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**SURVEY OF THE CAUSES OF INFORMATION SYSTEMS
FAILURE AMONG MICROFINANCE INSTITUTIONS IN KENYA 1**

By:

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**A Management Research Project Submitted in partial fulfilment
of the requirements of the degree of Masters in Business
Administration (MBA), Faculty of Commerce**

University of Nairobi

March 2004

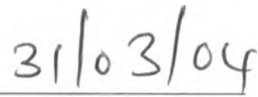
DECLARATION

This project is my original work and has not been presented for a degree in any other University.

John Kimuli Ndulu



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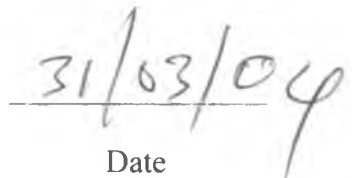
Date

This project has been submitted for examination with my approval as University supervisor.

James Thuo Kariuki



Signed



Date

DEDICATION

My special dedication of this work goes to my wife Felicity and sons Nicholas and Mwendwa for their endless support throughout this period I undertook my MBA. May God bless them all.

ACKNOWLEDGEMENTS

This has been a long and taxing journey and I feel indebted to various people who made this project a success.

To my supervisor, Mr. James T Kariuki, I salute you for your sincere guidance, suggestions, comments, criticisms and constant encouragement throughout the entire research project. My special thanks goes to Mr. Jackson Maalu for encouraging me all through the MBA course and Mr. Kipngetich for challenging me to do a project in microfinance. I am grateful for the support and warmth I received from my workmates Kamau Kabbucho, Dominick Nagillah, Samuel Mwaura, Anthony Kiogora, Esther Mwangeli, Muli Musinga and Henry Oketch.

To my classmates especially, Peter Kilonzo, Sang, Anthony Wachira and Bernice, thanks for your endless support. I cannot forget my entire family for their understanding and the sacrifice they made to make this MBA a success.

Special thanks also goes to David Ferrand of DFID, Brigit Hermes of CGAP and Caroline Kudwoli of K-Rep's Arifu Library for their support in providing vital literature for my references. Lastly, but not the least, special thanks to all MFIs that participated in providing valuable data for this study.

Once again I thank you all for your support and may God bless you.

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ABSTRACT

This study sought to identify the state of information systems among the microfinance institutions (MFIs) in Kenya and what causes their failure after they have been implemented. This study emanated from realization that though information lies at the very heart of microfinance; information systems have remained as one of the key constraints facing MFIs in Kenya and other parts of the world. The nature of the operations of MFIs necessitates collection and management of high volumes of data and information. This presents a big challenge to the sector.

The research was carried out on 37 MFIs operating in Kenya. Relevant data was collected through use of questionnaires. A drop and pick method of questionnaire administration was used. A total of 30 responses were received representing 81% response rate.

The findings revealed that majority of the MFIs were operating manual systems (53%) and further 64% of those using computerized information systems are not satisfied with their systems. Various causes of this scenario were expressed and included among others financial constraints to acquire and maintain good systems, inadequate managerial support and leadership to systems implementation, unavailability of appropriate software, unreliable telecommunication, poor training to users, poor documentation, defective system development process and ever changing operational policies and procedures.

The study revealed that information systems used in the sector were inadequate. Factors contributing to this inadequacy and failure include poor systems development and implementation process used, lack of management support, inadequate financial and personnel resources, poor supportive telephone and infrastructures and inadequate support from vendors.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Microfinance is broadly defined as the means of providing a variety of financial services to the poor based on market-driven and commercial approaches (Christen R.P, 1997). The notion of microfinance implies the provision of a range of financial services (credit, savings, money transfer services, etc) in small quantities. The distinguishing factor of *microfinance* is that the services are not only provided in *micro (or minute)* units but also that such services are provided to *micro* operators (Klose and Holtz, 2000). Micro operators (also referred to as micro enterprises) operate largely so because they have limited capital, access to credit and other resources. For this study, microfinance institutions will refer to those organizations that provide microfinance services to the Small and Micro Enterprises (MSEs). The MSE's definition differs from country to country but is normally based on capital invested and number of employees among other factors. In Kenya, micro and small enterprises are defined generally as enterprises that have employees less than 20 and capital investment less than Kshs 250,000.

Microfinance is a relatively young industry compared to the conventional banking, starting in the 1970s and gaining an industry/sector status only in the last decade (1990s). It is perhaps from this fairly young age of the industry that there are still many unresolved issues (Christen, 1997). Slowly some industry standards are emerging, with certain practices, definitions and norms coming up as generally accepted.

The role of the Microfinance institutions (MFIs) in developing countries is crucial for they support the micro and small-scale enterprises considered to be the future of these countries (ICEG, 1999). According to the economic survey of 2002, the informal sector created 473,500 new jobs in 2001 representing a rise of 11.4% (CBS, 2002). The national

baseline survey on Micro and Small Enterprises (ICEG, 1999) indicated that the MSE sector contributed 18.9% of 1998 GDP (and 25.5% of non-agricultural GDP) as well as 28.8% of total employment in Kenya (Charmes, 1998). The baseline survey on MSEs rated lack of credit as one the severest problem MSEs have experienced in the past. Most commercial banks shy away from providing credit to this sector. The study indicated that the MFIs provide 54.8% of total credit (5.7% of capital) to the MSE sector while commercial banks offer only 14.4%.

The technologies of providing the poor with credit are not fully developed and keep on changing with time and place where they are being applied. The main focus of these institutions' effort has been developing and designing new products and delivery processes to provide financial services to the poor. A lot of efforts have been made on measuring impact created by provision of credit to the poor. Other concerns are to measure sustainability and cost of lending of these programmes. This attests the need for a microfinance institution to have information systems that can accommodate a varied range of databases and provide numerous reports to support management of these activities.

The nature of the microfinance business necessitates MFIs to have information systems capable of providing wide range of information to serve interests of various users. The need for microfinance information to focus on both financial and non-financial indicators such as staff productivity, efficiency, average loan size and client retention has rendered computerized information systems used by conventional banking irrelevant for the sector. An *Information system* is defined as a set of interrelated elements or components that collect (input), manipulate and store data and disseminate information (output) to decision makers and provide a feedback mechanism. An information system can be manual or computerised. *Computer-based information system* is composed of hardware, software, databases, telecommunications, people, and procedures that are configured to collect, manipulate, store and process data into information (Reynolds, 1998). Management normally require certain refined information for decision-making referred to as Management Information System (MIS). *Management information system* is an organized collection of people, procedures, databases, and devices used to provide

routine information to managers and decision-makers. The focus of MIS is operational efficiency (Reynolds, 1998).

1.2 Statement of the Problem

Information lies at the very heart of microfinance operations (Mainhart, 1999). These institutions maintain large amounts of basic data on clients and their businesses as well as sophisticated analysis of operations statistics. Loan administration is involving with each loan having weekly instalments and several disbursements of small amounts being done on daily basis. By design, MFIs rely on information-based lending technology, as opposed to commercial banks that use a collateral-base approach (Churchill, 1997).

A recent study of the leading microfinance institutions in the World showed that a distinguishing feature (and pre-requisite) of successful institutions is a strong and effective management information system capable of providing management and operations staff with timely and reliable information to key operational, management and strategic decisions (Barton and Bear, 1999). The success of an institution depends on how it implements its information system that will store, manipulate and present this information to its users to make sound management decisions.

As the industry grows with more institutions entering the market and existing ones expanding, the intensity of competition for clients increase and need for efficient service delivery mechanisms becomes a necessity (Mainhart, 1999). The stakeholders including donors are getting concerned about the state of information systems in this sector for it threatens the future of the industry. This research seeks to investigate the status of information systems among the MFIs in Kenya.

The hope of implementing information systems is that the organization will be able to realize its mission and meet its operational goals. However, many systems have failed to take off soon after the MFIs sign off acceptance from the vendors (Waterfield and Ramsing, 1998). The research seeks to investigate whether the information systems installed are functional in the first place and whether they have been assessed and tested properly before implementation.

Though MFIs have realized that they need good information systems for their prosperity, stories of failure and frustration abound. Inadequately developed information systems to support the operations stand out as a major weakness for most microfinance institutions (Waterfield and Ramsing, 1998). Many of the stories feature computer-based information systems that either never work quite right or are prone to crashes (Mainhart, 1999). Why do these systems fail to deliver as expected? What factors cause these failures?

1.3 Objectives of the Study

The objectives of this study were: -

- (i) To investigate the state of information systems among microfinance institutions in Kenya.
- (ii) To find out what causes failure in information systems among MFIs in Kenya.

1.4 Importance of the Study

This study will be of importance to: -

- (i) Managers of MFIs will be able to identify factors that cause systems failures after implementation and how they can solve them.
- (ii) Donors, being the main financiers of most MFIs, will be able to know the possible causes of failure of systems that they are funding and how they can support them.
- (iii) Policy makers can identify roles that they can play to promote information systems development in the sector.
- (iv) Information system designers and vendors will be able to get feedback on the performance of their systems and reasons why they fail and enable them to make improvement.
- (v) Academia will be able to add to their literature the unique factors that cause systems failure among Kenyan MFIs and as well trigger researchable issues and topics for further development in the sector.

CHAPTER TWO

LITERATURE REVIEW

2.1 History of Microfinance

The origin of microfinance could be traced back into the 1950s when governments and international aid donors started providing subsidized credit to small-scale farmers in rural areas of many developing countries as a way of helping the poor to improve their incomes (Johnson and Rogaly, 1997). By late 1960s this initiative of using credit to improve incomes had been expanded to include promotion of income earning activities among poor communities as a strategy of reducing poverty. Lending to small enterprise development later gained prominence and from this initiative microfinance developed and has undergone four major shifts of focus since its inception (Steinward, 2001). These comprise of:

- (i) **The Community-Based Enterprise (CBE) paradigm.** Many development efforts directed to the poor in the late 1960s and 1970s focused on assisting groups or communities to generate their own (joint) sources of income. Mainly because of joint ownership of projects (which inhibited innovation and efficient management) most CBEs failed miserably, even though their intentions were good.

- (ii) **The Integrated approach to Small Business development paradigm (in the 1980s)** The small business development interventions focused on developing individual small businesses. Support to the businesses included credit, training, marketing and technical assistance to individual entrepreneurs. The fundamental difference between this approach and its forerunner is that it focused at individually owned enterprises as opposed to community ownership of businesses. Like the predecessor, this model failed to address sufficiently the issues on institutional capacity building and self-sustainability and as a result it had a very low capacity of extending their services to large numbers of those in need.

- (iii) **The Minimalist approach to Micro-enterprise development paradigm (late 1980s – early 1990s).** This model began with a major change in the method of delivering services. It also emphasized the need to focus and separate (at least operationally and administratively) the functions of financial and non-financial services. The group approach and focus on credit became a common goal. Non financial services such as training, technical assistance and business counselling were unfortunately, but perhaps necessarily relegated to secondary position, until the organizations could generate surpluses to support them. A new objective of transforming MSE support projects into commercially viable institutions was introduced.
- (iv) **The microfinance paradigm (Current thinking).** Transformation and creation of commercial banks became a major institutional strategy. It was on the basis of these new innovations that the current generation model of *Microfinance* has been developed. The development of the Microfinance model explored new horizons, beyond micro-enterprises, by putting emphasis on savings as a major intervention in itself, as opposed to being complimentary to credit. This has opened the sphere of operation to all the poor people, be they business operators or not. It also opens windows of opportunity for exploring new savings and credit products to address a wide range of financial services for poor communities.

Over time MFIs realized that generation of profit was necessary and a sure way of increasing scale enabling them to lend to a large number of people (Otero and Rhyne, 1994). In pursuit of sustainability and scale, most MFIs have been forced to be more commercial oriented – a move away from donor-dependent arena of subsidized operations into one in which, MFIs are being “managed on a business basis” and are part of the regulated financial system (Drake and Rhyne, 2002). Non-governmental organizations (NGOs) dedicated to microfinance are transforming into licensed banks, and commercial banks are noticing the potential of microcredit to enhance their product mix and bottom line (Drake and Rhyne, 2002). Studies done on demand on microfinance products indicate that there is a bigger market for savings than for credit (Johnson and Rogaly, 1997).

Many microfinance institutions have been thriving in the country, and increasingly these institutions have found themselves competing to attract and retain clients, attract staff and draw in donor subsidies. This competition has led to two changes in the market place: -

- a) A shift towards individual loans. Clients' preference for individual loans over group loans has been observed in competitive environments (Rhyne and Christen, 1999).
- b) Technological advances. MFIs are developing and implementing innovative techniques for making loans available at convenience clients and at lower cost in an attempt to position themselves favourably in the market. These techniques include credit cards, ATMs, Credit Scoring, pawn loans, payment through post office, hand-help personal computers, and satellite based communication (Campion and Halpern, 2001).

In Kenya, credit to small farmers could be traced to early 1970's while credit to small enterprises started gaining prominence in mid-1980s. The above four approaches are still in use in the country. Many of community-based organizations (normally referred to as CBOs) use CBE approach but their emphasis is on social welfare development other than business. Some church-based MFIs are still using integrated approach where they combine business training, marketing and provision of credit. However, many of large MFIs have span off from their promoters and employ minimalist approach. Major shift from integrated approach was evidenced in 1990 when K-Rep and a group of other MFIs decided to adopt a modified version of Grameen Bank group-based model (Mutua, 1996). At the time of this study, two MFIs (K-Rep bank and Equity Building Society) were already operating under microfinance model (as commercial banks). Some of the MFIs using minimalist approach are strategizing to shift to microfinance paradigm.

2.2 Approaches of Microfinance Operations

Various forms of institutions are currently providing financial services to the poor. These include non-governmental organizations, non-bank financial institutions, commercial banks, savings and credit societies and government departments (Drake and Rhyne, 2002). Irrespective of the institutional form, the sector faces unique challenges in its delivery systems. The target clientele, the poor mainly women do not have collateral, live in inaccessible areas and their financial transactions are in small amounts making it expensive to administer (Johnson and Rogaly, 1999). In order to reach the poor innovations have been made to counter the challenges of collateral, cost of administration and loan recovery. There are three main lending methodologies used namely; (i) wholesale lending, (ii) group lending, and (iii) individual lending.

(a) Wholesale Lending

Wholesale lending involves lending to an organised group, which either engages in a group project or it on-lends to its members. This approach is losing popularity due to various problems related to ownership of group projects, commitment and accountability.

(b) Group lending

In group lending or unitary approach, clients are organised into groups or units that in turn administer loan appraisal, collateral arrangements, use peer pressure for loan repayment, and collect and deposit group savings and loan repayments among other activities. Sometimes it is referred to Grameen model due to the origin of the concept from Grameen Bank of Bangladesh. Through this group approach, a credit officer is able to control clients up to 500 with loan portfolio of Kshs 5 million. For this methodology to work, a lot of client preparation is required involving client screening, intake, group formation and training.

(c) Individual Lending

In individual approach, each client accesses the financial services directly. Individual lending is, of late, gaining a lot of popularity due to the direct contact between the

borrower and lender and more so clients have graduated to bigger loans that cannot be fully secured through group guarantees. Banks are particularly using this approach.

In Kenya, MFIs are using wholesale, group and individual lending methodologies. For a long time MFIs have been using wholesale lending. However, K-Rep made the first important process innovation in 1988, when it acknowledged problems associated with wholesale lending and identified a group-based lending system for use in Kenya (Mutua, 1996). This group approach to lending was replicated to most of MFIs operating in Kenya by then and soon after. Towards the end of 1990's, pressure was mounting from clients accessing large loans because of the constraints in the group approach and led to introduction of individual loans. The move to individual loans is happening at the same time as shift to microfinance banks. Another change has also been observed in the size of groups, from traditionally 30 members to 5.

2.3 Information needs and information systems in use among MFIs

The technologies of providing the poor with financial services are not fully developed and keep on changing with time and place where they are being applied. Originally, the focus in microfinance was on developing products and delivery systems that would avail financial services to the micro operators as way of alleviating poverty through increased incomes and employment. Little effort was put in designing information systems that would track adequately the operations of these institutions. As loan portfolio grows and the need for accountability to stakeholders intensifies, MFIs are forced to seek solutions and more often than not the starting point is developing in-house information systems to address the need (Waterfield and Ramsing, 1998).

MFIs need to collect, store and process data about their operations. Although there is a trend to move to provision of financial services, the range of data collected is wide; client personal data, business data, loan and savings transactional data and financial data. No single system has been found to adequately track these (Waterfield and Ramsing, 1998).

There are many interested parties on the performance of industry including the donors, investors, micro operators and government putting pressure on information generated by these MFIs. The need for information from various stakeholders is becoming a major challenge to cope with among the MFIs. Concerns include measurement of economic impact created by this intervention, growth potential, sustainability and cost of services provided. This attests the need for a microfinance institution to have information systems that can accommodate a varied range of databases and provide numerous reports to support management of these activities. Thus the biggest challenge has been to cope with the demand for a wide range of reliable historical and current information.

There is a growing awareness of the significance of information to microfinance institutions (Ferrand and Havers, 1997). A consensus is emerging that good information systems are fundamental to the success of these institutions (Waterfield and Ramsing, 1998). Many MFIs, especially small ones, are using manual information systems or a combination of manual and computerised information systems. Majority of MFIs with some form of computerized systems have developed them in-house (Waterfield and Ramsing, 1998). Some of the known international MIS software packages are: -

- (i) FAO Microbanking System SRTE and EXTE versions,
- (ii) IPC Banking System,
- (iii) Micro Finance 2000 and Credit Union 2000,
- (iv) SiBanque,
- (v) Small Bank Manager,
- (vi) Solace for Workgroups,
- (vii) Micromanager,
- (viii) Bank Realm,
- (ix) Cubis 2001 International
- (x) Loan Performer
- (xi) Portfolio Manager, and
- (xii) Total Microfinance Solution (TMS)
- (xiii) TEMENOS eMerge.

2.4 Current problems with the Information Systems in the Sector

Information is a critical factor determining the competitiveness and survival of organizations. Without access to timely, reliable, and relevant information on market opportunities, potential buyers, market prices, sources of inputs, production technologies, and government regulation, no enterprise, big or small, is able to survive in the fast changing, increasingly globalized and competitive world (ICEG, 1999). However, inadequate information systems have been identified as one cause of weaknesses of institutions providing financial services to poor households in Kenya and in the world. Various factors have been cited as contributing to this state.

Good information systems appear expensive to acquire and maintain while most NGO-based MFIs prefer to allocate the scarce resources to serving the poor to the detriment of information systems (Christen, 1990). Most small-sized MFIs are still operating manual or partially manual information systems (with computerized accounting module and manual or spreadsheet based loan tracking). The challenge on the manual systems has been coping with volume of data and information that is generated daily.

Hutchinson and Sawyer (1995) identified inadequate user involvement as a key cause of systems development projects failure. This cause user resistance and low participation among various user groups. Over time they abandon the system.

Increasingly information systems management is becoming a task of the top management that cannot be easily delegated, which many top-level managers have not embraced. Information technology risks are becoming increasingly entangled with business risks, and it is therefore the CEO's responsibility to distinguish them (Martin, 1999). The rules of the information technology (IT) game have shifted, and the function now requires strong management leadership (Batchelder, 1999). Information technology is not a back-office operation; it is not just systems or telecommunications. It is a valuable source of business solutions, touching virtually every aspect of the company; technology is central to streamlining business processes, cutting costs, and management of work activities

better. Information systems development and implementation is, therefore, an important managerial responsibility (O'Brien, 1993).

Information systems being at the heart of MFI productivity, the biggest problem is inability to keep pace with technological changes. In many forums, microfinance institutions have been accused of taking too long to implement decisions on their information systems. Changes in technology happen too frequently and management decisions on information systems should be reviewed quite regularly. Continuation of an information system project that should have been cancelled long time would end up failing (Hutchinson and Sawyer, 1995).

Lack of appropriate software packages that caters for MFIs information needs has been cited as a common problem. Most software packages cater for certain operations like loan portfolio or accounting thereby forcing MFIs to use several packages to serve various functions. Information systems may collapse due to failure of two or more portions of these subsystems to fit together properly (Hutchinson and Sawyer 1995).

Users often have a wide range of expectations that the information system should provide, which may not be properly conceptualised by the IT personnel. Management must have access to timely and accurate information about the individual operations and consolidated information about branch offices. MFIs use a wide range of financial and non-financial indicators such as capital adequacy, asset quality, delinquency ratios, staff productivity, efficiency, growth, average loan size and client retention, and as such require their information systems to support this (Churchill, 1997). Limited training offered to IT personnel on microfinance operations often leads to wrong solutions being offered by them.

More often than not, the soft science of information systems is ignored during implementation (Newcomb, 1999). *Soft science of information* will be used to refer to the organizational and human-related aspects of an information system such as procedures, people and organizational culture and behaviour towards information. Too much

emphasis is put on the hardware and software (using the 'hard' approach to systems development (Curtis, 1996)) and not enough emphasis is put on the soft science of how people actually use and share information. Implementing an information system means changing corporate behaviours that discourage information sharing. Information managers must begin by thinking about how people use information, not how people use machines. Changing the company's information culture is the best way to implement IT, but it is also the hardest to carry out (Newcomb, 1999).

A study by Nyambane in 1996 on factors that limit the use of IT among the publicly quoted companies indicated that inadequate training to users was one of the major causes. Sometimes, information users may be confused on how to access data due to technical and behavioural problems. The attitudinal factors among users may limit the utilization of capabilities available in the system like when managers prefer to get information from people (or printed reports) rather than computers (Batchelder, 1999).

Another common challenge facing information systems is lack of reliable telecommunication systems in the Sub-Saharan Africa limiting the use of wide area networks (WANs) coupled with sparsely distributed population (Fruman and Paxton, 1998). A *Wide Area Network* is a network that ties together large geographic regions using microwave and satellite transmission or telephone lines. Nyambane cited poor public infrastructure and inadequate IT support services as a key constraint to use of IT in Kenya (Nyambane, 1996).

This study seeks to establish whether the following causes of systems failure identified in other countries and sectors apply among the MFIs.

- a) High costs of acquiring good information systems while resources being committed to IT are limited.
- b) Inadequate user involvement in the design and implementation of information systems.
- c) Information systems not being conceived as strategic by top management leading to minimal support.

- d) Inability of organizations to keep pace with technological change.
- e) Lack of appropriate software leading to implementation of the multiple systems that are not integrated.
- f) Inadequate training to information users.
- g) Ignorance of the social aspects (soft science) of information systems by IT specialists.
- h) Organizational inertia to change their culture and behaviours to that, which is congruent with information systems.
- i) Poor telecommunication systems.

CHAPTER THREE

STUDY DESIGN AND METHODOLOGY

3.1 Research Design

This research was an exploratory study meant to investigate the state of information systems among the MFIs and what causes their failure.

3.2 Population and Sample Selection

The population of study was made up of 44 the microfinance institutions operating in Kenya in 2000 updated from a list provided by K-Rep in 1997 (Kabiru, 1997 and Dondo, 1999). Though the population of study was small to warrant a census, a sample was thought to be most appropriate for this study. The reason for this was that many of MFIs have offices either in Nairobi or other major towns where accessibility was easier while a few others operate in remote places and could not be reached with ease. A sample of 37 was selected using convenience sampling, a non-probabilistic sampling method (*See appendix on List of MFIs*). The MFIs were picked on the basis of their easiness to reach by post, hand delivery or e-mail. Although this sampling technique has been criticised on possible bias and influence beyond researcher's control, the selection criteria ensured that majority of MFIs (84%) included in the sample.

3.3 Data Collection Method

In this research, use of questionnaires was considered appropriate. In order to collect relevant data for this study, standardized questions on attitudes, opinions and organizational practices were required to identify and describe the variability in different phenomena (Saunders, Lewis and Thornbill, 1997). The questionnaire designed was divided into five parts. The first part was to be filled by all respondents and covered institutional details. Parts two and three were filled by MFIs usnig computerized

information systems. The focus of part two was assessment of the performance of the computerized information systems and possible causes of failure. Part three was a description of how various stages of system development cycle have been implemented. Part four was filled by MFIs using manual information system and covered constraints to computerization.

A drop and pick method of administering questionnaires was used. These questionnaires were delivered to 37 selected MFIs using the most convenient method, by hand, post or through e-mail.

3.4 Data Analysis techniques

Data collected was analysed and presented using descriptive statistics to capture general trends. There was extensive use of frequency distribution tables and other measures of central tendency.

SPSS for windows version 10.0, a statistical software application, was used to analyse data collected for this study.

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.1 Overview of the data collected

This chapter contains the analysis of the data collected and is organized into two main sections. The first section analyses the state of information systems among the MFIs to answer the first objective of this study. The second section focuses on analysis of the causes of failure of information systems among these MFIs to answer the second objective.

In this study, 30 questionnaires were received out of 37 sent to MFIs. This represents a response rate of 84%. The study involves 68% of the total population MFIs into the analysis and this is expected to be representative of the industry for it involved a good mix of the MFIs of different sizes.

The number of clients per MFI in the past has been used in the industry as an indicator of the size of the MFI. This study adopts this practice.

4.2 The state of information systems among the MFIs

In this section, data was analysed to answer the question on whether MFIs had adequate information systems in the first place. The literature review points out that inadequate information system is a major constraint among MFIs in the world. This section explores the extent of computerization and the performance level of the information systems among the MFIs.

4.2.2 Level of computerization

a) Computer use

Use of computers in information systems has come of age and greater accuracy and efficiency has been achieved. The study categorized institutions using computers in their information systems and those using purely manual systems. 53% of the respondents indicated that they were using manual information systems.

Since MFIs rely greatly on character of their clients, a lot of data is kept on client, group and loan transactions. In this case the number of clients is an indicator of volume of data stored and transactions processed. A comparison of the number of computers and number of clients per computer for MFIs with computerized information systems as a measure of computerization of the organization was done (*see table 4.01 below*). Out of the 14 MFIs using computer-based information systems, half of the respondents indicated that they had less than 20 computers in their organization. Indeed 29% had less than 5 computers in their organization. MFIs with large number of clients had more computers than those with smaller number of clients.

Table 4.01: Number of computers

Number of computers	Frequency	Percent (%)
None	16	53%
0-5	4	13.3%
6 – 10	2	6.7%
11 – 20	1	3.3%
Over 20	7	23.3%
Total	30	100.0%

Source: Research data, September 2000

Majority of the MFIs with manual information systems had less than 1,000 clients. This is a reflection that many of these MFIs are small and have limited resources. Other factors cited included that the number of transactions were low and could still be tracked adequately with manual systems and that their level of operations could not afford to finance computerization of their information system.

b) Network systems

Computer Network consists of communication media, hardware and software needed to connect two or more computer systems and/or devices. Computers are not only used for processing data but also as communication devices. MFIs are organized into field offices that administratively report to semi-autonomous units (sometimes referred to as branches) that in turn report to head office. This arrangement necessitates data processing, sending and use of information at each level. The use of computer networks can be used as another indicator of the level of computerization.

The respondents were asked to indicate the type of computer networks they use in their organizations (*see table 4.02 below*). Though majority of the respondents with computers (71%) had at least a computer network in their organization, still a high percentage (29%) of respondents did not have a network of any kind. However, only 7% (1 organization) had both the wide area network (WAN) and local area network (LAN). 64% of the respondents had only a LAN. *Local Area Network* is a network that connects computer systems and devices within the same geographic area and a *Wide Area Network* is one that ties together large geographic regions using microwave and satellite transmission or telephone lines.

Table 4.02: Analysis of networks installed

Type of network (s)	Frequency	Percent (%)
None	4	28.60 %
LAN only	9	64.30 %
WAN only	0	0.00 %
Both LAN & WAN	1	7.10 %
Total	14	100.00%

Source: Research data, September 2000

c) Operations computerised

Computers are used strategically to process data originating from various organizational activities, store and produce summarized reports for management to make informed decisions. MFIs have a challenge to track and manage three main databases namely; individuals and groups, loans and savings, and accounting. The number of business

activities computerized was used as another indicator of the level of computerization. The basic operations of MFIs were grouped into 5 categories: client screening and intake, loan processing and disbursement, loan repayments and monitoring, loan reporting and general ledger. The respondents were asked to tick the operational activities that have been computerized. On average, they indicated that 3 out of the 5 activities had been computerized. The modal number of activities computerised was 3 and the mean was 3.29. Only 2 of all the respondents had all the five activities listed computerized and 3 had four activities computerized.

When asked to indicate the software applications in their organizations, 14% (2) of the respondents indicated that they were operating an integrated system for loan tracking and general ledger.

On the other hand when asked to indicate the number of software application they have tried in their organization, 64% of the respondents had only tried one or two software applications. Only a small percentage had tried more than 3 applications in their organizations.

d) Staffing of the computer unit

Most of the MFIs (over 71%) had their IT or MIS sections headed by either an information officer (43%) or MIS officer (29%). However, majority of these information officers were reporting to the accountant and therefore too junior to influence decision-making. The rest of the MFIs had either an accountant or a general manager handling the function.

4.2.2 Performance of the information systems in place

The systems implemented in majority of the MFIs studied indicated that they performed below the expectations of the users. Below is an analysis of the systems performance evaluation (*see table 4.03*). This performance was put into a scale of 1 to 5 where 1 represented very poor, 2 – poor, 3 – average, 4 – good and 5 – very good.

Table 4.03: Analysis of performance of computerized information systems

	Parameter used	% Not Satisfied (Responded average, poor and very poor)
1	Helping the organization attain its overall mission	36%
2	Supporting specific departmental goals	64%
3	Adequacy of the hardware and software	57%
4	Adequacy of the database storage space	64%
5	Sufficiency of the IT/MIS staff	43%
6	Acceptance of the rules and procedures on the information access and use	64%
7	Adequacy of the security rules and procedures	71%
8	Adequacy of the training offered to users	79%
9	Adequacy of the information systems budget	79%
10	Reliability of the systems	64%
11	Efficiency of the systems	64%
12	Response time	71%
13	Simplicity to operate and maintain the system	57%
14	Adequacy of the systems documentation	79%
	Average performance level	64%

Source: Research data, September 2000

a) Helping the Organization attain its overall mission

One of the main purposes of implementing information systems in an organization is to help management monitor their progress towards attaining overall mission. Over 64% of the respondents indicated that their systems performance in helping the organization meet its overall mission was good but none indicated was very good. 29% of the respondents indicated that performance was just average while 7% was below average.

b) Supporting specific departmental goals

Information systems are expected to support attainment of departmental goals. 57% of the respondents indicated that their systems performance in supporting specific departmental goals of their organization was average and a further 7% showing performance as poor. Only 36% of the respondents indicated that their systems support for specific departmental goals was good.

c) Adequacy of the hardware and software

More than 57% of the respondents showed that adequacy of their hardware and software to handle current and future needs was either average or poor. However, 21% of the respondents indicated that they were satisfied (good and very good) with their current software and hardware.

d) Adequacy of the database storage space

Adequate storage capacity for historical, current and future data is essential for the information system being used. On this aspect, more than 64% of the respondents indicated that their current database storage capacity was not enough. 21% had showed that their database storage capacity was poor and 43% was average. Only 21% of the respondents were satisfied with their storage capacity (very good).

e) Sufficiency of the IT/MIS staff

People (and more specifically the IT staff) play a key role in implementation of effective information system. 57% of the respondents felt that their IT/MIS personnel were relatively sufficient (good and very good) while 43% felt that IT/MIS personnel were not sufficient to handle the processing tasks for their organization.

f) Acceptance of rules and procedures of the information access and use

Control over access to data and information is an important quality of valuable information system. Only 35% of the respondents felt that their rules and procedures for use and access of information in the organization were reasonably acceptable (good (14%) and very good (21%)). However, more than 64% of the respondents felt that their rules and procedures were inadequate and needed improvement.

g) Adequacy of the security rules and procedures

Data integrity is key to useful information and must be safeguarded. However, majority of the respondents (71%) were not happy with the current rules and procedures for protection against errors, invasion of privacy, fraud and other potential problems (ranked this as poor and average). A substantial percentage (21%) indicated that their protection rules and procedures were poor. Only 7% of the respondents (one organization) ranked their system to be very good on security rules and procedures.

h) Adequacy of the training to users

Users need to have adequate knowledge about the systems they use to enable them benefit from it. None of the respondents showed that training programs to the users and the IT personnel was done as per their expectation (ranked very good). 79% of the respondents indicated that the training was done either poorly (43%) or average (36%) to their expectations.

i) Adequacy of the information systems budget

Information technology is very dynamic requiring continuous upgrade and maintenance of hardware, software and skills. This necessitates organizations to provide adequate budget for IT. Like in training, none of the respondent showed that the information systems budget was adequate (ranked very good). In fact, 79% of the responses showed that the budget was either below average (29%) or just average (50%).

j) Reliability of the systems

System reliability is another quality of valuable information systems. 64% of the respondents indicated that their systems were not very reliable (performed averagely on this aspect). Only 7% (representing 1) of the respondents indicated that their systems were very reliable.

k) Efficiency of the systems

Information systems are expected to help an organization cut costs or generate other benefits that can offset the cost of acquisition and maintenance. On efficiency of the

system to produce outputs from the inputs and resources available, majority of the respondents (64%) indicated that their systems performed averagely or poorly on this respect. Only 36% perform at a reasonably acceptable level (good).

l) Response time

Another characteristic of computerized information system is its ability to process data much faster than manual systems. None of the respondents ranked their systems response rate at peak processing times as very good. 71% of the respondents indicated that their systems performed averagely or poorly on response time at peak times.

m) Simplicity to operate and maintain the systems

Valuable information systems are expected to be user friendly and simple to use. On this aspect, only 43% of the respondents indicated that their systems were fairly simple to operate and maintain (good). 57% of the respondents expressed that their systems are somehow complex to operate and maintain.

n) Adequacy of the systems documentation

Systems documentation is essential for referral by users. A very high number, half, of the respondents showed that their systems documentation was poor. In addition, 29% of the responses indicated that their systems documentation was neither poor nor good.

4.3 Major causes of information systems failure

In order to extract information of what could have caused the systems failure among the MFIs, a set of direct and indirect statements were used. Using several possible factors that could have contributed to failure of the information systems to meet the needs of the MFIs, statements were generated. Respondents asked to state whether they agree with the statements or not. A Likert scale of 5 has been used for the respondents to indicate the extent to which they agree or disagree with the statements with 1 representing 'strongly disagree', 2 – 'disagree', 3 – 'neutral', 4 – 'agree' and 5 - 'strongly agree'. For analysis, this scale was further reduced to 3 with all response that disagreed with the statement (1 and 2) put together and all that agreed to the statement (4 and 5) put together.

In analysing possible causes of statement were grouped into software, management, IT personnel, financial, telecommunications, user related and operations related issues. Below is the detailed analysis of the possible causes of failure.

4.3.1 Software related causes

Various issues related to software applications in use were found to cause failure to the systems implements. These included the system development cycle issues, availability of appropriate software and support as summarized in table 4.04 below.

Table 4.04: Summary of responses on software related issues

Statement	Responses received as a percentage of total		
	Agreed	Neutral	Disagreed
Poor identification of organizational needs	42.80%	28.60%	28.60%
Inadequate feasibility study to establish alternative solutions	35.70%	21.40%	42.90%
Systems implementation does not meet user expectations	35.70%	21.40%	42.90%
Lack of suitable software applications in the market	50.00%	28.60%	21.40%
Failure to do post-implementation review	57.10%	35.70%	7.20%
Poor software documentation	57.10%	21.40%	21.40%

Source: Research data, September 2000

a) Poor identification of organizational information needs

43% of the respondents agreed with the statement that poor needs identification was the cause of failure of systems implemented. Only 29% of the respondents disagreed with the statement. 43% of the respondents indicated that their organizations did not carry out a preliminary study to establish their needs and 64% of the respondents indicated that a feasibility study was not done to establish possible solutions.

b) Inadequate feasibility to establish alternative solutions

Further findings indicate that about 36% of the respondents felt that due to inadequate evaluation of possible alternative systems a wrong choice was made. A noticeable number of the respondents (36%) agreed that systems implemented did not meet the expectations of the users.

c) Lack of suitable application software

Majority of the respondents (50%) agreed that it is indeed the lack of suitable software that has led to failure of systems implemented. Only 21% disagreed with the statement. This ties well with the fact that many packages that have been tried. 29% of the

respondents indicated that finding suitable packages for microfinance institutions is a major challenge facing information managers in the sector. Out of the 14 MFIs only one was running an integrated system.

A good percentage (over 57%) of the respondents agreed with the statement “if post-implementation review was done some of the systems shortcomings would have been detected and corrected hence avoiding the failure. Only a mere 7% (1 respondent) disagreed with this statement.

When asked to state major challenges facing the management of their information systems, 29% of the respondents indicated that software vendors’ support is still a nightmare.

c) Software documentation

When respondents were asked whether the systems documentation was adequate 57% of the respondents indicated that it was inadequate. Only 21% of the respondents were satisfied with the current documentation of their systems.

4.3.2 Management related

In the analysis of causes of failure of information systems among MFIs management related issues are grouped together. They included IT skills and knowledge among the managers, manager’s preferences, management support to information projects, and managers’ role in systems implementation and information systems decision-making process. (*See table 4.05 below*)

Table 4.05: Summary of responses on management related causes

Statement	Responses received as a percentage of total		
	Agreed	Neutral	Disagreed
Limited IT knowledge by managers	42.80%	28.60%	28.60%
Top management has not embraced IT as a business solution	35.70%	21.40%	42.90%
Managers' prefer printed reports to soft copies	35.70%	21.40%	42.90%
Managers do not want to use computer to get solutions for themselves	50.00%	28.60%	21.40%
CEO heads the MIS committees	57.10%	35.70%	7.20%
Decision making takes too long	57.10%	21.40%	21.40%

Source: Research data, September 2000

a) Limited IT knowledge by managers

50% of the respondents concurred with the statement that limited systems knowledge of the decision makers was the reason for wrong choice of the systems and process of implementation adopted. Only 21% disagreed with this statement.

b) Management support to systems

A mixed reaction was observed towards the statement that 'top management has not embraced IT as a business solution and as a result they have not given it the attention it requires'. 43% agreed with the statement while 50% disagreed with it.

As users of the information systems, managers appeared to be reluctant to use computerised systems. 50% of the respondents agreed with the statement that managers prefer to use printed reports than getting them online from the computers.

Only 43% of the respondents disagreed with the statement that "managers do not want to use their computers to get solutions to their problems".

c) Management championing the systems implementation

Although management appear to be represented in the MIS committees with (36%) agreeing with the statement that “the CEO heads these committees”, a substantial proportion of the respondents do not agree (64%). This implies that the chief executives do not take a lead role in the information systems projects but delegate to their juniors.

d) Decision making process

In addition, 50% of the respondents concurred with the statement that decision-making in their organization takes too long that they cannot cope with the rapid technological changes leading to inappropriate systems being implemented. Only 29% of the respondents disagreed with this statement.

4.3.3 IT Personnel related

In addition to decision makers having limited systems knowledge, lack of authority of the IT/MIS staff in implementation of systems seem to be another cause of systems failure. 36% of respondents agree with the statement that lack of authority over their systems implementation by the IT/MIS staff led to failure of the systems. Only 29% of the respondents disagreed with the statement. (See table 4.06 below)

Table 4.06: Lack of authority by MIS/IT staff

	Frequency	Percent (%)
Disagree	4	28.60%
Neutral	5	35.70%
Agree	5	35.70%
Total	14	100.00%

Source: Research Data, September 2000

When the respondents were asked to state the major challenges facing management of their information systems, half of them (50%) stated that getting and maintaining skilled IT personnel was severe. In fact these respondents ranked this challenge as their number 1 or 2 in their list as indicated below in table 4.07.

Table 4.07: Challenge of getting and retaining IT Personnel with required skills & experience

Severity Rank	Frequency	Percent (%)
1	3	21.40%
2	4	28.60%
Total	7	50.00%
Did not mention	7	50.00%
	14	100.00%

Source: Research Data, September 2000

There has been heavy reliance on consultants (who may not be microfinance specialists) in systems design for the MFIs. Only 3 respondents did systems design internally.

4.3.4 Financial related

An overwhelming majority (over 71%) agreed with the statement that financial constraint is the major limitation to implementation of IT plan leading to current problems. In fact a very high percentage (36%) strongly agreed with the statement. Only 7% disagreed with this statement. (See table 4.08 below)

Table 4.08: Financial constraint

	Frequency	Percent (%)
Disagree	4	28.60%
Neutral	0	0.00%
Agree	10	71.40%
Total	14	100.00%

Source: Research Data, September 2000

Six of the 14 respondents (43%) stated that limited or no budget for IT as one of the major challenge facing management of information systems in their organization. This factor was listed as the main constraint to computerization by MFIs that are not computerized. (See table 4.09 below)

Table 4.09: Challenge of limited IT budget

Severity Rank	Frequency	Percent	Cumulative Percent
1	2	14.3	33.3
3	2	14.3	66.7
4	2	14.3	100.0
Total	6	42.9	
Not listed	8	57.1	
	14	100.0	

Source: Research Data, September 2000

Similarly, limited financial resources were ranked as the severest constraint among the MFIs operating manual information systems.

4.3.5 Telecommunication related

Majority of the respondents (over 64%) agreed with the statement that poor telecommunication systems have been a major constraint in distributing data and information in their organization. Only mere 14% of respondents disagreed with this statement. (See table 4.10 below)

Table 4.10: Poor telecommunication systems

	Frequency	Percent (%)
Disagree	2	14.30%
Neutral	3	21.40%
Agree	9	64.30%
Total	14	100.00%

Source: Research Data, September 2000

4.3.6 User related

In many cases users are forgotten when designing and implementing information systems. Respondents were asked various questions to gauge how users have been involved in the development and implementation of the information systems in their organization. The issues asked related to user attitudes to the systems, user consultations and training. (See table 4.11 below)

Table 4.11: Summary of responses on user related causes

Statement	Responses received as a percentage of total		
	Agreed	Neutral	Disagreed
Users' reluctance to use system because they were not involved	42.90%	21.40%	35.70%
Inadequate user training	35.70%	28.60%	35.70%

Source: Research data, September 2000

a) User involvement

43% of the respondents agreed that users in their organizations are reluctant to use the system because they were not involved in its development and implementation. Only 36% of the respondents disagreed with this proposition.

When asked to indicate their involvement in the systems development, 9 respondents (representing 64% of the total) indicated that they were not involved.

b) Training

36% of the respondents attributed failure of the systems to lack of training. A similar number of respondents tended to disagree with the statement. Only 14% of the respondents indicated that they received enough training on the systems they are using.

c) Information sharing

Internal politics and unwilling to share information between departments did not feature as a serious cause of information systems failure. Only 7% agreed to the statement that unwillingness to share information as hindrance to system implementation while 21% were neutral. 86% of the respondents have disagreed with the statement that internal politics have caused failure in their systems implementation.

4.3.7 Operations related

Many times systems developed or customized to suit this sector have failed to take into account the complexities of operations in the sector. Data was collected to analyse contribution of unique factors arising from operational issues and how they contribute to information systems failure. (See table 4.12 below)

Table 4.12: Summary of responses on operations related causes

Statement	Responses received as a percentage of total		
	Agreed	Neutral	Disagreed
Fast changing operational policies and procedures	42.90%	35.70%	21.40%
Rapid growth of operations	35.70%	28.60%	35.70%

Source: Research data, September 2000

a) Changing operational policies and procedures

Only 21% of the respondents disagree with the statement that fast changing operational policies and procedures are causing instability in their systems. 43% of the respondents agreed with the statement.

b) Fast growth in operations

36% of the respondents indicated that rapid growth of operations in their organization has caused their systems to crash. A similar percentage disagreed with the statement.

CHAPTER FIVE

CONCLUSIONS, LIMITATIONS AND SUGGESTIONS

5.1 Conclusions

5.1.1 Conclusions on Status of Information Systems among MFIs

The study revealed that the information systems used in the sector were inadequate. This inadequacy ranges from having no computerized systems to having computerized systems that do not meet the users expectations. The problem with these systems arises from the fact that the MFI have inadequate resources, non-availability of software applications in the market and management inertia to internalise IT as a business solution and a strategic option.

(a) Level of Computerization

The findings has reviewed that a great number of MFIs surveyed (53%) were operating manual-based systems. The study has also revealed that there is a strong relationship between the size of the MFI (measured by the number of clients) and the level of computerization.

Analysis further indicated that even MFIs with computerized systems were not fully utilizing fully the capacities of the computers they had. Though 71% of the respondents had indicated that they had a network of a kind, only one MFI had both the LAN and WAN. In most cases these networks are in their head offices and are basically utilized for printing reports other than sharing information in soft form. In big MFIs, a lot of effort is wasted in consolidating data and reports from branches and more often than not there is a lot of duplication of effort between different departments or section in the same organization. At the time of this survey, less than 5 MFIs had e-mail addresses and Internet access. For those who had e-mail facility, it was restricted to the chief executive

office and the computer department. None of the MFIs was using an intranet. Therefore computers were not used as communication devices.

The study has revealed that not all operational activities have been computerized. On average 3 of the 5 listed activities were computerized with only one MFI operating an integrated system. There was high usage of the spreadsheet to track transactions and preparation of financial reports. In most cases computers were being used basically for word processing and as calculation devices.

The study indicates that in general there is low level of computerization and most MFIs are in their second or third evolution stage in information system development according to Nolan Stage Model (Nolan, 1979). Different applications used were department specific and were not integrated with those being run by other departments. This proliferation of applications was as a result of user dissatisfaction and frustration of what was available at the institution. There was little progress that had been achieved towards development of a comprehensive information system.

This study confirms the conclusion that as the volume of transactions and level of competition increases, MFIs will be forced to move from the manual to more computerized systems (Waterfield and Ramsing, 1998). MFIs that have had the resources have been shopping for suitable software. Majority have been reworking on their whole information systems including staffing, networking and improving their reporting systems. Increasingly they have been lobbying with their donors to fund their computerization project.

(b) Performance of information systems in place

The performance evaluation carried out in the questionnaire pointed out that cross-section of the MFIs were not satisfied with the information systems that were implemented in their organizations because they were not meeting their expectations. In fact most of the respondents indicated that their systems were performing either at average or below average.

From the analysis, the systems that had been implemented in these MFIs were far from being adequate for the kind of operation they were doing. On average, 64% of the MFIs with computerized information systems who were interviewed expressed dissatisfaction with their current systems. The systems implemented in these MFIs performed poorly (over 71% of respondents were dissatisfied) in terms of training provided to users, systems documentation, response time and adequacy of security rules and procedures.

5.1.2 Conclusions on Causes of Information Systems failure among MFIs

Setting up a good information system is an intense task that may require restructuring the institution, reworking the staff responsibility, redesigning work processes and information flows, revising and rationalising operational policies and investing in computer technology.

This study revealed that several factors that were contributing to the high rate of systems failure or poor performance of information systems that are implemented by the MFIs in Kenya. Some of these factors could be associated with the system development cycle, implementation, management of MFIs and issues unique to the industry (sector).

(a) Systems Development Related Causes

The study identified that the systems development cycle had not been followed or where it had been tried some key steps were skipped. In some cases hardware and software have been bought without a proper analysis of user requirements and feasibility study on alternative solutions. This was supported by the fact that 43% of the MFIs did not have a preliminary study and a further 64% did not have a feasibility study to establish alternative solutions.

Linked to improper systems design are weak systems solutions implemented. This could be as a result of systems conceptualisation mismatch where the analyst did not understand the underlying facts to the way of microfinance business is done. This led to implementation of inadequate systems.

With weak implementation system, as indicated by lack of post-implementation review, defects in the system design persist after rollout and users get dissatisfied and slowly abandon the system.

(b) *Software Related Causes*

As noted by Mainhart (Mainhart, 1999), MFIs in Kenya were operating both computerized and manual systems. None of these MFIs had a fully integrated system that was capable of providing all information required online. With systems that are not integrated, consolidation and reconciliation of reports from different branches and departments is still a major problem.

This study confirms that there was an extensive use of systems that are not integrated (93% of the MFIs) was still a cause of systems failure (Hutchinson and Sawyer, 1995). The core business activity (lending) of the MFIs remain mainly manual. Most MFIs had been able to computerize the general ledger (accounting) by buying off-the-shelf accounting package while credit activities had remained largely being tracked through spreadsheets or through manual ledger cards.

The situation had been worsened by the fact that there was no proven software in Kenya that was capable of meeting the information requirements of the MFIs. IT developers in Kenya had not taken keen interest in developing software applications for MFIs. There had been a tendency of customising banking software from other parts of the world or using the general ledger module of any accounting package for accounting transactions and financial reporting. The weakness with these systems was that their structural design was in conflict with the basic principles in lending approach used by Kenyan MFIs – the group methodology. The banking software applications were particularly designed for individual-based lending, deposit taking and cash-based transactions while MFIs were not allowed to take deposits and do not operate front office services rendering these applications inappropriate.

The study points out that inadequate and sometimes non-availability of software documentation was a major cause of systems failure. The IT personnel were largely incapacitated to fix bugs when they occurred or modify the systems to be in line with changing needs. This was worsened by the fact that the technical support for the software was always located many miles away and was not available when required.

(c) *IT Personnel Related Causes*

The cost of maintaining high level and experienced IT staff has been a constraint to MFI given that majority of them (93%) had a limited budget for information system. The MFIs had limited access to high level IT staff capable of not only providing quality technical advice but also overseeing the implementation of a successful information system. This was one reason why proper information system solutions had not been provided. Elaborate IT plans were missing among majority of the MFIs casting doubts on when a solution would be sought to their current problems.

(d) *Management Related Causes*

More often than not management in most MFIs view information systems as an add-on into their management systems that could be plugged into their existing systems without adjusting other subsystems in the organization to produce the desired output. In fact it was viewed as a peripheral system other than the main system that supply “blood” to other systems. In many cases, the information systems had failed because of the management inertia to initiate the necessary changes in the organization’s informational culture and to support the whole implementation process. The study pointed out that, indeed managers preferred to use printed reports other than getting the information online from their computers. In many cases, computers placed at manager’s offices were used by their secretaries for writing memos and processing other Word documents.

There was strong evidence that top management support and championing of new systems was lacking. This was as a result of limited IT knowledge by the management and general fear of change. Since most IT projects were demanding, top management had delegated the tasks to IT department. This was an indication of how they viewed IT as

other people's (IT personnel) responsibility other than it being their central responsibility. Unless the entire management orientation towards IT changes, there isn't much progress that would be achieved in implementing successful systems in this sector.

(e) Operations Related Causes

Several MFIs operate a chain of hierarchical layers of offices: field offices, branches, regional offices and head office, and yet no network system to link these offices. Majority of those who had network had implemented a LAN only. Only one respondent had both the LAN and WAN. This indicates that data and information consolidation is done manually and sharing is limited to hard copies (computer print outs).

Fast changing operations policies and procedures and growth in operations have been identified as causing instability of systems in place over time. Since there were no industrial standards or guidelines in the sector and the fact that most programmes operated by these MFIs differ from one institution to another, because they are either new innovation or modifications, developing and maintaining information systems for them is highly demanding and dynamic. Systems developed at one time become irrelevant over time and require replacement. With lack or limited long-term strategy on the information systems among the MFIs, they get caught up by fast growth in operations and tend to deal with crisis.

(f) User Related Causes

Inability of users to specify their information needs fully had led to provision of partial solutions to their MFI. Since most users had limited knowledge on information systems, defining information needs was inadequately done. The situation was made worse by the fact that most MFI could not afford to hire and maintain high-level IT personnel.

Inadequate training and non-involvement of users in systems development was revealed by the study as major contributing factor to systems failure after implementation. In most cases, the users felt ignored and incompetent to operate the new systems and slowly lose interest in them withdrawing back to what they are used to.

Since users were poorly trained on the use and the maintenance of the systems, more often, they did not know what to do when their system developed a problem. The situation was even worsened by the fact that most software applications in use had been developed by vendors who were not easily accessible for technical support and their system documentation was poor. In many cases the MFIs do not utilize the systems to their full capacity because they lack the know-how.

(g) *Financial related causes*

For certain information systems are expensive to acquire and maintain. It was revealed that both the computerized and non-computerized MFIs had identified financial constraint as the single most restraining factor to acquisition of state-of-the-art technology. It seems that there was a conflict between the mission of poverty alleviation in which these MFIs were set to achieve and spending money on projects that are not directly related to it. Most funding by donors was restricted to the purpose (for example for lending) and most often, the managers of these MFI found it difficult to justify a request for IT project.

(f) *Other causes*

Lack of reliable telecommunication systems (Fruman & Paxton, 1998; Nyambene 1995) was still a major limiting factor to implementation of computer networks among the MFIs. As MFIs grow, they establish branches or field offices where most of the transactions take place. Data is then moved to head office for processing and information sent back to these offices for action. This process is tiresome because it was almost impossible to operate a WAN. The alternative to this would be backing up data into diskettes and sending them to their consolidating offices (branches), which was also not reliable and is risky due to possibilities of damage, loss and delay.

5.2 Limitations of the Study

In this study, some MFIs could not be reached because they either operated in rural areas or their current addresses could not be obtained. The alternative was to travel to visit their offices. This meant that considerable time and money was to be spent. The researcher was had limited time and financial resources that could not meet this travelling.

5.3 Suggestions For Further Study

This study was an exploratory one. It has exposed various issues affecting the information systems in the sector. Further in-depth studies should be conducted to draw out relationships between various factors identified as causes of failure of information systems.

In particular, a study should be done to investigate the reasons why management seem to play a sluggish role in seeking IT solutions and why elaborate IT plans have not been developed. More important, a study should be carried out to identify possible solutions to enable elevate the problems facing the sector.

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APPENDICES

QUESTIONNAIRE

Challenges of Information Systems among MFIs in Kenya

This survey is part of a research project to understand better the major challenges of information systems that face microfinance institutions in Kenya. Please feel free to share your experience by answering questions below.

I hope you will find completing the questionnaire enjoyable, and thank you for taking your time for me. If you have any queries or you would like further information about this research please call me on 02-573165/6 or e-mail me at ndulu@insightkenya.com.

PART I: Institutional Details

1. Tick from the list below, the classification that best suits your organisation.

Commercial Bank Financial NGO Parastatal Other (specify) _____

2. When did your organisation start offering microfinance services (lending to MSEs)?
Year _____.

3. What method of lending do you use? Group Individual

4. How many clients does your organisation have? Tick the appropriate range.

Below 1,000 clients 1

1,000 to 5,000 clients 2

5,001 to 10,000 clients 3

Over 10,000 clients 4

5. (i) Does your organisation have a position of a chief information officer or its equivalent? Tick as appropriate.

YES

NO

(ii) If NO to 1 above, what is the highest position held by the person in charge of IT or MIS. _____.

(iii) To whom does he/she report? _____.

6. How many employees does your organization have? _____

7. Does your organization operate a computerized information system?

YES

NO

PART II: Level of Computerization and Performance

If the answer is YES in Q 7 above, answer questions 8 to 28 and if NO then got to question 29.

8. How many computers does your organization have? Tick in the appropriate box that matches the correct answer.

None _____	<input type="checkbox"/>	1
1 to 5	<input type="checkbox"/>	2
6 to 10	<input type="checkbox"/>	3
11 to 20	<input type="checkbox"/>	4
Over 20	<input type="checkbox"/>	5

9. Tick from the list of operations below that have been computerised in your organisation:

Client screening and intake	<input type="checkbox"/>	1
Loan processing and disbursement	<input type="checkbox"/>	2
Loan repayments and monitoring (tracking)	<input type="checkbox"/>	3
Loan reporting	<input type="checkbox"/>	4
Accounting activities (general ledger)	<input type="checkbox"/>	5

10. Tick the types of software applications that are in use in your organisation and indicate against each when you installed or the last time you upgraded them.

		Installed	Upgraded
Integrated system (general ledger and loan tracking)	<input type="checkbox"/> 1	Year _____	Year _____
Separate general ledger (accounting package)	<input type="checkbox"/> 2	Year _____	
Separate Loan tracking system	<input type="checkbox"/> 3	Year _____	Year _____
Word-processing	<input type="checkbox"/> 4	Year _____	Year _____

Spreadsheets 5 Year _____ Year _____

Database systems 6 Year _____ Year _____

11. Tick from the list below the type of Networks that are in use in your organization and indicate the year it was installed.

Local area network 1 Year _____

Wide area network 2 Year _____

None 3

12. How many software applications specialised for your operations have you tried in your organisation?

None 1

One 2

Two 3

Three 4

More than Three 5

13. When did you install the current (latest) hardware? Year _____

14. Did you develop a list of expected performance and benefits for the new system at the design stage?

YES NO

15. Have you had a review or evaluation of the performance of the current systems since implementation?

YES NO

16. Suppose you were to review your information systems now based on the following parameters, tick the appropriate performance level you would give using the scale provided.

	Parameter (aspect) Measured	Scale				
		Very good	Good	Average	Poor	Very poor
1	Helping the organization to attain its overall mission					
2	Supporting specific goals of various areas and departments of the organization					
3	Adequacy of the hardware and software to handle current and future needs					
4	Adequacy of the database storage space to handle the current and future needs					
5	Sufficiency of the MIS/IT personnel to perform current and projected processing tasks					
6	Acceptance of rules and procedures for use and access of information in the organization					
7	Adequacy of the rules and procedures in protecting against errors, invasion of privacy, fraud, and other potential problems					
8	Adequacy of training programs and provision for both users and IT personnel					
9	Adequacy of information systems budget					
10	Reliability of the systems					
11	Efficiency of the system to produce outputs from the inputs and resources available					
12	Time taken to respond to users during peak processing times					
13	Simplicity to operate and maintain the systems					
14	Adequacy of the systems documentation					

17. From your experience, indicate to what extent you agree or disagree with the following statements about information systems in your organisation.

	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Poor identification of our information needs has been the cause of the failure of the systems implemented.					
2	Systems that have been implemented do not meet the expectations of the users.					
3	The design of the systems screens and user interface does not appeal to the users.					
4	I think an evaluation of the possible alternative systems was not done properly hence the wrong choice was done.					
5	I think inadequate testing of our systems led to their crash after implementation.					
6	Limited systems knowledge by those making decision on them led to wrong choice.					
7	There are no suitable software applications in the market for MFIs					
8	The software sophistication has led to rejection by our users.					
9	Limited technical skills amongst the IT/MIS staff has caused poor internal support resulting to systems failure.					

	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
10	If post-implementation review was done, some shortcomings of the system could have been detected hence averting the systems failure.					
11	Lack of authority by the MIS/IT staff over the implementation and maintenance of the system has led to their failure.					
12	The reason why our systems have failed to meet our users needs is limited understanding of the operations by the IT/MIS staff.					
13	Financial constraints have forced us not to implement our IT plan partially hence the problems we are undergoing.					
14	I think the problem we have in our organization is that our managers do not want to use computer to get the information they want.					
15	Our managers prefer printed reports than getting them online from the computers.					
16	Our decision making process takes too long that we cannot cope with the rapid changes in technology hence our systems cannot adequately serve us.					
17	Our hardware is not compatible with the software leading to systems breakdown.					
18	A committee handles IT/MIS issues where the Chief Executive Officer is the chairperson.					
19	IT/MIS issues are only dealt by the IT department because the top management feels that these issues require specialist skills.					

	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
20	The users are reluctant to use the system because they were not involved in the development and implementation.					
21	Poor user training is the main source of the confusion and lack of confidence on the system.					
22	The fast changing operational policies and procedures are cause instability in our systems.					
23	I think the reason why our systems do not work is that we lack an IT strategy in our organization.					
24	The top management has not embraced IT as a business solution and as a result they do not given it the attention it requires.					
25	Internal politics between departments over the control of information has caused our systems to fail.					
26	The rapid growth of our operations has been the cause of our systems crash.					
27	The poor telecommunication systems have been a constraint in distributing data and information in our organization.					
28	Unwillingness to share information across departments has reduced the usefulness of our systems.					
29	I think, in most cases, the main cause of systems failure is the "soft" part of information systems (i.e., management support, user involvement, policies and procedures etc.).					

PART III: Systems Development Cycle

Please comment on how the following stages of information systems development were handled in your organisation.

18. (i) Was there a preliminary study to examine the status of the existing system before you bought or developed the current system? YES NO

(ii) If YES, comment on how the study was conducted.

19. (i) Was there a feasibility study to evaluate various alternative solutions to the information problem(s) before you acquired the current one?

YES NO

(ii) If YES, how was it carried out?

20. (i) Did your organisation perform systems design to specify the kind of hardware, software, database, personnel and user interface it required?

YES NO

(ii) If YES, comment on how it was done?

(iii) Who did the systems design? Consultant In-house

21. (i) Did your organization buy or develop the systems in use? Tick the appropriate answer

Buy Develop

(ii) Why did you choose this option?

(iii) If the software was bought, comment on level of customization that was done on it.

22. (i) Did you buy all your hardware from the same vendor?

YES NO

(ii) Were software-hardware compatibility checked?

YES NO

23. Which system changeover method did you use in your organization?

24. Briefly comment on the users were involved in the development of the current systems.

25. (i) Was training provided to the users?

YES NO

(ii) Do you think this was adequate?

26. Comment on the systems documentation (technical, operational and training).

27. Comment on the systems maintenance arrangements.

28. List, in order of severity, the challenges that face you in managing your information systems in your organization.

- i. _____
- ii. _____
- iii. _____
- iv. _____
- v. _____
- vi. _____
- vii. _____

PART IV: Factors Inhibiting Use of Computers

29. List, in brief, the reasons why you have not installed a computer-based information system.

- i) _____
- ii) _____
- iii) _____
- iv) _____

COVERING LETTER

Wednesday, 19 July 2000

The MIS/IT Manager

Dear Sir/Madam:

Re: Filling of Questionnaire

My name is John Kimuli Ndulu, a postgraduate student at the University of Nairobi. I am undertaking a research project as part of the academic programme. The focus of my research is to determine the causes of information systems failure among microfinance institutions in Kenya.

I highly appreciate your experience in the sector and systems implementation and I kindly request you to share it with me through this questionnaire.

The results of this research will be for academic purpose only. However, the findings of this research can be availed to you upon request. The information provided shall be treated with utmost confidentiality.

WHEN YOU HAVE COMPLETED THE QUESTIONNAIRE PLEASE ENCLOSE IT IN THE SAME ENVELOPE SOMEBODY WILL COME TO PICK IT FROM YOUR OFFICE.

If you have any queries or you would like further information about this project please call me on 02-573165/6 or e-mail me at ndulu@insightkenya.com

Thank you in advance for filling this questionnaire.

John Kimuli Ndulu

LIST OF MICROFINANCE INSTITUTIONS

MFIs Included in the Sample

1. SMEP
P.O. Box 64063, Nairobi
Kirichwa Rd, Kilimani
Tel: 570162/7
2. Faulu Kenya Ltd.
Off Muthangari Road
P.O. Box 60240, Nairobi
Tel: 577290/572183/4
3. World Vision (Kadet)
P o Box 1676-00200 Nairobi
Tel: 567343/572835
4. K-rep Bank
P.O. Box 25363, Nairobi
Tel: 570554/570551/31
5. K-rep Development Agencies
P.O. Box 39312 Nairobi
Tel: 571511
6. Bimas (Business initiatives & Management)
Embu Motors Building Opposite Consolidated Bank
P.O. Box
Tel: 068 – 20645, Fax: 068-20573
7. Ecumenical Church Loan Fund (Eclof) - Kenya
Ufungamano Hse
P.O. Box 34889
Tel: 3745055
8. Wedco (Care)
P.O. Box 6711 Kisumu
Tel: 057-21211/44724
9. Ebony Sacco
P O Box Nakuru
Tel: 037-216061
10. AREP
P.O Box
Tel: 2711768
11. Save the Children
P.O. Box 39664 Parklands

Dik Dik Grds, Mandera Rd
Tel: 4347148/575084

12. Koping Organization of Kenya
Off Magadi Rd,
Tel: 891609/891956/570754
13. PCEA Jitegemee Credit Scheme
KCB Plaza, Jogoo Road, 2nd floor, office no. A/2c
P.O. Box 46514 Nairobi
Tel: 535866
14. Equity Building Society
Fourway Towers Ground, Floor, Muindi Mbingu Street
P o Box 75104 –00200
Tel: 330434/33,334265
15. Kenya Small Traders & Entrepreneurs Society (KSTES)
Old Nation House, Kilome Road,
P O Box Nairobi 12454
Tel: 331103/245984
16. Catholic Diocese of Embu
P.O. Box 884
Tel: 0161 - 20638
17. Likipia Rural Development Programme
P.O. Box 144, Nanyuki
Tel: 22673
18. Catholic Diocese of Kitui
P.O. Box 300 Kitui
Tel:044-22855/22621/22899
044-22675
19. Catholic Relief Service – Kenya
Rank Xerox House Westlands
P.O. Box 49675 Nairobi.
Tel: 3741356/3741355/3750567
20. WEEC
P.O. Box 52529 Nairobi
Tel:045-25279/25192
21. WAC (Dandora Catholic Church)
P.O. Box 58078 Nairobi
Tel: 787831

22. Christian Children Fund
P O Box 14038, Nairobi
Tel: 444890/3, 444428/440232
23. Adventist Development and Relief Agency (ADRA)
P O Box 42276, Nairobi
Tel: 566013
24. Action Aid Kenya
P O Box 42814, Nairobi
Tel: 799989, 4440440/4/9
25. Improve Your Business (IYB)
P O Box 40304
Tel:
26. SAGA Thrift and Enterprise Promotion Limited
P O Box 19414, Kisumu
Tel:
27. Small Enterprise Finance Company (SEFCO)
P O Box 34045 Nairobi
Tel: 2726026
28. Undugu Society of Kenya
P O Box 40417, Nairobi
Tel: 552211
29. Pride Africa
Parklands Rd
Tel: 3749521/3752952
30. Kenya women Finance Trust (KWFT)
P.O. Box 55919 Nairobi
Tel: 2712903/712823/712829
31. Family Finance Building Society
Fourway Towers Muindi Mbingu St.
Tel: 337231/332483/335003/341229
32. Young Women Christian Association (YMCA)
P.O. Box 40710, Nairobi
Tel: 2724789, 27246699
33. CENT Microfinance Ltd
P.O. Box 2762, Kisumu
Tel:

34. Initiative of the Marianists to Assist the Needy to be Independent (AMANI)
P.O. Box 50504, Nairobi
Tel: 761699
35. Kenya Gatsby Charitable Trust
Electricity Hse, Harambee Ave.,
P.O. Box 44817
Tel: 212088
36. Pride Ltd Kenya
Kanyiri Building, 2nd Floor , Workshop Rd
P.O. Box Thika
Tel:0151 - 30685
37. Kenya Organization of Micro Small and Medium Enterprises (KOSME)
New Accra Hse, Tom Mboya st,
P.O. Box 50982, Nairobi
Tel: 222192

MFIs Not Included in the Sample

38. Ministry of Local Government, Joint Loan Board Scheme
P.O. Box
Tel:
39. Memonite
P. O. Box
Tel:
40. Vintage
P.O. Box
Tel:
41. Catholic Diocese of Machakos
P.O. Box
Tel:
42. CPK Diocese of Maseno South
P.O. Box , Kisumu
Tel:
43. Christian Industrial Training Centres
P.O. Box 72935
Tel: 762485
44. CPK Diocese of Eldoret
P.O. Box 3404, Eldoret
Tel: 31120/62784/5