus simultaneously on the factors that may increase the chances of early adoption and the probability of ultimate adoption in order to conserve resources. The study findings imply that targeting older farmers and existing heavy savers with banking services that meet rural farmers' expectations or satisfaction would be one way to pursue such a savings mobilization goal. This is possible despite the lack of such traditional savings incentives as high nominal interest rates, in part because farmers can be persuaded to use banks to save for their liquidity needs. Thus, policy makers should begin to pay greater attention to the role of non-financial incentives, such as those related to customer satisfaction or marketing-controlled features, in a savings mobilization program. The results of this study suggest that the adoption of the savings habit was accelerated by the marketing-orientated features of the program despite the low level of education among the sample of farmers in this study. Thus, development planners and international development agencies might begin to pay greater attention to marketing features as a means of enhancing the success of bank savings mobilization programs in Sub-Saharan African context. For example, agencies might attach planners of the Ghanaian program to similar programs in other Sub-Saharan African countries to facilitate the transfer of experience and know-how.

Given that the ultimate economic development benefit of a savings mobilization program is to foster availability of rural credit, the results of the Ghanaian approach has other implications for planners and international development agencies as well. The study results suggest that the successful adoption of banks for savings has not significantly improved farmers' chances of receiving bank loans

in Ghana: only eleven percent of the farmers in the present study had applied for and received bank loans. While the limited scope of this study does not allow for a precise explanation of this situation, some tentative reasons suggested by the study seem to be associated with the fact that the use of banks has not significantly altered bank lenders view of farmers credit worthiness. One would expect that, with a banking record – bank savings history -- banks can now access the credit worthiness of farmers and therefore increase lending to rural farmers. However, the results suggest minimal or no influence of bank savings history or experience on the probability of a farmer receiving a bank loan. This situation may further imply that banks still face obstacles in lending to farmers. Perhaps, planners and development agents interested in the Ghanaian approach should explore the credit channeling capability of the Ghanaian system more deliberately . For example, the present system does not allow farmers the opportunity to select banks of their choice. This not only stifle competition, but it destroys the incentive for lenders to pursue farmers' income potential. While the incorporation of bank choice may be costly, it may allow farmers to consolidate their banking accounts and build long term relationships with banks in order for banks to find it feasible to lend to farmers, especially in lean times when farmers liquidity needs may be best met by short-term bank loans. This approach will also increase the level of competition to enhance the level of service enjoyed by rural farmers in the long-run.

## **II. Detailed Statement of The Research**

### **Background and Rationale**

Mobilizing the savings of rural households to enhance the availability of agricultural credit has been a major objective of many developing countries (Adams 1978; McKinnon 1978; Shaw 1973). To accomplish this objective, many of these countries have expanded their formal financial

institutions to rural areas (Shaefert-Kernet 1980; von Pischke et al. 1983). Underlying the use of banks for rural savings mobilization are several reasons. Not only do banks help to monetize the rural economy--something necessary for an effective mobilization scheme-- but they also allow for the accumulation of rural household savings. Also, banks help channel funds from low yielding investment to high yielding investments ( Porter, 1966 ). Despite the potential of banks as savings mobilizers, the outcome of bank-based rural savings mobilization programs has been less than satisfactory. Von Pischke et al. (1983) describe the problems of bank-based savings mobilization programs as follows “..... their efforts to achieve institutional and financial viability and to expand their clientele are complicated by the vagaries of agricultural production and price, and some of their activities have more in common with social welfare than with commercial practice.”

The failure of banks as mobilizers in developing countries stems in part from the characteristics of rural households. Unlike their counterparts in the industrialized countries, rural households in developing countries lack formal education and, therefore, the skills to effectively conduct bank transactions. Furthermore, many rural savers view banks as a “foreign” or urban concept, since they rely on traditional/informal financial institutions (e.g., pawn-brokers, money lenders, friends, and family members) to meet their banking needs. Not only do they find these informal institutions easy to use, but also their liquidity needs are better met by them than by formal banks (Morrison and Adams 1992).

Thus, to succeed at using banks for rural savings mobilization, development planners and policy makers face three strategy-related challenges. The first is how to encourage rural households to adopt banks for savings and other banking needs. This calls for the design of

savings mobilization programs that meet the needs and values of rural households. Thus, the mere extension of banks into the rural areas without major modifications is unlikely to lead to their widespread adoption and use by rural households (Miracle et al 1982). The second challenge is for planners to encourage banks not only to mobilize rural savings but also to channel such savings into rural development projects. This could be achieved by lending to rural households instead of channeling such capital to urban households. Of course, since rural households lack the banking experience, planners face the third challenge of encouraging banks to lend to rural borrowers given the difficulty they have faced in assessing their credit worthiness. Hence, knowledge of the impact of savings mobilization programs on bank savings and rural household credit should enhance the successful planning of rural savings mobilization programs in developing countries.

#### Specific Research Questions

The study investigates the long term impact of a successful savings mobilization program on (1) savings behavior of the farmers of a developing country, and (2) bank lending to these farmers. In particular, the study seeks to determine the features of the program that enhance savings and how such savings affect bank lending to farmers. The following research questions were addressed:

- (1) To what extent does the introduction of a savings mobilization program affect voluntary savings behavior?
- (2) What specific program and personal characteristics affect the likelihood of bank savings or the adoption of the bank savings habit?
- (3) To what extent does the adoption of the bank savings habit improve farmers' access to bank loans?

- (4) What program and personal characteristics enhance the likelihood of farmers applying for and receiving bank loans ?
- (5) How important is savings behavior (e.g. previous bank experience, total bank balances, savings propensity) in increasing the likelihood of farmers qualifying for bank loans?

These research questions were explored based on the special farmers' bank program (system) in Ghana, called the "Akuafu" (meaning farmers') bank. Not only is Ghana held in high regard by the International Monetary Fund for its sound economic reform and growth policy, but also because its savings mobilization program comprises a large network of banks with operations in rural areas. Ghana's rural savings mobilization program was initiated in 1971 with approximately 11 rural banks. The number of banks quickly grew to sixty by 1980. In 1982, the program was reorganized into a scheme involving over 240 government and private banks. Also, the country's largest industrial corporation, the Cocoa Board played a central role by paying cocoa farmers for produce using checks.

Indeed, the entire program was developed based on contemporary marketing strategy principles, making it unique in developing country contexts. The saving mobilization program in Ghana has been hailed as a successful model for other Sub-Saharan African countries. Research of the farmers' bank system after its first year of operation suggested that it has had a positive impact on bank savings by rural farmers. The first year's savings ratio was estimated at 15%. Most farmers showed a strong inclination to save with their banks (Dadzie, Akaah and Dunson 1989; Dadzie, Menyah and Akaah 1985). Not surprisingly, the level of cocoa production increased from 150,000 tons in 1983/84 to 224,000 tons in 1992/93 (Business in Ghana 1994). Banks in the program also showed a keen interest in the savings mobilization effort. However, the

extent to which these positive outcomes have persisted beyond the first year remains to be assessed. Furthermore, the impact of farmers' savings on their access to bank loans, and the factors that enhance or limit loan access are yet to be examined. More importantly, if the farmers' bank program is to offer any useful lessons to savings mobilization efforts in other developing countries, its long-term impact must be evaluated. This is particularly the case because the approach used mandated that farmers use banks to cash their payment for produce (Cocoa) sales to the Ghana Cocoa Board. It was hoped that farmers' initial interaction with banks would encourage them to voluntarily continue to save with banks. Thus, a true test of the voluntary savings inducement since its inception can only be assessed after a considerable period of time.

### **Importance of the Research Project**

The contribution of this project lies in the fact that it offers empirical evidence of the long-term impact of the farmers' bank program in Ghana on farmers' savings behavior and their access to bank loans. The study results suggest that even under the economic conditions of low interest rates and high inflation that prevailed in Ghana, the use of banks for savings by rural households can be achieved if the features of these banks meet the needs of users who lack formal banking skills. All the same, the results suggest that the adoption of the bank savings habit does not significantly increase the likelihood of farmers applying for and receiving bank loans.

Approximately 71% of the farmers in the study had adopted the bank savings habit as of 1995, i.e., twelve years after the bank program's introduction. However, only 11 percent of the farmers had ever received bank loans.

The importance of the study lies in three areas. First, it expands on the little work that has been done on the determinants of successful savings mobilization efforts in Sub-Saharan African

countries. Second, in empirically identifying the characteristics that impact the Ghanaian program, the study provides useful policy guidelines to developing country planners. For example, the study sheds light on factors that impact the ultimate adoption of the bank savings habit. In focusing on these factors, planners should be able to formulate successful mobilization programs. Hitherto, the assumption has been that income and wealth are the sole determinants of the adoption of the savings habit. However, the study suggests that consumer-oriented features of banks are equally important.

Third, in providing evidence of the long-term success of the farmers' bank system, the study demonstrates the potential of joint collaboration with government institutions in mobilizing rural household savings. Many government institutions in Ghana and other African Countries, including Marketing Boards and financial institutions, have recently lost their monopolistic privileges and are restructuring their programs to compete in rural financial markets and in the export of major primary commodities. Similarly, many private firms participating in these industries, both multinational and domestic firms, have little experience in the rural financial market. Thus, as government and private institutions learn to compete in these markets, the results should help them formulate their positioning and/or repositioning strategies.

Finally, the importance of the study lies in its linking bank savings adoption behavior to credit access. In determining the characteristics that influence the likelihood of farmers applying for and receiving bank loans, the results should help policy makers assess the economic development impact of savings mobilization programs and thereby formulate policies that are likely to appeal to banking institutions as well as rural households.

The remainder of the paper provides a brief review of the role of savings and financial institutions in economic development, followed by a review of the role of marketing in economic development, the study methodology and data analysis. The paper ends with a summary of findings, conclusions and implications of the study for development planners and researchers.

### **Review of Rural Savings Mobilization Research And Hypothesis**

Research on rural savings mobilization has followed two streams: (1) the role of banks in economic development, and (2) the influence of marketing on savings behavior. Although both streams do not directly address the bank-adoption process by rural households, they suggest environmental characteristics of less developed countries (LDCs) that could be relied upon to facilitate the adoption of banking behavior by rural households. These characteristics are reviewed in the paragraphs that follow.

### **The Role of Banks in Economic Development**

The importance of savings in economic development is widely recognized (Adams 1978; McKinnon 1973; Shaw 1973). Savings provide capital for funding development projects in addition to enhancing entrepreneurial spirit (Mauri 1977). While there is no consensus as to the best strategy for mobilizing savings, it is believed that banks should be an integral part of any savings mobilization program because they play several essential roles. Studies have shown that banks can help integrate the rural economy into the cash economy, thus enabling planners to exercise stronger controls over rural savings mobilization programs. In addition, banks act as agents for channeling funds from low-yield investments to high-yield investments (e.g., Galbis 1977). Furthermore, studies show that as the number of banks increases, voluntary savings also increase (Porter 1964).

Despite the important role of banks in savings mobilization programs, they are generally located in the urban areas and are rarely available to rural consumers. This situation is unfortunate because the rural population comprises the majority of the population of many developing countries. Hence, successful use of banks to mobilize rural savings can help make credit available for funding rural development projects that benefit the majority of the population of developing countries. For example, many rural towns and villages do not have basic social amenities such as clean water, health care, and roads etc. As a result, the younger, stronger members of rural households have been leaving for urban cities and towns where most of the social infrastructure is concentrated. An inevitable consequence of this rural-urban imbalance, therefore, is the deprivation of rural communities of farm labor, ultimately affecting the basic economic sustenance as well as agricultural production levels for developing countries. Rural savings potential, if appropriately mobilized, could provide a significant source of capital to fund rural projects. Not surprisingly, international agencies have taken keen interest in funding rural savings mobilization programs.

However, as noted earlier, policy makers face several strategy-related problems in mobilizing rural savings through banks. Despite their potential roles, banks are generally viewed as "western" phenomena to rural consumers who are more familiar with informal financial institutions (e.g. money lenders, pawn-brokers, savings associations, relatives and friends) than formal financial institutions (banks). In contrast, banks require customers to know how to read and write. The use of some financial services, such as checks, may be completely foreign to many rural consumers.

In addition, studies have shown that rural consumers face several barriers in using banks (Dadzie, Akaah and Dunson 1989). First, banks frequently cannot meet the liquidity needs of many rural households in less developed countries (Morris and Adams 1994). Second, they are not designed to suit the service needs and values of rural household members. In particular service hours often do not suit the farming households. Also the attitudes of bank employees are often intimidating to farmers (Miracle, Miracle and Cohen 1980). Third, the literature suggests that traditional savings incentives, such as interest on deposits, are often not attractive enough to induce bank use given high inflation rates in many LDCs (Dadzie, Akaah and Dunson 1989; Miracle, Miracle, and Cohen 1980). These customer-oriented problems have spurred increasing attention to the role of marketing know-how in savings mobilization efforts.

### **Marketing Know-How and Savings Mobilization**

As noted above, many of the barriers that face planners in introducing banks to rural consumers in LDCs pose marketing challenges. The introduction of banks to a largely illiterate rural population calls for the use of marketing skills and tools, including synchronization of the marketing mix and reliance on market segmentation and positioning strategies. Although marketing know-how is traditionally absent in rural areas and development programs are often viewed with disdain and suspicion in developing countries (Duhaim and others 1985; El-Sherbini 1979; Ross and Mctavish 1985), emerging evidence suggests increasing recognition of its importance in economic development planning (Balassa 1982; Cundiff 1982). The emerging consensus is that both marketing and economic development seek to enhance improvements in the standard of living of consumers (Kotler 1984; Fiske 1982). Increasing the living standard of

consumers is possible if marketing programs are planned and implemented from a macro marketing viewpoint. Macro marketing is the application of traditional marketing tools for the purpose of achieving societal goals ( Goetke 1987).

### **The Macromarketing Approach To Rural Savings Mobilization**

According to Dadzie, Akaah, and Dunson (1989), the application of a macromarketing framework to rural savings mobilization involves the following steps. The first step is to conduct an environmental opportunity and cost analysis of the rural financial market. The opportunity analysis for rural societies would include assessment of the potential for capital accumulation for agricultural lending. The cost analysis will include assessment of the cost of developing and training bank personnel and constructing bank offices in rural towns and villages. The second step involves market segmentation and needs analysis of the rural population. This task comprises the division of the population into homogeneous groups so as to enhance the precise identification of needs and the efficient targeting of banking services, communication messages, and distribution outlets. The third step involves the coordination of key marketing activities, i.e., product or service design, pricing, communication, and delivery of financial services. The ultimate goal is to ensure customer satisfaction.

Despite its relevance, one sees little or no application of the macromarketing framework in rural savings mobilization planning. One exception is the farmers' bank system in Ghana which was designed and implemented based on conventional marketing strategy planning principles (Dadzie, Akaah and Dunson 1989). This included the use of marketing research to assess environmental opportunities for positioning the program, the selection of cocoa farmers as the most desirable target

for the program, and the design of banking services compatible with the needs and values of rural farmers. The program was also positioned to satisfy the needs of cocoa farmers through a heavy public educational campaign and easy-to-use banking procedures ,i.e., passbook numbers, bank officers trained to be helpful and able to speak local languages, and banks located within 25 miles of each rural town or village.

Although the farmers' bank system in Ghana offers a rare opportunity to assess the macromarketing framework, only a baseline study of the system's success has been conducted thus far. This study by Dadzie, Akaah and Dunson (1989) suggests that the program's marketing features did enhance bank savings behavior among farmers. An average savings propensity of 15% was observed for participating farmers (Dadzie, Menyah and Akaah 1983). However, whether this impact prevailed beyond the first year remains to be established. Moreover, how much impact the Ghana program had on bank lending to farmers could not have been assessed in the first year of the program.

### **The Farmers Savings Mobilization Program In Ghana**

The farmers' bank system was introduced in 1982 as an extension of the rural banking system which had been initiated in 1971 to help mobilize rural savings. These initial rural banks were individual banks operated with share capital and boards of directors drawn from local residents of the respective rural areas. By 1980, approximately sixty such rural banks had been set up. The government felt the need to expand the program into other rural areas because they were well received by farmers.

While the government of Ghana was contemplating expanding the rural banks system, the cocoa industry, which comprised some of Ghana's wealthy farmers, was experiencing several

marketing (logistics) and financial problems with its cash systems of procurement . This system, despite accounting for over 25% of the country's money supply, operated outside the banking system. It involved the use of cash to pay farmers for their produce sales to the Cocoa Board. Under this cash system, the produce officer would issue a chit or IOU to farmers whenever cash was delayed or not available, to be redeemed later. However, it sometimes took several months to redeem these chits (Dadzie, Menyah and Akaah 1983). Because the Board paid for produce sales in cash, large quantities of cash had to be moved throughout the farming regions and districts. The logistics nightmare of transporting cash outside the country's banking system to ensure timely payments was exacerbated by opportunities for cash loss or the redirection of cash for other purposes (Awhoi 1987). Further, these delays were exacerbated whenever unfavorable world price conditions led to cash flow problems for the Board. The logistics problems of moving such large inventories of cash outside the banking system caused the government to look into more efficient payment methods.

Largely because of the size of the industry (cocoa still accounts for 37% of the country's GNP) and the substantial income capacity of cocoa farmers, they were targeted for the rural savings expansion program. In addition, market analysis confirmed the appropriateness of targeting this group for the introduction of the large scale savings mobilization program.

Under the program, the Cocoa Board began to pay farmers by check for their produce instead of cash, starting in 1983. The farmers could cash their produce checks in full at designated banks or they could deposit a portion of the face value of the checks in savings accounts opened with their designated banks. To reduce the travel distance to banks to a maximum of 25 miles, the government encouraged all banks, both private and state-owned, to open branches in rural towns and villages.

As a result, the number of banks in the rural savings mobilization program had reached 250 by 1982 (Dadzie, Akaah and Dunson 1989).

As explained earlier, a distinguishing feature of the farmers' bank system was its dependence on mandatory use by farmers. That is, farmers had no choice but to accept payment in checks for their produce. However, planners hoped that the experience would encourage farmers to adopt banks for savings. To this end, the planners of the program hoped that reliance on marketing strategy planning principles would lead to a marketing-oriented program that would meet the expectations and needs of rural farmers so as to encourage the adoption of banks for savings. Whether this objective was accomplished at the end of twelve years is investigated in the rest of this study.

### **III. Methodology**

#### **Sample Selection and Design**

The data for this study were collected from individual interviews with a nationwide sample of cocoa farmers. To facilitate comparison with the baseline study of 1983, the sampling procedure used was similar to that used in 1983. Approximately 65 producing districts from a total of 136 were randomly chosen on the basis of the number of districts per region. Second, towns and villages were classified into two categories, under 15 miles (close) and over 15 miles (far away). Third, an equal number of towns was chosen from each category. Finally, a number of towns and villages was selected for the study. The target sample was 2300, similar to that for the 1983 study.

#### **Questionnaire Development and Pretest**

The questionnaire was designed to elicit three types of information about the impact of the savings mobilization program. The first pertained to information about farmers' self-reported use of

their bank for savings. This was assessed by asking farmers to indicate whether they had opened an account for saving their cocoa income. They were also asked to indicate their use of other banking services, e.g., use of banks for money transfer, safety deposits, and use of checks for personal or business transactions. Respondents were also asked to evaluate their service expectations and experience or satisfaction, including the relative benefits of using banks ( e.g., security of savings and interest on savings), attitude of bank personnel ( attitudes of bank people, such as courtesy of service, helpfulness of bank personnel, and understanding of procedures), and quality of banking services (speed of service, accuracy of service, and reliability of service). Their evaluations were elicited based on a Likert-type scale ranging from “not at all adequate” (coded 1) to “highly adequate” (coded 5).

The second type of information pertained to farmers’ access to credit. This concerned whether or not they had applied for a bank loan, the amount involved, the year in which they applied for the loans, and the amount given. The third type of information pertained to the operations of the Cocoa Board and its affiliate organizations. This information is not addressed in this report.

The questionnaire was designed in three stages. First, one of the principal investigators visited with planners and policy makers in Ghana to explore recent developments in the farmers’ bank system. Discussions were held with the chairman of the Cocoa Board, the managing director of the Ghana Cocoa Marketing Company, and the managers of some of the banks participating in the farmers’ bank program.

The second stage involved designing and pretesting the survey instrument. The instrument was based on the 1983 study but was revised substantially to include measures of innovation and adoption behaviors. It was examined for face validity by several professors at the University of

Ghana and in the U.S. who are experts on economic development in Africa. Consistent with the 1983 study, the instrument was retranslated into two local Ghanaian languages, Ashanti-twi and Ewe by two language experts at the University of Ghana, one of whom participated in the translation of the 1983 instrument. The instrument was pretested in a pilot study conducted in December 1994 by one of the principal investigators and 12 undergraduate students. The pretest/pilot study involved 360 farmers from 15 cocoa districts in the Eastern Region of Ghana. Finally, the instrument was revised to reflect pretest information. Again, the revisions were checked by the two language experts.

### **Data Collection Procedures**

The questionnaire was administered through personal interviews by agricultural extension officers of the Ghana Cocoa Board. The respondents (farmers) were selected on a random basis from a list of towns and villages provided by the Board. Extension officers who lived in sampled towns and villages were then recruited for a day of training on the administration of the questionnaire by one of the authors and a professor at the University of Ghana. The officers were then given guidelines for the selection of individual farmers, including the randomized process of selecting every third farmer from the categories of close distance (under 15 miles) and far away distance (over 15 miles) from the farmers' bank. This sampling process resulted in the selection of approximately one farmer from every village/town. Interviewers were also provided standard translations of the English version of the questionnaire in the two major local languages in order to minimize possible interviewer bias.

The completed questionnaires were returned by the extension officers to the regional offices of the Board. Both principal investigators met with the extension officers to debrief them about the study. Also, each extension officer provided a short summary of the interview conditions. The completed questionnaires were examined for completeness and sample representativeness.

Table 1 presents a summary of the variables considered in the analysis, and Table 2, the profile of respondents in the study. The profile of respondents suggests that the sample distribution corresponded with the regional distribution of farmers. In spite of the representativeness of the sample, biases are always possible. In particular, respondents might have over- or under-estimated some of the study measures, e.g., the amount saved with banks. For example, farmers might have over- or under-reported the amount in order to minimize their potential tax liabilities, even though they were promised anonymity. However, analysis of the data showed no significant differences between respondents who preserved their anonymity (i.e., did not reveal their names) and those who did not preserve their anonymity (i.e., did reveal their names). Thus, bias in responses does not appear to be a significant problem.

Table 2 provides some descriptive statistics of the success of the farmers' bank program. Approximately 71 percent of the respondents had opened a bank savings account for the first time by 1995. In addition, respondents averaged a savings ratio of approximately 22 percent which represented a significant increase over the initial savings ratio of 15 percent (Dadzie, Akaah and Dunson 1989).

**TABLE 1:  
SUMMARY OF VARIABLES AND DESCRIPTIVE STATISTICS**

<u>Variable</u>	<u>Definition and Measure</u>	<u>Statistics</u>
<i>Duration</i>	Timing of adoption: number of years from system's launch to first bank savings	1.81 years (mean)
<i>Adopter/Non-adopter</i>	Adopter: a respondent who has opened a bank savings account anytime since the launch of system	
<i>Education</i>	Years of formal education.	8 years (mean)
<i>Age</i>	Age of respondent in years.	53.1 (mean)
<i>Children</i>	Number of dependent children.	8.64 (mean)
<i>Innovativeness</i>	Innovative orientation: measured by 10 item 5-point likert scale.	3.1 (mean) .74 (coefficient alpha)
<i>Savings prop</i>	A measure of savings propensity: the proportion of farm income saved with banks.	.22 (mean)
<i>Service I</i>	Expectations of service quality measured by a six item 5-point likert scale including convenience of hours, days, speed of service, reliability and accuracy and locational convenience.	3.1 (mean) .76 (coefficient alpha)
<i>Service II</i>	Satisfaction with service quality measured by a six item 3-point scale in Service I.	1.9 (mean) .80 (coefficient alpha)
<i>Attitude I</i>	Expectations regarding attitude of bank personal measured by a four item 3-point scale including trust, helpful, courteous, and language.	1.98 (mean) .85 (coefficient alpha)
<i>Attitude II</i>	Satisfaction with attitude of bank personnel measured on the 5-point scale used in Attitude I.	3.1 (mean) .69 (coefficient alpha)
<i>Bank Benefits</i>	Satisfaction with benefits of savings with banks measured on a four item 3-point scale including security, interest, credit history and ease of use.	2.1 (mean) .62 (coefficient alpha)

**TABLE 2:**  
**SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE**

<b>Education</b>	<b>Total %</b>
1) None	39.8
2) Some elementary school	19.4
3) Completed elementary school	32.4
4) Completed secondary school	4.8
5) More than secondary school	3.5
 <b>Income</b>	
1) Over 2 million cedis	15.4
2) Between 1 million and 2 million cedis	17.9
3) Between 500,000 to 1 million cedis	22.5
4) Between 250,000 and 500,000 cedis	20.0
5) Between 100,000 and 250,000 cedis	16.1
6) Under 100,000 cedis	7.9
 <b>Age</b>	
1) Over 60 years	34.6
2) Between 50-59	28.8
3) Between 40-49	22.3
4) Between 30-39	12.9
5) Between 20-29	1.5
6) Under 20 years	0.0
 <b>Marital Status</b>	
1) Single	3.3
2) Married	91.5
3) Divorced	2.3
4) Widowed	2.9
 <b>Banking Experience Prior to Check Program</b>	
1) Prior experience	51.6
2) No experience	48.4
 <b>Bank Savings Adoption Category</b>	
1) Adopter	71.4
2) Non-adopter	28.6

## **Study Variables**

The following key information on respondents and the farmers' bank program formed the basis of the analyses.

- a) Data on personal characteristics, i.e., age, income, education, number of children, innovative orientation, and farm size (as proxy for wealth).
- b) Data on marketing variables, including customer service expectations and quality (e.g., speed of service, consistency of service, accuracy of service, convenience of service, hours of operation, days of operation, and locational convenience), and attitudes of bank personnel (trust, helpfulness, courtesy, and understanding of banking operations).
- c) Data on bank benefits (i.e., security of savings, interest on income, and savings history, etc.).

As the earlier discussion shows, these variables do influence bank savings in a developing country context. Furthermore, the relevance of these factors was validated in the 1983 baseline study (Dadzie, Akaah, and Dunson 1989).

## **Analysis Approach**

Two general analytical procedures were employed in the analysis of the data on the bank savings program. The first, Event History Analysis (EHA), was used to investigate the determinants of the bank savings adoption decision while the second approach, logit and ordinary least squares regressions, was used to investigate the extent of bank savings behavior (extent of savings) and the determinants of farmers' access to bank loans. The EHA analysis model was applied to two dependent variables: (1) whether or not a farmer saved with the farmers' bank system and (2) the duration of the adoption decision (how long it took the farmer to open a savings account with the farmers' bank system after its introduction). The logit analysis was conducted on the first variable

only, i.e. whether or not a farmer ultimately adopted a bank for savings. In addition, the logit analysis was conducted on one key dependent variable, i.e., whether or not a farmer applied for and received a loan from a farmers' bank. Estimation under the EHA model is explained further since its use is relatively new in development research.

In many respects a study of bank-based rural savings mobilization constitutes an innovation adoption/diffusion study because banks are not "native" to the culture of rural communities in Ghana. A problem with the use of traditional regression estimation procedures in innovation research is that they tend to suffer from the data censoring problem (Mayer 1990). That is, the EHA model is better suited to estimating adoption behavior than the traditional logit or OLS model because the EHA model considers both the timing and the ultimate probability of adoption. Thus, the EHA model offers a more comprehensive estimate of innovation processes than such traditional procedures as logit or ordinary least square (OLS). Studies have shown that logit and OLS models will arbitrarily exclude non-adopters while EHA will estimate both the probability of adoption decision and the duration of adoption simultaneously—thus avoiding the problem of arbitrary censorship of data (Mayer 1990).

Preliminary analysis of the data reported elsewhere provides an extensive discussion of the literature on EHA modeling. It also confirmed that an EHA model consistently yielded more parsimonious estimates of the Ghana farmers' bank adoption decisions than logit and OLS models (see Dadzie, Moschis, Lee and Dadzie 1996). Because of its methodological advantage, EHA is used to model the determinants of bank savings adoption behavior under the farmers' bank program.

For the purpose of the logit model, an adopter was defined as one who reported having opened a bank savings account at his/her designated farmers' bank since it was launched in 1982 and, non-adopter, if otherwise. The regression equation is as follows:

Average Bank Balance = f [Age, Income, Children, Education, Innovation Orientation, Service Expectations, Service Satisfaction, Attitude Expectations, Attitude Satisfaction, Bank Benefit Expectations]

Bank Loan = f [Age, Income, Children, Education, Innovation Orientation, Service Expectations, Service Satisfaction, Attitude Expectations, Attitude Satisfaction, Bank Benefits Expectations].

The EHA analysis was conducted separately for each of the two predictors (individual characteristics and marketing controlled features). The PHA procedure in (SAS 1995) was used for the analysis.

### **Personal Characteristics As Correlates Of The Bank Savings Adoption Decision**

Table 3 is a summary of the results pertaining to the socio-demographic and individual variables. These variables include: AGE, INCOME, EDUCATION, CHILDREN, EXPERIENCE, FARM SIZE, SAVINGS PROP, AND INNOVATIVENESS. Of the seven factors, INCOME has received the most attention in LDC research ( Mikesell and Zinser 1973; Snyder 1974) . However, it remains to be validated in a rural consumer bank savings context. The table shows that the EHA model yielded significant overall estimates ( EHA: 2 Log L =4391.86, p< .01) as did the Logit model (Chi-sq=1321.9, p<.01) and the basic duration (OLS) model ( F=5.98, p<.01). As expected, the estimates of the EHA have lower standard errors than the traditional models, confirming that the EHA estimates are more parsimonious than the logit

and OLS estimates. However, the variables with significant influences were not identical across all three models. AGE and SAVINGSPROP were the only significant variables in the EHA model. In the logit and basic duration models, CHILDREN, INCOME and EDUCATION were significant in addition to AGE and SAVINGSPROP. The results suggest that AGE and SAVINGSPROP are the characteristics that explain both the timing and the ultimate probability of the bank savings adoption decision while CHILDREN, INCOME, and EDUCATION are associated with only the timing of the adoption decision.

With respect to the influence of AGE, the coefficient of .015 suggests that older respondents are more likely to save with banks than are younger respondents. This result is consistent with findings of similar innovation studies but it is difficult to explain it in the cocoa farmers case except that one may attribute it to farm ownership. That is, given the traditional system of land ownership in Ghana, older farmers are more likely to be farm owners than younger farmers. Assuming direct correspondence between farm size and scale of operations, older farmers would have a greater need for banks than younger farmers. The fact that AGE increases the likelihood of early adoption is reflected in its negative coefficient in the basic duration model as well. The .005 coefficient on AGE in the logit model also confirms the EHA estimate of the influence of age. However, this estimate does not consider the timing of the adoption. The standard error of the estimates are lowest for the EHA estimates and highest for the basic duration model. Thus, the EHA estimates of the age effects appear more parsimonious than that of the logit and basic duration models.

**TABLE 3:**

**INFLUENCE OF SOCIO-DEMOGRAPHIC AND INDIVIDUAL CHARACTERISTICS  
ON THE BANK SAVINGS ADOPTION DECISION**

<u>Variables</u>	<u>EHA Model</u>	<u>Basic Duration Model</u>	<u>Logit Model</u>
Intercept	NA	6.800 (1.317) <sup>a</sup>	-1.318 (.497) <sup>a</sup>
Age	.015 (.004) <sup>a</sup>	.059 (.015) <sup>a</sup>	.010 (.005) <sup>b</sup>
Farm Size	.006 (.005)	.022 (.018)	.018 (.007) <sup>a</sup>
Income	.031 (.041)	.082 (.139)	.159 (.050) <sup>a</sup>
Education	-.110 (.011)	-.029 (.037)	.039 (.014) <sup>a</sup>
Children	.006 (.009)	.049 (.037)	-.001 (.014)
Savingsprop	.067 (.028) <sup>b</sup>	.118 (.092)	-.043 (.073)
Innovativeness	-.078 (.061)	-.035 (.205)	.044 (.080)
<u>Summary Statistics</u>			
-2 LOG L	4391.864 <sup>a</sup>		1321.962 <sup>a</sup>
F-Value		5.989 <sup>a</sup>	

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<sup>a</sup>p < .01  
<sup>b</sup>p < .05  
<sup>c</sup>p < .10

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**Note:** N=1,090. This sample size includes only respondents who had no prior experience with banks. Because of missing vales, effective sample size varies from 420 in basic duration model to 980 in the logit and EHA models.

The .067 coefficient on SAVINGSPROP in the EHA estimates suggests that the probability of ultimately adopting a bank for savings was higher among respondents who have already developed the savings habit (i.e., heavy savers). This relationship is intuitive since any savings behavior requires the ability to save significant proportions of earnings.

The lack of influence of INCOME and EDUCATION in the EHA model comes as a big surprise since its importance has been widely confirmed (Mikesell and Zinser 1973; Snyder 1974). However, EDUCATION appears to be a significant influence in the logit model, suggesting that while it does influence the ultimate probability of adoption, it does not have any influence on the likelihood of early adoption.

#### **Marketing and Bank-Related Variables as Adoption Correlates**

Table 4 presents estimates for the EHA, logit, and basic duration models for bank and marketing related factors. As the table shows, the overall EHA model was not significant (Chi-sq=4605.3,  $p < .10$ ). In contrast, the overall logit (Chi-sq.=1413.1,  $p < .01$ ) and basic duration ( $F=4.3$ ,  $p < .01$ ) models were highly significant. These differences may reflect the methodological differences among the three models as earlier explained. As the table shows, SERVICE I (customer service expectations) is significant only in the Logit model ( $p < .01$ ), while SERVICE II (customer satisfaction with service) is significant in all three models ( $p < .01$ ). One interpretation of this relationship is that while the ultimate bank adoption probability is increased by level of service expectations, service satisfaction or experience is the more dominant determinant of the adoption decision: higher satisfaction with service is associated with a greater likelihood of early adoption (as suggested by both the EHA and OLS models).

ATTITUDE I (attitude expectations) is also significant in both the EHA model and OLS model but not the logit model, suggesting that the more positive the attitude of bank personnel (i.e., helpful, user friendly, etc.) the greater the likelihood of early adoption. ATTITUDE II (attitude satisfaction) is significant in both the OLS and logit model but not the EHA model. The negative coefficients of both estimates suggest that the more satisfied the respondents were with the attitude of bank personnel, the greater the likelihood of early adoption but the lower the ultimate probability of adoption. This finding means that the positive customer-oriented attitude of bank personnel might have accelerated the timing of the adoption decision while still minimizing the probability of the adoption decision. It is intuitive when considered in the context of the farmers' bank system. As explained earlier, farmers use of the bank system was mandated by the Board. Since most farmers' income is seasonal they have liquidity needs during the lean season. It appears that the positive helpful attitude of bank personnel enhanced the use of banks to save for liquidity needs just to tie the farmers over the lean periods.

Finally, with respect to bank-related variables, the estimates in the basic duration and logit models are both significant implying that respondents who were satisfied with the perceived benefits of banks (e.g., the security of holding money at the bank, interest earnings at banks, and the possibility of building credit history, etc.) were more likely to be early adopters of banks for savings.

Overall, these results suggest that marketing variables had profound effects on both the timing and the ultimate adoption decision in the Ghana bank program. The customer orientation of the program (specifically, convenient hours of operation, accuracy of service, and locational convenience) was significant in accelerating the adoption of the bank savings habit among the potential adopters.

TABLE 4:

INFLUENCE OF MARKETING CONTROLLED AND BANK-RELATED VARIABLES ON THE BANK SAVINGS ADOPTION DECISION

<u>Variables</u>	<u>EHA Model</u>	<u>Basic Duration Model</u>	<u>Logit Model</u>
Intercept	NA	11.042 (.87) <sup>a</sup>	1.807 (.361) <sup>a</sup>
<b><u>Marketing Variables</u></b>			
Service I	.033 (.062)	.225 (.211)	.279 (.086) <sup>a</sup>
Service II	-.340 (.122) <sup>a</sup>	-1.687(.398) <sup>a</sup>	-.575 (.158) <sup>a</sup>
Attitude I	.323 (.122) <sup>a</sup>	1.475(.418) <sup>a</sup>	.069 (.17)
Attitude II	-.104 (.073)	-.500 (.253) <sup>b</sup>	-.602 (.103) <sup>a</sup>
<b><u>Bank-Related Variables</u></b>			
Benefits	-.001 (.108)	-.040 (.387)	.357 (.155) <sup>b</sup>
<b><u>Summary Statistics</u></b>			
-2 LOG L	4605.291 <sup>c</sup>		1413.112 <sup>a</sup>
F-value		4.328 <sup>a</sup>	

<sup>a</sup> p < .01

<sup>b</sup> p < .05

<sup>c</sup> p < .10. Note: Table values in parenthesis are standard error of estimates.

By stressing these features, planners can accelerate the diffusion of the bank savings habit within the target population.

### **Determinants of Bank Savings Propensity**

To investigate the impact of the savings mobilization program characteristics on the extent of bank savings, ordinary least square regression was conducted on the proportion of total farm income saved with banks (i.e., savings propensity).

Table 5 presents the marketing controlled and individual characteristics considered in the OLS analysis along with the results. As the table shows, the estimates of bank savings yielded significant overall values ( $F=2.32$ ;  $p < .01$ ). The independent variable shows that all four marketing controlled variables contributed significantly to the observed effect on bank savings balance. However, only two of the eight personal characteristics had significant effect on the proportion of farm income saved with banks. The proportion of farm income saved increased with farmers' expectations about the attitudes of bank personnel ( $P < .01$ ) and their satisfaction with the attitudes of bank personnel ( $p < .05$ ). In contrast, the proportion of farm income saved decreased with the level of expectations about bank services ( $p < .05$ ) and satisfaction with the level of bank service quality ( $p < .01$ ). Again, this parallels the findings in the model for adoption decision.

### **Determinant of Bank Loan Access**

Table 6 lists the personal and program characteristics considered in the logit estimates for probability of farmers applying for and receiving loans. The table shows that the overall estimate is significant ( $\text{Chi-sq}=50.10$ ,  $p \leq .01$ ). Three independent variables account for the observed effect: FARM SIZE ( $p < .01$ ), SERVICE I (service expectations) and ATTITUDE II ( $p < .01$ ).

**TABLE 5:**

**INFLUENCES OF PERSONAL CHARACTERISTICS AND MARKETING  
CONTROLLED FEATURES ON BANK USE BEHAVIOR**

<u>Variables</u>	<u>Savings Ratio</u>
Intercept	.321
<u>Personal Characteristics</u>	
Age	-.001
Farm Size	-.001
Income 95	-7.658
Income 94	-1.040
Income 93	-8.760
Education	-.005
Children	-.000
Innovativeness	-.024
<u>Marketing Controlled Variables</u>	
Service I	-.012
Service II	-.282
Attitude I	2.39 <sup>a</sup>
Attitude II	.157 <sup>a</sup>
<u>Summary Statistics</u>	
R2	.026
F-value	2.318 <sup>a</sup>

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<sup>a</sup> p < .01

<sup>b</sup> p < .05

<sup>c</sup> p < .1

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The negative coefficient of FARM SIZE suggests that large farm owners were less likely to apply for and receive loans than small farmers. This finding is intuitive as it implies that the credit needs of large farmers may exceed the average loan sizes granted by banks. Alternatively, large farm owners probably have other sources, considering their relative wealth. The coefficient of SERVICE I suggests that the higher the service expectations the more likely the farmer was to receive a bank loan. The coefficient of ATTITUDE II suggests that the more farmers were satisfied with the attitude of bank personnel, the less likely they were to receive bank loans. This suggests that banks may attract more credit worthy customers by offering higher quality bank service (accurate and fast) than by offering a personable attitude (courteous, friendly, and helpful).

#### **IV. Discussion and Conclusion**

Promoting domestic savings is now a priority for most African countries and rural societies, which represent the bulk of these populations, are naturally the most desirable target for domestic savings mobilization efforts. However, because of social and economic barriers, successful savings mobilization strategies in Sub-Saharan Africa countries are virtually non-existent. Thus the Ghanaian farmers' bank program, a highly successful marketing-oriented savings mobilization scheme, was examined to explore the determinants of the bank saving behavior and its impact on farmers' access to bank credit. Taken together, these results help to isolate the variables that can both enhance the ultimate adoption probability and the timing of the bank savings adoption decision. Variables for the former comprise the two demographic variables of age and savings propensity, while the latter comprises four socio-demographic variables of income, farm size, education, and children along with several marketing variables, including service expectations and

TABLE 6:

INFLUENCE OF PERSONAL CHARACTERISTICS AND MARKETING  
CONTROLLED FEATURES ON FARMERS' LOAN ACCESS

	<u>Probability of Receiving Bank Loan (Logit Estimates)</u>
Intercept	2.064
<b><u>Personal Characteristics</u></b>	
Age	0.004
Farm Size	-.024*
Income 95	-2.280
Income 94	5.525
Income 93	0.000
Education	0.003
Children	.030*
Balance 95	1.435
Balance 94	1.798
Balance 93	-4.000
Innovativeness	-.108
<b><u>Marketing Variables</u></b>	
Service I	0.324*
Service II	-0.085
Attitude I	-0.091
Attitude II	-0.397*
<b><u>Summary Statistics</u></b>	
-2 LOG L	1083.75*
*p < .01	
*p < .05	
*p < .10	

service satisfaction. These marketing controlled features had pervasive influence on the use of banks for savings purposes. Key indicators of marketing influence were satisfaction with bank service including satisfaction with the bank personnel's attitudes ( e.g., trust, perceived helpfulness, courtesy and understanding of the banking processes and activities). The fact that level of education did not emerge as a significant influence on the timing of the adoption decision is not surprising, as it suggests that illiterate farmers driven by commercial motives are capable of learning banking procedures. Also, the fact that income was not found to be a significant influence is surprising , since its influence has been widely supported in other studies. However, this may be explained by the fact that farmers can still use banks to save to meet their liquidity needs, regardless of income level.

Also, despite the success of the farmers' bank program, it appeared to have had only rather limited impact on bank lending. Only eleven percent of the farmers in our study reported having received loans during the ten year period covered in our study.

### **Macro Policy Implications**

The above conclusions about the determinants of Ghana's rural bank expansion program have significant implications for savings mobilization policy and strategy in African and other less developed countries (LCS).

Because most of the population of LDCs live in the rural sector, a successful strategy for mobilizing their savings potential can be a tremendous source of capital accumulation for development projects. Not surprisingly, many planners in LDCs have extended their banking programs to rural areas with little success of inducing voluntary savings. While the failure of these

efforts has been attributed to a lack of marketing orientation in rural savings mobilization programs, empirical research of the determinants of bank savings adoption behavior among rural consumers has been sparse.

Development planners in Ghana seem to have addressed successfully this problem by combining the infrastructure of the country's largest marketing board with that of the existing rural bank systems to create a network of banks and then compelling farmers to use the banks by paying them with a produce check to be cashed at a designated bank. The underlying marketing strategy was to design the farmers' bank system in such a way that it meets most of the banking needs of rural consumers and thus induces voluntary bank savings behavior. The analysis of the determinants of Ghana's strategy is thus of interest to development planners and macro marketing scholars not only because of its innovative nature but also its reliance on marketing features to foster the diffusion of the bank savings habit among a largely illiterate farming population.

Given the immediate and long-term success of the Ghanaian program, several macro marketing policy implications emerge from the reliance on a marketing oriented approach. First, the study results imply that Ghana's approach is transferable to many African countries. The results indicate that the probability of adoption of the bank savings habit among the Ghanaian rural consumers is related to only a few socio-demographic variables, namely, age and savings propensity. This suggests that the most critical variables to focus on in designing similar programs are households with older farmers who have already developed the savings habit. These individuals are not only easy to identify in most rural communities but they also constitute a significant proportion of the population of these communities. The fact that farmers' income may

be meager or that farmers are largely illiterate should not preclude their early adoption of the bank savings habit.

The second implication of the study is that diffusion of the bank savings habit in Ghana was relatively rapid, in part because of the strong marketing orientation of the banking system for farmers. The adoption process was accelerated by such bank features as service expectations and experience. Satisfaction with the functional and locational convenience of the banks and specially trained bank personnel to provide friendly, accurate, and reliable services to largely illiterate rural consumers was helpful in accelerating bank savings adoption. What makes the Ghanaian approach transferable to other African countries is that the contributing marketing features were achieved without incurring the huge infrastructural investments that seem to retard the diffusion of banks into rural societies in Africa. Since many African countries and other Less Developed Countries (LDCs) with agricultural export economies have similar marketing boards with similar goals, the Ghanaian approach may be adapted in these countries as well. Thus, domestic savings promotion policy might stress non-financial rewards or marketing-related features such a “rural customer orientation including locational convenience and more customer-oriented bank personnel to overcome the “western” or “urban” orientation may typical of banks. Moreover, the modification of banking operations to suit rural consumers’ banking needs need not be cost prohibitive if individual banks are given the freedom to set up offices in rural towns as in the case of the Ghana farmers’ bank system. The government’s role in Ghana’s case was to provide policy support and initiative in making rural roads accessible. Individual banking institutions then found it cost effective to maintain branches in the rural towns. Competitive pressures in

maintaining such branches have since become the case in Ghana's farmers' banks. The relaxation of market monopoly by the Ghana Commercial Bank, a government-owned bank, was clearly an important step in developing the competitive spirit with which individual private banks embraced the program.

Perhaps the infusion of more competitive elements may be needed to enhance bank lending to rural farmers. The provision of some of insurance to banks to encourage them to lend to rural households should be an essential part of future improvement in the Ghanaian program.

## **B. Research Implications**

The study methodology allows for the isolation of the variables that , from a resource conservation viewpoint, can both accelerate the timing and ultimate bank saving adoption decision. It also suggests that income is not as important as has been claimed in explaining farmers' savings behavior. However, as always, these conclusions can not be asserted with full confidence, given the limitations of the study. Hence, the results of this study would have to be confirmed by analyses with other comprehensive models to verify that the determinants identified in this study do not suffer from efficiency loss associated with the EHA model used in the analysis (Chandrashekar and Singha 1995). Such analyses should consider savings propensity as a proxy for volume of first time savings in order to provide a more comprehensive estimate of the bank savings habit adoption-diffusion process.

In conclusion, the specific contribution of this paper is in validating the link between the factors that underlie the adoption-diffusion of the banks savings habit and the characteristics of the rural financial market environment in sub-Saharan African context. The result of the study

suggests that the strong customer orientation of Ghana's program may have accelerated the adoption and diffusion of banks savings habit among potential adopters. This means that the relative role of non-financial incentives , such as marketing controlled features of banks, on savings behavior deserves more attention in savings mobilization research. Such studies might replicate the EHA model in other LDC research to validate the findings of the present study. In addition, other specific EHA research applications might include the use of EHA to select the relevant variables for designing bank services, for segmenting and positioning banks and formal financial institutions in rural financial markets, and for examining the multiple adoption unit question.

#### **V. Names And Positions of Investigators**

Dr. Evelyn Winston Dadzie, Principal Investigator, is Assistant Professor of Management in the Department of Economics and Business at Morehouse College in Atlanta, Georgia.

Dr. Kofi Q. Dadzie, Co-Principal Investigator, is Associate Professor of Marketing and Logistics in the College of Business Administration, Georgia State University in Atlanta, Georgia.

Mrs. Marjorie Danso-Manu, host country collaborator, is a lecturer in Statistics, University of Ghana. She assisted with the sampling design and supervised the data collection for the survey.

Dr. Ishmael P. Akaah , statistical consultant, is Professor of Marketing in the School of Business at Wayne State University in Detroit, Michigan.

#### **PROPOSED PLAN OF RESEARCH**

1. Revision of Conference Manuscript for Journal Submission Paper accepted for for Presentation at The American Marketing Association, Summer Educators' Conference, San Diego, August 2-6, 1996, "Assessing the Determinants of Bank Savings Adoption in Developing Countries: An Event History Analysis Approach," Dadzie, Moschis, Lee and Dadzie. Possible Journal Outlet: Savings and Development, Journal of Economic Development, etc.

2. **Completion of Study on Governance Mechanism and Performance of Rural Financial Institutions.** Comprehensive data relating to bank lending and credit impact of the farmer's bank system in Ghana could not be collected at the time of the primary data collection. Such data are now being collected for the main purpose of improving the manuscript quality targeting the Global Finance Journal or similar Journals.
3. **Customer Service and Savings Behavior.** A third article will be crafted for a logistics journal to demonstrate the nature and impact of customer service in rural financial market context.

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