

## **Management Information Systems Challenge to Regulation Compliance by Deposit Taking Savings and Credit Co-Operative Societies in Kenya**

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**DOI Link:** <http://dx.doi.org/10.6007/IJARBSS/v5-i3/1510>

**Published Date:** 07 March 2015

### **Abstract**

The aim of the study was to investigate the challenges to regulation compliance by Deposit Taking Savings and Credit Co-operative Societies (D.T.S) in Kenya. Further, since the D.T.S are ranked according to size, the study analysed the compliance level in these groupings. The objective was to establish the relationship between management information systems and regulation compliance, and whether SACCO size moderated this relationship. The study recommends that SACCOs should have dynamic MIS system with regular upgrades. They should also consider integrating their BOSA and FOSA banking software with the SASRA reporting portal. Of importance as well is for SACCOs to carry out regular MIS training of staff. The study further recommends that SACCOs should benchmark with other financial

institutions. To fill in the gaps that exist within the organization the study advises SACCOs to have in-house dedicated IT departments and also establish operational MIS policies. Lastly the study recommends that transparent procuring from reputable firms is required in SACCOs and where possible the regulator needs to accredit software vendors for the SACCOs. A sample of 139 respondents was selected using stratified random sampling but only 108 respondents were interviewed using the questionnaire method. The major finding from the study was that there is a relationship between management information systems and regulation compliance. The study further established that while management information systems influences regulation compliance, SACCO size has a significant moderating influence in this relationship.

**Keywords:** Management Information Systems, Regulation Compliance, SACCO Size, Logistic Regression Model, Deposit Taking SACCOs

### **1.0 Introduction**

It is envisaged that the Deposit Taking Savings and Credit Co-operative Societies (D.T.S) have various challenges to regulation compliance. This study investigated management information system as a challenge to regulation compliance. Savings and Credit Co-operative Societies (SACCOs) have a significant role in empowering their members Socio-Economic Status all over the world. In Western Europe there are around 11,000 local and regional saving and credit cooperatives banks, with over 56,000 outlets, a 33 million strong membership and a staff of more than 400,000. Their market share is 17 percent of savings, ranking third after the commercial and savings banks (Shaw, 2006). Regionally at least 28 countries in Africa have established Credit Unions (SACCOL, 2014). Africa has a membership of 16 million making it third in membership size after North America and Asia which have 105 million and 41 million respectively. Africa has a total of 20,831 Credit Unions or 37% and is second only to Asia that has 21,934 Credit Unions or 39% (WOCCU, 2012b). The Kenyan sector is by far the largest SACCO sector in Africa with several of Kenya's largest SACCOs having capital large enough to rival banks (Owen, 2007). The total number of SACCOs in Kenya stood over 6,000 as at December 2013, this comprised of over 5,785 non-D.T.S and 215 D.T.S. (SACCO, 2013). The D.T.S are licensed and regulated by the SACCO Societies and Regulatory Authority (SASRA) while non-D.T.S are supervised by the Commissioner for Co-operatives (SASRA, 2012).

Management Information System (MIS) is a system that manages information, collects, processes, stores, analyses and distributes it to users for a specific purpose or objective. MIS are distinct from other information systems in that they are designed to be used to analyse and facilitate strategic and operational activities in the organisation (O'Brien, 1999). A MIS thus provides information that is needed to manage organisations efficiently and effectively. MIS are not only computer systems these systems encompass three primary components: technology, people (individuals, groups, or organisations), and data/information for decision making. According to Turban, Volonino, and Wood (2013) there are six components of an information system; hardware, software, data, network, procedures and people.

### **2.0 Statement of the Problem**

The Kenyan SACCO sector is the largest in Africa and the seventh worldwide (Ademba, 2010). Kenya contributes up to 62% of total savings mobilised and 69% of loans advanced by SACCOs in Africa (WOCCU, 2012b). The Kenyan SACCO sector contributes 45% of the country's Gross Domestic Product (Ondieki, Okioga, Okwena &, Onsase, 2011). The major innovation in the

development of the sector in Kenya was the development of D.T.S. offering banking services (Owen, 2007). As at December 31, 2013, out of the 215 D.T.S in Kenya, 135 had fully complied and were licensed by SASRA, the D.T.S that were yet to be licensed had also embarked on aggressive strategies to fulfil the SASRA requirements (SACCO, 2013).

Limited empirical literature with various research gaps exists in this area as the regulations came in force in the year 2010. The study by Deller, Hoyt, Hueth, and Sundaram-Stukel (2014) on the economic impact of cooperatives in the US did not specify whether it targeted D.T.S or non D.T.S. The studies by Macharia (2013), Ndung'u (2013), Ngaira (2011), Odhiambo (2011), Olando (2013) and Owino (2011) focused on sampling in only one region of Kenya. Okwee (2011) focused on only one region in Uganda, while the study by Magali (2014) in Tanzania concentrated on only three regions. All these studies were thus limited in scope. The challenges to successful implementation of the new regulatory framework also differ significantly because of SACCO size but these studies did not consider its effect. This is despite the fact that according to SACCO (2013) D.T.S are ranked according to asset size. This study thus seeks to provide more insight into the challenges to regulation compliance by D.T.S in Kenya.

### **3.0 Objectives of the Study**

- i. The main objective of this study was to assess the challenges to regulation compliance by Deposit Taking Savings and Credit Co-operative Societies in Kenya
- ii. The specific objective of the study was to determine how management information system affects compliance of SASRA regulations in Kenya.

### **4.0 Justification of the Study**

The study will be significant to the management teams including the SACCOs Board of Directors (B.O.D) and Senior Staff as it will provide guidance on issues affecting SASRA compliance levels. The Government on the other hand will find this study useful as it seeks to attain a 10% economic growth rate in line with Kenya being an industrialising and middle income country by the year 2030. This can be achieved through the alignment of SACCO Societies Act 2008 to the Constitution of Kenya 2010 and Vision 2030. This study will thus provide the rationalisation of the SACCO sector and unlock the potential of SACCOs in increasing financial access in an effective and cost efficient manner.

### **5.0 Limitations of the Study**

The study will involve 215 D.T.S in Kenya. It is important to note that the D.T.S target lower income earners and are retail based. This is in contrast to banks and micro financial institutions that are wholesale based and target higher income earners. D.T.S thus have the unique combination of providing retail services to the low income population and having a large coverage. Generalisation of these findings to other financial institutions such as banks and micro- financial institutions shall therefore be difficult.

### **6.0 Literature Review**

A conceptual framework is a concise description of the phenomena under study accompanied by graphic or visual depiction of the major variables of the study (Mugenda, 2008). According to Dodge (2009) an independent variable is that which is presumed to affect or determine a dependent variable. It can be changed as required, and its values do not represent a problem

requiring explanation in an analysis, but are simply taken as given. The dependent variable in contrast responds to the independent variable (Everitt, 2009). It is what you measure in the experiment and what is affected during the experiment. The dependent variable in this study is regulatory compliance while the independent variable is management information system. The study's conceptual framework is illustrated in Figure 1.0.

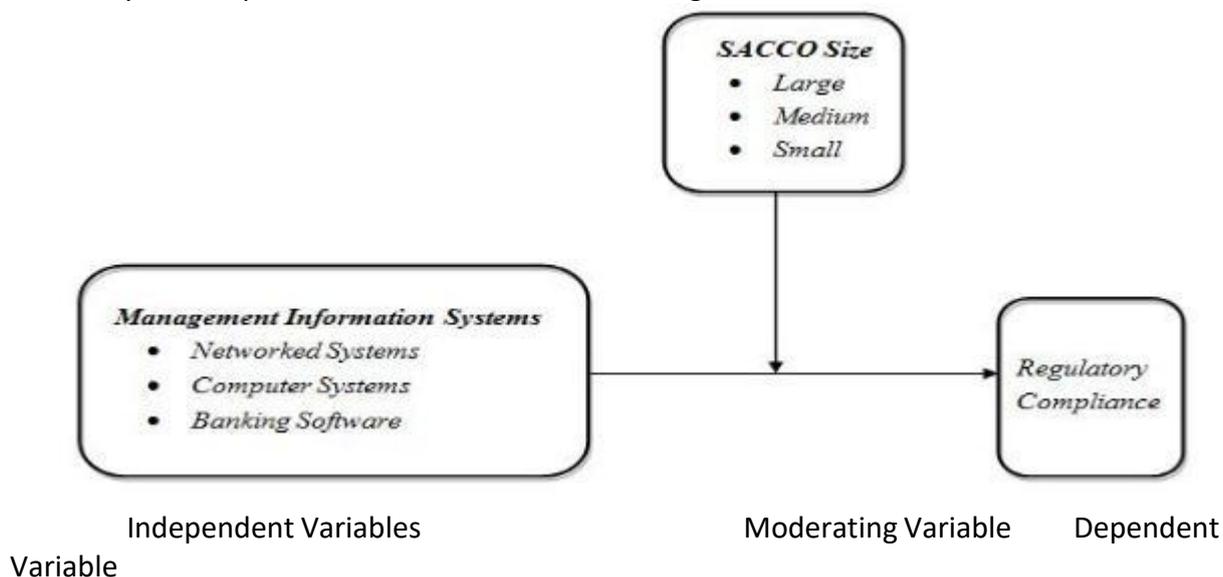


Figure 1.0: Conceptual Framework

According to Owen (2007) lack of good computerised systems is a major constraint in efficient operations. In its absence, it is very difficult to track loan delinquencies, aging, provisioning, write offs, and ensure that accountants and financial managers apply business rules consistently. Furthermore, most SACCOs have manual or simple spreadsheet-based accounting and MIS systems. Even in the SACCOs which have computerised systems, these are not integrated between front and back office. The exceptions are some of the top SACCOs that are using off the shelf software and some others that have developed customised systems. A key factor constraining the adoption of computerised systems is the limited capacity of SACCO boards and managements. The weakness of the underlying communications infrastructure is also a factor constraining adoption of networked systems. Makori (2013) noted that an inadequate ICT system and underdeveloped MIS is a challenge facing regulatory compliance in SACCOs.

This is a significant challenge for the sector, given that large SACCOs have several thousand clients and a wide variety of products. New products require sophisticated cash flow loan management systems that allow staff and managers to generate the necessary types of reports for proper loan monitoring and recovery management. This unfortunately is lacking in most SACCOs. The operating regulations and prudential standards define new ways of doing business thus requiring heavy investments by the SACCOs in upgrading the existing management information systems for effective compliance (SASRA, 2012). The pace of the upgrade is however slow, importantly as well is that data generated by SACCOs is not entirely without integrity issues on its accuracy and consistency. Hence from the study the research would hypothesise the following.

H<sub>0</sub>1: Management information system has insignificant influence on compliance of SASRA regulations.

### **7.0 Research Methodology**

The study adopted a positivist research paradigm which advocates for the application of natural sciences to the study of social reality. Positivism is characterised by a belief in theory before research and statistical justification of conclusions from empirically testable hypothesis (Cooper & Schindler, 2011). The study conducted a pilot study to test for reliability and validity of the instruments. Reliability test was performed using the Cronbach's Alpha. Validity of data collection instruments was confirmed by inquiring from the respondents on whether they viewed the measure of regulation, as either full compliant or non compliant, adequate to evaluate regulation compliance. In addition experts in the area of study confirmed the validity of the data collection instruments as being adequate. Relevance of carrying out factor analysis was conducted using a combination of the Kaiser- Meyer- Olkin (KMO) Measure of Sampling Adequacy and the Bartlett's test of Sphericity.

Further, a combination of the Kaiser eigenvalue greater than one rule, Scree Test and the Monte Carlo PCA for Parallel Analysis was employed which determined the components to be retained and subsequently, communalities were derived. A full study that targeted 139 respondents was then conducted. To confirm the usefulness of the logistic regression model a classification accuracy rate was computed and compared with the proportional by chance accuracy rate. The Cox & Snell R Square and the Nagelkerke R Square further supported the usefulness by showing that the relationship between the predictors and the prediction. In addition the Hosmer and Lemeshow good of fit test was done to find the level of non-significance and that the model's estimates fit the data at acceptable levels.

### **8.0 Population**

Population is the total collection of elements about which inference is made to all possible cases which are of interest in the study (Sekeran & Bougie, 2010). The population of this study were the 215 D.T.S operating in Kenya. According to SACCO (2013) the D.T.S accounted for 78 percent of the total SACCOs turnover as at December 2013. In addition, the research stratified the population of D.T.S according to Counties.

Kombo & Tromp (2009) define the target population as a group of individuals, objects or items from which samples are taken for measurement. Target population is the totality of cases conforming to the designated specifications as required by the study. In this study the target population were the 215 D.T.S in Kenya. The sampling frame is a list of all those within a population who can be sampled, and may include individuals, households or institutions (Sarndal, Swensson, and Wretman, 2013). In this study the sampling frame consisted of the list of D.T.S per County.

### **9.0 Data Collection Instruments**

Cooper and Schindler (2011) explain that the questions in a study are directly related to the research questions. Bryman (2012) further explains that the number of closed- ended questions in any survey exceeds the number of open- ended questions. Questionnaires are preferred because according to Dempsey (2003) they are effective data collection instruments that allow respondents to give much of their opinion pertaining to the researched problem. This study primarily used questionnaires that were administered by mailed questionnaires or the drop and later pick method. Additional secondary sources of collecting evidence were documents, journals and archival records. To encourage the richness and

depth required for this research, the target audience was only the Chief Executive Officer or General Manager.

### **10.0 Pilot Study**

A pilot study can reveal deficiencies in the design of a proposed experiment or procedure and these can then be addressed before time and resources are expended on large scale studies (Golafshani, 2003). A pilot study was undertaken in which the procedures used in pre-testing the questionnaire were identical to those used during the actual study or data collection. In this study the questionnaire was tested on 10% of the target population of 215 D.T.S. This translated to 22 D.T.S and 22 Respondents. The D.T.S were chosen from the stratified target population purely on random basis.

### **11.0 Findings from the Study**

#### **11.1 Response Rate**

This study targeted a population of 215 D.T.S in which a sample of 139 D.T.S all operating in Kenya as at December 31, 2013 was derived. The duration for administering the questionnaire was one month. The questionnaire was administered to all sampled C.E.Os/ GMs of Deposit Taking SACCOs in Kenya totalling to 139, of which 108 were returned. This represented a response rate of 77.7%. The response rate is considered adequate given the recommendations by Rugg and Petre (2007) who suggest a response rate of above 50% as adequate for analysis.

#### **11.2 Sample Demographics**

The study found that most of the respondents had worked in the SACCO industry for 5 years (13.9%). Cumulatively those that had worked for five years or less were at 26.9% of the total respondents. Majority of respondents (50.9%) had worked for at most 10 years. The findings of this study therefore agrees with Mbui (2010) who found that majority of respondents had worked for between three to twenty years. This finding implies that the respondents were well versed on the SACCO industry issues. It also suggests that the respondents are well placed to respond to the data collection instrument by virtue of the knowledge they attained from their years accumulated in the industry.

The study found that majority of the respondents (27.8%) had senior management experience of over 12 years. However, majority of cumulative respondents (60.2%) had at most nine years of senior management experience. This implies that only 39.8% of respondents had senior management experience of more than nine years. This agrees with Muigai (2013) findings that all respondents had worked in senior positions for at least four years. This however differs with Kiama (2014) findings that most of the respondent had between 6 to 10 years. The findings of this study suggest that the respondents are knowledgeable on the subject matter of the research and thus capable to help in the realization of the research objectives. The study further looked at the gender as compared to the number of years in senior management. The findings showed that shows although all genders were to be found in the selected scope of years of senior management experience, the number of female was less than males. This finding supports the earlier finding that females are disenfranchised in SACCO management.

### **11.3 Study Variable**

The study looked at three indicators of Management Information Systems. These were; Networked systems, Computer systems and Banking software. Respondents were asked various questions to operationalise the constructs. The results are presented as follows.

#### **11.3.1 Networked Systems**

The study posed to the respondents as to whether they consider the use of mobile services important in ensuring regulation compliance. 83.1% of respondents who were fully compliant answered yes while 89.2% of those non-compliant answered no. Cumulatively 41.7% of the total respondents answered no while 58.3% answered yes. This agrees with SACCO (2013) that found the D.T.S continue to adopt technology delivery channels including automated teller machines and mobile financial services. It also supports SASCCO (2010) view that adopting ICT and in particular, the use of mobile phones in mobilising the markets, monitoring prices on the market, money transfer and payments of bills and services is an effective tool in improving operation and services in SACCOs. Use of mobile services is therefore a good measure of networked systems in this study. The study posed to the respondents as to whether they thought that the existence of Local Area Networks affects regulation compliance. 74.6% of respondents who were fully compliant answered yes while 89.2% of those non-compliant answered no. Cumulatively 47.2% of the total respondents answered no while 52.8% answered yes. This agrees with Ademba (2012b) finding that low adoption of information technologies affects regulation compliance. It also agrees with Makori (2013) finding that to a large extent inadequate ICT system had an effect on the successful implementation of a good management system. The finding means that for this study the existence of local area network is a good indicator of networked systems. The study posed to the respondents as to whether in their opinion the use of internet was important in ensuring regulation compliance. 83.1% of respondents who were fully compliant answered yes while 86.5% of those non-compliant answered no. Cumulatively 40.7% of the total respondents answered no while 59.3% answered yes. This agrees with Ademba (2012a) who found that the need to keep pace with the information technology is an external challenge affecting African SACCOs. It also supports Owen (2007) view that the weakness of the underlying communications infrastructure is also a factor constraining adoption of networked systems. It further agrees with Badaso (2014) finding that in order to meet today's operating challenges, there is need to turn to ICT to enhance services through implementing scalable communication infrastructures such as wide area networks (WANs) that accommodates provision of broadband internet access for online services and internal collaboration and handling administrative data. This means that the use of internet is a good measure of networked systems in this study.

#### **11.3.2 Computer Systems**

The second indicator of management information systems was computer systems. The study postulated to the respondents as to whether they consider use of computers with Windows 7 or above as affecting regulation compliance. 76.1% of respondents who were fully compliant answered yes while 75.7% of those non-compliant answered no. Cumulatively 41.7% of the total respondents answered no while 58.3% answered yes. This agrees with Ademba (2012b) who found that the low adoption of computer technologies affects regulation compliance and Waweru (2011) finding that the MIS challenge facing SACCOs in Nakuru is due to few SACCOs being computerised and having personnel with no formal

training. The finding means that use of computer systems is a good indicator of networked systems. The study postulated to the respondents as to whether they think existence of ICT policies and procedures affects regulation compliance. The results are displayed in Figure 4.15 as follows. 85.9% of respondents who were fully compliant answered yes while 73.0% of those non-compliant answered no. Cumulatively 34.3% of the total respondents answered no while 65.7% answered yes. These findings agree with Ademba (2012a) who found that insufficient technological development is an internal challenge affecting African SACCOs. It further agrees with Ondieki, et.al, (2011) who observed that among the major challenges inherent in the cooperative movement in Kenya is ICT infrastructure weakness. This means that for this study existence of ICT policies and procedures is a good measure of management information systems. The study further postulated to the respondents as to whether in their opinion the prevalence of manual systems affects regulation compliance. 81.7% of respondents who were fully compliant answered yes while 73.0% of those non-compliant answered no. Cumulatively 37.0% of the total respondents answered no while 63.0% answered yes. This agrees with Makori (2013) view that automation of SACCOs is a need that must be continually addressed. And Owen (2007) who found that most SACCOs have manual or simple spreadsheet based accounting and MIS systems. For this study this means that the prevalence of manual systems is a good measure of computer systems.

### **11.3.3 Banking Software**

The third indicator of management information systems was banking software. The study postulated to the respondents as to whether they thought the use of customised banking systems affected regulation compliance. 80.3% of respondents who were fully compliant answered yes while 67.6% of those non-compliant answered no. Cumulatively 36.1% of the total respondents answered no while 63.9% answered yes. This supports Owen (2007) finding that some of the top SACCOs are using developed customized systems or modular banking software. This means that the use of customised banking systems is a good measure of banking software. The study further postulated to the respondents as to whether the integration of FOSA & BOSA software affects regulation compliance. 67.6% of respondents who were fully compliant answered yes while 73.0% of those non-compliant answered no. Cumulatively 46.3% of the total respondents answered no while 53.7% answered yes. This supports SACCO (2013) finding that by December 2013, 11 DTS had integrated mobile financial services to their core SACCO systems to retain members and ensure convenience access to services at all times. It further supports Owen (2007) finding that even in the SACCOs which have computerised systems, these are not always integrated between front and back office. This means that integration of FOSA and BOSA software is a good measure of banking software.

### **11.3.4 SACCO Size**

The study looked at SACCO size as the moderating variable. SACCO size was determined by the asset base and as such was categorised into large, medium and small. Respondents were asked various questions regarding SACCO size. The study asked the respondents whether in their view they think size of the SACCO affects regulation compliance. 97.2% of respondents who were fully compliant answered yes while 86.5% of those non-compliant answered no. Cumulatively 31.5% of the total respondents answered no while 68.5% answered yes. This agrees with Makori (2013) who noted that challenges to the successful implementation of the new regulatory framework differ significantly both because of the size and diversity of the

SACCOs. This means that the size of SACCO is a good measure of SACCO size in this study. The study asked the respondents whether in their opinion they classified their SACCOs as large, medium or small. 57% (61) of respondents classified their SACCOs as small, 31% (34) as medium and 12% (13) as large. This supports SACCO (2013) that found out of 135 D.T.S, 11% were large, 30% medium and 59% small. It also supports Owen (2007) finding that 20% of the SACCOs were large, 30% medium and 50% small. This means that for this study the sample represented the population well.

#### **11.4 Summary of the Findings**

The study sought to investigate the state of management information systems in D.T.S and found that D.T.S considered management information systems as significantly affecting compliance of SASRA regulations in Kenya. The respondents scored highly on the indicators of management information systems. Specifically, networked systems, computer systems and banking software were found to be good indicators of management information systems. The management information systems value of Exp(B) was 13.671 and implies that a one unit increase in management information system increased the odds by approximately thirteen and a three quarter times that survey respondents belong to the fully compliant group.

The study further established that while management information systems influences regulation compliance, SACCO size has a significant moderating influence in this relationship. This was demonstrated by the increase in the value of both Cox & Snell and Nagelkerke  $R^2$  at the introduction of the SACCO size in the moderated logistic regression analysis done in order to establish the moderating influence of SACCO size in the relationship between the regulation compliance and management information system.

#### **12.0 Recommendations of the Study**

On management information systems, the study recommends that SACCOs should have dynamic MIS system with regular upgrades. They should also consider integrating their BOSA and FOSA banking software with the SASRA reporting portal. Of importance as well is for SACCOs to carry out regular MIS training of staff. The study further recommends that SACCOs should benchmark with other financial institutions. To fill in the gaps that exist within the organisation the study advises SACCOs to have in-house dedicated IT departments and also establish operational MIS policies. Lastly the study recommends that transparent procuring from reputable firms is required in SACCOs and where possible the regulator needs to accredit software vendors for the SACCOs. The study recommends that the above be implemented in order to improve the existing management information systems and hence increase the regulation compliance levels within the SACCO industry.

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