The Influence of Training and Development on the Performance of Employees in Research Institutes in Kenya

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Abstract: This study sought to establish the influence of Training and Development on the performance of employees in research institutes in Kenya. There is growing evidence that human resource management practices can play an important role in attaining high quality workforce. Training and Development has been specifically singled out as a major human resource management practice that can have an influence on the level of employee performance in organizations. Research institutes in Kenya have been facing performance challenges and there is need, therefore, for them (Research Institutes) to equip their employees with relevant skills. The quality of employees in terms of skills recruited by research institutes in Kenya is viewed as a possible intervention. The overall objective of the study was to determine how Training and Development influence employee Performance in research institutes in Kenya. The study adopted the null hypothesis that Training and Development do not influence employee performance in research institutes in Kenya. The study adopted descriptive and correlation research designs while the study population was drawn from all Government owned research institutes formed under the Science & Technology Act. Cap 256. The target population was drawn from the research institutes that were within Nairobi county and its environs. The study adopted stratified sampling technique while the sample size was 256 employees. The study used questionnaires to collect data while Cronbach’s alpha was used to test the validity and reliability of the instruments. A statistical package for social sciences (SPSS) was used to analyze quantitative data while data was presented using statistical techniques such as tables, bar-graphs and pie charts. The results of the study revealed that the correlation between employee performance and Training and Development were highly significant at 0.383 (P=0.000). The study recommended that research institutes initiate Training and Development programs that are relevant to their needs.

Keywords: Training, Development, Employee performance, Human resource management, Practices.

1. Introduction

Training is a key part of a broader field of human resource development and theories on learning have emphasized the need for strategic leadership that communicates the organization vision and mission clearly to enable employees understand the organization objectives for optimum performance (Cole, 2002).

Opportunities for training and development are major factors in regards to people’s career. Training factors are evaluated in recruitment process. Bartlett (2001) found a positive relationship between workplace training and organizational commitment. From an employee stand point, a training received is related to a significant portion of satisfaction experienced on the job, employee’s value training and job. Examined on another level, employees view training as an aspect that allow them to be better able to offer customer satisfaction since they are already satisfied them and will increase their performance levels.

Training employees shows a strong commitment that an employer has with employees and demonstrate the value that an employer has on the employees. Schmidt (2004) in his study on the relationship between workplace training and overall job performance found out that components of job training and time spent in training determined a significant relationship to employee performance on the job. The quality of training has maximum impact on performance since work output of an employee would be dependent on the experience level that employee would have acquired (Sahu, 2000). The training impacts on performance in that it determines whether one will keep the job at hand or loose it altogether if not well done. A common cause of job dissatisfaction is that the staffs do not have the basic skills required for their job. The struggle to finish or accomplish an assigned work is seen and as a result the gap between their skill level and the expected performance keep them away from job satisfaction. Armstrong (2006) points out that a needs analysis that is fully involving and inclusive of all employees must be carried out before any training is done. In particular, Mullins (2007) notes that employees need to be trained and developed inclusively to avoid talent loss that affect performance of other employees and the whole organization.

Teaching and training programs provided by tertiary education systems concerning lifelong adult learning is one of the trends in most organizations (Foley, 2004). In today’s rapidly changing socio-economic environment, where the importance of competencies and skills acquired and refined has been widely recognized (Gove, 2012). Over the past decade, new dynamics have emerged in the domain of education that focuses on training and development of employees as well as accelerating the rate of knowledge economic growth (Powell & Snellman, 2004). The optimization of human resources, by reforming and upgrading their knowledge is the key to staff development,
thus the achievement of organizational goals (Manente, 2008). However, the coexistence of intrinsically heterogeneous human capital requires the development of specific programs, especially for adult and other non-traditional learners in order to be consistent with the current trends of education and innovation (Walsh, 2009).

Human resource planning has been viewed as the most powerful tool of any organization’s success and the training and development of employees is regarded as one of the most important functions of effective resources management (Nelson & Wei, 2012). In order to obtain a competitive edge in providing the best services to the customers, training and development which will develop a well productive workforce is necessary (Hyz & Pappas, 2005). New professionals may, therefore, require the same in order to continuously improve on their productivity. Others may however need it for a specific purpose such as the development of a new service. In a situation of less development. People need training even more because if a job becomes drudgery, it cannot be performed effectively (Gottelmann-Duret & Bahr, 2012). Training and development is particularly important for the maintenance of the human resource base of the organization and must be viewed as an integral part of the core organizational strategy, rather than an ad hoc operational issue (Rowley, 2001). Lack of training and development, therefore, results into lack of skill to use the knowledge existing in a person, which causes in effective services, lack of self-satisfaction, customer satisfaction and ensuing lower productivity. A well trained and developed individual understands the scope, expectations and depth of their jobs and will be able to add building blocks to their professionalism as they progress through their careers. Training and development is, therefore, critical for human resource planning and organizational/ staff development.

1.1 Statement of the Problem

Research institutes in Kenya plays an important role towards the realization of vision 2030. This is because research has been singled out as the driving force and the Government, therefore, lays a lot of emphasis by supporting various projects being undertaken by research institutes (GOK, 2012). In order to remain relevant and achieve their goals, research institutes have undertaken various HRM practices including Training and Development. In undertaking this practice (Training & Development), research institutes aim to equip their employees with relevant skills. In addition to this, research institutes have developed an HR strategic plan which provides road maps on how they can achieve their goals. Among the issues being addressed in their strategic plans is training and development of staff. However, from the year 2008 to 2012, research institutes in Kenya have faced performance challenges. This has been attributed by the fact that they have not been able to achieve their desired results. Specifically, the performance contracting results for the financial years 2008/2009 and 2009/2010 respectively indicate that although they did well, they fall short of what was anticipated of them despite the fact that the Government increased their budgetary allocation (GOK, 2010). Among the best performing research institutes were Kenya Agricultural Research Institute and Kenya Forestry Research Institute with a performance index of 2.86 and 2.83 respectively. On a scale of 5, this was considered to be slightly above average. On the other hand, Kenya Medical Research Institute and Coffee Research Foundation had a performance index of 2.49 and 2.48 respectively and this was considered to be slightly below average. Training and Development is, therefore, viewed as a possible intervention. There is not much information that is available on the role of Training and Development on the performance of employees in research institutes in Kenya. This study, therefore, sought to explore how Training and Development influence employee performance in research institutes in Kenya.

1.2 Objective of the study

The objective of the study was to determine the influence of training and development on the performance of employees in research institutes in Kenya.

2. Methodology

The study adopted descriptive and correlation research designs. Kothari (2001) observes that a descriptive research design is used when one wants to get information on the current status of a person or object. Mugenda and Mugenda (2008) on the other hand indicate that correlation research design is basically concerned with assessing relationships among variables. The study populations were all employees in the selected cadres of all Government owned research institutes formed under the Science and Technology Act. Cap. 250. These institutes include; Kenya Agricultural Research Institute, Kenya Forestry Research Institute, Coffee Research Foundation, Kenya Sugar Research Foundation, Kenya Industrial and Research Development Institute, Kenya Medical Research Institute, Kenya Marine Fisheries Research Institute and Tea Research Foundation with a total population of 986. The target population on the other hand consisted of research institutes within Nairobi County and its environs. They included; KARI, KEFRI, CRF, KIRDI and KEMRI with a total population of 760. The study adopted a sample size of 34% which translated into a sample size of 256. Stanley and Gregory (2001) indicate that a sample size of at least 30% of the population is generally acceptable. Structured questionnaires were used to collect primary data while secondary data was collected through published reports. Kothari (2008) observes that collecting data through the use of questionnaires saves time. Cronbach’s alpha was used to test the reliability of measures in the questionnaire. All variables were found to be reliable and valid since they ranged above 0.7. A statistical package for social science (SPSS) was used to analyze quantitative data while a linear regression model \[ Y = \beta_0 + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + \epsilon \] was used to describe the relationship between independent variables and dependent variable. A t-test was also conducted to ascertain if two sets of data were significantly different from each other. Normality test was used to test for the normality of the dependent variable Y. The study, therefore, conducted Kolmogorov-Smirnov and Shapiro-Wilk tests to test the normality of the dependent variable Y. In addition, Analysis of Variance (ANOVA) test was also conducted to analyze the amount of variation within each sample relative to the amount of variation between samples. Quantitative data was presented through statistical techniques such as tables, pie-charts and bar-graphs while qualitative data was presented
descriptively. t-test was used to test the significance of the influence of independent variables \( x_1, x_2, s_3, s_4 \) and \( s_5 \) at 5% level of significance. For the hypothesis to be accepted or rejected, comparison was made between the critical t values and the calculated t values. If the calculated t was greater than the critical t, then the alternative hypothesis was accepted.

3. Results and Discussion

3.1 Response Rate

A total of 256 questionnaires were distributed to the target population. This consisted of KARI, KEFRI, CRF, KIRDI and KEMRI. The number of questionnaires distributed included KARI with a total of 112, KEFRI with a total of 66, CRF with a total of 34, KIRDI with a total of 20 while KEMRI had a total of 24. Out of the 256 questionnaires distributed, a total of 184 were returned which represents a response rate of 71.9%. This response rate was satisfactory to draw conclusions from the study and was, therefore, representative. According to Mugenda and Mugenda (1999), a response rate of 50% is adequate for analysis and reporting, a rate of 60% is generally good while a response rate of above 70% is excellent. This is also the same position taken by Babbie (2010) who also asserts that a response rate of above 70% is deemed to be very good. Table 1 shows the distribution and response rate of questionnaires from the respondents.

Table 1: Response rate

<table>
<thead>
<tr>
<th>Name of the organization</th>
<th>Total number of questionnaires distributed</th>
<th>Total number of questionnaires completed and returned</th>
<th>Response rate per organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>KARI</td>
<td>112</td>
<td>87</td>
<td>77.70%</td>
</tr>
<tr>
<td>KEFRI</td>
<td>66</td>
<td>37</td>
<td>56.06%</td>
</tr>
<tr>
<td>CRF</td>
<td>34</td>
<td>23</td>
<td>67.60%</td>
</tr>
<tr>
<td>KIRDI</td>
<td>20</td>
<td>17</td>
<td>85.00%</td>
</tr>
<tr>
<td>KEMRI</td>
<td>24</td>
<td>20</td>
<td>83.30%</td>
</tr>
<tr>
<td>Total</td>
<td>256</td>
<td>184</td>
<td></td>
</tr>
</tbody>
</table>

Table 1 shows that all organizations had a response rate of above 50% and hence the conclusions drawn from the study are representative. KIRDI had the highest response rate of 85%. This was closely followed by KEMRI at 83.3%, KARI at 77.7%, CRF at 67.6% while KEFRI had a response rate of 56.06%.

3.2 Employee Performance

Employee performance in research institutes in Kenya is very critical because it determines whether they are to achieve their objectives or not. Employee performances also tend to enhance their corporate image.

3.3 Factor analysis for employee performance

The dependent variable which was employee performance in research institutes in Kenya had a total of eight (8) items in which six (6) were confirmed valid and were, therefore, retained for subsequent analysis. However, two (2) items that is, the cost of work performed has some degree of control over costs and the employees in the organization are encouraged to appraise themselves were excluded from subsequent analysis since they had a factor loading of below 0.4. This information is presented in Table 2.

Table 2: Component Matrix for Employee Performance

<table>
<thead>
<tr>
<th>Item</th>
<th>Extraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work performed by employees in the organization is of high quality</td>
<td>0.456</td>
</tr>
<tr>
<td>Employees in the organization usually meet deadlines</td>
<td>0.608</td>
</tr>
<tr>
<td>The cost of work performed has some control over costs</td>
<td>0.325</td>
</tr>
<tr>
<td>The employees in the organization achieve their specified targets</td>
<td>0.611</td>
</tr>
<tr>
<td>The rate of absenteeism in the organization is low</td>
<td>0.447</td>
</tr>
<tr>
<td>Employees in the organization are creative and innovative</td>
<td>0.427</td>
</tr>
<tr>
<td>Employees in the organization are encouraged to appraise themselves</td>
<td>0.199</td>
</tr>
<tr>
<td>Employees in the organization are aware of the organizational objectives, mission statement and vision</td>
<td>0.627</td>
</tr>
</tbody>
</table>

After the factor analysis was conducted, the reliability test was conducted using Cronbach’s Alpha based on the items that were confirmed in order to ascertain the measure of the degree to which a research instrument would yield the same results of data after repeated trials (Devellis, 1991). Employee performance had a total of eight items, but two were dropped and a new reliability co-efficient determined as shown in Table 3.

Table 3: Reliability Co-efficient for Employee Performance

<table>
<thead>
<tr>
<th>Cronbach’s Alpha</th>
<th>Number of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.795</td>
<td>6</td>
</tr>
</tbody>
</table>

3.4 Normality of Employee Performance in research institutes in Kenya

Following the descriptive analysis, normality of the dependent variable was conducted. For inferential analysis to be done such as correlation, regression or related linear techniques, the dependent variable should have a normal distribution. In case the dependent variable is not normally distributed, then normality has to be sought for before proceeding with any further analysis (Anthony et al, 2007; Annette, 2002; Alan, 2003). Thus, employee performance was subjected to normality test to check if the data was normally distributed or not. The testing of normality of employee performance in this study was conducted using Kolmogorov Smirnov test and Shapiro Wilk test. The test was done such that given \( H_0 \) and \( H_1 \), with \( \alpha = 0.05 \), the rule of thumb according to (Daviv, 2012; Rencher, 2002) is that reject \( H_0 \) if p-value is less than \( \alpha \) or else fail to reject \( H_0 \):

\[ H_0: \text{The data is normal} \]
\[ H_1: \text{The data is not normal} \]

<table>
<thead>
<tr>
<th>Kolmogorov-Smirnov</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statistic</td>
<td>df</td>
</tr>
<tr>
<td>Employee performance</td>
<td>0.9862</td>
</tr>
</tbody>
</table>

Thus, Table 4 indicate that using both tests of normality that is Kolmogorov Smirnov test and Shapiro-Wilk tests, the p-
value for both tests is greater than 0.05, thus the study failed to reject H₀ and a conclusion made that employee performance variable was normal in distribution and as a result subsequent analysis was done.

Figure 1, shows a histogram of the dependent variable fitted with a normal curve, the figure shows that employee performance was approximately normal with a mean of 17.47 and standard deviation of 4.538. The quantile-quantile (Q-Q) plot and the detrended Q-Q were also established and are illustrated on Figures 4&5. The Q-Q plot is an excellent way of observing whether data deviate from normal, while the detrended Q-Q plot is useful for spotting outliers (David, 2012; Brian 2005).

According to David (2012), for a variable to be normally distributed, most of the cases should lie on the theoretical quantile line. From figure 1, the normal Q-Q plot of employee performance had most of its cases lying on the 45° line, thus the observed values of employee performance in research institutes in Kenya are in conformity with the hypothetical distribution and hence normally distributed. Further, the detrended Q-Q plot in Figure 2 affirmed the normality of the data.

Figure 1: Normality of Employee Performance

![Employee Performance](image1.png)

4. Training and Development

Training and development is a critical component of the HRM function since it enables research institutes to have employees who are skilled.
4.1 Factor analysis for training and development

Training and Development as an independent variable had a total of Thirteen (13) items. All the items in the variable were confirmed valid since their factor loading values were more than 0.4. They were, therefore, retained for subsequent analysis. This information is presented in Table 5.

Table 5: Component Matrix for Training and Development

<table>
<thead>
<tr>
<th>Item</th>
<th>Extraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>People are properly oriented and trained upon joining the organization</td>
<td>0.486</td>
</tr>
<tr>
<td>The organization does provide regular opportunities for personal and career development</td>
<td>0.507</td>
</tr>
<tr>
<td>Innovation and creativity are encouraged in the organization</td>
<td>0.490</td>
</tr>
<tr>
<td>The organization has career development activities that help employees identify/improve their abilities, goals, strengths and weaknesses</td>
<td>0.534</td>
</tr>
<tr>
<td>The organization accords equal training opportunities for all cadres of staff</td>
<td>0.603</td>
</tr>
<tr>
<td>After formal training, the organization recognizes employees’ efforts</td>
<td>0.519</td>
</tr>
<tr>
<td>The organization has put in place well elaborate development programs aimed at improving employee performance</td>
<td>0.410</td>
</tr>
<tr>
<td>The workshops and seminars organized by the organization are relevant to the needs of the organization</td>
<td>0.500</td>
</tr>
<tr>
<td>The organization conducts workshops both within and outside its premises</td>
<td>0.493</td>
</tr>
<tr>
<td>The organization embraces both on the job and off the job training</td>
<td>0.547</td>
</tr>
<tr>
<td>There is an elaborate policy in the organization to guide on training and development activities</td>
<td>0.497</td>
</tr>
<tr>
<td>The organization has set up a committee that reviews and evaluates training needs assessment</td>
<td>0.508</td>
</tr>
<tr>
<td>There is a budget set aside in the organization to cater for training and development activities</td>
<td>0.463</td>
</tr>
</tbody>
</table>

Training and development had a total of thirteen items and all of them were confirmed valid and had an acceptable reliability co-efficient of above 0.7 as shown in Table 6.

Table 6: Reliability Co-efficient for training and development

<table>
<thead>
<tr>
<th>Cronbach’s Alpha</th>
<th>Number of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.828</td>
<td>13</td>
</tr>
</tbody>
</table>

4.2 Training and Development Pearson correlation computation

Based on the results in Table 7, the correlation coefficient (P) between employee performance and training and development was found to be 0.383 at (P=0.000). The findings of this study therefore, indicate that there was a highly significant linear correlation between the two variables (Training and development and employee performance). This implies that the two variables are very close. This supports the argument by Miller et.al (2002) who indicates that there is a strong relationship between training and development and employee performance. They argue that employees who are skilled tend to be more productive than those who are not. Becker (2001) indicates that organizations should invest in their employees through training and development in order to boost their performance since this is the only way for organizations to improve on their portfolio. Kokkos (2005), Walsh (2009) and Herod (2012) also indicate that once organizations have procured employees, they should continuously develop their skills in order to improve on performance.

Table 7: Training and Development Pearson correlation computation-Correlations

<table>
<thead>
<tr>
<th>Employee Performance</th>
<th>Training And Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.383*</td>
</tr>
<tr>
<td>N</td>
<td>184</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.383*</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>184</td>
</tr>
</tbody>
</table>

4.3 Results of the regression analysis on Training and development

The model equation  \( y = B_2 x_2 + \varepsilon \) explained 38.3 % as measured by the goodness of fit as shown in Table 8. This showed that Training and Development explained 38.3 % of the variation in employee performance. This indicates a moderate relationship since it is above the recommended 30% (Sekaran, 2003). This supports the argument by Hyz and Papas (2005) who argue that employees who are trained and developed are likely going to be motivated and this will improve their performance. Guri-Rosenbliit (2010) indicate that organizations with well-defined training and development programs tend to have a competitive edge over its rivals. He argues that employees cannot perform effectively if they are not trained and developed since this will have an overall effect on organizational performance. Gove (2012) indicate that there is a strong relationship between training and development and employee performance since employees who are skilled tend to focus more on the achievement of organizational goals. Smart and Paulsen (2012) also indicate that training and development of employees in organizations represent an indication of seriousness on the part of organizations. They argue that organizations which equip their employees with relevant skills enhance their corporate image as well as employee performance.

Table 8: Model summary for regression between Training and Development and employee performance

<table>
<thead>
<tr>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>.383*</td>
<td>.147</td>
<td>.142</td>
<td>4.203</td>
</tr>
</tbody>
</table>

The ANOVA results indicated that the model of employee performance with training and development at F-value 31.329, p=0.000 explained the variance in employee performance in research institutes in Kenya. The results of ANOVA are presented in Table 9.
According to the results of the regression, training and development was found to have a positive influence on employee performance. This is illustrated by the regression results at 95% confidence interval with unstandardized beta coefficient of 0.240 and t value of 5.597 with a p-value of 0.000.

In supporting the findings of the study on the significance of training and development on employee performance, previous studies conducted by McLrath et.al (2012) revealed that achievement of organizational objectives will depend on the skills available in the organization. They argue that skills possessed by employees have a strong influence on employee performance. Kismihok et.al (2012) also conducted studies to establish the influence of training and development on employee performance. The study revealed that training and development had a positive impact on employee performance. It was established that organizations which were able to achieve their goals are those that had imparted relevant skills to their employees.

5. Training and Development Hypothesis Results

There is no significant linear relationship between training and development and employee performance.

The hypothesis that
\[ H_0 : B_1 = 0 \]
\[ H_1 : B_1 > 0 \]
were tested by comparing the calculated t value and the critical t-value

Since the calculated t=5.597 is greater than critical t(184-1) α(0.05) = 1.96, the study rejected the null hypothesis that there is no significant linear relationship between training and development and employee performance in research institutes in Kenya. In supporting this, Evans, Kelley and peoples (2010) indicate that there is a positive relationship between training and development and employee performance. They argue that employees who are trained tend to be more efficient. Fischer and Smith (2003) also indicate that organizations should develop effective training and development programs in order to improve the performance of their employees.

6. Conclusion

Although research institutes in Kenya have put in place training and development programs, there seems to be in equalities in sponsorship opportunities since staffs in the scientific cadres are always given priority. Research institutes in Kenya have different cadres of staff who contribute towards the achievement of their objectives. The model summary for training and development indicated that there was a high significant relationship between training and development and employee performance.

7. Recommendations

Research institutes in Kenya should ensure that the training offered to employees should be relevant to their needs. All cadres of employees should be given equal opportunities in terms of sponsorship. In order to achieve this, training needs analysis should be conducted to ascertain the possible gaps. Training committees which represents all cadres of employees should be formed in order to ensure fairness in the award of training scholarships.

References


