

Human Capital and Performance of Water and Sewerage Utilities, Kenya

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Abstract: Kisumu Water and Sewerage Company has consistently struggled to achieve its envisioned accepted performance against business plan target of 80% set by the Water Sector Regulatory Board standards despite having unlimited access to government subsidies, donor grants, commercial loans and enabling policy environment. This study sought to establish the influence of human capital performance of KIWASCO. The study adopted a correlation research design with a sample size of 68 respondents selected through Stratified random sampling from a target population of 83 managers while data was collected using a semi-structured questionnaire. Both descriptive and inferential statistics were used to analyze the data, involving means and standard deviation and correlation and regression analysis. The study established a significant influence of human capital ($p < 0.001$) on organizational performance at 5% level of significance. It was concluded that human capital had a significant influence on organizational performance. The study concluded that human capital had positive significant influence on organizational performance and recommends that the WASH sector reforms should prioritize building creative and innovative human capital at the helm of the companies. Future research should explore the mechanisms of building human capital in similar companies and trends across business periods within similar regulatory context.

Keywords: Human Capital, Performance of Water and Sewerage Companies

I. INTRODUCTION

Access to water and sanitation for most urban and rural poor remains a challenge in developing countries (United Nations, 2020) and is expected to worsen with a global demand projection for fresh water exceeding supply by 40% in 2030 (UN, 2017). A 2014 survey of the world's 500 largest cities estimates that one in every four households is in a situation of water stress (UNICEF, 2015). Improved access to water and sanitation is fundamental to the achievement of sustainable development goals (SDGs) of healthy living and poverty eradication (UNICEF, 2015).

In Sub-Saharan Africa, 43% of the urban population had access to piped water by 1990, but this had dropped to 33% by 2015 due to rapid urbanization and population growth compared to water utilities expansion (Heymans *et al.*, 2016). Though the National Water Services Strategy 2007-2015 had a target of 80% for water services in the urban setting, only 15% urban water utilities in Kenya met the set target with the

rest performing poorly despite the countless interventions (World Bank, 2016). However, the government has again affirmed commitment to Sustainable Development goal (SDG 6), with a national target of 80% coverage by 2020 and universal access coverage by 2030 (World Bank, 2016). This has been through water sector reforms in 2002 to ensure that water provision is reliable, financially sustainable and safe water services (World Bank, 2016). While past interventions incidentally did help improve governing environments and utility management, many water utilities continue to struggle in improving service for sustainability. According to Okumus (2013) human knowledge resources is vital for strategy implementation. However, few empirical studies have explored the role of human resource on performance of water utilities in Kenya. The study therefore focused on Kisumu water and sewerage company (KIWASCO) to understand the relationship of the variables under study.

The study sought to establish the influence of human capital on performance of KIWASCO, Kenya. This study is significant to many water and sanitation service companies in Kenya that are mandated to supply quality water across the rural and urban areas but are struggling in reaching the regulatory set targets. The study is useful to policy makers in the government since recommendations can be implemented through policy frameworks. The findings of the study might be of significance to the county government water resource management officials and the civil society organizations by equipping them with facts and knowledge necessary to ensure effective oversight, financing, partnership and collaboration for access to adequate quality water supply. The findings of this study enrich existing knowledge and hence are of use to both researchers and academicians for further investigations.

II. LITERATURE REVIEW

2.1 Theoretical Review

Theories propose reasons in the form of cause-and-effect relationships that explain the variation of a particular phenomenon in terms of the effects of the action of another phenomenon – the why and the how (McAuley, Duberley and Johnson, 2007).

2.1.1 Human Capital Theory

Human Capital Theory founded by Becker's (1993) noted that the most valuable of all capital is that of investment in human being. Examples of firm-specific human capital include expertise obtained through education and training in management information systems, accounting procedures, or other expertise specific to a particular firm (Odongo and Owuor, 2015). General-purpose human capital is knowledge gained through education and training in areas of value to a variety of firms such as generic skills in human resource development (Onyango, 2012). Baron and Armstrong (2007) suggest that human capital arises out of any activity able to raise individual worker productivity.

Mwangu (2006) explains that human capital is 'generally understood to consist of the individual's capabilities, knowledge, skills and experience of the company's employees and managers, as they are relevant to the task at hand, as well as the capacity to add to this reservoir of knowledge, skills, and experience through individual learning. Despite the important role of human capital in modern societies, there are still many unknowns about the process of educational production as well as individual and collective decisions concerning how much and what kind of education to obtain (Mweni, 2008). The theory is used in the study to explain the premise that employee skills and knowledge will lead to quality decisions formulation and implementation to promote organizational performance. Organizations should invest in trainings in order implement strategies formulated without difficult. Employee training will minimize change resistance and enhance strategic planning process. However, these theories do not review human capital and organizational performance together in a similar context which this study explored in Kisumu Water and Sanitation Company.

2.2 Empirical Literature Review

2.2.1 Human Capital and Organizational Performance

Human capital refers to the knowledge and skills of a firm's entire workforce. From the perspective of human capital, employees are viewed as a capital resource requiring continuous investment, being perhaps the only truly sustainable source of competitive advantage (Hitt et al., 2013). Hitt et al., (2006) support the argument that valuable intangible resources are the most likely to contribute to a competitive advantage and create value for owners, extending the knowledge of the resource-based view of the firm (RBV). Resource-based view suggests that possessing valuable and rare resources provides the basis for value creation, which may be sustainable when the resources are also inimitable and lack substitutes (Sirmon, Hitt and Ireland, 2007). Effective staff development and training programs help strategic leaders build skills to complete other tasks associated with the actions characteristic of strategic leadership such as determining strategic direction, exploiting core competencies and developing organisational culture (Hitt et al., 2013). The

interaction of human capital with strategy has positive effects on firm performance.

According to Grigoryev (2006), effective human resource recruitment benefits from core competency modelling to ensure the right person is hired for the right job. Together with motivation, skills are what organizations need to meet the challenge of change. No strategy can be fully implemented without the active support and commitment of the personnel. If personnel are encouraged to value their contribution and that of their colleagues, they will generate their own sense of pride in their service delivery.

In Nigeria, Ukenna, Ijeoma, Anionwu and Olise (2010) sought to establish the effect of investment in human capital development on organisational performance. A structured questionnaire was used to collect data while analysis involved ANOVA, t-test, regression and correlation. The study showed that training and skill are stronger predictors of human capital effectiveness. Equally, a study by Abioro (2013) on effect of employee motivation on organizational performance using descriptive survey design and target population drawn from MTN Nigeria indicated that employee motivation have positive effect on organizational performance. Three different hypotheses were formulated and tested using descriptive statistics and correlation analysis.

Using Human capital, skill acquisition and sustainable resource theories, Odhong and Omolo (2015) sought to establish the effect of Human Capital Investment on Organizational Performance of Pharmaceutical Companies in Kenya and confirmed that there exists a positive significant relationship between human capital investment and organizational performance. Data was collected from 200 participants using questionnaires and analysis conducted using descriptive and inferential statistics.

III. METHODOLOGY

The study adopted a correlation research design. A correlation study is a quantitative method of research in which the similarities between two or more quantitative variables from the same group of subjects are determined. According to Kothari (2004), correlation analysis studies the joint variation of two or more variables for determining the amount of correlation between two or more variables. The study used a sample size of 68 respondents out of a target population of this study comprised of 83 managers of KIWASCO. Stratified random sampling was used to select the respondents as it allows the population to have an equal chance of being selected in the different strata of senior, middle level and lower level managers. Data was collected using a semi-structured questionnaire containing open and close-ended questions. The researcher first conducted a pilot study on 10% of unselected respondents were used and a validity coefficient of 0.79 and a reliability coefficient of 0.8 obtained. Descriptive statistics of mean and standard deviation and inferential

statistics of correlation and regression at a significance level of 0.05 was done.

The regression model that was used in this study was

$$Y = \beta_0 + \beta_1 X_1 + e$$

Where;

Y= Dependent Variable (Organizational Performance)

β_0 = Constant

β = Coefficient

X_1 =Human Capital

e= error term

H_0 : Human Capital has no significant influence on Organizational Performance of KIWASCO, Kisumu County, Kenya

Performance=f(Human Capital, random variable)

IV. FINDINGS AND DISCUSSION

Out of the sampled 68 questionnaires, only 54 were dully filled representing a response rate of 79.8%. The study sought to establish the influence of Human Capital on performance of KIWASCO, Kisumu County, Kenya. The researcher required the respondents to specify the extent to which Human Capital influenced performance of KIWASCO. The responses were as shown on Table 4.14.

Table 4.1: Extent of Human Capital

	Frequency	Percent
No extent	1	1.9
Low extent	3	5.6
Moderate extent	10	18.5
Great extent	28	51.9
Very great extent	12	22.2
Total	54	100.0

The findings show that 51.9% of the respondents indicated that human capital influences the performance of KIWASCO to a great extent, 22.2% indicated to a very great extent, 18.5% indicated to a moderate extent, 5.6% indicated to a low extent while 1.9% indicated to no extent. This implies that there was adequate human capital which has influence on performance of KIWASCO as 74.1% agreed that there was adequate human capital in the organization. This conforms to Hittet *al.*, (2013) who argued that in every organization the human capital's increasing importance implies a significant role for the human resource function of the organization.

The respondents were required to specify the extent to which aspects of human capital were practiced in the organization. The aspect of Human Capital was measured

using four indicators of the organization motivates employees in the organization; the organization conducts staff training frequently; the organization offers coaching to its employees and; the organization has good promotion system. The indicators were developed into five Likert items measured on a 5-point Likert scale as 1 = No extent, 2 = Low extent, 3 = Moderate extent, 4 = Great extent and 5 = Very great extent. The participants provided their opinion based on their level of agreement with each item. The results were analysed and presented using mean and standard deviation as presented in Table 4.15.

Table 4.2: Extent of Practice of Aspects of Human Capital in KIWASCO

Statement item	Mean	Std. Dev.
The organization motivates employees in the organization.	3.889	0.691
The organization conducts staff training frequently.	3.667	0.476
The organization offers coaching to its employees.	2.130	0.339
The organization has good promotion system	4.111	0.718
Composite Mean	3.449	

The composite mean for Human Capital was moderate 3.449 indicating that participants moderately agreed that KIWASCO had better Human Capital. The results also show that the organization has good promotion system (Mean=4.111) and that the organization motivates employees in the organization (Mean=3.889) to be above average as most of the respondents agreed that sufficient promotional system and employee motivation was being undertaken. Equally, the results revealed that respondents to a moderate extent agreed that the organization conducts staff training frequently (Mean=3.667) while concerning the statement that the organization offers coaching to its employees (Mean=2.130) had very low agreement amongst respondents since it was way below the composite mean of 3.449.

These findings are in line with Hittet *al.* (2006) who support the argument that valuable intangible resources are the most likely to contribute to a competitive advantage and create value for owners, extending the knowledge of the resource based view of the firm (RBV).

4.1 Relationship between Human capital and organizational performance

The researcher sought to analyze the relationship between Human Capital and organizational performance. The regression analysis was used to establish the relations between the independent and dependent variables while correlation was conducted to assess the degrees of association between the variables. A Pearson moment 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. Table 4.18 shows the results for the Pearson moment correlation.

Table 4.38: Correlation Coefficients

		Performance	Human capital
Performance	Pearson Correlation	1	
	Sig. (2-tailed)		
Human capital	Pearson Correlation	.739	1
	Sig. (2-tailed)	.009	

*. Correlation is significant at the 0.05 level (2-tailed).

The results also showed a strong positive association between human capital and performance of KIWASCO where the correlation (R= 0.739), which is statistically significant at (p= 0.009<0.05). This shows that human capital and performance of KIWASCO are statistically strongly and positively correlated such that as human capital increases, performance of KIWASCO also improves to a high extent. This relates to Cole (1997) who asserts that personnel skills are a vital factor in implementation of strategy. Together with motivation, skills are what organizations need to meet the challenge of change. Nevertheless, the positive relationship indicates that when the practice of the afore-mentioned factors is in place the levels of performance of KIWASCO increases. Overall, human capital had influence on performance of KIWASCO.

4.2 Influence of Human Capital and Organizational Performance

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	0.628	0.395	0.383	2.032		
ANOVA						
Model	Sum of Squares	Df	Mean Square	F	Sig.	
1	Regression	140.054	1	140.054	33.905	0.003
	Residual	214.798	52	4.131		
	Total	354.852	53			

Table 4.4: Stepwise Regression Analysis for Human capital and Organizational Performance

Regression Coefficients				
Unstandardized Coefficients		Standardized Coefficients	t	Sig.
B	Std. Error	Beta		
0.992	0.197		5.036	0
0.836	0.314	0.628	2.662	0.01

From the output in Table 4.22, the model summary gives a R² value = 0.395 with p=0.003<0.05. This shows that Human capital accounts for 39.5% of Organizational Performance. Moreover, the model was found to be a good fit for the data and variables with F (1, 52) = 33.905 (p = 0.003<0.05). The coefficient of the constant term (β=0.992, p = 0.000<0.05) and the coefficient of Human capital (β= 0.836, p = 0.010<0.05) were found to be statistically significant. Thus a unit change in Human capital improves Organizational Performance by 0.836 units.

Linearly, the variables can be modeled using the equation:

$$Y = \beta_0 + \beta_1 X_1 + \epsilon$$

Where; B₀ is coefficient of the constant term, β₁ is coefficient of the predictor (Human capital), X₁ is the predictor (Human capital) and ε is the error term.

Thus replacing the coefficients the equation becomes:

$$Y = 0.992 + 0.836X_1$$

4.3 Test for Hypothesis Three

Hypothesis one was stated in the null and tested as:

H₀: There is no significant influence between Human capital and Organizational Performance.

The null hypothesis was tested at 95% confidence level as H₀: β₀ = β₁ = 0 (p = 0.05). The null hypothesis was to be accepted when p > 0.05 (There is no significant difference) and rejected when p ≤ 0.05 (There is significant difference) between the coefficient of the constant term and the coefficient of the predictor.

Since the results showed that β₀ ≠ β₁ ≠ 0 (p < 0.05), null hypothesis was rejected and alternative accepted. Thus, there is a significant influence between Human capital and Organizational Performance.

V. CONCLUSION

The research purposed to establish the influence of human capital on performance of KIWASCO, Kisumu County. The study established that human capital influences the performance of KIWASCO to a great extent. The organization has good promotion system, motivates employees and conducts staff training frequently to a high extent. The study concluded that for performance of the firm to be enhanced, the firm needs to have adequate staff for each function. The study recommended that KIWASCO should have clear human resource training and development policies. It is further recommended that KIWASCO should more often train their staff on new technological innovations that can enhance productivity and reduce wastage. This research paper also recommends further research to include studies in other public water utilities in different counties and other highly regulated sectors like water.

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