INFLUENCE OF EMPLOYEE CAPACITY ON HEALTH WORKFORCE PERFORMANCE IN KENYA'S PUBLIC HEALTH SECTOR: A TALE OF ISO 9001:2008 CERTIFIED HOSPITALS

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ABSTRACT

This study sought to establish the influence of employee capacity in health workforce performance in the Kenyan public health sector among the ISO 9001:2008 certified hospitals. Like many countries in Sub-Saharan Africa, Kenya faces protracted and acute human resources for health crisis that significantly hampers its capacity to improve health outcomes and achieve the health-related Millennium Development Goals. The research design adopted for this study was cross-sectional survey. Survey questionnaires were used to collect quantitative data. Data obtained was analyzed qualitatively through factor analysis, descriptive analysis, correlation analysis and regression analysis. The study found that employee capacity had a significant influence on health workforce performance. The general conclusion that was drawn from the study findings is that employee capacity in ISO 9000:2008 certified hospitals plays a significant influence in health workforce performance if respective authorities invest enough on what is required to build capacity in employees.
Keywords: *Employee Capacity, ISO 9001:2008 Quality Management System, Health Workforce performance*

1. Introduction

According to Chen et al. (2004), the major challenges to building an effective health-care workforce in developing countries include; low absolute numbers of trained health workers, difficulties in recruiting, retaining, and managing health workers, the impact of HIV on the health workforce and poor health-worker performance. African countries have a very low density health workforce compounded by poor skill mix and inadequate investment and trained healthcare staff continue to migrate from Africa to more developed countries (Chen et al., 2004). It is too simplistic and misleading to define or try to resolve the crisis in human resources for health in Africa by looking only at overall numbers and density of workers because the poor performance of health services in African countries is often compounded by shortages of drugs and other essential supplies, broken equipment, and poor logistical support (Habte, Dussault, & Dovlo, 2004).

As per the GOK (2006) report, Kenya currently faces four main HRH challenges. First, Kenya is losing skilled health workers to both the private sector and other countries that offer better financial packages. Second, there is a shortage of skilled HRH workers across the country. For example, in 2004 the (public sector) doctor-to-population ratio was 3:100,000, while the nurse-to-population ratio was 49:100,000. The 2004-2005 Human Resource Mapping and Verification Exercise found that staffing levels do not meet the prevailing Ministry of Health staffing norms. Almost half of the dispensaries (47 percent) have only one community nurse plus one or two support staff, while 3 percent has only support staff not qualified to administer drugs. Third, the HRH shortage prevents the even distribution of skilled health workers across the country. More than half of all health personnel and four-fifths of doctors are urban based (GOK, 2006). The GOK (2006) Human Resource Mapping and Verification Exercise found that the number of nurses working in district and provincial hospitals exceeded the need, while many health centers and dispensaries are acutely understaffed. Similarly, there is a great disparity in the staffing of doctors at district hospitals, with about half of the hospitals having fewer than six doctors (12 are required) and others having more than 20. These challenges are all centered on employee capacity and therefore meaning that employee capacity can have a significant role in health workforce performance. Introduction of quality management systems like ISO 9001:2008 can also lead to provision of working environment that foster the building of employee capacity because the ISO standard focuses on customer satisfaction and as such, employee capacity becomes an automatic pre-requisite to achieving that end.

2. Literature Review

Empirical evidence shows that the motivation for undertaking ISO 9000 certification is often for external reasons such as, marketing advantages, customer expectation and competitive pressures instead of internal reasons such as improving the quality of products and services (Ho, 1994). However, more recent research indicates that manager's motivation for seeking ISO 9000 certification has shifted significantly from external to internal reasons. For example, market related reasons for certification do not rank high as motivators to gain ISO 9000 certification (Feng, 2000; Gotzamani & Tsiotras, 2001). Companies which seek ISO 9000 certification for external reasons are likely to fail or gain fewer benefits because of their narrow focus. On the other hand, companies that seek certification to improve their quality of products and services tend to gain greater benefits from the ISO certification process (Feng, Terziovski, & Samson, 2007). This implies that strategies to improve employee capacity are therefore critical in improving service delivery in organizations and can yield better results and outcomes such as health workforce performance.

Within the literature of quality management, Singh, Feng, and Smith (2006) argued that the generalizability of the knowledge of ISO 9000 in the literature is impeded partly by the fact that most of the extant studies were based in manufacturing sector and that the proposed theories or models were generally investigated
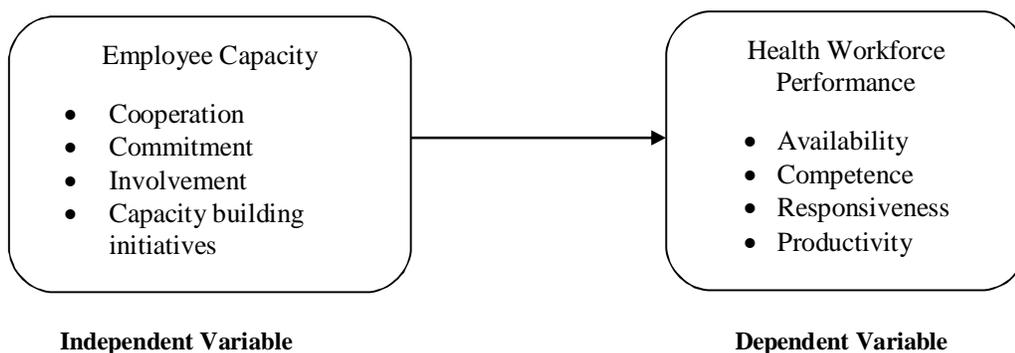
through the lens of the manufacturing sector. Hence, it can be inferred from such information that researchers of ISO 9000 may not be paying sufficient attention to the adoption of the standard in service organizations. This work suggests the need to conduct more studies on ISO 9000 in service sector because of its importance to national economy even in the Kenyan case (Aluvi, 2009).

In 2000, all 189 United Nations member states including Kenya endorsed the MDGs. This represented an unprecedented agreement within the development community about key development outcomes (Organization for Economic Co-operation and Development (OECD), 2002). The MDGs are a set of 8 goals, 18 targets and 48 performance indicators relating to poverty reduction by 2015. Of these goals, four are directly related to better health outcomes: two third reduction of infant and under five mortality, three-fourth reduction of maternal mortality, halt and reverse HIV/AIDS, tuberculosis, and malaria epidemics, and halve the proportion of people suffering from hunger (Liese & Dussault, 2004). This provides the impetus for governments, bilateral and multilateral development agencies working in the health sector to develop effective strategies to attain these goals.

Some analyses comparing the results obtained by ISO certified and non ISO-certified companies have shown that certified companies manage to achieve greater reductions in defective products, reprocessing costs and guarantee costs, and have also evidenced higher levels of customer satisfaction, company profitability and productivity (Sun, 1999). Yahya and Goh (2001) reported that certified companies achieved higher profits than non-certified companies and specifically greater awareness of quality and improvements in measurement systems. More recently, Koc (2007), in a study of certified and non-certified companies, observed significant differences in the results achieved in certain phases of the manufacturing process (product design, production planning, inspection, use of machinery and tools, usage time and waiting time, restrictions in batch size and raw material inventory requirements) and in certain competitive advantages (delivery results, volume flexibility, product variety and product quality). Since ISO standard can be applied to both manufacturing and service sector, then applicable results obtained from the certified manufacturing companies can as well be obtained from certified service sector institutions like hospitals.

3. Conceptual Framework and Hypothesis Development

A conceptual framework was developed based on the literature review. The framework consisted of four basic components as shown in the following framework.

Employee Capacity

- Cooperation
- Commitment
- Involvement
- Capacity building initiatives

Health Workforce Performance

- Availability
- Competence
- Responsiveness
- Productivity

Independent Variable

Dependent Variable

In recent years, the emphases on human issues and involvement of employees have increased within the field of quality (Cruickshank, 2000). As the primary producer of output for customers, the workforce is, of course, an important player, and their cooperation and personal commitment to ISO 9000 systems are essential (Mahadevappa & Kotreshwar, 2004). Because the quality of customer service affects customer satisfaction, improvement in the quality of service will have a direct impact on an institutional image as well as on its ability to attract new customer loyalty (Ferrel, Fraedrich, & Ferrel, 2004). Each and every employee in an institution must be fully committed to ISO 9001 implementation. The collective, integrated and coordinated efforts of all fully involved staff members make a world-class organization (Ishikawa, 1985). If employees are not involved, not trained and empowered during development of the system, they will not comply with the procedures and goals defined in the system (Vloeberghs & Bellens, 1996).

Capacity building and enhancement consists of training and education, participation in decision making, suggestion systems, incentive mechanisms and work autonomy (Temtime & Solomon, 2002). Capacity effectively translates into the knowledge of what to do and how to do it and the capability to transform that knowledge into effective decisions and actions to solve development problems for both short term and longterm (Slack & Lewis, 2002). Availability of skilled labor is critical in institutional competitiveness. Therefore, the policies of institutions with regard to education and training have a great contribution to make with regard to labour force development and assembly of relevant skills (Wanjau, 2010).

Capacity enhancement can be implemented by adopting a variety of strategies including the provision of technical assistance and training, fostering of field-to-field support networks, enhancement of strategic partnerships, development of innovative programming approaches and methodologies, documentation and dissemination of best practices (Slack & Lewis, 2002). Development of a workforce with positive work attitudes including loyalty to the institution, pride in work, a focus on common organizational goals and the ability to work with employees from other departments facilitates teamwork and flexibility (Hutton, 2000). Knowledge of common organizational is essential in ensuring that teams will progress in a direction that is not inconsistent with the institutional common goals (Ryan, Deane, & Ellington, 2001).

Brown and Van der Wiele (1996) developed a typology that highlights different ways companies adopt quality in terms of ISO 9000 and TQM based on the motivators for pursuing quality. One approach they discovered is called converts. Institutions in this group are initially skeptical about certification, do not have any quality practices like ISO 9001 or TQM and feel driven to become certified by external factors but in the process of doing so, they discover beneficial outcomes.
The goal of the organization is to develop a useful quality system and employees are involved in developing the procedures and work instructions that can prepare the way for further progress down the quality maturity path. When employees are loyal to the institution, and have pride in being part of it, they will be more willing to take individual risks in order to better the institution. Institutions and enterprises put only average emphasis on the importance of employee empowerment and involvement in quality implementation (Temtime & Solomon, 2002).

From the review, the most important barrier in ISO implementation is related to the human resource such as a lack of leadership, insufficient involvement of employees, and absence of training (Mezher, Ajam, & Shehab, 2005; Bhuiyan & Alam, 2005a). Implementing the ISO standard considerably relies on employees' invisible efforts and positive attitude to change the organizational culture and ways of working (Piskar & Dolinsek, 2006). Thus, it was hypothesized that:

H_0: There is no relationship between employee capacity and health workforce performance.

4. Methodology

4.1 Research design

The research design adopted for this study was cross-sectional survey which is used to investigate populations by selecting samples to analyze and discover occurrences. A survey is concerned with hypothesis formulation and testing the analysis of the relationship between non-manipulated variables. Survey method is also use to gather data from a relatively large number of cases at a particular time (Kothari, 2004). Cross-sectional survey was appropriate for this study because data was gathered from a large number of respondents just once over a period of four months in order to achieve research objectives (Sekaran & Bougie, 2010).

4.2 Population and Target Population

In this study, the population was from the public health sector hospitals. Target population was obtained from the ISO 9001:2008 certified public hospitals in Kenya and included the entire health workforce in these institutions as shown in table 1.

4.3 The Sample

To arrive at the sample size from the target population, the following relationship suitable for populations less than 10,000 as suggested by Mugenda and Mugenda (2003) was adopted.

$$n = \frac{n_0}{1 + n_0/N}$$

Where, n is the desired sample size for small populations.

n_0 is the desired sample size when population is big

N is the population size

On substitution,

$$n = \frac{384}{1 + 384/7542} = 365$$

The sample size was therefore 365.

To determine proportionate sample sizes of each of the two institutions, proportions were used. Similarly, to arrive at sample sizes of an individual subgroup, proportionate stratified random sampling (Sekaran & Bougie, 2010) was used. The respondents from every subgroup were selected for inclusion in the sample size using simple random sampling as summarized in table 2.

Data was collected using self administered survey questionnaires. Self administered questionnaires befit large enquiries and are free of bias since they are respondent-only based and they increase the rate of response (Kothari, 2004) and help the researcher accumulate and summarize responses easily (Trochim, 2006). They are used to collect information about people's attitudes, opinions and habits (Orodho & Kombo, 2002).

A modified five point Likert scale was used to measure interval data where 'one point' score meant that the respondent strongly disagrees with the question statement and a five point score meant that the respondent strongly agrees with the question statements (Kothari, 2004).

4.4 Measurement of Variables / Operationalization of Variables

The variables were operationalized as discussed hereafter.

4.4.1 Independent Variable (Employee Capacity)

Key basis for the revision of ISO 9001/2/3:1994 standards was their lack of TQM characteristics such as employee involvement and empowerment (Sun et al., 2004). As such, participation and commitment of employees, having competent quality managers and internal auditors, specificity of everyone's responsibility and provision of training programs about mechanisms, roles, and terminologies of ISO 9000 are important employee capacity building initiatives (Balzarova, Bamber, McCambridge, & Sharp, 2004; Briscoe, Fawcett, & Todd, 2005; Chin & Choi, 2003; Feng, Terziovski, M., & Samson, 2008; Singh, 2008). In this survey, employee capacity was measured by the following sub-variables; employee cooperation, employee commitment, employee involvement and employee capacity building initiatives. A five-point likert scale was used to measure each of the sub-variables.

4.4.2 Dependent Variable (Health Workforce Performance)

The independent variable - health workforce performance, is critical because it has an immediate impact on health service delivery and ultimately on population health. A well-performing workforce is one that works in ways that are responsive, fair and efficient to achieve the best health outcomes possible, given available resources and circumstances. The performance of the health workforce plays a crucial role in the improvement of health outcomes, due to its impact on accessibility to health services and appropriateness of care provided to service users (Dieleman & Harnmeijer, 2006). In this survey, health workforce performance was measured through indicators related to availability, competency, responsiveness and productivity as suggested by World Health Report (2006). A five-point likert scale was used to measure each of the indicators which were made to be sub-variables of the independent variable.

5 Data Analysis and Presentation

Data analysis is extracting significant variables and detecting anomalies and testing any assumptions (Kombo & Tromp, 2006). It is a way of transforming data into knowledge through proper interpretation and ascribing meaning to it. In this study data analysis was guided by the hypothesis of the study. Leedy and Ormrod (2001) posit that qualitative research is used to come up with a rich and meaningful picture of a multifaceted, complex situation. This allows exploration and better understanding of the complexity of the phenomenon under study.

The collected data was entered into the Statistical Package for Social Sciences (SPSS) for windows version 17 because of its ability to analyze data easily and accurately. Quantitative data was presented descriptively using percentages. Analysis of qualitative data varies from simple descriptive analysis to elaborate reduction; varies with purpose, complexity of research design and extent to which conclusions can be reached easily (Orodho & Kombo, 2002).

The objective of Regression analysis is to make a prediction about the dependent variable based on its covariance with all the concerned independent variables (Kothari, 2004). The coefficient of determination, R^2, provides information about the goodness of fit of the regression model. It is a statistical measure of how well the regression line approximates the real data points. R^2 is the percentage of variance in the dependent variable that is explained by the variation in the independent variable. If R^2 is near to 1, most of the variation

in the dependent variable can be explained by the regression model. In other words, the regression model fits the data well. On the other hand, if R^2 is near 0, most of the data variation cannot be explained by the regression model. In this case, the regression model fits the data poorly (Sekaran & Bougie, 2010). Forced entry regression model was used for this study which is a method in which all predictors are forced into the model simultaneously. This method relies on good theoretical reasons for including the chosen predictors and the researcher makes no decision about the order in which variables are entered (Field, 2009). Some researchers believe that this method is the only appropriate method for theory testing because stepwise techniques are influenced by random variation in the data and so seldom give replicable results if the model is retested (Studenmund & Cassidy, 1987).

The following reduced linear regression model was used to model the data:

$Y = B_0 + B_1 X_1$

Where, Y is Health Workforce Performance, X_1 is Employee Capacity, ε is the error component, B_0 is the y-intercept (constant) whose influence on the model is insignificant, B_1, is the Employee Capacity model coefficient.

6 Results and Discussions

6.1 Response Rate

Data was collected from the two ISO certified public hospitals in Kenya while targeting a sample of 365 from both institutions. A total of 353 out of 365 self administered questionnaires were filled and returned yielding a response rate of 96.7%. A response rate of this size is quite reasonable compared with other studies in the field of total quality management (Dissanayaka, Kumaraswamy, Karim, & Marosszeky, 2001).

6.2 Analyses of Dependent Variable (Health Workforce Performance)

In this survey, health workforce performance was operationalized into; availability, competency, responsiveness and productivity. A five-point likert scale was used to measure each of the sub-variables and the results were presented in percentages.

6.2.1 Health Workforce Availability

i) Factor Analysis

Factor analysis using Principal Component Analysis was conducted to determine if all factors / questionnaire items had significant factor loadings. According to Hair, Anderson, Tatham, and Black, (1995), items / questions which have loadings above 0.5 are considered to be significant. Results of factor analysis showed that all the items had factor loadings greater than 0.5.

ii) Reliability Test

Since no item was expunged, Cronbach's alpha reliability test results were similar before and after factor analysis. Cronbach's alpha result of 0.620 shows questionable internal consistency (George & Mallery, 2003). According to Aamidi (2002), the acceptable value ranges from 0.7 to 0.9. As such the item with a factor loading of 0.511 was expunged as much as it had a factor loading greater than 0.5. This gave a Cronbach's alpha result of 0.881 after the item was expunged of which is shows good internal consistency (George & Mallery, 2003).

iii) Descriptive Analysis

From descriptive results, 75.2% agreed with the opinion that health workforce availability leads to better health workforce performance in the varied ways as shown above, 16.5% were neutral and 8.4% disagreed.

The SERVQUAL model by Parasuraman, Zeithaml, & Berry (1988) provides an instrument for measuring service quality. One of the five dimensions of service quality that are applicable in general to a service-providing organization like a hospital institution is tangibility which includes physical facilities, equipment and appearance of personnel in the institution to serve customers. This means that availability of health workforce (appearance of personnel) at service delivery points measures service quality (performance) of the health workforce. This therefore explains the majority of employees who agreed that health workforce availability leads to better health workforce performance.

A study by Singh, Feng, and Smith (2006) found that the benefits such as increased quality of customer service, improved documentation and fewer mistakes and defects were of higher value for service companies. This means health worker availability to at respective work stations plays a key role in ensuring the stated ends are achieved in health care institutions as an example of service organizations.

6.2.2 Health Workforce Competency

i) Factor Analysis

Results of factor analysis showed that all the items had factor loadings greater than 0.5 and as such, all the items were retained (Hair et al., 1995).

ii) Reliability Test

Since no item was expunged, Cronbach's alpha reliability test results were similar before and after factor analysis. Cronbach's alpha result of 0.891 shows good internal consistency (George & Mallery, 2003).

iii) Descriptive Analysis

Descriptive results showed that 76.8% agreed with opinion that health workforce competency in ISO QMS certification has led to better health workforce performance, 15.5% were neutral and 7.8% disagreed.

Another dimension of service quality in the SERVQUAL model by Parasuraman et al. (1988) is reliability which is the ability to perform the promised service reliably and accurately. This means that competence of health workforce (ability to perform the promised service reliably and accurately) at service delivery points measures service quality (performance) of the health workforce. This therefore explains the high majority of respondents who agreed that health workforce competency in ISO QMS certification has led to better health workforce performance.

Magd (2008) found that the vital benefits derived from implementing the standard were the improved documentation and efficiency of the quality system. Gotzamani, Tsiotras, Nicolaou, Nicolaides, & Hadjiadamou (2007) found that the greatest improvements from ISO 9001 certification were the following: establishment of a formal process management system, systematic recording of process performance data, systematic monitoring of internal indicators related to customer satisfaction and demand for quality proofs from partners. These findings corroborate findings in the current study by showing that ISO certification has created a culture of competence that is required for the pursuance of organizational goals.

6.2.3 Health Workforce Responsiveness

i) Factor Analysis

Results of factor analysis showed that all the items had factor loadings greater than 0.5 and as such, all the items were retained (Hair et al., 1995).

ii) Reliability Test

Since no item was expunged, Cronbach's alpha reliability test results were similar before and after factor analysis. Cronbach's alpha result of 0.904 shows excellent internal consistency (George & Mallery, 2003).

iii) Descriptive Analysis

Descriptively, 74.7% agreed that health workforce responsiveness leads to better health workforce performance as measured by different aspects above, 16% were neutral and 9.3% disagreed.

Another dimension of service quality in the SERVQUAL model by Parasuraman et al. (1988) is responsiveness which is the willingness to help customers and provide prompt service. This means that responsiveness of health workforce (willingness to help customers and provide prompt service) at service delivery points measures service quality (performance) of the health workforce hence the majority of employees agreeing that health workforce responsiveness leads to better health workforce performance

A study by Butt and Run (2010) on private healthcare quality: applying a SERVQUAL model used a seven-point Likert-scale from 1 (strongly disagree) to 7 (strongly agree) to measure service quality and responsiveness as one of the measures scored 5.6 (80%). As compared to the findings of the current study, 74.7% of the respondents were of the opinion that health workforce responsiveness leads to better health workforce performance. These findings are can be said to be consistent.

6.2.4 Health Workforce Productivity

i) Factor Analysis

Results of factor analysis showed that all the items had factor loadings greater than 0.5 and as such, all the items were retained (Hair et al., 1995).

ii) Reliability Test

Since no item was expunged, Cronbach's alpha reliability test results were similar before and after factor analysis. Cronbach's alpha result of 0.895 shows excellent internal consistency (George & Mallery, 2003).

iii) Descriptive Analysis

On average, 75% agreed with the opinion that health workforce productivity in ISO quality management system certification has led to better health workforce performance, 15.5% were neutral and 9.5% disagreed.

One of the three stages in the Performance Realization Framework formulated by Kim, Kumar, and Kumar (2011) is the enhancement stage. The purpose of this stage is to make the standard-oriented practices routine across organizations and improve operational performance (workforce performance). In this stage, requirements of the ISO standard are incorporated into the ways that organizations produce products or service. Main outputs are associated with ISO 9000 outputs, such as reduced cost, enhanced flexibility, and improved productivity. This framework therefore explains the majority of employees having the opinion that health workforce productivity in ISO quality management system certification has led to better health workforce performance.

In their survey on relationship of ISO 9001:2000 quality system certification with operational and business performance, Feng, Terziovski, & Samson, (2007) found that increased productivity as one of the items in their dependent variable – operational performance, had a factor loading of 0.792 meaning that productivity was a good measure of operational performance which is performance related to organisations' internal operation (Feng et al., 2007). Improved employee productivity was found to be one of the most important benefits occurring from implementing the ISO standard in a survey by Magd (2008) on ISO 9001:2000 in the Egyptian manufacturing sector. Studies by Highlands (1995) and Elmuti (1996) on business environments claimed that productivity, quality of product, and quality of work life improved due to ISO 9000 certification. In another study on the role of ISO 9001:2000 certification in competitive production in Kenya's sugar industry, Aluvi (2009) found that 176 (94.6%) of respondents rated high (increased) productivity after attaining ISO 9001:2000 certification. These findings corroborate the findings in the current study.

6.3 Analyses of Independent Variable (Employee Capacity)

In this survey, employee capacity was operationalized into; employee cooperation, employee commitment, employee involvement and employee capacity building initiatives. A five-point likert scale was used to measure each of the sub-variables and the results were presented in percentages.

6.3.1 Employee Cooperation

i) Factor Analysis

Results of factor analysis showed that all the items had factor loadings greater than 0.5 and as such, all the items were retained (Hair et al., 1995).

ii) Reliability Test

Since no item was expunged, Cronbach's alpha reliability test results were similar before and after factor analysis. Cronbach's alpha result of 0.875 shows good internal consistency (George & Mallery, 2003).

iii) Descriptive Analysis

Results of descriptive analysis showed that on average 77.1% agreed that employee cooperation leads to better health workforce performance while 15.4% were neutral and 7.6% disagreed.

The human relations school (Homans, 1950; Mayo, 1945; Roethlisberger & Dickson 1939) stressed that employees are capable, intelligent actors and that management should provide opportunities for communication and interaction with their employees in order to enhance their cooperation (Garvin & Klein, 1993; Jaffee, 2001). Majority of the respondents agreed that employee cooperation in ISO QMS (opportunity for interaction) leads to corporation and thus better health workforce performance.

There are also similarities between the findings of the present study and those of Wahid and Corner (2009), who examined a large service organization and identified critical factors for a sustainable QMS based on the ISO 9001:2000 standard. The most important had similarities to the latent constructs of present study. These was the human aspect (employee commitment, involvement, team working, rewarding), which has similarities with the construct of "employee capacity" in the present study. This therefore means employee cooperation has been found to be a critical factor in ISO QMS.

6.3.2 Employee Commitment

i) Factor Analysis

Results of factor analysis showed that all the items had factor loadings greater than 0.5 and as such, all the items were retained (Hair et al., 1995).

ii) Reliability Test

Since no item was expunged, Cronbach's alpha reliability test results were similar before and after factor analysis. Cronbach's alpha result of 0.894 shows excellent internal consistency (George & Mallery, 2003).

iii) Descriptive Analysis

On average, 76% agreed that employee commitment leads to better health workforce performance while 16.5% were neutral and 8.1% disagreed.

According to the ISO relationship model by Feng et al. (2007), organizational commitment (work unit employee commitment) is related to operational performance (health workforce performance). This model could be used to explain the higher percentage of employees who agreed that employee commitment in ISO QMS has led to health workforce performance.

Using a seven-point Likert-type scale, Psomas, Fotopoulos, & Kafetzopoulos (2010) in their study on critical factors for effective implementation of ISO 9001 in SME service companies found that employee involvement and commitment scored a mean of 5.1 out of 7. This means that 72.9% of the respondents were

of the opinion that employee involvement and commitment is a critical factor for effective implementation of ISO 9001. This finding is similar to the finding in the current study because, in the current study, 76% were of the opinion that employee commitment leads to better health workforce performance in ISO QMS.

6.3.3 Employee Involvement
i) Factor Analysis
Results of factor analysis showed that all the items had factor loadings greater than 0.5 and as such, all the items were retained (Hair et al., 1995).
ii) Reliability Test
Since no item was expunged, Cronbach's alpha reliability test results were similar before and after factor analysis. Cronbach's alpha result of 0.885 shows good internal consistency (George & Mallery, 2003).
iii) Descriptive Analysis
On average 73.85% agreed with the opinion that employee involvement leads to better health workforce performance, 16% were neutral and 10.1% disagreed.

The results are supported by a model by Arumugam, Ooi, and Fong (2007) on the relationship between TQM practice (people involvement) and quality performance. Majority of respondents agreed with the opinion that employee involvement in ISO QMS (TQM practice) affects health workforce performance (quality performance). The same results are also supported by a conceptual model by Lin and Jang (2008) on successful ISO implementation that proposed that employee involvement is related to operational performance (health workforce performance).

Cheng and Tummala (1998) in their study on employee involvement strategy for ISO 9000 registration and maintenance found that employee involvement is critical in achieving ISO 9000 registration and in the effective maintenance of the ISO 9000 quality system in Hong Kong and Chinese companies. In their study on successful ISO 9000 implementation in Taiwan. How can we achieve it, and what does it mean? Lin and Jang (2008) measured employee involvement using question items on a five-point Likert scale, where a "one-point" score means that the respondent strongly disagrees with the question statement and a "five-point" score means that the respondent strongly agrees with the question statements. Employee involvement had a mean score of 3.71 meaning 74.2% were of the opinion that the successful implementation and benefits of ISO 9001 in Taiwan was as a result of employee involvement. This corroborates the findings of the current study where 73.85% agreed with the opinion that employee involvement leads to better health workforce performance as a benefit of ISO certification in the public health sector.

6.3.4 Employee Capacity Building Initiatives
i) Factor Analysis
Results of factor analysis showed that all the items had factor loadings greater than 0.5 and as such, all the items were retained (Hair et al., 1995).
ii) Reliability Test
Since no item was expunged, Cronbach's alpha reliability test results were similar before and after factor analysis. Cronbach's alpha result of 0.897 shows good internal consistency (George & Mallery, 2003).
iii) Descriptive Analysis
On average, 68.8% agreed with the view that employee capacity building initiatives lead to improved health worker performance, 17.2% were neutral and 14.1% disagreed.

6.3.5 Correlation Analysis of Employee Capacity and Health Workforce Performance

The result of correlation between employee capacity and health workforce performance showed a positive correlation of 0.805. This is further supported by the scatter plot diagram 1.

6.3.6 Regression Analysis of Health Workforce Performance on Employee Capacity

As shown in table 3, the R^2 value of 0.648 shows that 64.8% of the variation in health workforce performance is explained by the model: -

$Y = B_0 + B_2X_2 + \varepsilon$ equation (1)

Where Y is Health Workforce Performance, B_0 is the Y intercept, B_2 is the gradient of the regression line, X_2 is Employee Capacity and ε is the error term.

Analysis of variance (ANOVA) tells whether the regression model results in significantly better prediction using the 'F' value. The value tells how much variability the model can explain relative to how much it cannot explain. It is the ratio of how good the model is compared to how bad it is (Field, 2009). As shown in table 4, the results of ANOVA gives a P-value of the above fitted model as 0.000 of which is less than 0.01. This implies a highly significant overall model at 0.000. Therefore, we can conclude that our regression model results in significantly better prediction of health workforce performance than if we used the mean value of health workforce performance.

In equation 1, B_0 is the Y intercept and this value is the value B in table 5 for the constant. From table 5, B_0 is 5.377 units and this can be interpreted as meaning that when there is no employee capacity, i.e. when $X_2 = 0$, the model predicts that health workforce performance will have 5.377 units.
For these data, employee capacity had a positive B-value (0.831) indicating positive relationship and therefore, as employee capacity increases, health workforce performance improves. Additionally, the B-value also tells to what degree each predictor affects the outcome. $B_2 = 0.831$, indicates that as employee capacity increases by one unit, health workforce performance improves by 0.831 units. If we replace the B-values in equation 7, we can define the model as follows: -

$Y = 5.377 + 0.831 \text{ (Employee Capacity)}$.

7. Hypothesis Testing
The second hypothesis of the study was as follows: -
H_0: There is no relationship between employee capacity and health workforce performance in Kenya's public health sector.

To test this hypothesis, linear regression was conducted to determine the level of significance of the relationship between employee capacity and health workforce performance in Kenya's public health sector. As shown in table 5, $B_2 = 0.831$, p = 0.000. Since p-value was less than 0.01, the null hypothesis was rejected and therefore there was a highly significant relationship between employee capacity and health workforce performance in Kenya's public health sector. To test whether the regression relationship was not positive, the B value was subjected to t-test. Calculated t-value was compared with the critical t-value. For employee capacity, $t_{calc}(348) = 25.417$ while $t_{0.95}(348) = 1.649$. The null hypothesis was rejected because the calculated t-value was found to be greater than the critical t-value and therefore there was a highly significant positive relationship between employee capacity and health workforce performance in Kenya's public health sector.

Recent studies have identified employee empowerment as a critical factor of TQM implementation (Westlund & Lothgren, 2001). For example, Brah, Wong, and Rao (2000) identify and empirically validate critical areas of TQM based on the perceptions and experiences of a range of total quality practitioners as the basis to analyze the association between TQM and business performance on the Singapore's services industry. Some of the critical success factors of TQM implementation that they found were customer focus, employee involvement, employee training, employee empowerment, supplier quality management, process improvement, service design, quality improvement rewards and benchmarking. However, some studies have found contrary results. For example, a study by Talib, Rahman, and Qureshi (2013) found that employee involvement (B = 0.028, p = 0.681) and employee encouragement (B = 0.007, p = 0.918) as TQM practices had no significant effect on quality performance. In general, most studies agree with the findings of the current study and this therefore implies that employee capacity is critical in any service industry including Kenya's public health sector.

8   Conclusion

The central finding of this study is that Top Management Support has a positive and significant effect on health workforce performance. This finding is consistent with existing literature and theories and therefore confirms that Top Management Support is also critical in the process of ensuring better health workforce performance in ISO 9001:2008 certified hospitals and also in the service sector at large.

Since this study is based on a cross-sectional questionnaire survey, cause-and-effect relationships between employee capacity and health workforce performance outcomes or contextual factors cannot be established. A longitudinal methodology measuring changes in employee capacity, performance outcomes and contextual factors over time will offer evidence to support causal arguments.

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Table 1. Target Population of the Study

		KNH		MTRH		
	Level	Job Group	Number	Job Group	Number	Total
Management	Top Management	K3 and K4	67	M2 – M4	62	129
	Middle Management	K5 – K7	468	M5 – M7	293	761
Unionisable	Officers	K8 – K11	2502	M8 – M11	1759	4261
	Lower Cadre	K12 – K17	1384	M12 – M17	1007	2391
Total			**4421**		**3121**	**7542**

Table 2. Sample Sizes

		KNH			MTRH			Total	
Level		Job Group	Population	Sample size	Job Group	Population	Sample size	Population	Sample size
Management	Top Management	K3 and K4	67	3	M2 – M4	62	3	129	6
	Middle Management	K5 – K7	468	23	M5 – M7	293	14	761	37
Unionisable	Officers	K8 – K11	2502	120	M8 – M11	1759	85	4261	205
	Lower Cadre	K12 – K17	1384	67	M12 - M17	1007	49	2391	117
Total			**4421**	**213**		**3121**	**152**	**7542**	**365**

Table 3. Variation of the Regression Model – Employee Capacity

R Square	Adjusted R Square	Std. Error of the Estimate
0.648	0.647	6.6293104

Table 4. Significance of the Model in Prediction of Health Workforce Performance

Model		Sum of Squares	df	Mean Square	F	Sig
1	Regression	28390.688	1	28390.688	646.010	0.000
	Residual	15425.663	351	43.948		
	Total	43816.351	352			

Table 5. Regression Coefficient of Employee Capacity

Model		Unstandardized Coefficients		t	Sig
		B	Std. Error		
1	(Constant)	5.377	1.346	3.995	0.000
	Employee Capacity	0.831	0.033	25.417	0.000
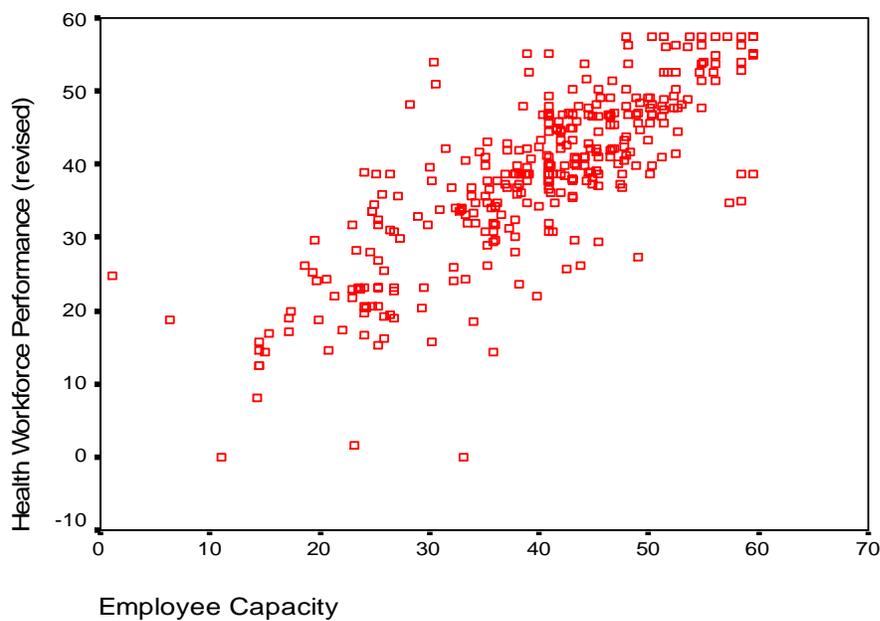
Scatter plot diagram of Employee Capacity and Health Workforce Performance