Financial Resources, Physical Resources and Performance of Public Health Institutions in Embu County, Kenya

Elias Njagi, Stephen Muathe, Ann Muchemi
School of Business, Kenyatta University, Nairobi, Kenya

Abstract
Kenya constitution recognizes health as a fundamental right for all citizens in Kenya. Hence the Kenya government has invested resources heavily in the health sector in order to boost the performance of public health institutions. However, it has been a mere dream for many Kenyans to enjoy healthcare benefits as expected despite government commitment to improve the performance of health sector. The study sought to investigate the effect of financial and physical resources on the performance of public health institutions in Embu County, Kenya. The study used explanatory and descriptive research designs and targeted 550 employees and 769 outpatients drawn from all the five public hospitals in Embu County. The sample size comprised of 165 employees and 232 outpatients. Data was collected using semi-structured questionnaires and an interview guide. Quantitative data were analysed using descriptive and inferential statistics, while content analysis was used to analyse qualitative data. The findings of the study established that there was a positive and a statistically significant effect of financial and physical resources on the performance of public health institutions. Policy implications of these findings have been discussed.

Keywords: physical resources, financial resources, performance of public health institutions

1. Introduction
The right to health for all people has been recognized globally by many countries of the world. However, this right has been a mere dream for many people in many developing countries due to inadequate resources in many public health institutions. Urde (2009) argues that the key strategic assets that enhance a firm to accomplish its key objectives in a manner likely to produce feasible results comprise of monetary and physical assets.

A study by Maureen (2005) established that timely receipt of adequate funds had a significant relationship with hospital performance. This is in line with Miller, Moore, Richards, Kotchuk and Kahtzzy (1993) observations that funds are the most basic resources that influences the performance of public health institutions because they determine the amount of human capital, physical resources, information technology resources and other needed resources to be acquired. However, studies have revealed that there is gross underfunding in health sector in many developing countries, a trend that has continued to undermine the delivery of health care (Kaseje, 2006; Dieleman & Harmeijer, 2006; Okeke, 2008). Mosadeghrad (2014) found that inadequate financial and physical resources were associated with the provision of poor health care services in Iranian public hospitals.

A study by Franco, Benett and Kanfer (2004) established that performance of health sector does not meet the expected clients’ needs because of financial constraints. In order to guarantee financial sustainability for competitive advantage, studies have shown that an organization must enter into collaboration with relevant stakeholders in order to improve her financial base (Chawla, Govindara, Berman & Needleman, 1996; Ombui, Mwende & Kariuki, 2014). A study by Mays Megan, McHugh, Shim, Perry, Lenaway, et al (2006) revealed that inadequate funds had stifled performance of many public hospitals. Their study further indicated that even where adequacy of funds is not an issue, public hospitals have not performed as expected due to mismanagement of funds.

Studies have linked performance of public health institutions with strategic physical resources (Isackow, 2006; Lewis, 2006; Lalude, 2006). Bryan (2011) contends that there are three key attributes of physical resources that influence the performance of a public health institution are availability, adequacy and quality of physical resources. However, Temple (2005) and Wang (2006) observed that the possession of adequate physical resources by an organization does not guarantee achievement of an organization’s strategy of provision of quality health care.

Grimes (2004) argues that despite the strategic physical resources possessing critical attributes, there will be a minimal contribution if the resources lack the technical support of competent human resources at both engineering and managerial levels. A WHO (2012) report revealed that the status of physical resources in Kenya’s public health institution has continued to undermine the provision of health care.

According to Barker and Ahmad (2010), physical resources comprise of equipment, buildings and other facilities that contribute to the production of a good or service. However, Barney (1997) argued that physical resources can only confer competitive advantage if they are obtained in sufficient extents while Clarke (1988) observed that physical resources could be a source of competitive advantage if they yield economies of scale. However, it should be noted that physical resources do not extraordinarily improve performance because of their inability to meet conditions of sustainable competitive advantage such as rarity, inimitability and non-
substitutability and hence competitors can easily duplicate them.

Studies have revealed that the status and conditions of physical resources in many public health institutions are questionable raising concerns over delivery of healthcare (Lalude, 2006). According to Parloe (2003), the acquisition of physical resources in health institutions should be done in accordance with the laid down legal procedures failure to which it may lead to the acquisition of inappropriate, perhaps excessively complex and substandard equipment leading to poor performance of the health facility. Empirical evidence reveals that public health institutions in Kenya have been experiencing serious challenges (Wanjau, Muiruri & Ayondo, 2012). This concurs with Muathe (2010) who pointed out that the demand for healthcare has outstripped the government ability to provide effective service to the ever-increasing Kenya’s population.

2. Literature Review
The authors widely reviewed both theoretical and empirical literature

2.1 Theoretical Literature
The study was anchored on Resource-Based Theory which proposes that the organizations gain competitive advantage by deploying valuable bundle of resources and capabilities that are in elastic in supply (Afiouni 2007). The research based theory can be traced way back to the postulates of Penrose (1959) seminal work. Grunert and Hildebrandt (2004) concurred with Penrose (1959) seminal works that the services delivered to clients by an organization are a function of the way resources are used. The central premise of RBT is that firms compete on the basis of the resources at their disposal (Peteraf & Barney, 2003). The theory proposes that organizations gain a competitive advantage by deploying a valuable bundle of resources and capabilities that are inelastic in supply (Mata, Fuerst & Barney, 1995; Afiouni, 2007).

O’Sullivan (2011) argues that according to RBT organizations should exploit all sources of competitive advantage in order to develop unique strategies which can yield customer value. Studies have revealed that there are three assumptions of resource-based theory that are the basis of competitive advantage and include: Resources and capabilities possessed by firms differ (resource heterogeneity) Resources and capabilities can be sources of sustainable competitive advantage if they are valuable and heterogeneously distributed across competing firms and if the skills needed to manage technical and market risks are perfectly immobile (Bordello, Ravarini, Wu & Nigam, 2012).

Peteraf and Barney (2003) observed that resources have different intrinsic levels of efficiency and this explains why different firms perform differently leading to different outcomes. Apart from resource heterogeneity, the other resource characteristics that can help an organization to deliver value to customers are rarity, non-substitutability and inimitability. The RBT provides guidelines that help to determine what constitutes a valuable asset, capability or competence. It addresses the challenge of determining which resources represent strengths or weaknesses, that is, resources which generate core competencies are sources of sustainable competitive advantage (Pearce & Robinson, 2005). The resource-based theory sheds light on organizations on the need to artificulately acquire and deploy organizational resources such as financial and physical resources prudently for improved organizational performance.

2.2 Empirical literature
Financial resources are critical for financing strategic organizational resources and expanding business activities in line with organization’s strategic objectives (Yusuf, 1995). This concurs with previous studies that have found availability of adequate business finance is a critical factor in sustaining long-term investment leading to business success (Dye & Webster, 1997). Grant (1995, 2002) argued that an organization should allocate financial resources in priority areas in order to obtain maximum returns from the investment in question which will consequently lead to improved performance. Barney (2007) contends that access to reliable sources of funding and ability to generate acceptable returns on invested money determines the ability of the organization to attract more funding from its stakeholders, consequently leading to improved performance.

Dasanayaka (2001) found that there was a significant relationship between financial resources and performance of public hospitals in Sri Lanka. The study further revealed that inadequate funds for allocation of needs like the acquisition of right and quality equipment and maintenance of medical equipment and staff training for handling medical equipment among others were responsible for poor performance of Sri Lankan public hospitals. In addition, the study found that although inadequacy of funds was a pertinent issue the hospital management played a critical role in channelling the available funds to priority areas in order to improve performance.

Imnyxail and Takahashi (2010) examined the effect of firm resources on business performance of male and female-headed firms in the case of Lao Micro, Small and Medium-sized Enterprises (MSMEs) in Japan. The study established that financial resources were significantly linked with firm performance irrespective of who heads it. The study further indicated that availability, accessibility and adequacy of funds led to the achievement
of an organization’s competitive advantage.

In their study Sai, Prabbu and Reddy (2012) found most of the health facilities in Chittoor district of Andhra Pradesh in India lacked drug supplies, diagnostic equipment and other medical devices leading to poor performance of public hospitals in India. The study failed to focus on critical aspects of physical resources such as adequacy, quality, and maintenance which enhances delivery of quality health care. In addition, the study was done in a different contextual setting from Kenya and hence the need to conduct the study in Kenya to find out the current state of the art.

Waithaka (2012) established that there was a positive relationship between availability and quality of physical resources (which comprised of pharmaceutical and non-pharmaceuticals) and performance of both public and private hospitals. The study sampled 294 respondents from a population of service providers who included 1016 nurses and midwives, 531 paraprofessionals, 265 clinical officers and 47 doctors from both public and private health organizations. The study ignored critical aspects of physical resources such as availability, adequacy, and maintenance of medical equipment which are fundamental to the performance of health facilities.

A study by Wanjau, Muiruri, and Ayondo (2012) found that there is a significant positive relationship between financial resources and performance of public health institutions in regard to delivery of quality health care. The study indicated that funds were critical in the acquisition of the necessary physical resources like medical supplies and equipment. However, the study ignored critical aspects like adequacy of funds and timeliness in the disbursement of funds by the government. In addition, the study used service providers as respondents and ignored the service receivers who would have provided vital information in regard to customer satisfaction.

In their study on effects of training on employee performance, Onyango and Wanyoike (2014) established that there was a positive relationship between funds and employee training which promoted employee skill development leading to improved performance of public hospitals in Siaya County. However, the study focused only one aspect of human resource management and ignored such aspects such as acquisition physical resources such as medicines and medical equipment where funds played a critical role. The current status of public heath institutions reveals that the government has continued to increase financial resources in the health sector and yet the expected performance improvements have not been realized (KNBS and ICF, 2010).

Abiro and Mbera (2014) investigated on the gaps in universal health coverage in Malawi where they focused on rural communities. The study found that there was shortage of medicines and other medical equipment and devices in many of Malawian public hospitals leading to poor performance of the health sector. The study ignored critical aspects of physical resources such as quality, adequacy and maintenance of physical resources which are responsible for the continued improvement of performance of a health facility.

A study by Nnebue, Ebenebe, Adogu, Ifeadike, Nwabueze (2014) found that inadequate supply of drugs, medical equipment, power and water supply including bad disposal systems stifled the delivery of quality maternal health services in primary healthcare level in Nnewi, Nigeria. The study targeted all women utilizing maternal health care services at primary healthcare level while the sample size was 252 clients. Data were analysed using quantitative statistics while content analysis was used to analyse qualitative data. The study ignored inferential statistics and therefore statistically significant relationships between independent and dependent variables could not be established.

In their study on effect of physical resources on health care houses and health centres in Holestan province, Heidari, Kabir, Jafari, and Gashi (2016) found that there were low levels of physical resources leading to poor performance of the organizations studied. The study used descriptive research design, and the population of the study was rural and urban health houses and health centres. Data was only analysed using descriptive statistics. The study could not establish a statistically significant relationship because inferential statistics were not used.

The authors developed the following hypotheses from the literature reviewed.

\[ H_{01} \quad \text{Financial resources have no statistically significant effect on the performance of public health institutions in Embu County, Kenya.} \]

\[ H_{02} \quad \text{Physical resources have no statistically significant effect on Performance of public health institutions in Embu County, Kenya.} \]

3. Methodology

The authors used explanatory and descriptive research design as recommended by Sekeran and Bougie (2009) who contend that a researcher can combine a set of research designs to obtain optimal results. The study targeted 550 employees drawn from five public hospitals in Embu County, Kenya. The employees comprised of doctors, clinical officers, nurses, pharmacists, laboratory technologists, hospital administrative officers, nutritionists and health record officers. To obtain data on customer satisfaction the study targeted 769 outpatients drawn from the five public hospitals. The sample size was 165 employees and 232 outpatients. Semi-structured questionnaires were used as data collection tools for quantitative data while interview guide was used for collection of qualitative data.
The study ensured that data collection instruments possessed face, content and construct validity by subjecting the questionnaires to double check, seeking expert opinions and operationalization of study variables. This was to ensure data collection instruments measure the constructs of study variables accurately. The reliability test was carried out using Cronbach alpha coefficient as recommended by Gay and Airasian (2000). The study used a threshold alpha coefficient of 0.7 as recommended by Ehlers (2000). The Cronbach alpha coefficient of financial resources and physical resources were 0.834 and 0.817 respectively. This implied that they were above the threshold set and therefore, the study concluded that the instruments were reliable.

4. Findings and Discussions
The authors distributed 165 questionnaires out of which 150 were received but 9 were rejected due to incompleteness and nonresponse, and therefore only 141 were correctly filled representing a response rate of 85.46%. This was very good as per recommendations of Mugenda and Mugenda (2003) who posit that response rate of 50% is adequate. The study used multiple linear regression as recommended by Cooper and Schindler (2003). The study conducted a diagnostic test to ensure that the assumptions of multiple linear regression are satisfied as recommended by Green (2002).

The study computed F statistics which was found to be 27.004 with a p-value of 0.000 (P-value < 0.05) indicating that the model was statistically significant. The coefficient for financial resources was 0.159 with a P-value of 0.004 (P-value < 0.05) while the coefficient for physical resources was 0.213 with a P-value of 0.000 (P-value < 0.05).

The first null hypothesis (H01) was: Financial resources have no statistically significant effect on the performance of Public Health Institutions. The study rejected the null hypothesis (H01) because the P-value of the coefficient of financial resources was 0.004 which was less than the significance value of 0.05 implying that financial resources had a positive statistically significant effect on the performance of public health institutions.

The findings were consistent with Dye and Webster (1997) who found that financial resources were critical to sustaining business success. The findings collaborated with Maureen (2005) who found that timely receipt of adequate funds had a significant relationship with hospital performance. The findings also concurred with Wanjau, Muiruri and Ayondo (2012) who found that financial resources significantly influenced the performance of public hospitals in Kenya since they were a critical component in the acquisition of necessary physical resources.

The study findings collaborate with Miller et al. (1998) who found that there was a positive relationship between funds and improved hospital performance. A study by Mays et al. (2006) found that adequate government funding is significantly associated with improved performance of public health institutions. The findings are in agreement with Dasanayaka (2001) who found a significant positive relationship between financial resources and performance of public hospitals in Sri-lanka because they were responsible for various purposes such as acquisition and maintenance of medical equipment and devices and responsible for staff training.

The findings are supported by Immyxail and Takahashi (2010) who found that financial resources were significantly linked to firm performance irrespective of who heads the institutions. The findings of this study collaborated with Onyango and Wanyoike (2014) who found, a significant positive relationship between funds and employee training which led to improved performance in public hospital in Siaya County.

The second null hypothesis (H02) was: Physical resources have no statistically significant effect on the performance of Public Health Institutions. The study rejected the null hypothesis (H02) because the P-value of the coefficient of physical resources was 0.000 (P-value < 0.05) which was less than the set significance value of 0.05 implying that physical resources had a positive statistically significant effect on the performance of public health institutions.

The findings of this study are consistent with Sai, Prabbu and Reddy (2012) who established that there was a significant positive relationship between the availability of physical resources and performance of public health facilities in Chittoor District of Andhra Pradesh in India. The findings are in agreement with Danasayaka (2001) who found that there was a significant relationship between adequacy, maintenance and quality of physical resources and performance of public hospitals in Sri Lanka.

The study findings find support in Waithaka (2012) who established that there was a positive relationship between availability and quality of pharmaceuticals and non-pharmaceuticals and performance of both public and private hospitals. The study is in line with findings of Abiro and Mbera (2014) who found that shortage of medicines and medical equipment were the main causes of poor performance of Malawian public hospitals leading to serious challenges in universal health care coverage to rural Malawians.

The study was consistent with Nnebue et al. (2014) who found that inadequate physical resources such as drugs, power, water supply, medical equipment and improper disposal systems stifled provision of quality maternal health services in Nigeria. The study collaborated with Heidari et al. (2016) who found that low levels of physical resources led to poor performance of health houses and health centres in Golestan Province.
5. Conclusion and Policy Implications
The study made the following conclusions based on the findings. Public health institutions which invest in adequate and quality physical resources (that is pharmaceuticals and non-pharmaceuticals) will enhance the performance of the various hospital cadres of employees. This will automatically translate to overall hospital performance. In addition, the public hospitals that have higher quantities of financial resources will achieve higher levels of performance than those with lower quantities because they will be able to acquire the necessary facilities and at the same time finance various hospital operations. In regard to contribution of the two resources, physical resources had a higher contribution to performance of public health institution than financial resources. The county government should ensure adequate quality medicine and medical equipment in order to provide their clients with quality health care. The hospital management should ensure medical equipment are serviced regularly and replace obsolete equipment. This will necessitate the employment of skilled personnel in the maintenance department. In order ensure functionality of the medical equipment at all times. The county government should enforce and strengthen the policies on the acquisition of the right and adequate physical resources. This is in line with the findings of the study which established that physical resources had a positive statistically significant effect on the performance of public health institutions.

The county government should increase budgetary financial allocation for the public hospitals so as to be able to acquire the requisite resources such as medicines and medical equipment. Further, the county government should review and enforce policy on disbursement times and amount disbursed. So as to ensure the hospitals have adequate funds and on a timely basis. The review should also focus on collaboration with other bodies such as CDF, non-government organizations and business community in order to increase the financial base of the public hospitals in order to ensure programmes are carried out effectively and efficiently throughout the year.

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