Enterprise Resource Planning System Implementation and Value Realization in Savings Credit Co-Operative Society of Nairobi

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ABSTRACT

In the dynamic business environment, organizations have implemented Enterprise Resource Planning system solutions to gain competitive advantage and fasten service delivery for value realization. Despite their benefits, ERP solutions have not been fully embraced by SACCOs, and those that have implemented the ERPs are not able to justify the benefits of the investment. Therefore the purpose of the study was to establish the value realizations for SACCO's after the implementation of Enterprise Resource Planning solutions, Nairobi region. Specific objective included: to establish the levels of ERP implementation and the value realized by SACCOs through ERP implementation. The researcher administered the questionnaires to the respondents randomly on a drop and pick basis. The data collected was expected to give both quantitative and qualitative results and it was analyzed using descriptive and regression model. It was found out that there was a strong relationship between the implementation level and the benefits of the ERP systems to SACCOs. The findings recommended that ERP systems should be implemented for customer relationship management; education, training and mentorship; monitoring and evaluation; and for research and development and for these reason, SACCOs should invest in the ERP systems.

Introduction

Enterprise Resource Planning systems are known to be information technology solutions that integrate and automate administrative and customer functionalities in organizations (Deshmukh, 2014). ERP has its origin in the manufacturing and production sectors where it was used to perform different tasks like manufacturing of the products, marketing the produce through automating the marketing system which has led to the today's e-business, online banking, supply chain management (Swartz & Orgill, 2001).

During its evolution, ERPs were used to phase out cost and efficiency pressures in organization (Wang & Ramiller, 2009). ERPs has a lot of functionalities; administrative functionality includes human resource, accounting, payroll, and billing and customer functionalities which include account opening, account balance checking, online deposit and withdrawals, statement retrieval, money transfer among other services (Deshmukh, 2014)

The Savings Credit Co-operative Society (SACCO) systems were formed through mutual membership organization that involves pooling together of member voluntary savings in form of shares basing on either their geographical area, employment, community or any other affiliation (Olando, Jagongo, & Mbewa, 2013). SACCO's are the micro-financial institutions that provide financial services to low income earner, (Partnerships, 2010). They are formulated with the main objective of investing and accumulating wealth, (Olando, Jagongo, & Mbewa, 2013)

A study done by Kesharwani (2005) on ERP prospects for banks found out that ERPs system's creates a considerable flexibility and ease to various banking functions both internally and externally. This system has enabled most banks to serve their customers to the best of their capability. However since the SACCOs are banking institutions, then they are deemed to benefit from the systems just like the banks.

Enterprise Resource Planning System

ERP has attracted many definitions from different authors both in business and educational level. O'Brien and Marakas (2008) define ERP as a cross functional enterprise system driven by an integrated suite of software modules that supports the basic internal business process of a company. According to Shoemaker (2003) ERP is a modular software package designed to eliminate the fragmentation of information in large business organization through automating and integrating a firms major business practices, sharing common data and process across the entire enterprise.

From the definitions, the researcher defines ERP as system software with different modules that integrates organizations functionality and allows sharing and exchange of information between different levels of the organization for value addition.

Value Realization from Information System

Value refers to the impact of the information system on an organization performance at all levels basing on profitability, reliability of information, adaptability of business process, global outreach, customer satisfaction, learning and growth both internally and externally (Velcu, 2008). Information systems benefits are not experienced overnight. To achieve the benefits of cost cutting and having a common pool of information all depends on how good the

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system fits the organizations' functionalities and how well it's tailored and configured to match with the organizations culture, operations strategy and the organizational structure (Rashid, Hossain, & Patrick, 2002). These benefits sometimes cannot be associated with the net income of the organization, mostly like the training of the staff can have an impact on the sales or performance of the organization.

Other organizations however use Information System to facilitate all business aspects from sales through finance, production and dispatch of the products and services (Waring & Skoumpopoulou, 2012). According to Rashid, Hossain and Patrick (2002) Information Systems have a lot of value which can be justified including: cost cutting in terms time of product/service production and delivery, reliable information access to member's and managements, easy adaptability of the business processes, e-marketing, e-conferencing and collaborative culture in the organization. It's therefore because of the many values that outweigh the shortcomings that has streamlined Information Systems activities and better quality information which has led to informed decision for service delivery (Waring & Skoumpopoulou, 2012).

Savings Credit Co-operative Society in Nairobi

Sacco were invented in south Germany in 1846 when agricultural crises and drought were on the peak in Europe, by two community business leaders: Freidrich W. Reinfeisen and Herman Schultze-Delitsche, who are considered the founding fathers of the Savings and Credit Cooperatives (SACCO's) (Tache, 2006).

SACCOs in Kenya are growing fast due to changes in the financial environment and are adapting to new approaches to SACCO model. By December 2011 there were 6,902 registered SACCO's but only 3,983 were active. These SACCOs includes the Mwalimu, Waumini, Youth, Matatu, Housing, Education, Biashara Community, Jamii, Hazina SACCO just to mention but a few(Comco, 2015).

Nairobi region has 36 registered and licensed SACCOs which are revolving the economy of this region at a high rate to offer front office service activity (FOSA) and back office activity (BOSA) (Kenya, 2014). They are formulated with the main objective of investing and accumulating wealth, (Olando, Jagongo, & Mbewa, 2013).The Sacco's are cooperatives in nature and are developed through autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs (Pelrine, 2010).

Enterprise Resource Planning System Implementation and Value Realization

ERP is a major investment to any organization as it involves a lot of money in implementation although it helps in automating and integrating the institutions functionalities (Tian & XU, 2015). According to Njihia and Mwirigi, (2014), financial resource availability, organizational complexities, employee perception, regulatory requirement and having top management support affects the effective implementation of ERP system and which in turn affects an organizations performance.

ERP implementation goes through multiple phases; from adoption to implementation. According to Sykes, Venkatesh and Johnson (2014), it's noted that many organizations will always avoid change. ERP implementation will result in process reengineering, which involves changing the current institutions functionality, back filling of the staff, training, recruitment of talent and retention (swartz & orgill, 2001), this involves a lot of cost and many SACCOs do not have the capability. Converting the legacy system into the new user friendly system is a great challenge to most organizations.

However configuration process and transformation of key business processes has led to a lot of losses since many organizations do not have proper procedures for this (Lau, 2003).

Implementing ERP in SACCO will add a lot of values including increased efficiency, reduce manual effort and lower risk for human error, enables management to enforce compliance with agreed business processes and can immediately identify deviation and ensures increased information access by evaluating and supporting audit functions (Partnerships, 2010). Therefore when institutions decide to implement the ERP, they will be buying into the vendor's imagination of how the institutions functionality and best practices should look like, (Bradford, 2010). This means that institutions should identify, understand and match their functionalities with the systems at the market if they are buying the on the shelf system.

Therefore value is the regard that something is held to deserve, the importance, worth or the usefulness of something (CITE, 2002). In information system, value realization is where organizations or institutions evaluate, estimate the nature, quality, ability, extent or significance of something, or experience the monetary worthiness of Information Systems in achieving greater business results and driving towards operational excellence, identifying opportunities for consolidating and streamlining the organization operations (Neely & Met, 2013).

Research Problem

ERP has facilitated decision making with simulations for enhanced responsiveness and change. It uses portal technology, business intelligence, knowledge management, and mobile technologies that save time and reduce the cost of service delivery (Kesharwani, 2005). Mwangi (2013) notes that the major benefits of implementing the ERPs in SACCO's are: need for common platform, process improvement, increased customer responsiveness and improved strategic decision.

Nairobi region has 265 SACCOs registered and only 36 are registered and licensed to offer both BOSA and FOSA services hence playing a crucial role in empowering its members on services and the finances for wealth creation (Kenya, 2014).

Many studies have been done to establish the challenges in implementing the ERP systems in large organizations. Despite the challenges, it was found out that greater integration is achieved by the ERP systems (Seo, 2013). Another study Ndone by Mwenje (2013) on the Enterprise Resource Planning Systems implementation strategies in commercial banks in Kenya found out that the implementation strategy is important for banks to get return on their investment. The recent study on viable automation solutions for SACCOs by Partnership (2010), these studies found out that integrated systems were needed for SACCO to enable them improve on governance and cut operation cost respectively. Though closer to SACCO's, ERP solutions have not been fully embraced, those that have implemented the ERPs are not able to justify the benefits of the investment (Tache, 2006). Therefore the question is: do SACCOs in Nairobi Region realize values after implementing ERP solutions?

Research Objective

The study seeks to establish the levels of ERP implementation and the value realized by SACCOs through ERP implementation.

Methodology

The researcher used a descriptive cross sectional survey research design. According to Orodho (2003), descriptive research design aimed at answering the questions what, where, when, how much and by what means the system was adding value to the SACCO, and its used mainly when the researcher wants to gain a better understanding of a topic, (Kothari, 2004).

The target population comprised of 36 registered SACCOs in Nairobi regions, which offer both Bank Office Service Activity (BOSA) and Front Office Service Activity (FOSA) services. However for purposes of the study, the researcher was interested in SACCOs that had been in existence for more than five years, had membership of at least five thousand people and had branches country wide to participate in the study.

The study used stratified sampling method since there were different categories of SACCO in Nairobi region. These strata comprised of the type of formation and the number of years of operation. The sample had a 95% confidence level with a precision of ±10% as shown below:

$$n = \frac{NZ_{\frac{\alpha}{2}}^2\, P(1-P)}{e^2(N-1) + Z_{\frac{\alpha}{2}}^2\, P(1-P)}$$

Where

n=sample size

N=population
Z= statistic used in estimation (1.96)
P=level of significance (5%)
e=precision (0.01)

The researcher used questionnaires as the instrument for data collection. The questionnaires consisted of structured and non-structured questions. The questionnaires were administered by the researcher to the respondents randomly on a drop and pick basis.The study used both primary and secondary data. Quantitative and qualitative techniques were used to collect primary data. Secondary data sources were also used to compliment the primary data. This information was obtained from both published and unpublished material like books; reports, journals, thesis and government report and achievements reports from the SACCO's archives was also used to help in comparing the performance in the previous consecutive years of service delivery (Khan, 2002). The researcher personally ensured that the questionnaires were given to the right people, at the right time and place and were later collected after one week (MacDonald & Headlam, 1986).

The study was expected to produce both quantitative and qualitative data. Quantitative data was analyzed by employing descriptive statistics to obtain percentages. This technique gave a simple summary about the sample data and present quantitative descriptions in a manageable form (Murphy & Simon, 2002). The analyzed data was presented using tables, charts and figures. To test the relationship between the depended and the independent variable, graphs and decision tables were used. The analysis of the objectives was done as shown below:

Findings and Discussion

The study sought to find out the years in which the SACCO societies had been in operation and it was found out that the oldest SACCO that offered BOSA and FOSA had been in operation for above forty years with most of them having operated between thirty and forty years. Many of the SACCO's had been in operation for above 40 years giving a percentage of above 75% years of operation.

Most of the SACCOs knew the ERP systems; they were using them in their daily activities. Most SACCOs had implemented the Microsoft Dynamic Navision. According to some SACCO's, these type of ERP had a good security option and it was user friendly, according to some of the respondents.

In the past five years a number of SACCOs had adopted the ERP system although the system was not implemented in all functional areas. A few SACCOs use ASAM and the Interactive system and others had a plan of moving to the use of the ERP system.

It was found out that financial accounting, management accounting, supply chain, customer care solution and payroll modules had been implemented up to 80%. According to the respondents, these were the key areas where the system had helped them in attaining their objectives for value realization. Human resource management and procurement systems had been implemented to 60% as there wasn't much they could do with these systems. A small percentage of these SACCO's were still dragging behind in the sense that apart from the financial, management, customer care solution and the payroll, the other modules had been implemented only up to 20%.
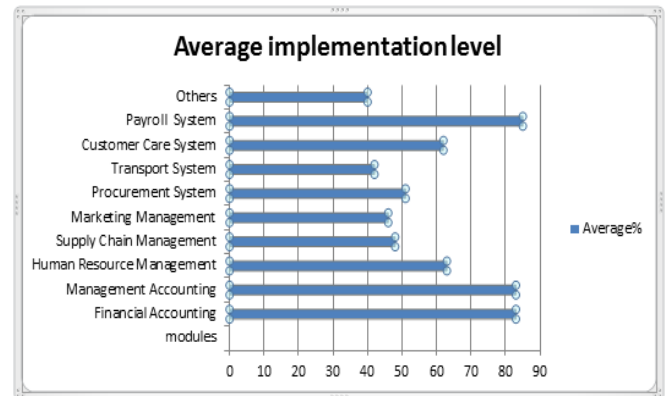
It was found out that the level of ERP implementation determines the value that any SACCO experiences. The following gives a summary of how the business values were influenced by the implementation levels.

A summary of the table above is as follows:

The scatter plot above indicates that there is positive correlation between levels of implementation a value addition to organization. From the findings, the two variables are exhibiting correlation hence we compute the various Karl Pearson correlation coefficient to further show the correlations.

Table 1. Business Value and Implementation Levels to SACCO.

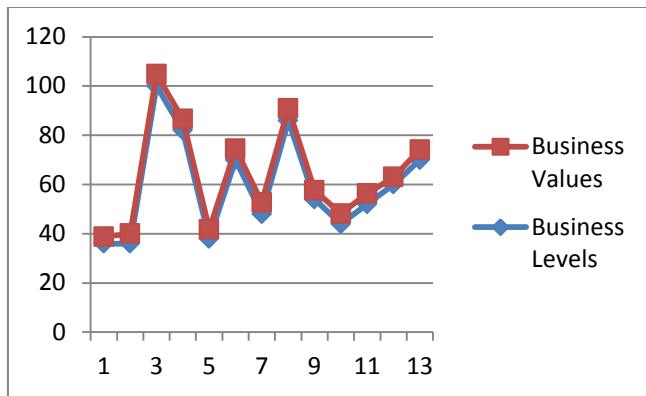| SACCO	1	2	3	4	5	6	7	8	9	10	11	12	13	
Average	36	36	100	82	38	70	48	86	54	44	52	60	70	776
Average squared	1296	1296	10000	6724	1444	4900	2304	7396	2916	1936	2704	3600	4900	51416
Total	53	82	99	90	79	96	100	106	81	93	98	72	96	1145
	2809	6724	9801	8100	6241	9216	10000	11236	6561	8649	9604	5184	9216	103341
Average * Total	1908	2952	9900	7380	3002	6720	4800	9116	4374	4092	5096	4320	6720	70380

Figure 1. Business Values and Implementation Levels to SACCO.

Calculating Pearson Product Coefficient

Summarize the data into the values needed for the calculation.

- N – the number of data pairs (number of SACCOS is 13).
- $\Sigma(x^2)$ - the sum of the squares of the x values (51416).
- Σx - the sum of all the x values (776).
- $\Sigma(x*y)$ - the sum of each x value multiplied by its corresponding y value (70830).
- Σy - the sum of all the y values (1145).
- $\Sigma(y^2)$ - the sum of the squares of the y values (103341).

Calculate ss_{xy}, ss_{xx} and ss_{yy} using these values.

- $ss_{xy} = \Sigma xy - (\Sigma x \Sigma y \div n) = 70830 \ (776 * 1145) / 13 = 2483$
- $s_{sxx} = \Sigma x^2 - (\Sigma x \Sigma x \div n) = 51416 - (776 * 776) / 13 = 5095$
- $ss_{yy} = \Sigma y^2 - (\Sigma y \Sigma y \div n) = 103431 - (1145 * 1145) / 13 = 2583$

The value should be between 1 and -1, inclusive.

- $r = ss_{xy}/(ss_{xx} * ss_{yy})$
- $2483 / (5095 * 2583) = 0.88$

A value close to 1 implies strong positive correlation. (The higher the x, the higher the y). However, there is a strong positive correlation between levels of implementation and business value realized. Where *r* is the Pearson's correlation coefficient between business values and implementation levels.

From the graphs above, there is a positive correlation between ERP implementation and value realization. However, the challenges during implementation of ERP add to costs (due to training of staff.) it's realized that the benefits of ERP implementation far outweighs the cost. It's therefore economical for SACCOs to implement the ERP systems.

According to the findings, 60% of the SACCO experienced increased efficiency, reduced operation costs increased departmental interaction, reliable information access to members and management, improved customer satisfaction, easy adaptability of the business process, improved collaborative culture, improved and timely delivery, competitive advantage and improved coordination are the major values experienced across all sections among the SACCO. It was also realized that 30% did not benefit from the system implementation, profitability and behavioral change being among the benefits that were refuted as the benefits of the ERP system implementation in some sections. Since most SACCOs do not have their clients outside Kenya, 10% of the SACCO did not agree with global outreach as a benefit in the department.

Conclusion

In conclusion, the study found that ERP implementation is very key to SACCOs and most of this SACCOs have not realized the value of this system. The study also shows that SACCOs depend on the ERP system for many benefits including; increased efficiency, reduced operation costs increased departmental interaction, reliable information access to members and management, improved customer satisfaction, easy adaptability of the business process, improved collaborative culture, improved and timely delivery, competitive advantage and improved coordination are among the major values that most SACCOs have experienced. Technology is a tool that should be exploited to enhance service delivery in SACCOs. It not only creates competitive advantage but also enhances business growth and stability. Inco-operation of technology in SACCO operations has seen SACCOs improve efficiency, curb fraud and improve service efficiency to clients.

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