

# Human Resource and Leadership Journal (HRLJ)

**INFLUENCE OF EMPLOYEE TRAINING ON INNOVATION  
PERFORMANCE OF DTS IN KENYA**

**Dr. Grace Wanjiru Njine, Dr. Joyce Nzulwa, Dr. Mary Kamaara and Dr. Kepha  
Ombui**



**CARI  
Journals**

## INFLUENCE OF EMPLOYEE TRAINING ON INNOVATION PERFORMANCE OF DTS IN KENYA

<sup>1</sup>**Dr. Grace Wanjiru Njine**

Postgraduate Student, Jomo Kenyatta University of Agriculture and Technology

\*Corresponding Author's Email: [njinegrace@gmail.com](mailto:njinegrace@gmail.com)

<sup>2</sup>**Dr. Joyce Nzulwa**

Lecturer, Jomo Kenyatta University of Agriculture and Technology <sup>3</sup>**Dr.**

**Mary Kamaara**

Lecturer, Jomo Kenyatta University of Agriculture and Technology

<sup>4</sup>**Dr. Kepha Ombui**

**KARLO**

### Abstract

**Purpose:** The purpose of the study was to examine the influence of employee training on Innovation Performance of DTS in Kenya.

**Methodology:** This study adopted a descriptive survey design. The sampling frame of this study was derived from the database of the SASRA. Multistage sampling was used to select the sample of the study. The population of the study was the 181 DTS's operating in Kenya while the target population was 18 DTS's. The respondents were individual management staff. A questionnaire was used to gather primary data. Secondary data was collected through review of published literature such as journals articles, published theses and textbooks. Information was sorted, coded and input into the statistical package for social sciences (SPSS) version 21.0 for production of graphs, tables, descriptive statistics and inferential statistics.

**Results:** The study found out that employee training and innovation performance are positively and significantly related ( $r=0.186$ ,  $p=0.000$ ),

**Unique Contribution to Theory, Practice and Policy:** The study recommends for Deposit Taking Sacco's to come up with training programs which will better their understanding on their role in the SACCO. This will enable the trainee, upon completion, to perform efficiently.

**Keywords:** *Employee training, Innovation Performance, DTS.*

## 1.0 INTRODUCTION

### 1.1 Background of the Study

The world is moving quickly from a production-based economy to an innovation-based economy (Huang, Yi-Chun & Wu 2010). Knowledge storage and application are the basis of economic growth and accumulated capital (Hsu & Fang, 2010). Crossan & Marina Apaydin (2010) define innovation as production or adoption, assimilation, and exploitation of a value-added novelty in economic and social spheres; renewal and enlargement of products, services, and markets.

Human resource management (HRM) practices have been defined in several aspects. Schuler and Jackson (2002) define HRM practices as a system that attracts, develops, motivate, and retains employees to ensure the effective implementation and the survival of the organization and its members. Besides, HRM practices is also conceptualized as a set of internally consistent policies and practices designed and implemented to ensure that a firm's human capital contribute to the achievement of its business objectives (Delery & Doty, 2004).

Sanidas (2005) examined the links between SMEs, organizational innovations (OIs), and economic growth across OECD countries with particular reference to Japan and the USA. The study in these two countries revealed that the American economic survival and Japanese protracted economic downturn can be related to the existence of organizational innovation. The relative importance of SMEs in the two countries was only a contingent factor necessary but not sufficient for economic growth.

Many developing countries are recognizing innovation as a major source of modern productivity growth and presently constitute a central process of economic advancement. In the context of Somalia, telecommunication industry has been considered as one of the most important industry in Somalia's economy. The industry has full contribution in terms of technological innovation, unemployment reduction, and acting as a source of public contribution to the society. Every telecommunication company attempts to popularize its services, renew its products, and make innovations in order to become well known and gain the major part of the market.

As contended by Küpper, (2001), service innovation strategy has been aimed at highlighting any procedures and strategies in improving and enhancing business in terms of new services or patterns of service. Many telecommunication organizations in Mogadishu brought new services to the market by enhancing their business performance, growth, and innovation strategies to succeed their competitors. However, the focus on Innovation Performance particularly in developing countries is a relatively recent phenomenon.

Kenya has managed to achieve a higher level of competitiveness when compared to other African countries. In the Global Competitiveness Index, Kenya ranked 94 in 2006, one place down from its previous rank of 93 in 2006 (Porter et al, 2006). The country's competitiveness seems to expand into the micro-economic area, displaying a rank of 68 for 2006 in the Business Competitive Index, five places up from rank 73 that Kenya occupied in 2005 (Porter et al, 2006). Kenya's technological achievements are far from being realized and it is ranked at 68 out of a total of 72. Not only has the country not managed to branch out into newer technological areas, it has also not managed to diffuse old technology to large parts of its

population, reducing with this the potential benefits that country nationals could derive from it (UNDP, 2008).

The SACCO movement in Kenya is reputed as the largest in Africa and among the top 10 globally (Wanyama, 2009). It has over KES 500 Billion in assets and a savings portfolio estimated at KES 378 Billion, the SACCO movement in Kenya constitutes a significant proportion of about 20% of the country's savings. SACCOs have thus become vital components of Kenya's economy and social development.

## **1.2 Statement of the Problem**

In the Kenya Vision 2030, Kenya aims at raising savings and investment rates from 17% to 30% and reducing the share of population without access to finance from 85% to 70%. Ahmed and Shepherd, (2010) noted that countries like USA, Japan and some European that continuously innovate contribute significantly to economic growth. Sacco's plays a critical role in the transformation of economy through mobilization of required savings and offering credit facilities. As part of Kenya Government reform process in the financial sector, SACCO Societies Regulatory Authority (SASRA) was established in 2008 with dual objectives of protecting the interests of Deposit taking Sacco's (DTS) members, ensuring public confidence in the public towards the Sacco sector and spurring Kenya's economic growth through the mobilization of domestic savings. However, despite of the increased regulatory reforms undertaken in the Sacco sub - sector in Kenya, performance of DTS' is still poor. SASRA statistics show that between 2014 and 2016, the regulator revoked operating licenses of 43 Deposit Taking Sacco's due to severely undercapitalization, inability to meet members and third parties obligations leading to unsustainably high external borrowing (SASRA 2015; 2016). CBK in a survey conducted in 2013 and 2014 found out that in spite of Sacco's wide geographical spread in the country, DTS's lost 12% and 17% respectively of their market share to other financial service providers. This implies that DTS's are threatened for survival as a competitive enterprise.

Nyaga (2014) avers that many DTS's are undercapitalized due to their low level of innovativeness. Cheruiyot (2012) found out that in order to gain competitive edge, increase capital, enhance efficiency and meet increasing demand of relatively cheaper loans by the members, DTS's must embrace innovation; introduce new products and services, adopts new technology, improve business processes and increase operational efficiency. Human Resource (HR) is the most important asset for any organization as source of achieving competitive advantage. The previous innovation literature has been characterized by relatively scant attention being paid to HRM practices and how they influence innovation performance (Laursen and Foss, 2011). Most of the empirically-based literature since the mid-2000s has focused on the effects of complementary HRM practices, rather than the effect of individual HRM practices (Ennen and Richter, 2010).

Notably still, most of the literature reviewed linking HRM practices to innovation performance are drawn from developed countries context like the USA, Europe and Japan and the studies cannot be generalized to Kenya. Although there are other HRM practices that influence innovation performance, this study will focus on employee training. This study therefore seeks to establish the influence of employee training on innovation performance of DTS's in Kenya.

### **1.3 Objective of the Study**

The objective of the study was to examine the influence of employee training on Innovation Performance of DTS in Kenya.

## **2.0 LITERATURE REVIEW**

### **2.1 Theoretical Review**

#### **2.1.1 Career Construction Theory**

Career construction theory by Holland, 1997 provides a way of thinking about how individuals choose and use work. The theory presents a model for comprehending vocational behavior across the life-cycle as well as methods and materials that career counselors use to help clients make vocational choices and maintain successful and satisfying work lives. It seeks to be comprehensive in its purview by taking three perspectives on vocational behavior: the differential, developmental, and dynamic. From the perspective of individual differences psychology, it examines the content of vocational personality types and what different people prefer to do. From the perspective of developmental psychology, it examines the process of psychosocial adaptation and how individuals cope with vocational development tasks, occupational transitions, and work traumas.

From the perspective of narrative psychology, it examines the dynamics by which life themes impose meaning on vocational behavior and why individuals fit work into their lives in distinct ways. In coordination, the three perspectives enable counselors and researchers to survey how individuals construct their careers by using life themes to integrate the selforganization of personality and the self-extension of career adaptability into a self-defining whole that animates work, directs occupational choice, and shapes vocational adjustment. Career construction theory responds to the needs of today's mobile workers who may feel fragmented and confused as they encounter are structuring of occupations, transformation of the labor force, and multicultural imperatives. This fundamental reshaping of the work world is making it increasingly difficult to comprehend careers with just person-environment and vocational development models that emphasize commitment and stability rather than flexibility and mobility. The new job market in our unsettled economy calls for viewing career not as a lifetime commitment to one employer but as selling services and skills to a series of employers who need projects completed. In negotiating each new project, the prospective employee usually concentrates on salary yet also seeks to make the work meaningful, control the work environment, balance work-family responsibilities, and train for the next job (Savickas, 2013).

#### **2.2 Empirical Review**

Employee training enables people to acquire new knowledge, learn new skills and perform tasks better. Training designs summarize all that is required in training to enable the trainee, upon completion, to perform efficiently. Bysted and Jespersen (2013) in their study on the role of the training and development on organizational innovations argued that when employees competences get developed, their creative skills get stimulated which in turn might trigger their innovative working behaviours. The study assumed that only competent employees are able to engage in innovative behaviours, since they are actually able to detect opportunities and problems.

Knol and van Linge (2009) use two variables to comprise training and development, namely opportunity and information. The first means to give employees the opportunity to learn and

grow. The latter refers to technical knowledge and data provided by the organization to enhance employees' knowledge and skills.

This is in line with Monks et al. (2012) who also describe training and development as knowledge and skill enhancing practice. Zhang and Begley (2011) name this practice knowledge structure, knowledge management and knowledge transfer, respectively. Knowledge acquisition and how this knowledge is structured and transferred among groups and individuals within an organization to enhance individuals' innovative capacity stay central. The above authors confirmed a direct positive relationship between training Innovation performance. However, they used different investigations of this HRM variable and give different explanations for the positive linkages, why a closer look is taking to their findings.

### **3.0 RESEARCH METHODOLOGY**

This study adopted a descriptive survey design. The sampling frame of this study was derived from the database of the SASRA. Multistage sampling was used to select the sample of the study. The population of the study was the 181 DTS's operating in Kenya while the target population was 18 DTS's. The respondents were individual management staff. A questionnaire was used to gather primary data. Secondary data was collected through review of published literature such as journals articles, published theses and textbooks. Information was sorted, coded and input into the statistical package for social sciences (SPSS) version 21.0 for production of graphs, tables, descriptive statistics and inferential statistics.

### **4.0 RESULTS AND DISCUSSIONS**

#### **4.1 Response Rate**

The number of questionnaires that were administered was 308 and a total of 296 questionnaires were properly filled and returned where as some of the respondents returned the questionnaires half-filled others refused to return them completely despite a lot of follow up. The response rate result is shown in Table 1.

**Table 1: Response Rate**

<b>Response</b>	<b>Frequency</b>	<b>Percent</b>
Returned	296	96.10%
Unreturned	12	3.90%
<b>Total</b>	<b>308</b>	<b>100%</b>

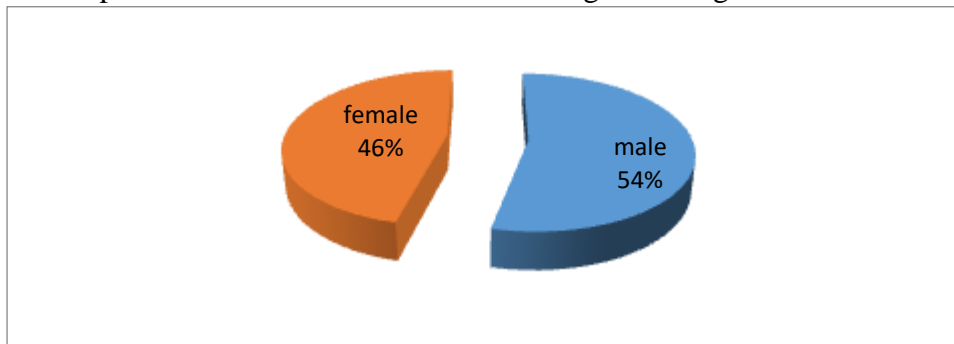
The response rate was 96.10% as shown on Table 1 This represented an overall success according to Mugenda and Mugenda (2003) and also Kothari (2004) a response rate of above 50% is adequate for a descriptive study. Cooper and Schindler (2003) also argues that a response rate exceeding 30% of the total sample size provides enough data that can be used to generalize the characteristics of a study problem as expressed by the opinions of few respondents in the target population Based on these assertions the response rate of , 96.10% was adequate for the study.

## 4.2 Demographic Characteristics

This section consists of information that describes basic characteristics such as gender of the respondent, age, level of education job position and number of years worked.

### 4.2.1 Gender of the respondents

The respondents were asked to indicate their gender. Figure 1 shows the results.

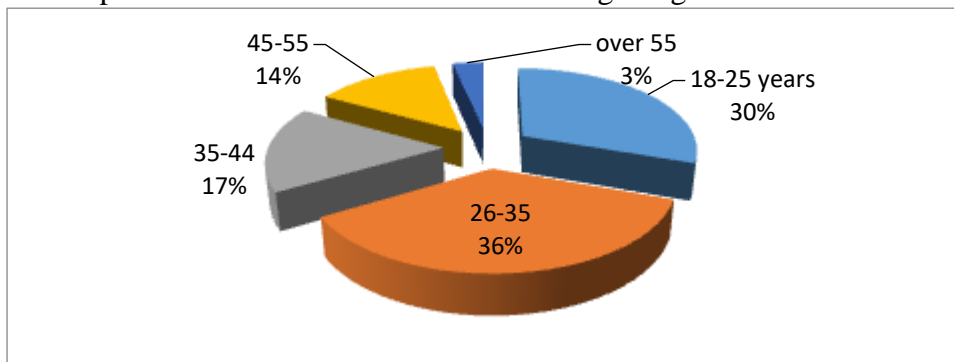


**Figure 1: Gender of the respondents**

Results in figure 4.1 show that 54% of the employees are males while only 46% are females. This implies that majority of people who works in Deposit Taking Sacco's are males. This agrees with a study by Ellis, Cutura, Dione, Gillson, Manuel & Thongori (2007) that in spite of women being major actors in Kenya's economy, and notably in agriculture and the informal business sector, men dominate in the formal sector citing the ratio of men to women in formal sector as 74%:26%. Other studies that have identified male domination in the formal and informal sectors include Gakure (2001) and Gakure (2003).

### 4.2.2 Age of the respondents

The respondents were asked to indicate their age. Figure 2 shows the results.



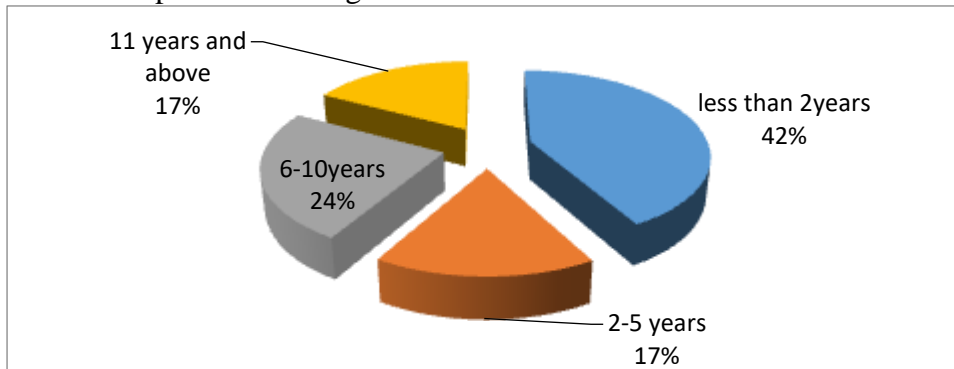
**Figure 2: Age of respondents**

Results in figure 2 show that 36% of employees in Deposit Taking Sacco's are aged between 26-35 years, 30% of the employees are aged between 18-25 years, 17% have their age between 35-44 years and 14% are between 45-55 years while only 3% are aged above 55 years. This indicates that majority of the people who work in Deposit Taking Sacco's are young. According to the Population Situation Analysis Report for Kenya (2014) the trend of population growth for persons aged 24-34 years has increased from about 12% in 1999 to nearly 15% in the year

2009. Therefore the finding of this study reflects the current trend of the Kenya population indices.

#### 4.2.3 Length of service

The respondents were asked to indicate the duration they have worked in the organization. Results are presented in Figure 3.

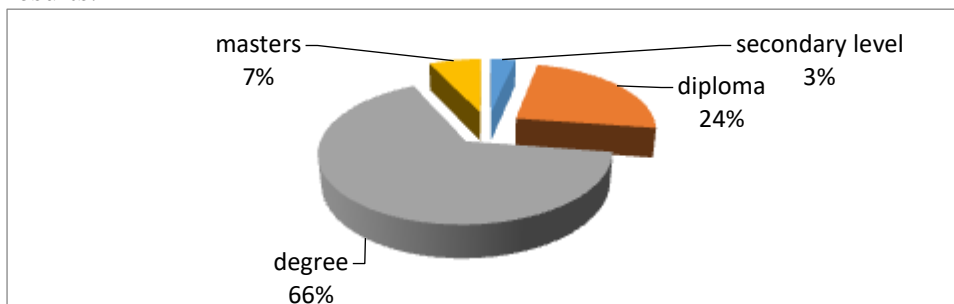


**Figure 3: Length of service**

Results in Figure 3 show that 42% of the respondents had worked in the Deposit Taking Sacco for less than 2 years, 17% had worked in the Deposit Taking Sacco for 2-5 years, and 24% had worked in the Deposit Taking Sacco for 6-10 years while 17% had worked in the Sacco for above 11 years. This implies that majority of the respondents had not worked in the organization for a long period. This finding is inconsistent with that of Ngui (2014) who found out that 65% of the respondents have worked in the sector for over five years, a period considered long enough for an employee to understand the operations of their respective duties. This finding is consistent with that of Randoy et al, (2006) who found out that one's experience depends on the number of years of service in the sector involved. It is assumed that the longer one worked in an organization, the more they understand the organization and hence the higher the ability to articulate issues pertaining to the organization (Afande, 2013)

#### 4.2.4 Level of education

The respondents were asked to indicate their highest level of education. Figure 4 shows the results.



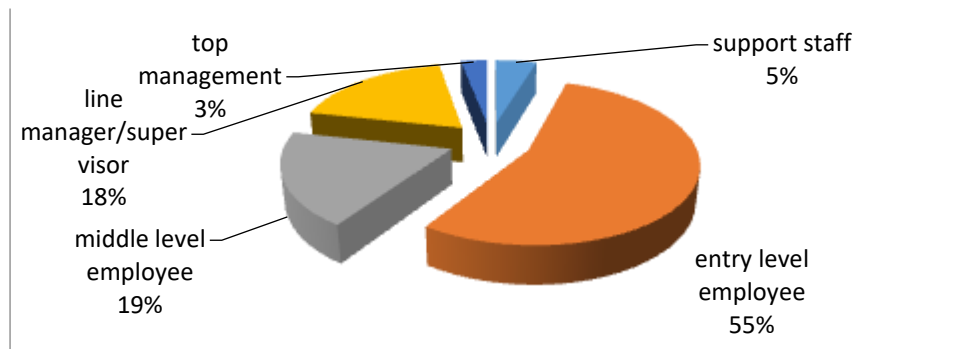


**Figure 4: level of education**

Results in Figure 4 show that 7% of the respondents had their highest level of education being masters level, 66% of the respondents had their highest level of education being degree level, 24 % of the respondents had their highest level of education being diploma level while only 3% had their highest level of education being secondary level. This implies that the employees working in the Deposit Taking Sacco are skilled for the job. In addition, regarding to this study, it means that the respondents were able to read the questionnaire on their own and thus better response achieved. This finding is inconsistent with that of Adegoye, Oladejo & Moruf, (2012) who found out that firm performance depends on academic qualification.

**4.2.5 Cadre**

The respondents were asked to indicate their current cadre in the Sacco. Figure 5 shows the results



**Figure 5: cadres**

The results in figure 5 show that 55% of the employees are at the entry level of job position 19% are middle level employees, 18% are managers or supervisors, 5% are support staffs while 3% are top managers. This indicates that most of the people in DTS in Kenya have not been trained enough to handle management positions.

**4.3 Influence of Employee Training on Innovation Performance of Deposit Taking Sacco’s in Kenya.**

The fourth objective of the study was to establish the influence of Employee training on Innovation Performance of Deposit Taking Sacco’s in Kenya.

**4.3.1 Reliability Results for Employee Training**

The result for reliability test for employee training is presented in table 2 below.

**Table 2: Reliability coefficient**

Variables	Number of items	Cronbach's Alpha	Comment
Employee Training	7	0.714	Reliable

Table 2 shows the reliability results. Employee training was reliable since the cronbach alpha was above 0.7 which was used as a cut-off of reliability for the study. Therefore the internal consistency reliability of the measure was excellent. This indicates that the data was reliable since a Cronbach’s alpha coefficient value of 0.714 was obtained on the research variables. This was above 0.70 and an alpha coefficient higher than 0.70 signifies that the gathered data

has a relatively high internal consistency and could be generalized to reflect the respondents' opinions on the study problem.

#### 4.3.2 Descriptive Statistics

The respondents were requested to indicate their level of agreement on the statements on employee training. Results are presented in Table 3.

**Table 3:Employee Training**

	strong ly disagr	disagre not	strongl	Mea	Std.		
Training Programs in my Sacco are geared towards Organization innovation	1.40%	2.70%	6.10%	70.60%	19.30%	4.04	0.695
Training techniques used in my Sacco creates and increases comparative advantages and enhances market share	0.00%	5.10%	5.10%	58.40%	31.40%	4.16	0.737
Training enables employees to acquire new knowledge, learn new skills and perform tasks better.	0.00%	0.00%	1.40%	30.10%	68.60%	4.67	0.498
Inducting employees on new products, processes, technology influences performance of Deposit Taking SACCOs	0.00%	1.40%	4.70%	46.30%	47.60%	4.4	0.646
Improving the competency of employees is a key determinant on enhanced creativity and innovation	0.00%	1.00%	1.40%	38.70%	58.90%	4.55	0.581
Training in SACCOs focuses on the current job, while development concentrates on providing activities to help employees expand their current knowledge and to							

allow for growth	1.40%	7.50%	2.40%	43.50%	45.20%	4.24	0.921
Changing business environment necessitates that SACCOs organizations should spend on employee training of employees to enhance organizational ability to positively respond to the dynamic environment	1.00%	1.00%	4.10%	34.20%	59.60%	4.5	0.72
<b>Average</b>						<b>4.37</b>	<b>0.69</b>
<b>Statements</b>	<b>ee</b>	<b>e</b>	<b>sure</b>	<b>agree</b>	<b>y agree</b>	<b>n</b>	<b>Deviation</b>

Results in table 3 revealed that majority of the respondents who were 89.90% (70.60%+19.30%) agreed that Training Programs in my Sacco are geared towards Organization innovation. 89.80% agreed in my Sacco creates and increases comparative advantages and enhances market share. The results also revealed that majority of the respondents who were 98.70% agreed that Training enables employees to acquire new knowledge, learn new skills and perform tasks better. 93.90% agreed that inducting employees on new products, processes and technology influences performance of Deposit Taking SACCOs. Further 97.60% agreed that improving the competency of employees is a key determinant on enhanced creativity and innovation. 88.70% agreed that training in SACCOs focuses on the current job, while development concentrates on providing activities to help employees expand their current knowledge and to allow for growth. The results also revealed that 93.80% agreed that Changing business environment necessitates that SACCOs organizations should spend on employee training of employees to enhance organizational ability to positively respond to the dynamic environment. Using a five point scale likert mean, the overall mean of the responses was 4.37 which indicates that majority of the respondents agreed to the statement of the questionnaire. Additionally, the standard deviation of 0.69 indicates that the responses were varied. The results herein imply that employee training influence innovation performance.

#### 4.3.3 Correlation analysis

Correlation analysis was conducted between employee training (independent variable) and innovation performance (dependent variable). Results are presented in Table 4. **Table 4: correlation matrix**

		Innovation performance	Employee training
innovation performance	Pearson Correlation	1.000	
			Sig. (2-tailed)

employee training	Pearson Correlation	.257**	1.000
	Sig. (2-tailed)	0.000	

\*\* Correlation is significant at the 0.01 level (2-tailed).

Results in Table 4 indicated that there was a positive and a significant association between employee training and Innovation performance ( $r=0.257$ ,  $p=0.000$ ) Employee training enables people to acquire new knowledge, learn new skills and perform tasks better. Training designs summarize all that is required in training to enable the trainee, upon completion, to perform efficiently. Bysted and Jespersen (2013) in their study on the role of the training and development on organizational innovations argued that when employees competences get developed, their creative skills get stimulated which in turn might trigger their innovative working behaviors.

#### 4.3.4 Regression Analysis

The results presented in table 5 present the fitness of model used of the regression model in explaining the study phenomena employee training structure was found to explain 6.6% innovation performance of Deposit Taking Sacco's in Kenya. This results further means that the model applied to link the relationship of the variables was satisfactory.

**Table 5: Model Fitness**

Variable	Coefficients
R	0.257
R Square	0.066
Adjusted R Square	0.063
Std. Error of the Estimate	0.702

In statistics significance testing the p-value indicates the level of relation of the independent variable to the dependent variable. If the significance number found is less than the critical value also known as the probability value (p) which is statistically set at 0.05, then the conclusion would be that the model is significant in explaining the relationship; else the model would be regarded as non-significant.

**Table 6 :Analysis of Variance**

	Sum of Squares	df	Mean Square	F	Sig.
Regression	10.277	1	10.277	20.83	.000
Residual	145.054	294	0.493		
<b>Total</b>	<b>155.331</b>	<b>295</b>			

Table 6 provides the results on the analysis of the variance (ANOVA). The results indicate that the overall model was statistically significant. Further, the results imply that the independent variables are good predictors of performance. This was supported by an F statistic of 20.83 and the reported p value (0.000) which was less than the conventional probability of 0.05significance level.

Regression of coefficient results were presented in table 7

**Table 7: Regression of Coefficients**

Variables	B	Std. Error	t	sig
(Constant)	1.618	0.167	9.705	0.000
Employee training	0.186	0.041	4.564	0.000

Regression of coefficients results showed that employee training and innovation performance are related ( $r=0.186$ ,  $p=0.000$ ). This implies that employee training and innovation performance are positively and significantly related. Training and development help in optimizing the utilization of human resource that further helps the employee to achieve the organizational goals as well as their individual goals (Adeniji, Osibanjo, and Abiodun, 2013). Training and development helps the company create a workforce that is able to cope with change, meet the increasing demands of consumers and prepare the future leadership of the company (Noe, 2008).

Thus, the model for the study is;

$$\text{Innovation performance} = 1.618 + 0.186 X$$

Where,

X= employee training

#### 4.3.5 Hypothesis Testing

The hypothesis was tested by using the ordinary least square regression. The acceptance/rejection criteria was that, if the p value is greater than 0.05, the Ho is not rejected but if it's less than 0.05, the Ho fails to be accepted. The null hypothesis was that employee training does not have a significant relationship with innovation performance. The alternative hypothesis was that employee training had a significant relationship with innovation performance.

Results in Table 6 above show that the calculated f-statistic of 20.83was higher than the tabulated/critical f statistic ( $F \alpha = 0.05$ ). The findings were further supported p-value of 0.000. This indicated that the null hypothesis was rejected hence employee training had a significant relationship with innovation performance.

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Conclusions

The study concluded that employee training has a positive and significant effect on innovation performance. Capacity building of staff for preparedness is perhaps the most important task. Deposit Taking Sacco's that train their employees lead to the employees competences getting

developed, their creative skills get stimulated which in turn trigger their innovative working behaviors. From this research, it was found that training and development leads to increased skill among the employees which in turn leads to improved quality of service to customers this concurs with findings that stated that training activities lead to better performance within an organization.

## 5.2 Recommendations

The study recommends for Deposit Taking Sacco's to come up with training programs which will better their understanding on their role in the SACCO. This will enable the trainee, upon completion, to perform efficiently.

## REFERENCES

- Bebbington, J., & Gray, R. (2003). Corporate accountability and the physical environment: Social responsibility and accounting beyond profit, business strategy and the environment. *Management Science Journal* 2(1), 1-11.
- Crossan, Mary M., & Apaydin, Marina. (2010). A Multi-Dimensional Framework of Innovation performance: A Systematic Review of the Literature. *Journal of Management Studies*, 47(6), 1154-1191.
- Delery, J.E. & Doty, H.D. (1996) 'Modes of Theorizing in Strategic Human Resource Management: Tests of Universalistic, Contingency, and Configurational Performance predictions'. *Academy of Management Journal*. 39(4): 802-35.
- Gray, L. R. (2009). *Educational Research, Competences for Analysis and Application*. Ohio: Charles. E. Merrill Press.
- Gray, R., Bebbington, J. & McPhail, K. (1994) "Teaching Ethics in Accounting and the Ethics of Accounting Teaching: Education for Immorality and the Case for Social and Environmental Accounting Education" *Accounting Education* 3(1) 51-75.
- Hsu, Y.H. & Fang, W. (2010). Intellectual capital and new product development
- Huang, Yi-Chun & Wu (2010). Intellectual capital and knowledge productivity: the Taiwan biotech industry", *Management Decision*, 48(4)580 – 599
- Jiang, J., Wang, S. & Zhao, S. (2012). Does HRM facilitate employee creativity and Innovation performance? A study of Chinese firms. *The International Journal of Human Resource Management*, 23(9), 4025-4047.