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ABSTRACT

The study established the effect of risk management agility on performance of savings and credit co-operatives in Kenya. The study used explanatory cross-sectional design. The study employed stratified random sampling technique in coming up with a sample size of 204 respondents from a total of 433 of representatives of management staff working in savings and credit co-operatives in Kenya. The study concluded that there is a strong correlation coefficient between Performance of Saccos and innovativeness agility. The study concluded that there is a strong correlation coefficient between Performance of Saccos and risk management agility. The study recommends that that policy and practice for performance should be carefully evaluated and the results of that evaluation fed back into improved approaches, that human resource management should formulate and implement an active reward policy and that Sacco's need to promote a healthier relationship at all times between them and their customers.

Key terms: Agility strategy, Competition, Organizational performance, Quality Management, Risk Management, strategic Agility.

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INTRODUCTION

According to Sambamurthy, Bharadwaj and Grover (2009), there is increasing recognition that agility is an imperative for success of contemporary firms as they face intense rivalry, globalization, and time-to-market pressures. Beneficial impacts of agility are increasingly acknowledged and more empirical support emerges on the link between agility and firm competitiveness (Giachetti *et al.*, 2009; Goldsby & Stank, 2012; Sharifi & Zhang, 2011; Vokurka, Zank & Lund, 2012). Organizational agility or the ability to execute innovations and competitive moves with speed, surprise, and competitive disruption has attracted significant attention as a business capability for competing effectively in the current business environments (Sambamurthy *et al.*, 2009). Agile firms are resilient to shocks and upheavals in their business environments, adaptive to emerging opportunities, and entrepreneurial in creating new business models or significant competitive moves (Bharadwaj & Sambamurthy, 2010).

Owing to the increasing uncertainty and unpredictability in organizations, researchers in the manufacturing field are focusing on mass customization and postponement strategies, which allow more space to respond to demand changes in a flexible way (Goldsby & Stank., 2012; van Hoek *et al.*, 2011). Scholars in the field of information systems (IS) are promoting information technologies as platforms that foster agility by helping achieve time reductions and quality enhancements in product design and development (Frayret *et al.*, 2011), and by facilitating communication necessary to coordinate work activities. Scholars in knowledge management contend that knowledge management practices can enable agility (Holsapple & Jones, 2010) by providing greater or faster awareness of changes. Weill and Vitale (2012) indicates that information technologies provide superior information management capabilities, analytical decision support, and

enhanced communication, firms are able to utilize information technologies in creating new business models and competitive advantage. Sambamurthy *et al.* (2009) argue that information technology (IT) management capabilities provide a platform for firms to develop the appropriate digitized processes and knowledge systems that enhance their agility. Piccoli and Ives (2010) further propose that IT management capabilities are an important part of basis through which firms can launch and sustain performance through IT-dependent initiatives.

Building strategically agile firms is a way to manage unforeseen changes and risks faced by firms. Agility has been defined as the capability of surviving and prospering in the competitive environment of continuous and unpredictable change by reacting quickly and effectively to changing markets, driven by custom designed products and services (Brannen & Doz, 2010). Strategically agile firms utilize strategies aimed at being responsive and flexible to customer needs, while the risks of supply shortages or disruptions are hedged by pooling inventory or other capacity resources. Firms that have the capability to be responsive to the changing, diverse and unpredictable demands of customers on the front end, while minimizing the back-end risks to supply disruptions (Lee, 2012) can be seen as strategically agile. If a company disregards the importance of agility, the consequences can be disastrous.

Agility strategy is the ability to leverage value-chain-wide resources to turn on a dime, providing the right product at the right price anywhere (Roth, 2012). This kind of agility requires a company to 'transcend manufacturing boundaries' to develop 'fluid operations' (Roth, 2012). Thus, strategic agility requires a firm to metamorphose from a mechanistic working machine to knowledge factory into an organic, accelerated learning organization that produces knowledge as key by product. Hence, we

can see the emergence of knowledge as the most important organizational asset to achieve strategic agility. This is in concurrence with knowledge-based view of the firm, which contends that, the most important and strategic resource of a firm is its knowledge base (Grant, 2012).

Strategically directed agility has also been defined as change management proficiency (Dove, 2011). Change proficiency is a competency that allows an organization to apply knowledge effectively (Doz & Kosonen, 2008). A change proficient organization can accommodate eight dimensions of change efficiently. Change proficiency serves two purposes, on one hand, it ensures viability (reactive change proficiency) and on the other hand, it helps to achieve market leadership (proactive change proficiency) as it allows a firm to manage and apply knowledge effectively. Thus, strategic agility is a dynamic capability derived from knowledge generating strategies that help firms to cope better with managing change (Sambamurthy *et al.*, 2009).

The key performance indicators (KPI) in the savings and credit co-operatives industry include: client satisfaction, profitability, productivity, return on capital (ROCE) employee satisfaction, staff turnover, sickness absence, working hours and qualifications and skills among others. These KPIs helps to know whether the firm's goals are being achieved. These can be used to keep an eye on the way the business is performing. KPIs can also be used to benchmark the firm's performance against competitors. KPI is a "yardstick" by which to judge the firm's performance (Kagioglou, 2008). In this study performance was measured through use of indicators which include: profitability (return on assets), shareholders returns, market share, customer service quality and customer satisfaction, Net assets, Members' savings, Loans disbursed and Dividends paid as adopted from Kiaritha (2015).

The structure of the cooperative movement in Kenya comprises of four tiers. These include the primary societies, secondary cooperatives, tertiary cooperatives and nationwide cooperatives. The Kenya National Federation of Cooperatives (KNFC) is the only apex society in the movement. It was formed with an objective of promoting, developing, guiding, assisting and upholding ideas of the cooperative and SACCO principles. KNFC is the link between cooperatives in Kenya and the international cooperative alliance. Of special mention here is the African Confederation of Cooperative Savings and Credit Associations (ACCOSCA), which is registered under the Societies Act, Chapter 108 of the laws of Kenya, (KUSSCO, 2009).

The business environment within which the SACCOs operate has been very volatile. The competition from more liquid commercial banks, Micro Finance institutions, new entrants, money transfer services such as Mpesa and other informal financial institutions, social reforms, political anxieties, technological advancement and globalization are some of the challenges that have greatly affected the performance and growth of this sector (Gweyi, 2014; Nkuru, 2015). Bureaucratic bottlenecks and inefficiency in the administration of incentives and support facilities provided by the government discourage innovations which may lead to new products or services, as most of these SACCOS cannot afford to establish the research and development due to lack of institutional capacity development (Wanjala, 2015; Okelo, Raburu & Sirma, 2015). These changes pose serious strategic threat to existing firms and a good number are not able to survive the new turn of events i.e. those, which are still surviving have had to adopt urgent measures in response to these changes.

The SASRA Press Release (2015) indicated that the general performance of the Saccos in Kenya has been

on the decline with inadequate technical skills, both at board and management levels being identified as the key challenge. This confirms an earlier study by Kivuvo and Olweny (2014) found that the financial performance of the SACCO sector is extremely weak. In Kenya, 6,727 SACCOs were registered and employed directly 303,455 people as at December 2010 (GOK 2014). However, despite the significant government initiative, a significant 3457 (51%) of the SACCOs were not operational. This high failure rate of SACCOs continues to frustrate millennium development goals and vision 2030 objectives of increasing financial inclusion.

According to Maingi (2015) the Sacco sector has been inadequately prepared and ill equipped to effectively deal with the Sacco's problems like insufficient capital base, lack of or slow rate of Information Technology (IT) adoption, and inefficient loan pricing strategies among others. A study by WOCCU (2015) revealed that SACCOs are facing severe liquidity problems and majorities are unable to meet the demands of their clients for loans and withdrawal of savings. Ondieki *et al* (2011) contend that inadequate managerial skills and knowledge have adversely affected SACCOs in Kenya. With the savings and credit co-operatives increasingly becoming an important tool in economic development, the instability and inadequacy of services provided by them may compromise the quality of life and life span of average income groups in Kenya. This in the long run may affect the country's income generation potential and the overall economic growth. This growth can only be realized when the SACCOs prioritise on innovativeness, quality management practices, risk management and be market oriented to enhance her service delivery and develop new products to satisfy ever changing preferences of customers.

However, despite various researchers in Kenya on organization agility and performance, no study has

focused on SACCOs. Rajab (2011) did a study to establish the effects of information technology on supply chain agility in General Motors East Africa. Kasyoka (2011) did a study to investigate the use of strategic positioning to achieve sustainable competitive advantage at Safaricom Limited. Further, Gatobu (2012) undertook a study to establish the role of customer relationship management in building competitive advantage among the mobile phone operators in Kenya. This notwithstanding, despite massive inquiry into the areas of competitive advantage and organizational agility no study local or international has been done to investigate effect of agility strategies on performance of SACCOs in Kenya. Nkuru (2015) who evaluated factors affecting growth of SACCOs within the Agricultural sector in Kenya, a case of Meru farmers SACCOs was not able to determine the effect of technology on the performance of SACCOs which is one of the variables in this study. Owino (2012) researched on the impact of regulation on financial performance of Savings and Credit Co-operatives societies in Kenya and found that through regulation, there was generally a positive impact in that SACCO savings and profits had increased. From the previous studies no research has been done to study the effect of agility strategies on performance of Saccos in Kenya. It is thus against this backdrop that this study sought to assess the effect of risk management agility on performance of Saccos in Kenya.

Research Hypotheses

H₁: There is no relationship between risk management agility and performance of Saccos in Kenya.

RELATED LITERATURE

Theoretical framework

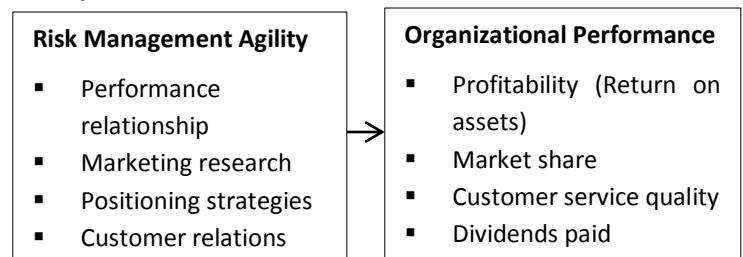
Deming's System of Profound Knowledge Model

Deming (1982) challenges the prevailing style of management and goes ahead to describe the knowledge necessary for transformation in four parts, all related to each other: Appreciation of a system; Knowledge about variation; Theory of knowledge and Psychology. One need not be eminent in any part nor in all four parts in order to understand it and apply it. The 14 action points for management (as listed below) follow naturally as the application of this knowledge (Deming, 1982). The various segments of the system of profound knowledge proposed cannot be separated. They interact with each other. Thus, knowledge of psychology is incomplete without knowledge of variation, appreciating the system and so on.

Deming therefore listed the following as guidelines to guide managers out of a crisis. This 14 action points for management follow naturally as application of the System of Profound Knowledge, for transformation from the present style of management to one of optimization. Create constancy of purpose toward improvement of product and service, with the aim to become competitive and to stay in business, and to provide jobs; adopt the new philosophy. Cease dependence on inspection to achieve quality. Eliminate the need for inspection on a mass basis by building quality into the product in the first place; end practice of awarding business on the basis of price tag, instead minimize total cost. Move toward a single supplier for any one item, on a long-term relationship of loyalty and trust; improve constantly and forever the system of production and service, to improve quality and productivity, and thus constantly reduce costs; institute training on the job; institute Leadership; drive out fear, so that everyone may

work effectively for the company; break down barriers between departments; eliminate slogans, exhortations, and targets for work force asking for zero defects and new levels of productivity; eliminate management by objective; remove barriers that rob people of their right to pride of workmanship; institute a vigorous program of education and self-improvement and put everyone to the task (Deming, 1982). Put everyone in the company to work to accomplish the transformation. Transformation is everybody's job. With this model application, management of quality will be a reality. Therefore, implementation of QM in a firm will need to be done systematically in observance of the Deming's 14 point.

Conceptual Framework



Independent Variable

Dependent Variable

Figure 1: Conceptual Framework

Source: Author (2019)

Risk Management and Performance

Over the last few decades, risk management has become an area of development in financial institutions. The area of financial services has been a business sector related to conditions of uncertainty. The financial sector is the most volatile in the current financial crisis. Activities within the financial sector are exposed to a large number of risks. For this reason, risk management is more important in the financial sector than in any other sectors (Carey, 2014). Carey regards financial institutions as the main point of risk-taking in an uncertain environment.

Risk is a function of the likelihood of something happening and the degree of losing which arises from a situation or activity. Losses can be direct or indirect. For example, an earthquake can cause the direct loss of buildings. Indirect losses include lost reputation, lost customer confidence, and increased operational costs during recovery. The chance of something happening will impact the achievement of objectives (Partnerships BC, 2010; NIST, 2012). "Risks are usually defined by the adverse impact on profitability of several distinct sources of uncertainty. While the types and degree of risks on organization may be exposed to depend upon a number of factors such as its size, complexity business activities, volume etc" (SBP, 2003) Risk can be classified into systematic and unsystematic risk (Al-Tamimi & Al-Mazrooei, 2007). Systematic risk refers to a risk inherent to the entire system or entire market. It is sometimes called market risk, systemic risk or un-diversification risk that cannot be avoided through diversification. Whereas, unsystematic risk is risk associated with individual assets and hence can be avoided through diversification. It is also known as specific risk, residual risk or diversifiable risk.

There is a growing research interest among researchers on the concept of risk (Taylor-Gooby & Zinn, 2010). This is partly because risk and risk management have become major concerns to individuals, organisations and nation states to the extent that Beck (2012) describes contemporary society as "risk society". Despite improvement in technologies and global socio-economic development, individuals, institutions and nations see themselves to be more rather than less vulnerable to risks of various kinds (Kasperson *et al.*, 2008). Risks and risk claims are now more than ever associated with every sphere of human endeavour.

Risk management can be defined in many ways. For example, Anderson and Terp (2010) maintain that

basically, risk management can be defined as a process that should seek to eliminate, reduce and control risks, enhance benefits, and avoid detriments from speculative exposures. The objective of risk management is to maximize the potential of success and minimize the probability of future losses. Risk that becomes problematic can negatively affect cost, time, and quality and system performance. The Committee of Sponsoring Organizations of the Treadway Commission (Committee of Sponsoring Organizations, 2012) defines risk management as follows: "Enterprise risk management is a process, effected by an entity's board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives" Risk management is the process to manage the potential risks by identifying, analyzing and addressing them. The process can help to reduce the negative impact and emerging opportunities.

The outcome may help to mitigate the likelihood of risk occurring and the negative impact when it happens (Partnerships BC, 2010). Risk management involves identifying, measuring, monitoring and controlling risks. The process is to ensure that the individual clearly understands risk management and fulfills the business strategy and objectives (SBP, 2003). Based on the definition above, the meaning of risk involves: the likelihood and consequence of something occurring. the chance of something happening impacting the achievement of objectives. And risk management is about: The process to eliminate, reduce and control risks, it involves identifying, analyzing, measuring, monitoring and controlling risks, reducing the negative and emerging opportunities, achievement of business strategy and objectives

The National Institute of Standards and Technology (NIST, 2012) reviews the risk management procedures in three parts: risk assessment, risk mitigation and evaluation and assessment. The risk assessment process includes identification, evaluation of risk impact and recommendation of risk-reducing measures. Secondly, risk mitigation involves prioritizing, maintaining and implementing the appropriate risk-reducing controls recommended by the risk assessment. Lastly, evaluation and assessment emphasize the continual evaluation process and the key factors for a successful risk management program.

Risk identification is a subjective component within this process. Each organization is responsible for its own risks and must identify them according to the company's perspective. In addition to those risks identified by specific organizations, there are risks common to companies within and across industries. Chopra and Sodhi (2012) presented a high-level categorization of potential risks in a supply chain, their associated drivers, and methods for defining appropriate mitigation strategies. Zsidison (2003) studied managerial perceptions of supply risk and used these to create a classification of supply risk sources. Johnson (2003) discussed risks specific to the toy industry (such as very high seasonality and the short life cycle of fad toys).

Risk identification is the first stage of risk management. It develops the basis for the next steps: analysis and control of risk management. Correct risk identification ensures risk management effectiveness. If risk managers do not succeed in identifying all possible losses or gains that challenge the organisation, then these non-identified risks will become non-manageable (Greene & Trieschmann, 2014). The organisation will not account for them and will not take any actions related to them and the consequences could be much unexpected. The

inability to identify possible gaining risks is as inappropriate as non-identified risks related to the loss. Missing a good positive possibility that an organisation seeks is a problem equal to bearing losses (Dickson & Hastings, 1989).

Risk identification has to be considered in a broader way. The attention of managers should not be concentrated only on what can be insured or mitigated. Risk identification should start with the basic questions: How can the organisational resources be threatened? What adverse effect can prevent the organization from achieving its goals? What favourable possibility can be revealed? Starting the identification process at this beginning point can form a good basis for its implementation and does not put up any barriers about the types of risk that will be identified or about the resources that are influenced.

Of course, it is very easy to present the idea about complex risk identification, than to realize this in practice (Dickson & Hastings, 1989). This idea sounds like a fairy tale where someone can see everything and everywhere. If the risk managers can see what is going on at all the organization's levels – administration, R&D, technological, etc. – they will know where a peril will occur, how an action in one level can develop a hazard in another, the conflicts that will be revealed, etc. It will be possible to observe not only the internal but also the external environment and to observe how the organisation's activities can threaten the environment and, on the other hand, it would be possible to see who may threaten the organisation and to what extent. Having this information about the internal and outside environment of the organisation, the risk managers can see all virtual risks that challenge the organisation, not only those that are known at the moment, and can undertake the appropriate actions. Unfortunately, it is not possible for a manager to

collect such complete information. Also, it is possible to perform a direct analysis of every risk case, but its practical application is difficult again due to the lack of information and lack of time. In this way the development of risk identification can be based aiming at developing a generalised approach for organisational activity investigation, considering all possible risks and investigating all resources exposed to risk.

Risk identification is a process that reveals and determines the possible organisational risks as well as conditions, arising risks. By risk identification the organisation is able to study activities and places where its resources are exposed to risks (Williams *et al.*, 1998). Risk identification can be described by the following basic elements: sources of risks; hazard factors; perils and exposures to risk.

Risk assessment is the determination of quantitative or qualitative value of risk related to a concrete situation and a recognized threat (also called hazard) (Merrill & Richard, 2011). Quantitative risk assessment requires calculations of two components of risk: R , the magnitude of the potential loss L , and the probability p , that the loss will occur. Risk assessment consists in an objective evaluation of risk in which assumptions and uncertainties are clearly considered and presented. Part of the difficulty of risk management is that measurement of both of the quantities in which risk assessment is concerned - potential loss and probability of occurrence - can be very difficult to measure. The chance of error in the measurement of these two concepts is large. A risk with a large potential loss and a low probability of occurring is often treated differently from one with a low potential loss and a high likelihood of occurring. In theory, both are of nearly equal priority in dealing with first, but in practice it can be very difficult to manage when faced with the scarcity of resources,

especially time, in which to conduct the risk management process.

Quantitative risk assessments include a calculation of the single loss expectancy (SLE) of an asset. The single loss expectancy can be defined as the loss of value to asset based on a single security incident (Merrill & Richard, 2011). The team then calculates the annualized rate of occurrence (ARO) of the threat to the asset. The ARO is an estimate based on the data of how often a threat would be successful in exploiting vulnerability. From this information, the annualized loss expectancy (ALE) can be calculated. The annualized loss expectancy is a calculation of the single loss expectancy multiplied the annual rate of occurrence, or how much an organization could estimate to lose from an asset based on the risks, threats, and vulnerabilities. It then becomes possible from a financial perspective to justify expenditures to implement countermeasures to protect the asset.

Johnson (2003) and other critics have expressed concerns that risk assessment tends to be overly quantitative and reductive. For example, they argue that risk assessments ignore qualitative differences among risks. Some charge that assessments may drop out important non-quantifiable or inaccessible information, such as variations among the classes of people exposed to hazards. Furthermore, Commoner and O'Brien claim that quantitative approaches divert attention from precautionary or preventative measures (Hallenbeck, 2011). Obvious benefits of risk assessment are that the results serve as the basis for cost savings through avoidance and the judicious use of finite resources for risk mitigation. With respect to avoidance, it is often possible to undertake actions that will eliminate major downtime events.

Once the risks are assessed, a number of strategies can be used to manage the risk. These include: transferring risk, taking risk, eliminating risk, reducing

risk and subdividing risk into individual levels for further analysis (Hallikas *et al.*, 2012). Rice and Caniato (2003) classified mitigation techniques by failure mode in a business. Zsidisin *et al* (2010) examined how and why firms created business continuity plans to manage risk in the business. Zsidisin and Smith (2010) performed case study research focused on managing risk through early supplier involvement. Johnson (2014) presented strategies for dealing with risks related to toys. Faisal *et al* (2007) used graph theory and matrix methods to mitigate business risk.

Finally, Nagurney *et al* (2010) used multi-criteria decision-making to manage risk of manufacturers and distributors. Risk mitigation strategies fall mainly into two categories: preparedness – to provide warning, establish contingency plans, and develop capacity for emergency response and prevention/mitigation measures – to reduce vulnerability and risk on a long-term and permanent basis. One growing risk mitigation technique is the use of insurance to cover certain operational risk exposures. An organization can ensure that their processes are being accurately transacted by applying strict control metrics to the process. Utilizing tools such as standard operating procedures and clearly defined training manuals can help to maintain uniformity of the process. To maintain the level of quality expected by customers, an organization must implement rigid metrics with which to gauge product quality. Metric tools such as 20-point quality checklists or statistical process control charts can help to minimize the potential for variation from the norm.

According to Hahn *et al.* (2012) effective communication and coordination among all elements of the supply chain are essential to its success. Increasing the visibility of demand information across supply chain reduces the risks (Chopra & Sodhi, 2012). Agility is defined as the ability to thrive in a

continuously changing, unpredictable business environment (Prater *et al.*, 2014). It is a business-wide capability that embraces organizational structures, information systems, logistics processes and in particular, mindsets (Christopher & Towill, 2014). Companies can minimize inventory risks by working with a highly responsive supplier (Chopra & Sodhi, 2014).

The last step, risk monitoring, has received the least attention by supply chain risk researchers and the literature has shown little focus on the tools necessary for temporal risk monitoring. While Singhal (2010) have noted an increased focus on developing tools to prevent or mitigate supply chain disruptions, we found only two papers that actually developed prototype methods. The first methodology developed by Humphreys *et al.* (2010) is a supplier assessment tool designed for new product development processes. While the methodology does include a risk index as a part of the measurement system, its focus is on supplier capability to meet customer requirements. The second methodology developed by Wu *et al.* (2010) is an AHP-based supplier risk assessment tool. While the method is comprehensive in its enumeration of risk types, it becomes more difficult to use as the number of suppliers being evaluated grows large. In addition, AHP is designed to take into account judgment and personal values and has widespread applications for making decisions such as allocation of resources, analyzing the impact of a policy, and resolving a conflict (Saaty, 2012). However, it is not designed to be a temporal monitoring tool and consequently, does not focus on assessing supplier risk over time. This same difficulty applies to the analytic network process (ANP). ANP is used to aid decision makers in making a choice from a myriad of options.

ANP has been successful in decision making in energy policy planning, product design, equipment

replacement (Sarkis, 2014) and for selecting a logistics service provider (Jharkharia & Shankar, 2007). This means having effective reporting mechanisms in place and ensuring that risk is covered in all key reports and reviews. Most of the key issues are covered. Effective monitoring and control also involves creating the right conditions for openness and transparency in the business. Risk control is working the risk management plan while, at the same time, ensuring the plan is still valid. The management team must continuously make sure that assumptions are still valid. They must also review the risks and probabilities for accuracy. Like any good planning, the process should be continual or on-going. Once your basic risk management plan is in place, monitoring risk means to review it and update it continuously: Identify new risks as soon as possible; Decide where and how to handle that risk; Look for other risks that might be reduced or eliminated and no longer need coverage and then Check operating volumes - they change so that coverage levels need to change.

Active risk monitoring ensures that effective counter-measures to control risks are appropriately implemented (Eloff *et al.*, 2013). The results of implementing risk-reducing measures are evaluated to determine if the expectation that risk management reduces loss is met. Then, appropriate adjustments must be made so that the organization remains prepared against the exposure to risks. Thus, risk monitoring not only evaluates the performance of risk-reducing measures but also serves as a continuing audit function.

METHODOLOGY

This study followed an explanatory cross-sectional design. Explanatory study establishes causal relationships between variables. Thus, it attempts to clarify how and why there is a relationship between two or more aspects of a situation or phenomenon. The target population of this study was 433

management staff working in Sacco societies licensed by SASRA in Kenya. The study focused more on the top and middle level management staffs who were directly dealing with the day to day management of the Saccos societies since they were the ones conversant with the subject matter of the study. The study employed stratified random sampling technique in coming up with a sample size of 204 respondents from a total of 433 representatives of management staff working in savings and credit co-operatives in Kenya. The study used the following regression model as follows:

$$Y = \theta_0 + \theta_1 X_1 + \varepsilon$$

Where:

Y = SACCO Performance

θ_0 = Constant Term

θ_1 = Beta coefficients

X_1 = Risk Management Agility

ε = Error term

A One-Way ANOVA was used to test the fitness of the model. The basic principle of ANOVA is to test for differences among the means of the populations by examining the amount of variation within each of these samples, relative to the amount of variation between the samples (Kothari, 2012).

RESEARCH FINDINGS

Risk Management Agility

Under this the researcher focused on identifying the effect of risk management agility on performance of savings and credit co-operatives in Kenya. On other risk management strategies adopted by Sacco's, the respondents indicated to have adopted oversight board and management information systems and also, they have adopted policies procedures and limits, risk measurements and monitoring and internal controls. Carey (2014) correlates with the findings by arguing that who claims that risk management is more important in the financial sector than in any other sectors.

Effect of Risk Management Agility on Performance of Saccos

The respondents were requested to indicate the extent to what risk management agility affects the

performance of savings and credit co-operatives using a likert scale of 1-5. Their responses were presented in Table 1.

Table 1: Effect of Risk Management Agility on Performance of Saccos.

	Frequency	Percentage
No Extent	4	2.9
Low Extent	10	7.4
Moderate Extent	22	16.2
Great Extent	58	42.6
Very Great Extent	42	30.9
Total	136	100

As per the likert scale of 1-5, the results in Table 1 shows that risk management agility affects the performance of savings and credit co-operatives greatly as shown by 42.6%, very greatly as shown by 30.9%, moderately as shown by 16.2%, lowly as shown by 7.4% and in no extent at all as shown by 2.9%. This revealed that there is a great extent to which the risk management agility affects the performance of savings and credit co-operatives.

These findings were in line with Carey (2014) who claims that risk management is more important in the financial sector than in any other sectors.

Extent of Aspects of Risk Management Agility Effect

The researcher further asked the respondents using a likert scale of 1-5 to indicate the extent to which aspects of risk management agility affect the performance of savings and credit co-operatives. Their responses were shown in Table 2.

Table 2: Extent of Aspects of Risk Management Agility Effect

	No extent	Low Extent	Moderate Extent	Great Extent	Very Great Extent	Mean	Std. Dev.	CV	Rank
Risk Identification	0%	14.7%	6.6%	50.7%	27.9%	3.919	0.967	0.247	3
Risk Assessment	0%	0%	9.6%	42.6%	47.8%	4.382	0.656	0.150	1
Risk Mitigation	0%	9.6%	1.5%	38.2%	50.7	4.302	0.905	0.210	2
Risk Monitoring	0%	22.8%	38.2%	10.3%	28.7%	3.449	1.134	0.329	4

As per the likert scale, a mean of between 3.5 and 4.4 implies an effect of great extent. Therefore, risk assessment with a mean of 4.382 shows that risk management agility greatly affects the performance of savings and credit co-operatives. This finding is in line with Merrill and Richard (2011) who argue that risk assessment is the determination of quantitative or qualitative value of risk related to a concrete situation and a recognized threat (also called hazard) where quantitative risk assessment requires

calculations of two components of risk: R, the magnitude of the potential loss L, and the probability p, that the loss will occur.

From the findings also, a mean of between 3.5 and 4.4 implies an effect of great extent. This shows that risk mitigation greatly affects the performance of savings and credit co-operatives as expressed by a mean score of 4.302. This conforms to Hallenbeck (2011) who claims that obvious benefits of risk

assessment are that the results serve as the basis for cost savings through avoidance and the judicious use of finite resources for risk mitigation.

The study further revealed that an average which is between 3.5 and 4.4 shows a great extent effect. Thus, risk identification as shown by an average of 3.919 revealed that greatly affects the performance of savings and credit co-operatives. This concurs with Williams *et al.* (1998) who argue that risk identification is a process that reveals and determines the possible organisational risks as well as conditions, arising risks where by risk identification the organisation is able to study activities and places where its resources are exposed to risks.

The study also revealed that a mean score of 2.5 to 3.4 implies a moderate effect as per the likert scale. Thus, risk monitoring was found to moderately affect the performance of savings and credit co-operatives as illustrated by a mean score of 3.449. This was in agreement with Eloff *et al.* (2013) who argue that active risk monitoring ensures that effective counter-measures to control risks are appropriately implemented in which the results of implementing risk-reducing measures are evaluated to determine if the expectation that risk management reduces loss is met.

On the respondents' opinion on how risk management practices improved the performance of their SACCO, they indicated that it allows their SACCO to identify their SACCOs strengths, weaknesses, opportunities and threats. It also establishes a list of internal and external risks to maximize profits and minimize expenses on activities that don't produce a return on investment. On the respondent's opinion on other risk management practices SACCOs should adopt to improve on their performance, they indicated use of guarantors, Collaterization, shareholding and insurance. This conforms to Hallenbeck (2011) who claims that obvious benefits of risk assessment are that the results serve as the basis for cost savings through avoidance and the judicious use of finite resources for risk mitigation.

Correlation Analysis

A correlation is a number between -1 and +1 that measures the degree of association between two variables. A positive value for the correlation implies a positive association while a negative value for the correlation implies a negative or inverse association. The Correlation coefficients are presented in Table 3.

Table 3: Correlation Matrix

		Performance of Saccos	of Risk Management Agility
Performance of Saccos	Pearson Correlation	1	
	Sig. (2-tailed)	.	
	N	136	
Risk Management Agility	Pearson Correlation	.825	1
	Sig. (2-tailed)	.000	.
	N	136	136

The findings of correlation test analysis between the Performance of Saccos and the risk management agility were presented in Table 3. The study found a

strong correlation coefficient between Performance of Saccos and risk management agility as shown by correlation factor of 0.856. The $p=0.00$ which is less than 0.005 implying that the relationship was

statistically significant. This showed that any positive change in risk management agility would increase the performance of Saccos.

Performance of Saccos

The respondents were further requested to indicate the trend of various aspects of performance in their Sacco for the last five years. Their responses were as shown in Table 4.

Table 4: Trend of Various Aspects of Performance in Sacco

	Greatly decreased	Decreased	Constant	Improved	Greatly improved	Mean	Std. Dev.	CV	Rank
Profitability (Return on assets)	0	5.9	17.6	61.8	14.7	3.853	0.736	0.191	6
Shareholders returns	0	0	19.1	51.5	29.4	4.103	0.692	0.169	3
Market share	0	7.4	19.1	54.4	19.1	3.853	0.812	0.211	7
Customer service quality	0	0	14.7	52.9	32.4	4.177	0.665	0.159	2
Net assets	0	2.9	17.6	50	29.4	4.059	0.768	0.189	5
Members' savings	0	0	8.8	63.2	27.9	4.191	0.578	0.138	1
Loans disbursed	0	47.1	20.6	32.4	0	2.853	0.882	0.309	8
Dividends paid	0	2.9	13.2	55.9	27.9	4.088	0.725	0.177	4

As per the Likert scale a mean between 3.5 and 4.4 implied an improvement. The therefore members' savings as shown by a mean score of 4.191 was found to have improved for the last five years. This concurs with Mumanyi (2014) who found that commercial banks in Kenya had relaxed their lending policy, thus attracting SACCO members to taking loans with them. This had resulted to SACCOs losing members' savings

As per the Likert scale a mean between 3.5 and 4.4 implied an improvement. The study further found that customer service quality as expressed by a mean score of 4.177 had also improved. This is in line with Otley (2009) who asserts that accounting measures have been the mainstay of qualitative approaches to organizational performance measurement.

As per the Likert scale a mean between 3.5 and 4.4 implied an improvement. Therefore, shareholders return with a mean of 4.103 was found to have improved over the last five years. This corresponds to Kiaritha (2015) who adopted that performance will be

measured through use of indicators which include: profitability (return on assets), shareholders returns, market share, customer service quality and customer satisfaction, Net assets, Members' savings, Loans disbursed and Dividends paid.

Further as per the Likert scale a mean between 3.5 and 4.4 implied an improvement. This therefore showed that dividends paid as expressed by a mean of 4.088 were revealed to have improved over the last five years. This conforms to

Again, as per the Likert scale a mean between 3.5 and 4.4 implied an improvement. This therefore shows that net assets as shown by a mean of 4.059 were revealed to have improved. This is in line with Otley (2009) who asserts that accounting measures have been the mainstay of qualitative approaches to organizational performance measurement.

Further as per the Likert scale a mean between 3.5 and 4.4 implied an improvement. Thus, market share

with a mean of 3.853 was found to have improved. This was similar to Akimova (2012) whose study findings showed that managers who placed extra emphasis on marketing activities such as product, promotion and positioning strategies scored significantly higher on competitive advantage measures than those who emphasized on production or selling activities.

Again, the study established that a mean between 3.5 and 4.4 implied an improvement which meant that profitability (Return on assets) as shown by a mean of 3.853 was found to have improved. This corresponds to Armstrong (2010) who argues that performance is often will be measured in terms of profitability.

Finally mean between 2.5 and 3.4 implied a constant. Therefore, the study found that loans disbursed as

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.825 ^a	.681	.678	1.571

a. Predictors: (Constant), Risk Management Agility

From the findings in Table 5, the adjusted R square for the regression of performance of Saccos on risk management agility was 0.678 which mean that risk

shown by a mean of 2.853 were constant over the last five years. This was in agreement with Pearce and Robinson (2007) who claim that strategic managers believe that such a firm can survive and eventually recover if a concerted effort is made over a period of a few years to fortify its distinctive competencies through various strategies among them brand rejuvenation strategy.

Hypothesis testing

Hypothesis deal with identifying whether there is any relationship between risk management agility and performance of Saccos in Kenya. To test the hypothesis, regression between performance of savings and credit co-operatives in Kenya as index of dependent variable and risk management agility as a composite of independent variable was done.

management agility could only explain 67.8% of variation in performance of Saccos. The remaining 32.2% was explained by other agility strategies affecting performance of Saccos.

Table 6: Analysis of Variance (ANOVA)

Model	Sum of Squares	Df	Mean Square	F	Sig
Regression	704.029	1	704.029	285.420	.000 ^b
1 Residual	330.530	134	2.467		
Total	1034.559	135			

a. Dependent Variable: Performance of Saccos

b. Predictors: (Constant), Risk Management Agility

As per the findings from the ANOVA Table above, the F-calculated was revealed to be 285.420 and the p-value was 0.000. This showed that that the for this relationship was significant at 95% significance level because F-calculated was greater than F-critical (3.89)

and the p-value was less than 0.05. This meant that relationship between the performance of Saccos and risk management agility were positively and significantly related and risk management agility could significantly predict the value of Sacco performance.

Table 7: Regression Coefficients

	Un standardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
(Constant)	17.017	.874		19.475	.000
Risk Management Agility	.909	.054	.825	16.894	.000

a. Dependent Variable: Performance of Saccos

The regression equation obtained from this outcome was: -

Performance = -17.017 + 0.909

Risk Management Agility.....**Equation (2)**

From the findings the study found that if risk management agility was held constant at zero, then the performance of Saccos will be 17.017 which is significant since $p=0.000$ is less than 0.05. The study further found that a unit change in risk management agility changes would lead to 0.909 units change in performance of Saccos. This shows that the null hypothesis two was not accepted meaning that there was a positive and significant relationship between risk management agility and performance of Saccos in Kenya. The findings concur with Eloff *et al.* (2013) who argue that active risk monitoring ensures that effective counter- measures to control risks are appropriately implemented in which the results of implementing risk-reducing measures are evaluated to determine if the expectation that risk management reduces loss is met.

CONCLUSIONS

The study also concluded that there is a strong and positive correlation coefficient between Performance of Saccos and risk management agility. The study showed that risk management agility greatly affects the performance of savings and credit co-operatives and that risk mitigation greatly affects the

performance of savings and credit co-operatives. The study also illustrated that risk identification greatly affects the performance of savings and credit co-operatives and that risk monitoring was found to moderately affect the performance of savings and credit co-operatives.

RECOMMENDATIONS

The study recommended that policy and practice for performance should be carefully evaluated and the results of that evaluation fed back into improved approaches. It is important that the evaluation considers the full range of costs and benefits. The Saccos should have sufficient special techno economic knowledge and openness to new, effective methods when assessing financial performance. Staffs should be equipped with the specific skills and competencies needed to design and manage contracts (including the associated training, after-sales service and Employ human resources with specific training and equipment for performing functional and performance tests in order to be able to accept the end product and verify performance.

Areas of Further Research

The study finally recommended that a study should be conducted to establish the relationship between capital and investments regulations on one hand and financial performance of the SACCOS on the other in Kenya to offer a broad analysis on impact of regulations on financial performance of SACCOS in Kenya.

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