STRATEGIC RESOURCES AND PERFORMANCE OF PUBLIC HEALTH INSTITUTIONS IN EMBU COUNTY, KENYA

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JULY, 2018
DECLARATION

This thesis is my original work and to the best of my knowledge has not been presented for a degree in any other university or for any other award. No part of this thesis should be reproduced without the authority of the author and/or Kenyatta University.

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DEDICATION

This work is dedicated to the Almighty God who has given me the grace, energy and insight to prepare this thesis. To my wife Beth and our children Ken, Mike, Faith, Ann and Simon, who have always been a part of this journey. I will forever be indebted to my late father, Gabriel Njagi and late mother Julia Mbere who sacrificed a lot to see me acquire the education but didn’t live to see the fruits of their hard work.
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OPERATIONAL DEFINITIONS OF TERMS

Assurance

Knowledge, ability and courtesy to inspire trust and confidence to patients.

Empathy

Provision of caring and individualised attention to patients.

Organizational Capability

Ability of a public hospital to use her accumulated experiences and documented routines to acquire, deploy, develop, combine and coordinate strategic resources in ways that add unique value to health care services provided to its clients in a hospital.

Organizational Culture

Norms, beliefs attitudes and values that identifies the members of one organization from others.

Organization Performance

Achievement of strategic objectives by a public hospital in regard to employee satisfaction, patient satisfaction, efficiency and innovativeness.

Public Hospital

Health care organization funded by the government and includes, county referral hospital, and sub county hospital.

Public Health Institutions

Comprises of public hospitals in Embu County

Reliability

Ability and willingness of medical care workers to provide the expected medical services and to help patients dependably and accurately.

Responsiveness

Willingness to help patients and provide a prompt service

Financial Resources

Receipt of timely receipt of adequate monetary resources by a hospital and that are easily accessible to hospital management for the right allocation
<table>
<thead>
<tr>
<th><strong>Human Resources</strong></th>
<th>Trained persons with knowledge, skills, experience, professional expertise and competence in provision of health care.</th>
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<tr>
<td><strong>Information Technology Resources</strong></td>
<td>Information communication technologies that possess attributes of integration potential, alignment, compatibility, ease of use and functionality in order to facilitate acquisition processing, retrieving and communicating information for decision making in line with organizational strategy of providing quality patient care.</td>
</tr>
<tr>
<td><strong>Physical Resources</strong></td>
<td>Pharmaceuticals and Non-pharmaceuticals necessary for providing quality health care.</td>
</tr>
<tr>
<td><strong>Strategic Resources</strong></td>
<td>Building blocks of competitive advantage which includes human resources, information technology resources, financial resources and physical resources in a public health institution which are acquired, deployed, developed, combined and coordinated to achieve hospital strategic goals of provision of quality health care.</td>
</tr>
<tr>
<td><strong>Tangibles</strong></td>
<td>Appearance of medical facilities, and equipment in facility.</td>
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## ABBREVIATIONS AND ACRONYMS

<table>
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<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>AOA</td>
<td>Annual Outpatient Attendance</td>
</tr>
<tr>
<td>BSC</td>
<td>Balance Score Card</td>
</tr>
<tr>
<td>CA</td>
<td>Competitive Advantage</td>
</tr>
<tr>
<td>CRA</td>
<td>Commission for Revenue Allocation</td>
</tr>
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<td>DAOA</td>
<td>Daily Average Outpatient Attendance</td>
</tr>
<tr>
<td>DCT</td>
<td>Dynamic Capability Theory</td>
</tr>
<tr>
<td>HCW</td>
<td>Health Care Workers</td>
</tr>
<tr>
<td>HR</td>
<td>Human Resources</td>
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<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
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<td>IT</td>
<td>Information Technology</td>
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<tr>
<td>ITR</td>
<td>Information Technology Resources</td>
</tr>
<tr>
<td>IOM</td>
<td>Institute of Medicine</td>
</tr>
<tr>
<td>KBV</td>
<td>Knowledge Based View</td>
</tr>
<tr>
<td>KDHS</td>
<td>Kenya Demographic Health Survey</td>
</tr>
<tr>
<td>KNBS</td>
<td>Kenya National Bureau of Statistics</td>
</tr>
<tr>
<td>MCH</td>
<td>Maternal Child Health</td>
</tr>
<tr>
<td>MOH</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>NACOSTI</td>
<td>National Council for Science Technology and Innovation</td>
</tr>
<tr>
<td>PHI</td>
<td>Public Health Institutions</td>
</tr>
<tr>
<td>RBV</td>
<td>Resource Based View</td>
</tr>
<tr>
<td>RoK</td>
<td>Republic of Kenya</td>
</tr>
<tr>
<td>SCA</td>
<td>Sustainable Competitive Advantage</td>
</tr>
<tr>
<td>US</td>
<td>United States</td>
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<tr>
<td>WHO</td>
<td>World Health Organization</td>
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ABSTRACT

The right to health care is one of the most fundamental rights for all citizens in a country because it leads to the well-being of people consequently leading to economic growth and development. Despite the commitment of Kenya government to provide equitable, affordable and quality health care by boosting resources in the health sector the public health institutions, have not yielded the expected performance. This study therefore investigated the effect of strategic resources on the performance of public health institutions in Embu County, Kenya. The specific objectives were to determine the effect of human resources, information technology resources, financial resources and physical resources on performance of Public Health Institutions in Embu County, Kenya. In addition, the study investigated mediating and moderating effect of organizational capability and organizational culture on the relationship between strategic resources and performance of Public Health Institutions respectively. The study adopted positivism research design by testing hypotheses derived from predetermined conceptual framework. The target population was 560 respondents who comprised of 550 employees and 10 outpatients drawn from the five public hospitals in Embu County. Proportionate stratified random sampling, purposive sampling and convenience sampling were used to select a sample size of 175 respondents (comprising of 165 employees and 10 outpatients). Primary data was collected using questionnaire based on five point Likert scale. Interview guide was used to collect data from outpatients. The quantitative data was analysed using both descriptive and inferential statistics. Descriptive statistics was used to describe characteristics of the study variables while inferential statistics specifically multiple linear regression was used to establish the nature of effect between the independent and dependent variables. Qualitative data was analysed using content analysis based on common themes that emerged. The study found that the combined effect of strategic resources was statistically significant and explained 42.6% of performance of public health institutions in Embu County. The study established that human resources, information technology resources, financial resources and physical resources had positive statistical and significant effect on performance of public health institutions in Embu County. The study further found that Organizational capability had a positive statistical and significant partial mediating effect on the relationship between strategic resources and performance of public health institutions. Organizational culture was found not to have a statistical significant effect on the relationship between strategic resources and performance of public health institutions. The study concluded that public health institutions which invest and maintain adequate and quality strategic resources such as human resources, information technology resources, financial resources and physical resources will realize better performance than those which do not. In addition, Public health institutions which prudently deploy, develops combines and coordinates strategic resources will perform better than those which do not. The study recommended that the county government should enforce and strengthen policy on acquisition and retention of visionary human resources, user friendly Information Communications Technology infrastructure and adequate and quality physical resources. Further, the government should increase financial budgetary allocation for public health institution. In addition, the Public Health Institutions should strengthen and enhance the policy on prudent deployment, development, combination and coordination of strategic resources for better performance in order to realize the national government agenda of Kenya vision 2030.
CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

The major challenge facing both public and private organizations is how to survive in the changing environments due to competition that is intensified by globalization. According to Mackie (2008), the long run survival of service organizations is dependent on customer satisfaction which is a critical indicator of organizational performance. Due to the increased customer awareness, all organization, whether public or private are expected to perform in order to deliver value to their clients.

In recent times the performance of organizations has received increasing scrutiny from strategic management researchers and practitioners in many countries of the world (Santos & Bintos, 2012). Empirical evidence reveals that the public health sector is characterised by customer dissatisfaction due to underperformance (Berman, Pallas, Smith, Curry & Bradley, 2011).

In order to improve client satisfaction, many public healthcare organizations are aggressive in developing strategies that are geared towards provision of quality healthcare services so as to improve performance. Despite a number of global health initiatives having been put in place in many countries of the world, performance failures of many public health hospitals continue to be reported (WHO, 2013).

In an attempt to improve the performance of health sector in China, the government introduced a strategy of payment by incentives for primary health care providers such that pay for performance was used to motivate health workers in order to increase the
provision of quality health care services (Yip, Hsioo, Merg, Chen & Sun, 2010). However, the strategy did not achieve the intended health benefits but instead created inefficiencies, waste and poor-quality health care. It has been reported that the performance of public health sector in Sri Lanka has for long been stifled by failure of medical equipment and devices arising from equipment obsolescence, inadequate funds for equipment maintenance and lack of technical personnel in regard to equipment maintenance (Parloe, 2003; Grimes, 2004).

According to Okeke (2008), the performance of health sector in less developing countries is stifled by shortage of skilled health care workers in public health institutions owing to migration of health work force to developed nations in search of better pay, better working conditions and career progression. This is in agreement with Ibrahim (2014) who found that lack of appropriate regulatory policies on management of human resources regarding conducive work environment have led to migration of health workers and especially doctors in less developing countries to developed countries leading to poor health outcomes. Empirical evidence confirms that 60% of doctors registered in Sudanese Medical Council are working in overseas countries (Ibrahim, 2014).

Hospital automation has been found to have contributed significantly to strategic value in public sector hospitals in South Africa leading to positive outcomes in regard to patient care, hospital work flow enhancements and overall employee morale in the workplace (Cline & Luiz, 2013). In contrast, the performance of health sector in Ethiopia has for long been stifled by lack of qualified health service providers and
especially specialised doctors who are not attracted to rural areas due to political reasons coupled with lack of medical supplies (Saharty, Kabende, Dubusho & Sadat, 2009). Similar scenario has been reported in India where the performance of health sector has remained poor despite significant growth of the country’s economy owing to lack of political commitment to recognize health as an essential component of human development and consistently low investment in the sector since independence (Reddy, Patel, Jha, Paul, Kumar & Dandona, 2011).

According to Kenya National Bureau of Statistics (2010), there are great inequalities in accessing health care by many people across different counties in Kenya. Kiambati, Kioo and Towett (2013) observed that Kenya is among the African countries currently experiencing major crisis in the area of human resources for health caused by inadequate distribution and high labour turnover of medical care workers, inadequate wages and unconducive working conditions to attract and retain quality work force in public health institutions.

According to KPMG International the performance of public health institution in Kenya has been deteriorating due to high labor turnover of health care workers across counties. Although the Kenya government remains committed to providing equitable, affordable and quality health care as envisioned in Kenya vision 2030, the guarantee of achieving the ambitious health milestones is questionable (Sousa, Scheffler, Nyoni & Boerma, 2013).
Studies have shown that the capacity and ability of an organization to articulately acquire, deploy, coordinate, develop and combine strategic resources prudently is fundamental in provision of quality services to her clients (Bryan, 2011). According to Barney (1995), strategic resources that influence performance positively and that guarantee an organization with sustainable competitive advantage (SCA) should possess four key characteristics which include valuability, rarity, inimitability and non-substitutability. These attributes make competitors face obstacles in obtaining competitive parity. Conversely, resources that do not add value do not improve the organizational performance.

There is substantial empirical evidence that unique knowledge of strategic resources makes such resources strategic in nature and confers an organization with performance advantages (Newbert, 2007). Studies have revealed that strategic resources such as human, information technology, financial and physical resources are the key inputs to performance of healthcare organization in regard to delivery of quality health care (Kiambati, Kioo & Towett, 2013).

1.1.1 Organizational Performance

Organizational performance is a multidimensional phenomenon characterised by the ability of an organization to create and deliver acceptable outcomes to various stakeholders (Islam, Khan, Obaidullah & Alan, 2011). This is the major reason behind the survival of an organization in the long run. However, measuring organizational performance has been a major challenge due to lack of consensus on measurement indicators among strategic management researchers, scholars and practitioners (Santos & Binto, 2012). Coombs, Crook and Shook (2005) posit that most researchers tend to
use financial measures for evaluating organizational performance. However, financial measures only reveal past performance of an organization which may not reflect the present or future state of an organization.

Kaplan and Norton (1996) in their model of balance scorecard (BSC) suggest that organizational performance should not only be measured by financial indicators but should also include non-financial metrics such as customer satisfaction and retention, improving business processes and innovativeness, employee satisfaction and corporate image. This is in agreement with Ott and Dijk (2005) and Evans (2007) who contend that, non-financial measures such as corporate image, customer and employee satisfaction are important measures of organizational performance. These observations are supported by Spraakman (2005) who established that non-financial metrics such as customer and employee satisfaction are critical drivers for the long-term stakeholder value creation.

Shaw (2003) suggests that efficiency (capacity to deliver high quality clinical services at low cost) and explicit goals (that reflect the values of various stakeholders such as patients, employees, government and publics which in essence is all geared towards delivery of better health) are important measures of performance of health care organizations. This is in agreement with Collins and Montgomery (2008) who argue that efficiency and customer satisfaction are important measures of hospital performance.
Studies have shown that there is a significant relationship between employee satisfaction and client satisfaction in health care industry (Ongori & Shunda, 2008). This is in line with internationally accepted health indicators such as patients and employee satisfaction for measuring organizational performance in health care industry (WHO, 2003). The measurement indicators further concur with Rodak (2013) who posit that the measurement indicators on studies done in health care organizations are average patient length of stay, bed occupancy rate, patient satisfaction, employee satisfaction, bed turnover and readmission rates.

Kazandjian and Lied (1998) argued that there has not been a consensus on performance measures for studies done in health care organizations due to reliability and validity concerns. Even where the organizational performance is validly measured, a link between measurement activities and long-term performance improvement has not been well documented. The current study used employee satisfaction, customer satisfaction, efficiency and innovativeness as measures of performance which were adopted from Rodak (2013); Balance score card (Kaplan & Norton, 1996); Shaw (2003) and Collins and Montgomery (2008). Hence the study operationalized performance of public health institutions into employee satisfaction, efficiency, innovativeness and customer satisfaction.

1.1.2 Strategic Resources
Barney (1991) viewed Strategic resources as key inputs to organizational performance which meets four criteria which includes: Valuability (the resource increases customer value or reduces costs); Rarity (competitors do not use the same resource to compete
away the value); Inimitability (keeps competitors off from gaining competitive parity); and Non substitutability (resources cannot be copied or equaled by competitors). Barney and Alikan (2001) Contends that strategic resources comprises of human resources, information technology resources, financial resources and physical resources.

Although strategic resources have been linked to organizational performance, studies have indicated that they explain performance only to the extent that organizations capture the economic value which key stakeholders such as managers, owners and employees compete to capture (Barney & Clark, 2007). This argument is supported by Newbert (2007) who argues that strategic resources shape organizational performance.

Duff (2016) viewed strategic resources as the building blocks of competitive advantage and comprises of an organization’s human resources, physical resources, financial resources and intangible resources e.g. patents, know-how and relationships among others. However, Grant (2001) argued that possession of strategic resources does not automatically guarantee performance but the way an organization builds a reliable strategic resource base by developing, upgrading, deploying and coordinating resources at her disposal.

Pfeiffer (1994) contend that to achieve sustainable competitive advantage (SCA), an organization should build a work force that has the ability to achieve competitive success and cannot be readily duplicated by rival firms. Human resources comprise of organizational capital which is mostly seen when an organization acquires trained and
well-motivated workforce and puts in place mechanisms to retain them in the organization so as to capture new environmental opportunities leading to SCA (Urich & Lake, 2009). According to Guest (2009), human resources help an organization to deal with environmental challenges caused by competition and rapid technological changes.

Studies have shown that an organization can create strategic strong organizational capital by embracing best human resource practices such as team building, continuous skill development through training, career progression, competitive reward schemes, creation of conducive work environment and employee empowerment (Wright & McMahan, 2002; Schuller, 2002; Stone, 2005; Marchington & Grugulis, 2000). The key idea behind human resources is to promote sustained organizational performance. This concurs with Becker and Huselid (2006) and Okeke (2008) who observed that investment in skilled and experienced workforce leads to improved organizational performance.

According to Guest (2009) employee empowerment, effective team work, employee training and better work place environment are human resource management practices that create well motivated skilled workforce with capability of dealing with environmental challenges caused by competition and technological changes leading to overall organizational performance. This concurs with the findings of Bhat (2013), who found that employee training had significant effect on employee productivity. Better work place environment has been closely linked with employee productivity (Hameed, & Amjad, 2009).
Dao, Langella and Carbo (2011) posit that information technology resources enable an organization to achieve its strategic objectives effectively and efficiently leading to competitive advantage and consequently improved organizational performance. Argyraki and Cheriton (2005) argues that information technology resources that possess integration potential through network access increases contact between organizational members leading to improved organizational performance. An IOM (2002) report, observed that in most of the public hospitals in developing countries requests for medications, laboratory tests and other services are still written on paper and that many hospitals lack the capability to deliver laboratory results in an automated manner.

The use of information technology resources in health care industry is on the increase as the quality of patient care in contemporary times seems to depend on timely acquisition and processing of clinical information related to the patient care (Brailer, 2005). However, a study by Getzen (2007) established that investment in information technology by health care organizations does not improve performance but only increases the cost of health care services making it unaffordable for the poor people.

Sun and Shibo (2008) indicates that information technology resources that are capable of supporting value adding activities in health care industry should possess five critical attributes which includes understandability, integration potential, compatibility, functionality and ease of use. Galliers (2007) argues that, many organizations are embracing information technology alignment as a key business strategy in order to exploit the environmental opportunities.
WHO (2005) report revealed that a hospital that embraces information technology resources improves communication between health care providers and patients leading to patient satisfaction. However, Verbeke (2012) found that public hospitals in Sub-Saharan Africa have continued to perform poorly due to inadequate adoption of information technology resources.

Studies have linked performance of public health institutions with physical resources (Isackow, 2006; Lewis, 2006; Lalude, 2006). Bryan (2011) contends that adequacy and quality of physical resources are critical attributes to organizational performance. 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.

Grines (2004) argues that despite, the physical resources possessing critical attributes, there will be minimal contribution if the resources lack technical support of competent human resources at both engineering and managerial levels. Studies have revealed that there is gross underfunding of PHI less developing countries a trend that has continued to undermine delivery of health care (Kaseje, 2006; Dieleman & Harmeijer, 2006; Okeke, 2008). Mosadeghrad (2014) found that inadequate financial resources and insufficient physical resources had seriously stifled delivery of quality medical services in Iranian public health institutions.
According to Franco, Benett and Kanfer (2004) the 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 the available funds must possess unique attributes which includes timeliness, adequacy and accessibility. (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 have stifled performance of many public hospitals globally.

1.1.3 Organization Capability

The concept of organizational capability has generated a lot of interest among strategic management researchers and practitioners in recent times. Organizational capability is considered a major source of sustainable competitive advantage (SCA) through articulate acquisition, deployment, development and combination of strategic resources in ways that add unique value and that is difficult for competitors to imitate (Barney, 1991). Amit and Schoemaker (1993) viewed organizational capability as the means by which strategic resources are deployed to achieve desired end.

Combe and Greenkey (2004) views organizational capability as intangible resources that comprises of bundles of skills, organizational routines and accumulated knowledge. Jugdev (2004) argues that organizational capability enhances coordination between individual resources, processes and knowledge which effectively lead to desired performance. Kash, Spaulding, Gamm and Johnson (2014) conceptualized organizational capability as organizational skills, collective learning, core competences,
resource development, organizational integration, stake holder partnership building and strategic decision making.

Ljungquist (2007) contend that, organizational capability is a critical component in regard to execution of an organization’s strategy. A study by King (2007) observed that organizational capability can affect the relationship between resources and competitive advantage. Teece et al. (1997) argued that organizations should continuously endeavor to renew and develop organizational capability in order to deliver value to their clients so as to gain SCA in the dynamic markets of today. Wheeler (2012) and Chen and Huang (2009) found that organizational capability facilitate an organization to integrate different resources in order to respond quickly to the changes in its dynamic environment and there by gain ability to deliver goods and services of superior value to their customers.

Yeoh and Roth (1999) argues that an organization’s unique capabilities is to deploy and transform its resources for better use can be responsible for its SCA beyond the accounted resource levels. This observation concurs with findings of Gloria and David (2015) who found that, organizational capability enhances improved organizational performance through prudent use of accumulated experiences. Rauffet, Cunha and Benard (2010) posit that, organizational capability helps an organization to engage in mutual partnerships between various stakeholders in order to articulate and implement desired strategies.
A study by Saint-Amant and Renard (2003) found that, organizational capability enhances organizational performance through prudent utilization of accumulated experiences overtime and organizational routines coupled with deployment and coordination of resources at her disposal. Chawleka (2006) argues that, partnership engagement of health care practitioners is a fundamental aspect of enhancing realization of a health organization’s strategic objective of provision of quality patient care. The current study operationalized organizational capability as deployment of resources, coordination of resources, accumulated experiences, partnership with relevant stakeholders and organizational routines as measurement indicators.

1.1.4 Organizational Culture

Organizational culture has been defined as set of attitudes, believes, customs, values, norms and practices which are shared by members in an organization (Alvesson, 2002, O’Riodan, 2015). These cultural attributes help to shape the ways in which the organizational members interact and engage with each other. According to Guizo, Saplenza and Zingales (2006), organizational culture can affect organizational outcomes either positively or negatively. Empirical evidence indicates that organizational culture can be a source of competitive advantage which distinguishes successful organizations from unsuccessful ones (Cameroon & Quinn, 2011).

Studies have revealed that, organizational culture prevailing in various organizations culture can be categorized into four dimensions of organizational culture namely; bureaucratic, collaborative, market and innovative culture (Masood, 2006; Slocum & Hellriegel, 2007). Bureaucratic culture is characterized by emphasis on adherence to
well defined rules, policies and procedures. Collaborative culture emphasizes on teamwork, consensus and cordial relationships among various stakeholders. Market culture focuses on productivity, competitiveness and profit motives while innovative culture focuses on readiness to change, creativity and willingness to take risks.

According to Christie, (2011) the organizational culture prevailing among public sector employees is more reactive than proactive because the employees respond to political activities and policies rather than responding to the changing customers’ needs. The public sector Organizations in Kenya has for long been characterized by culture of negative values coupled with inadequate responsibility and lack of accountability (Koigi, 2011).

World Bank (2007) report revealed that, pointed out that, there was poor service delivery in Kenya due to poor governance leading to mismanagement of public resources and decreased output. A study by Parker and Bradley (2000) found that the culture prevailing in public sector is less market oriented and is more concerned with political agendas making the employees deliver public services that are defined by politicians. McCarthaigh (2008) argues that lack of profit motives in public entities leads to inefficiency and poor service delivery.

This study operationalized organizational culture into three culture dimensions namely: bureaucratic, collaborative and innovative. These three dimensions of organization culture were chosen on the grounds that, they represent aspects which are critical for
the performance of public health institutions. Such aspects include adherence to well-defined rules, policies and procedures (Bureaucratic culture); team work, consensus and cordial relationships among various stakeholders (Collaborative culture); and creativity, readiness to change and willingness to take risks (Innovative culture).

Market culture was not included as one of the culture dimensions because the motive of public health institutions is not to make profit and hence do not compete. It is important to note that a culture that can promote formulation and implementation of government strategies is one grounded on strong and positive values based on rule of law and ethical standing.

1.1.5 Health Sector in Kenya
The performance of health sector in Kenya is a prerequisite for economic development of the country because it improves the livelihoods of Kenyans and thus boosts the economic growth through poverty reduction by improving the health of the people. According to RoK (2010), the country has a network of over 4700 health facilities with public sector accounting for 51% of these facilities while private sector and faith based organizations accounts for 49%.

The public health system consists of the following six levels: Level 6 (consists of National referral hospitals), Level 5 (consists of County referral hospitals), Level 4 (consists of Sub-County hospitals), Level 3 (consists of health centres), level 2 (consists of dispensaries) and Level 1 consists of the Community centre in specific area. Level one is headed by a trained community health worker who is in charge of health education and identifying the sick after which he or she refers the sick to other
levels of health care. RoK (2011) reported that the public health services are integrated from level six down to level one in order to serve their clients efficiently.

In an attempt to alleviate poverty and disease, Kenya government embarked on a development agenda called Vision 2030 which aims to provide high quality life to all Kenyan citizens in clean and secure environment (RoK, 2007). The vision is anchored on three key pillars which includes social, political and economic. The health sector under social pillar is critical to the other two pillars (economic and political pillars) under which vision 2030 is anchored. In order to realize the vision 2030 the health sector needs to acquire, deploy, develop and coordinate the right strategic resources prudently.

The Kenya government aims to improve the performance of health sector by improving access and equity of health work force through the provisions of Kenya constitution 2010, vision 2030, Kenya Health Policy framework 2011-2030 and strategic plan for human resources for health. However, since the devolution of health sector to the counties, there has been continuous staff unrest in various public health institutions across counties (Mwatsuma, Mwamuye & Nyamu, 2014). Embu County has witnessed serious staff unrest of medical care workers since devolution of health sector to counties in 2013.

Studies have revealed that the performance of public health institution has been facing a number of challenges as evidenced by client dissatisfaction (Wanjau, Muiruri & Ayondo, 2012). Muathe, (2010) posit that the demand for health care has outstripped the government ability to provide effective services to the ever increasing Kenya’s population.
World Bank (2014) report revealed that the doctor-patient ratio of 14 physicians to every 100,000 persons in Kenya is far below the WHO recommended standard of 21.7 doctors per every 100,000 people. This in essence, is a major challenge to the realization of government agenda of Vision 2030. It is worth noting that inadequate human capital translates to challenges in other strategic resources such as physical resources and information technology resources.

1.1.5.1 Public Health Institutions in Embu County.
Embu county is located in south eastern side of Mt. Kenya and covers an area of 2818 Km² with a population of 516,212 (GoK, 2012). The county comprises of five sub counties which includes Embu North, Embu West, Embu East, Mbeere North and Mbeere South. The county however comprises of four main constituencies which serves as sub counties in the health sector and includes Runyejes, Manyatta, Mbeere South and Mbeere North. The county is served by five public hospitals which includes Embu level five, Kianjokoma, Runyejes, Ishiara and Siakago (Embu County health office, 2016).

The implementation of devolved system has met a number of challenges (GoK, 2012). Since 2013 there has been turnover of doctors and staff unrest of health care workers of health sector in the counties. According to MOH (2013) the doctor patient ratio in Embu County is 1:9090.9 as compared to WHO recommend average of 1: 4602. The nurse patient ratio and clinical officer patient ratio in Embu County are 1:870 and 1:8333 respectively (Rok, 2013). In addition, according to CRA (2011) the diseases
burden is relatively high for instance Malaria as outpatient stands at 42.8% compared to national average of 27.7%.

The neonatal mortality rate (per 1000 births), infant mortality rate (per 1000 births) and maternal mortality rate (per 100,000 births) are 24, 43 and 400 respectively while national average for the same are 31, 45 and 488 (KDHS, 2013). These statistics reveal serious challenges affecting the performance of public health institutions in Embu County. In regard to physical resources there are gaps at facility level which are posing challenges to service delivery.

1.2 Statement of the Problem

The 2010 Kenya constitution recognizes health as a fundamental right for all citizens and an important driver in spurring economic growth (RoK, 2010). The major policy documents such as Kenya Vision 2030 and Kenya Health Policy Framework 2014 - 2030 highlight the government obligation to ensure that Kenya attains the highest standard of living for her population by boosting resources in the health sector (RoK, 2007; RoK, 2014). The health sector is classified under the social pillar, one of the three pillars under which vision 2030 is anchored.

Despite the heavy government investment in health sector, the performance of public health institutions remain below the required threshold. (KNBS, 2010; Atieno, Nancy & Seitz, 2014). Reports by WHO (2010), Transparency International (2011) and World Bank (2014) reveal that critical shortage of human resources continue to undermine the performance of public health institutions. For example according Rok (2013) Embu County has nurse patient ratio of 1:870 and a clinical officer patient ratio of 1:8333
while the doctor patient ratio is 1:9090.9 compared to the WHO recommended average of 1:4602.

The neonatal mortality rate (per 1000 births), infant mortality rate (per 1000 births) and maternal mortality rate (per 100,000 births) in Enbu County are 24, 43 and 400 respectively while the national averages for the same are 31, 45 and 488 (KDHS, 2013). In addition, according to CRA (2011) the disease burden is very high for instance, malaria as outpatient stands at 42.8% compared to national average of 27.7%. These statistics reveal serious challenges on performance of public health institutions in the County.

According to KPMG International (2013) there has been turnover of doctors and staff unrest of health care workers in the country’s public health institutions. Embu County has shared the problem as other counties in Kenya posing challenges in performance of public health institutions in the County. For instance in 2014, out of 201 doctors who resigned from public health Institutions in the country, 16 were from Embu County (Matendecher, 2014).

The literature reviewed indicates that most studies that have attempted to link resources to performance have only examined a single resource in one study with majority of the studies assuming linear relationship between resources and performance. For instance, Saif and Saleh (2013) found there was significant relationship between employee empowerment and hospital performance in Jordanian public hospitals. Muathe, (2010)
found that, ICT adoption led to significant improvements in customers service in health-related Small and Medium Enterprises in Nairobi County, Kenya.

Onyango and Wanyoike (2014) found that there was significant relationship between financial resources and employee training; while Sai, Prabbu and Reddy (2012) found a significant positive relationship between physical resources and performance of Public health institutions in India. These studies ignored the fact that performance of a health institution cannot be adequately determined by a single resource. Further, the studies ignored the influence of other factors such as Organizational Capability and Organizational Culture that can affect the direct relationship between resources and performance.

The extant literature reviewed have shown that studies that have used organizational capability as a mediating variable have been done in non-health care industry. Further the literature has indicated that the results of studies linking organizational culture and performance have tended to be inconclusive. For instance Rousseau (1990) found that there was no relationship between Organizational Culture and performance while Rowena, Russel, Davis, Hawison, Konten and Walshe (2013) found Organizational Culture was linked to performance of public hospitals. The current study therefore, sought to investigate the effect of strategic resources and the performance of public health institutions and to determine the effect of organizational capability and organizational culture on the relationship between strategic resources and performance of public health institutions in Embu County respectively.
1.3 Objectives of the Study

1.3.1 General Objective
The general objective of the study was to investigate the effect of strategic resources on the performance of public health institutions in Embu County, Kenya.

1.3.2 Specific Objectives
The specific objectives of the study were:

(i) To determine the effect of human resources on performance of public health institutions in Embu County, Kenya.

(ii) To establish the effect of information technology resources on performance of public health institutions in Embu County, Kenya.

(iii) To determine the effect of financial resources on performance of public health institutions in Embu County, Kenya.

(iv) To establish the effect of physical resources on performance of public health institutions in Embu County, Kenya.

(v) To determine the mediating effect of organizational capability on the relationship between strategic resources and the performance of public health institutions in Embu County, Kenya.

(vi) To establish the moderating effect of organizational culture on the relationship between strategic resources and performance of public health institutions in Embu County, Kenya.

1.4 Research Hypotheses
The study was guided by the following hypotheses.
**H01** Human Resources has no significant effect on performance of public health institutions in Embu County, Kenya.

**H02** Information Technology Resources has no significant effect on Performance of public health institutions in Embu County, Kenya.

**H03** Financial Resources has no significant effect on performance of public health institutions in Embu County, Kenya.

**H04** Physical Resources has no significant effect on performance of public health institutions in Embu County, Kenya.

**H05** Organizational Capability has no significant mediating effect on the relationship between strategic resources and the performance of public health institutions in Embu County, Kenya.

**H06** Organizational Culture has no significant moderating effect on the relationship between strategic resources and the performance of public health institutions of Embu County, Kenya.

### 1.5 Significance of the Study

The study benefits a number of stakeholders, first, the study will benefit the management of the public health institutions and health professionals in Embu County because it has provided an elaborate framework on the link between strategic resources and performance of public health institutions. In addition, the study revealed the mediating effect of organizational capability on the relationship between strategic resources and performance of public health institutions. The management is able to focus on acquisition, deployment, development, maintenance and coordination of the right and adequate strategic resources in order to ensure continued performance of PHI.
Second, the study provides insights to policy makers on which resources to invest more in since the study revealed the resources which contributed more in regard to performance of public health institutions in Embu County. For instance the study revealed that human resources had the greatest contribution and this information will help them enhance and formulate policies that will focus on retention of human resources.

Third, researchers will benefit because the empirical evidence contributes to advancement of knowledge that broadens the understanding on the effects of strategic resources on the performance of Public Health Institutions. In additional the study has contributed to theory building by illustrating the mediating effect of organizational capability on the relationship between strategic resources and performance of Public Health Institutions.

Further the study has contributed to theory building by supporting the assumptions of knowledge-based view and dynamic capability theory that organizational performance is influenced by strategic resources and the ability of the organization to articulately acquire, deploy, develop, combine and coordinate strategic resources at her disposal.

1.6 Scope of the Study

The study was carried out in the five Public Hospitals which are distributed in the five sub counties of Embu County namely: Embu North, Embu West, Embu East, Mbeere North and Mbeere South. The study focused on different hospital staff cadres namely doctors, clinical officers, nurses, pharmacists, laboratory technicians, nutritionists, health record officers and hospital administrative officers who constituted the unit of
observation. In order to complement the research findings, the study also interviewed outpatients all drawn from the five public hospitals. Data collection period was six months.

1.7 Limitations of the Study
The study faced the following three main limitations. First, the area of the current study had scarce literature making it difficult to obtain adequate literature from other similar studies. This limitation was mitigated by comparing similar studies from other corporate organizations both from local and developed nations. Second, accessing respondents in the hospitals was a big challenge given their busy schedules and the nature of their work. However the researcher established contacts with research assistants who were drawn from the same health institutions. In addition, the researcher used drop and pick method to allow respondents enough time to fill questionnaire.

Thirdly the researcher encountered some respondents who were suspicious of the purpose of the study particularly some heads of departments. This challenge was mitigated by the use of research permit from NACOSTI, research authorization letter from Kenyatta University Graduate School and approval letters from County Director of Medical Health and the County Commissioner. The respondents were also assured of confidentiality of the information they provided.

Lastly the results of this study were based on self-reported data from the most informed persons within the five public hospitals in Embu County. Though they are quite reliable, information generated from such informants could not be the only source of information that can explain hospital performance levels. At the same time
questionnaire and interview guide though good tools for data collection, group focus could yield more information especially on issues that are sensitive such as human resource aspects, organizational finances among others.

1.8 Organization of the Study

This thesis is organized into five chapters. Chapter one provides conceptual and contextual issues of the study. It is organized into various sections which includes: background of the study, statement of the problem, objectives, hypotheses, significance, scope, limitations and organization of the study. Chapter two is organized into various sub sections which includes: introduction, theoretical literature review, empirical literature review and summary of research gaps. A conceptual framework showing the relationship between the study variables is presented at the end of chapter two.

Chapter three presents various sections which comprises of introduction, research philosophy, research design, empirical model, target population, sampling and sample size, data collection instruments, validity and reliability of research instruments, data collection procedure, diagnostic tests and ethical considerations. Chapter four presents introduction, results of descriptive and inferential statistics emanating from data analysis. Finally, Chapter five presents the study summary, conclusion, contribution of the study to knowledge and recommendations.
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of the theories supporting the study and the empirical literature relating to the study variables of strategic resources which included: human resources, information technology resources, financial resources and physical resources. The literature on mediating and moderating variables, that is, organizational capability and organizational culture respectively has also been reviewed. In addition, the chapter outlines the research gaps addressed by the study and concludes with a presentation of the conceptual framework depicting the relationships between the study variables.

2.2 Theoretical Literature Review

The study was anchored on Resource Based View and supported by five other theories which included: Dynamic Capability Theory, Knowledge Based View Institutional theory; Balanced Score Card model and ServQual Model.

2.2.1 The Resource Based View

The Resource Based view (RBV) was developed by a number of strategic management researchers who includes Penrose (1959), Barney (1991), Peteraf (1993), Mata, Fuerst and Barney (1995). The proponents of RBV argue that organizational performance is largely influenced by strategic resources at the disposal of an organization. According to Barney (2001) organizations develop competitive advantage by accumulating bundles of resources that are difficult to duplicate.
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 RBV 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 competences are sources of SCA (Pearce & Robinson, 2005).

O’Sullivan (2011) argues that, according to RBV, 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 SCA if they are valuable and heterogeneousy distributed across competing firms and if the skills possessed by human resources needed to manage technical and market risks are perfectly immobile (Bordello, Ravarini, Wu & Nigam, 2012).

The RBV was relevant to this study because it reveals the importance of resources specifically, human resources, information technology resources, financial resources and physical resources in regard to performance of an organization which was the focus of the study. Other than possession of resources, organizational performance largely
depends on the ability of an organization to articulately acquire, deploy and coordinate strategic resources. This is well articulated by the dynamic capability theory.

2.2.2 Dynamic Capability Theory

This theory was developed by Teece, Pisano and Shuen, (1990, 1997) who viewed dynamic capability as the firm’s ability to integrate, build and reconfigure internal and external competencies to address the rapidly changing environments. Helfat et al. (2007) posit that dynamic capability is the capacity of an organization to purposefully create, extend or modify its resource base and that dynamic capabilities should be built in the organization such that they become organizational routines that are embedded in the organization overtime.

The basic assumption of dynamic capability theory (DCT) is that it can shed light on short-term competitive positions that can be used to build longer CA and consequently lead to long run survival of the organization. Sirmon and Hitt, (2003) argues that the old resources of the firm can be employed in new ways so as to reconfigure the firm’s resource base to sustain CA. Some studies have shown that, dynamic capabilities can be developed through learning and doing (Eisenhardt & Martin, 2000; Zollo & Winter, 2002). The main concerns of the proponents of DCT are asset accumulation, rarity and inimitability of the firm’s core competencies (Zollo & Winter, 2002).

The proponents of DCT, argue that, a firm’s CA depends on the ability of the firm to perform five key functions namely: reconfiguring, transforming and recombining resources in order to form a new resource base; developing mechanism which will
make the competitors incapable of replicating firm’s processes and systems; deploying resources into new domains; embracing learning strategies for employees in order to ensure continuous skill development and integrating and coordinating resources emerging out of new resource base (Zollo & Winter, 2002).

Ambrosini and Bowman (2009) categorized dynamic capabilities into four main processes which enhance performance of an organization. These are reconfiguration, which comprises transformation and recombination of assets and resources; leveraging which comprises of replication of a process or system that is operating in one area of a firm into another area or extending a resource by deploying it into a new domain, for instance applying an existing brand to a new set of product; learning which allows new tasks to be performed more effectively and efficiently often as an outcome of experimentation and permits reflection on failure and success; and finally Integration and coordination of its assets and resources resulting in the emergence of a new resource base.

The DCT was relevant to the study because it sheds light on the mediating role played by organizational capability on relationship between strategic resources and organizational performance. The ability of an organization to achieve its strategic goals is largely influenced by knowledge and skills possessed by human resource within the organization. This is better explained by the Knowledge based theory by Kogut and Zander (1992).
2.2.3 Knowledge Based View

Knowledge Based (KBV) was proposed by Kogut and Zander (1992) who viewed knowledge as the main contributor in the creation and development of dynamic capabilities that can be transformed into valuable products and services. The main focal concern of this theory is asset accumulation, replicability and inimitability of the core competences of the firm. Other researchers who have contributed to development of KBV are Teece and Pisano (1997) who contend that a firm’s performance is not only influenced by bundle of resources but by mechanisms put in place by a firm to learn and grow by accumulating new skills.

Grant (1996) posits that, the integration of specialized knowledge in the firm significantly leads to development of dynamic capabilities consequently leading to CA. Studies have shown that learning leads to four critical aspects which are fundamental for creation of SCA and includes: development and improvement of dynamic capabilities; repetition and experimentation of tasks; transfer of knowledge from various sources to the organization; and knowledge codification leading to accumulated experiences (Zollo & Winter, 2002; Njuguna, 2009).

According to the proponents of KBV, repeated learning practices help employees to internalize the experiences into the organization leading to the establishment of regular activities that can help organizational members to effectively gather and apply knowledge of the resources in order to respond to the changing customer needs. This theory was applicable to the study because it sheds light on the relationship between
knowledge of employees (human resource) in an organization and organizational performance.

2.2.4 Institutional Theory

The theory was developed by Meyer and Rowan (1977) and supported by Meyer (2008) who viewed an organization’s survival from the point of its relationship with its external environment. The proponents of the theory argue that organizations usually reflect myths, routines and rules that have been developed over time and legitimated by knowledge from various professionals and they serve to guide the operations of the organization in regard to changing customer demands (Meyer & Rowan, 1977; Powel, 2007).

The rules, routines and myths usually influence institutional forces, resource dependencies, legal issues, organizational practices and conventions which consequently influence the performance of an organization. The existing body of strategic management literature shows that, institutional theory shapes the behaviour of organizations to act in a socially responsible way both to society and various stakeholders (Brammer, Jackson & Matten, 2012).

The theory was relevant to the current study because it highlights the critical indicators of organizational culture in a public health institution. Specifically it places emphasis on the need for organizational members to adhere to rules, value routines, organizational practices, structures and legal issues. These aspects are of critical
importance to the performance of public health institution because they support the three culture dimensions which were used to operationalize organizational culture.

2.2.5 Balance Score Card

This is a performance model tool that was developed by Kaplan and Norton (1996). The tool incorporates non-financial measures to the traditionally used financial measures of organization’s performance. The proponents of balanced score card (BSC) contend that apart from measuring an organization’s performance using only financial measures, non-financial metrics help the top management to assess the long run survival of an organization. The BSC model is critical because it helps planners to identify what should be done and can be measured.

The BSC emphasises on four main areas that can be used for assessing an organization’s success both in the short and long run. These include: Customer satisfaction and retention; innovations which comprises of improving business processes by embracing the best business practices in the market; human resource development which comprises of learning and growth and employee satisfaction. Spraakman (2005) argued that the non-financial metrics are critical drivers for the long term stakeholder value and further pointed out that organizations that make customers dissatisfied will be forced out of business.

The BSC was relevant to this study because it informed the study of the choice of non-financial indicators of measuring performance of an organization. Hence measures such
as customer satisfaction, employee satisfaction, innovativeness and efficiency were used as indicators of performance of public health institutions in the study.

2.2.6 ServQual Model

The model was proposed by Parasuraman, Zeithml and Berry (1985) who sought to address the gap that exists between the customer expectations and the actual satisfaction obtained from consuming a particular service or product. The gap between customer expectation and actual performance (that is, service actually experienced by the customer) arises because of mismatch between customer experiences and expectations. This is why the model is usually referred to as Gap Model in Service Quality.

Parasuraman, Zeithml and Berry (1985) identified ten determinants that may influence the appearance of the gap as follows: Reliability; Responsiveness; Competence; Access; Courtesy; Communications; Credibility; Security; Understanding the customer; and tangibles. The proponents of the gap model later reduced the ten determinants into the following five critical elements which they identified as: Reliability; Assurance; Tangibles; Empathy; and Responsiveness (Parasuraman et al., 1985).

The Servqual model was improved by Van (2003) by identifying the generic dimensions under the five critical elements. The dimensions of tangibles include physical facilities, equipment and appearance of service providers. The dimension of reliability includes ability to perform the promised service dependably and accurately. Responsiveness includes the willingness of service providers to help customers and provide prompt service.
The dimension of assurance includes competence, courtesy, credibility and ability of service providers to inspire trust and confidence to the customer. Finally, the dimension of empathy includes communication, understanding and providing the customers with individualized attention so that he/she can access the desired service.

The key determinant of customer satisfaction in health sector is service quality which is determined by comparing the expected service and actual service received by the customer (Irving & Dickson, 2004). Edvardson (2005) established that customer experiences with healthcare workers influences the level of customer satisfaction. The Servqual model was relevant in this study because it prescribes five parameters for measuring customer satisfaction which includes responsiveness, reliability, empathy assurance and tangibles.

2.3 Empirical Literature Review

This section highlights the findings of various studies in regard to relationship between strategic resources and performance of public health institutions.

2.3.1 Human Resources and Performance

Studies have shown that there is a positive link between Human Resource and organizational success (Becker & Huselid, 2006; Combs, Ketchen & Liu 2006). Pfeffer (1994) argues that strategic human resource can be developed through embracing strategic human resource management practices that are consistent with the organization’s strategic objectives such as: recruiting and selecting qualified people, training and developing employees to meet current and future organizational needs,
providing adequate rewards to attract and retain top performers and empowering employees.

In any organization, employee retention is critical in the achievement of organizational goals. For instance a study by Ongori and Shunda (2008) established that, continuous skill development by way of training and provision of competitive rewards resulted to employee retention and motivation leading to patient satisfaction and hence improved hospital performance. This is consistent with Collins and Montgomery (2008) observations that, an organization can only achieve SCA through its human resources when they possess three key attributes that includes: value because they improve efficiency and effectiveness of the organization, rarity because employees’ knowledge and skills are not equally available to competitors, and inimitability that is, they cannot be emulated and copied by competitors.

The importance of human resource in the performance of an organization cannot be underscored. This is supported by a study conducted by Mark, Lengnick, Cynthia, Hall, Andrade and Orake (2009) who established that, there is a direct relationship between Human Resource and firms’ performance. The study identified four leveraging strategies for human capital which facilitate attainment of CA which includes: recognizing and rewarding individual employees’ efforts; accumulating an organizations reservoir of knowledge and expertise; balancing resources that enhance employee’s value and investing resources for development of employees’ skills. The study only examined one resource and yet performance of an organization is dependent on configuration of resources.
A study by Vermeeren, Steihen, Tummers, Lankhaar, Poerstamper and Beek (2014) found that human resources had a positive relationship with organizational performance of Dutch health care organizations. The study collected data from 61061 respondents drawn from 162 Dutch health care organizations for a period of one year. The study used measures recommended by Rodak (2013) which included client’s satisfaction and employee satisfaction.

Customer satisfaction in a health care organization is a function of human resource strategies formulated and implemented by the hospital. For instance, Rogers, Jiang, Rogers and Intindola (2015) in their study found positive associations between hospital strategies, volunteer management practices, volunteer workforce attributes (which includes ability to perform, motivation to perform and opportunity to perform) and patient satisfaction. The data for the study was collected from 107 US hospitals. The study ignored non-volunteer employees who have longer tenure in the hospital and patients of the hospital as respondents who may possess vital information concerning employee and patient satisfaction.

In their study, Meyerson and Dewettinck (2012) indicated that employee empowerment is a key management practice that contributes significantly to employee productivity. This is in line with Smith and Lieht (2008) who found that employee’s empowerment played key role in developing human resources leading to quality decisions and consequently improved hospital performance and health outcomes. This was in line
with Salas, Sims and Burke (2005) who indicated that effective team work had positive effect on employee motivation.

A study by Butt, Khan and Rasli (2012) found that conducive work environment had a positive significant relationship with commitment and satisfaction of nurses leading to patients’ satisfaction and hence improved hospital performance. The data for the study was collected from a public hospital in Pakistan using a sample of 120 nurses. However, the study only used one cadre of staff as respondents leaving other cadres such as doctors, pharmacists, administrative officers, laboratory technologist among others who could give concrete information on employee satisfaction. The study was consistent with Gelinas and Diab (2012) who found that there was significant relationship between working conditions and quality of health care in Jordanian public hospitals.

The achievement of organizational objectives is dependent on the quality of decisions made by human resources, which in itself is a function of the relationships between the employees and institutional management. A study by Saif and Saleh (2013) found that there was significant positive relationship between employee empowerment practices and improved employee morale leading to improved hospital performance in Jordanian public hospitals. The data was collected from 277 employees from five public Jordanian hospitals. The study only focused on one human resource aspect and ignored critical strategic human resource aspects such as team work, training, competitive reward schemes and work environment that can promote retention of highly skilled health care workers.
Hanaysha (2016) established a positive significant relationship between employee empowerment, team work and employee training with employee productivity. The study used a sample of 242 employees serving at public universities in northern Malaysia. However, the study ignored the effect of human resources management practices studied on overall organizational performance. The study was conducted in northern Malaysia in non-health sector.

2.3.2 Information Technology Resources and Performance

Studies have revealed that both public and private organizations have no option of investing in information technology resources if they have to effectively respond to customer needs in the ever-changing environments (Tallon, 2008; Preston & Karahanna, 2009). Oh, and Pinsoneault (2007) observed that knowledge sharing among business executives is an important factor in sensing environmental threats before deciding on how to respond.

The efficiency of operations in a health facility is subject to proper matching of the available information technology and the hospital functions. For example, a study by Talon and Pinsonneault (2011) found that information technology alignment improved firm performance in volatile markets. The study used information technology compatibility, information technology flexibility, network connectivity and information technology alignment as measurement indicators of the study. The data was collected from information technology and business executives drawn from 241 US firms. The study findings were consistent with (Luftman& Ben-Zvi, 2010) findings that information technology alignment is an important and enduring source of value creation leading to improved organizational performance.
Mithas, Tafti, Bardhan and Goh (2012) found that information technology investments had positive impact on revenue growth, profitability and improved organization performance because it helped to identify better opportunities for establishing distinctive strategic positioning. The study used archival data collected from 452 global firms from 1998 to 2003. Hence the current study collected survey data in order to confirm present state of the art.

In order to constantly meet customers’ needs in the rapidly changing environment, there is need for the health facilities to keep abreast with the development of information technology and communication. For instance, Muathe (2010) established that, ICT adoption led to significant improvements in communication between patients and clinicians and between employees in various departments, information storage and retrieval, business efficiency, customer service, stock control and reduction in administration and operation costs and reduction in workforce. The study used a sample size of 172 respondents drawn from 117 health related SMEs in Nairobi. However, the study ignored public health institutions which houses many of the health care clients.

A study by Olatokun and Adeboyejo (2009) found that Investment in ICT improved hospital performance because it led to faster access to relevant medical information by employees and easy exchange of information with colleagues leading to increased efficiency. The study further established that insufficient knowledge on use of ICTs and constant breakdown of ICT equipment were the major challenges limiting the potential benefits of ICT infrastructure. The study used descriptive survey design with a sample
of 360 reproductive health workers such as doctors, pharmacists and administrators among others of university college hospital in Nigeria. The sample selected for the study was not representative since many departments were not represented in the study.

Research has found that, IT integration in health care organization improves health care delivery. This argument is supported by Thrasher and Mark (2012) who found that information technology had significant relationship with hospital performance due to better decision making and consequently better customer service leading to customer satisfaction. The study used a sample size of 450 integrated delivery system in USA. However the study’s response rate was 22% since out of 450 questionnaires only 99 completed questionnaires were received.

The ease with which an organization applies appropriate information technology to store and retrieve information is a key component of an institutional success. A study by Azlan, Yusof and Razali (2012) found that information technology resources led to improvement in information storage and retrieval, business efficiency and daily communication among nurses leading to improved performance of medical centres in Malaysia. The study collected data from nurses as the only respondents and ignored other hospital workers such as doctors.

A study by Angst, Devaraj and Queenan (2011) found that, there was a significant relationship between information technology integration and performance of cardiology departments in 555 US hospitals. The study was in conflict with Laplante (2005) who
found that investment in information technology did not significantly improve performance in health sector.

**2.3.3 Financial Resources and Performance**

Financial resources are critical for financing strategic 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 the financial resources in priority areas in order to obtain maximum returns from the investment in question which will consequently lead to improved performance.

Provision of financial resources at the right time is paramount for the organizational success. This is corroborated by the finding of Barney (2007) who found that, access to reliable sources of funding and ability to generate acceptable returns on investment money determines the ability of the organization to attract more funding from its stakeholders consequently leading to improved performance. This is consistent with the findings of Inmyxail and Takahashi (2010), who found that availability, accessibility and adequacy of funds gives an organization competitive advantage in service delivery.

A study by Wanjau, Muiruri and Ayondo (2012) found that there was a significant positive relationship between financial resources and performance of public health institutions in regard to delivery of quality health care to patients. The study established that, funds were critical in acquisition of the necessary physical resources like, medical supplies and equipment. However, the study ignored critical aspects like adequacy of
funds and timeliness in 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.

Although availability of funds is critical in attainment of organizational goals, adequacy of such funds is equally important because it facilitates timely procurement of the necessary input. A study by Dasanayaka (2001) found that there was a significant relationship between financial resources and performance and that inadequate funds for allocation and acquisition of the right and quality equipment and maintenance of medical equipment and staff training for handling medical equipment among others was responsible for poor performance of Sri Lankan public hospitals.

A study by Maureen (2005) established that timely receipt of adequate funds had a significant relationship with hospital performance. This was in line with Miller, Moore, Richards, Kotelchuk and Kahtzzy (1993) whose observations show 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.

The development of human resources in an organization is facilitated by availability of funds. For instance, a study by Onyango and Wanyoike (2014) established that there was positive relationship between funds and employee training which promoted employee skills 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 like competitive pay package, working environment and employee empowerment which is a function of availability of adequate financial resources.

### 2.3.4 Physical Resources and Performance

Clarke (1988) observed that physical resources can be source of CA if they yield economies of scale. However, Barney (1997) argued that physical resources can only confer CA if they are obtained in sufficient amounts. Barker and Ahmad (2010) contends that physical resources comprise of equipment buildings and other facilities that contribute to the creation of a goods and services. However, physical resources do not meet conditions of sustainable competitive advantage such as rarity, inimitability and non-substitutability and hence competitors easily duplicate them as such they do not extraordinarily improve organizational performance.

Studies have revealed that the status and conditions of physical resources in many public health institutions are questionable raising concerns over their performance. (Isackow, 2006; Lewis, 2006; Lalude, 2006). According to Parloe (2003) the acquisition of physical resources in a health institution should be done in accordance with the laid down legal procedures failure to which it may lead to acquisition of inappropriate, perhaps excessively complex and substandard equipment leading to poor performance of the health facility.

Grimes (2004) found that possession of physical resources does not automatically guarantee good performance of an organization but availability of competent skilled
technical staff who can maintain and service the physical resources both at engineering and managerial levels. Temple (2005) posits that the capacity, adequacy, quality and maintenance of hospital facilities such as buildings, equipment, and devices are fundamental strategic aspects of ensuring improved performance of health institutions.

A good health facility in regard to customer satisfaction is one which is able to offer basic health services. A study by Sai, Prabhu and Reddy (2012) on physical infrastructure and man power facilities in Chittoor district of Andhra Pradesh in India found that, lack of drug supplies, diagnostic equipment and other medical devices was the cause of poor performance of public hospitals in India. The study did not focus on critical aspects of physical resources such as adequacy, quality and maintenance which enhance delivery of quality health care.

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

In a study by Waithaka (2012) on governance and service delivery in health institutions in Kenya, it was that, established that there was a positive relationship between availability and quality physical resources (which comprised of pharmaceutical and non-pharmaceuticals) and performance of both public and private hospital. 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 organisations. The study ignored critical aspects of physical resources such as availability, adequacy and maintenance of medical devices and equipment which are fundamental in the performance of health facilities.

DanaSayaka (2001) found that there was a significant positive relationship between adequacy and maintenance of medical equipment with performance of public hospitals in Srilanka. The study further revealed that the available physical resources were of low quality and poorly maintained leading to poor performance of public hospitals. The study ignored other strategic resources such as human resources, information technology resources and financial resources which enhance the performance of physical resources.

Physical infrastructure plays a key role in provision quality health care in a health facility. Heidari, Kabir, Jafari and Gashti (2016) examined physical resources in health houses and health care centres in Golestan Province. The study found that there were inadequate physical resources leading to poor performance of the organization 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. This implied that the study did not establish statistical significant relationships between study variables.

In another study Nnebue, Ebenebe, Adogu, Ifeadike and Nwabueze (2014) examined adequacy of resources for provisional of maternal health services at the primary health
care level in Nnewi, Nigeria. The study found the institutions studied suffered from inadequate supply of drugs and medical equipment, inadequate power and water supply including disposal systems leading to poor performance of primary health care level facilities. The study targeted all women utilizing maternal health care services while the sample size was 252 clients. Data was collected using questionnaires. The response rate was 100%. Data was analysed using descriptive statistics while content analysis was used to analyse qualitative data.

2.4 Strategic Resources, Organizational Capability and Performance

Organizational capabilities provide the link between strategic resources and SCA which consequently lead to firm performance (Colotla, Shi & Gregory, 2003; Wang & Lo, 2003). Studies show that Organizational capabilities can only lead to SCA if firms that do not possess them cannot acquire or replicate these capabilities successfully from firms who possess them (Barney, 1991; Peteraf, 1993; Collins, 1994).

Makadok (2001) posits that, organizations gain CA when their capabilities are used to improve the productivity of resources owned by the organization. This is consistent with Penrose (1959) observations that, resources and capabilities can only be of use when they are appropriately combined in the right proportions with other resources and capabilities.

In order to influence resources, organizational capabilities should be translated into activities that organizational members clearly understand. Ray, Barney and Muhanna (2004) on the effect of organizational capabilities and Business Processes on CA found
that, there was significant positive effect of organizational capabilities on the link between firm resources and organization’s CA and that organizational capabilities that are not translated into activities, routines or business processes do not have any positive impact on organizational performance. A sample of 800 respondents drawn from 1104 insurance firms was used for the study.

A study Ismail, Rose, Uli and Abdullah (2012) examined the relationship between strategic resources, capabilities, systems and CA and found that, there a significant positive effect of organizational resources, capabilities and systems collectively on competitive advantage. In another study, Carmeli and Tishler (2004) indicated that organizational capability played critical role in enhancing strategic resources to influence organizational performance. The study was done with a sample of 95 respondents drawn from population of 300 industrial firms. These findings provide a strong support of the insight provided by RBT that gaining and preserving superiority in competitive markets depends on set of core resources acquired, developed and deployed by the firm.

Empirical evidence has shown that organizational capabilities facilitate organizational performance in the long run. For instance, Paulraj (2011) examined the relationship between internal resources and capabilities, sustainable supply management and organizational sustainability. The findings revealed that organizational capabilities splayed significant role in managing sustainable supply practices as well as organizational sustainability. Data was collected from 1000 respondents randomly selected from 2500 members of institute of supply chain management drawn from 145
US firms. The study failed to focus on the effect of organizational capabilities on the relationship between strategic resources and organizational performance.

The formulation of organizational strategy that are geared towards improving organizational performance depends on available organizational capabilities. A study by Ouakouak (2010) established that organizational capabilities have a positive mediating effect on the relationship between middle level manager’s involvement in strategy making process and their ability to take autonomous actions in strategy development and company performance. The study used 372 respondents comprising of middle managers drawn from 372 companies from 33 different European countries. The study adopted longitudinal research design where the questionnaires were administered between January and July 2010. The study only focused on manager’s involvement in strategy making process and ignored the mediating effect of organizational capabilities on the relationship between strategic resources and organizational performance.

The continuity of organizational operations processes and systems is critical in achieving organizational success. This argument is supported by a study conducted by Smith (2008) on harnessing competences, capabilities and resources. The study found that organizational capabilities help an organization to apply the resources at their disposal prudently leading to continuous and uninterrupted operations and consequently improved firm performance.
In another study, Gruber, Helnemann, Brettel and Hungeling (2010) found that organizational capabilities have a positive significant effect on the relationship between resources and firm performance. The study further revealed that availability of resources may not necessarily lead to firm performance if the resources are not deployed and coordinated in the right and most optimal way. Data was collected from 1438 young technology firms of less than 12 years in Germany randomly selected from membership of chamber of Industry and Commerce. The response rate was 16% since out of 1438 young firms which constituted sample size only 230 firms responded.

2.5 Strategic Resources, Organizational Culture and Performance

Rousseau (1990) examined normative benefits in fundraising organizations among firms giving voluntary services. The study found that there was no relationship between culture and performance. Another study by Zhou, Bundorf, Chang, Huang and Xue (2011) found that, the typical culture of public hospitals in China focused more on social responsibility, sense of competition and sustainable development and less on capability development, team orientation and employee empowerment. This indicates that public hospitals in China do not prepare to meet changing customer needs. The study used employee satisfaction, patient length of stay, bed occupancy rate and patient satisfaction as measures of hospital performance.

The type of cultural dimension prevailing in an organization can impact on organizational performance. For instance, a study by Rowena, Russel, Davies, Harrison, Konteh and Walshe (2013) found that organizational culture was linked to performance and that collaborative culture prevailed in organizations with higher degree of specialization while innovative culture prevailed in organizations which had proportionately higher employee salaries. However bureaucratic culture prevailed in
organizations which emphasised on controls, rules and professional protocols. The study used senior management as key informants for the study ignoring middle and lower level managers.

Employee creativity stands at the centre of an organization’s performance. However, employee creativity is influenced by the cultural dimension that prevails in the organization. Improvement in employee creativity improves organizational performance. This argument is supported by Eynde, Canamares, Garcia and Munoz (2015) that innovative culture had significant moderating relationship between human resources and overall organizational performance. The study was limited to one culture dimension and ignored such dimensions as bureaucratic and collaborative culture which are critical to organizational performance.

Another study by Krot and Lewicka (2013) found that, lack of involvement of employees in creative solutions to problems affecting the company leads to poor organizational performance. This is consistent with findings of a study by Kenny and Reedy (2007) who found that innovation culture significantly mediated the relationship between firm resources and organizational performance leading to sustainable competitive advantage. However, studies of innovation culture adopting a holistic approach are scarce.

Employees in an organization display common values at work place which are influenced by the culture model adopted. This in return affects organizational performance. Parker and Bradley (2000) investigated the effect of organizational
culture in six public sector organizations in Queensland in Australia. The study found that public sector employees have values and motives that were aligned to outdated traditional bureaucratic model which emphasizes on rigidity of rules and procedures in all operations leading to significant negative effect on the overall organizational performance because it impedes innovations which are favourable for addressing the changing customer needs.

Kiuru (2015) examined strategic human resource practices and performance of parastatals in Kenya. The study found that public sector culture had no moderating effect on the relationship between strategic human resource practices and performance of parastatals in Kenya. Data was collected from 268 respondents (Comprising of senior and middle level HR managers) drawn from 185 parastatals in Kenya listed in the presidential task force report of October 2013. The effectiveness, efficiency, relevance and financial viability were used as measures of organizational performance. However, the study was done in non-health related institutions and hence the study findings may not be applicable in health sector.

A study by Panagiotis, Alexandros & George (2014) found that there was no significant moderating effect of bureaucratic culture on the relationship between firm resources and organizational performance. This concurs with the findings of Lee, Shiue & Chen (2016) who found that there was no moderating effect of bureaucratic culture on knowledge sharing and successful process improvement of software firms. Davies, Nutley and Mannion (2000) found that there was no moderating effect of organizational
culture on the relationship between resources and quality of health care in UK public hospitals.

2.6 Summary of Empirical Literature Review and Research Gaps

The reviewed literature has indicated that the performance of health institutions has largely been hampered by inadequate resources. The studies reviewed assumed linear relationship between resources and performance such that they have ignored other factors which may affect the direct relationships between resources and performance.

The extant literature reviewed that have examined strategic resources and performance, has not clearly shown which component of strategic resources critically affect performance of public health care organizations. Further, most of the studies have been conducted outside Kenya. In addition, studies that have used organization capability have been done in non-healthcare industries. Table 2.1 below shows summary of literature review and research gaps.
Table 2.1 Summary of Literature Review and Research Gaps

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Study</th>
<th>Findings</th>
<th>Research/Knowledge Gaps</th>
<th>Focus of the current Study</th>
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<tbody>
<tr>
<td>Parker and Bradley (2000)</td>
<td>Organization culture in public sector: Evidence in six public sector organizations in Queensland, Australia.</td>
<td>Culture prevailing in public sector organizations impedes employee creativity due to existence of rigid, rules and procedures in their operations.</td>
<td>The study did not specify the exact set of cultural dimensions within the public settings.</td>
<td>Three cultural dimensions which includes bureaucratic, collaborative and innovative culture were used as measurement indicators of organizational culture.</td>
</tr>
<tr>
<td>Desanayaka (2001)</td>
<td>Performance of health care equipment in public sector hospitals in the eye of good governance: a case study based in Sri Lankan public sector hospitals.</td>
<td>Poor performance of public sector hospitals in Sri Lanka due to lack technical support, inadequate funds and policy on use of health care equipment. In addition, there was poor maintenance of medical equipment and devices.</td>
<td>The study only focused on physical resources.</td>
<td>The study focused on four resources which included human resources, information technology resources, financial resources and physical resources.</td>
</tr>
<tr>
<td>Mark, Lengnick, Cynthia, Hall, Andrade and Orake (2009)</td>
<td>Effect of strategic human resource management on firm performance.</td>
<td>There is a significant direct relationship between human resources and firm performance.</td>
<td>The study failed to focus on critical aspects of SHR such as training, compensation, employee empowerment, work environment and team working.</td>
<td>Training, compensation, employee empowerment, team working and work environment were used as indicators of human resources.</td>
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<tr>
<td>Authors</td>
<td>Title</td>
<td>Findings</td>
<td>Limitations</td>
<td>Implications</td>
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<tr>
<td>Olatokum, and Adeboyejo</td>
<td>Influence of ICT on hospital performance in Nigeria.</td>
<td>Significant positive relationship existed between ICT and hospital performance.</td>
<td>The study only used reproductive health workers as respondents and ignored other staff cadres of medical workers. The study also ignored critical IT aspects such as compatibility, ease of use ICT integration and IT alignment.</td>
<td>The study used multiple informants as respondents also focused on critical aspects of ICT such as compatibility, ease of use, integration and ICT alignment as indicators of information technology resources.</td>
</tr>
<tr>
<td>Muathe, Wawire and Ofafa</td>
<td>Determinants of ICT adoption of health-related SME’s in Kenya.</td>
<td>ICT adoption significantly influenced the delivery of quality health service.</td>
<td>The study was biased on small firms and that it ignored the effect of ICT adoption on performance of public health institution which houses many of the health care clients.</td>
<td>The study focused on the effect of information technology resources on performance of public health institutions.</td>
</tr>
<tr>
<td>Talon and Pinsonneauait</td>
<td>Competing perspectives on the link between strategic information technology resources alignment and organization agility.</td>
<td>IT alignment improved organization performance.</td>
<td>Study only focused on IT alignment, compatibility, network access and IT flexibility and ignored critical aspects of information technology resources such as ease of use, functionality, compatibility and integration.</td>
<td>IT ease of use, functionality, compatibility, I.T integration and I.T alignment were used as measures of information technology resources.</td>
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<tr>
<td>Author(s)</td>
<td>Title</td>
<td>Summary</td>
<td>Limitation</td>
<td>Focus of study</td>
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<td>Paulraj (2011)</td>
<td>Relationship between internal resources, capabilities, sustainability, supply management and organizational sustainability.</td>
<td>Strong link between internal resources and capabilities and organizational sustainability.</td>
<td>The study failed to focus on the effect of organizational capability and performance.</td>
<td>The current study examined effect of organization capability on the relationship between strategic resources and performance of public health institutions.</td>
</tr>
<tr>
<td>Butt, Khan and Rasli (2012)</td>
<td>Impact of work environment on hospital nurses’ commitment and patient satisfaction.</td>
<td>There was a positive relationship between hospital work environment and nurses’ commitment and patient satisfaction.</td>
<td>The study only focused on work environment and ignored critical aspects of human resources such as compensation, team work and employee empowerment which played key role in motivation of workers.</td>
<td>Compensation, team work, work environment, training and employee empowerment were used as measurement indicators of human resources.</td>
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<tr>
<td>Onyango and Wanyoike (2014)</td>
<td>Effect of financial resources on employee performance.</td>
<td>Direct link between financial resources and employee training which led to employee performance.</td>
<td>The study only focused on effect of financial resources on employee performance.</td>
<td>The current study focused on effect of financial resources on performance of public health institutions in Embu County.</td>
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<tr>
<td>Sai, Prabhu and Reddy (2012)</td>
<td>Relationship between availability of physical resources and man power facilities and performance of health facilities in India.</td>
<td>Inadequate physical facilities led to poor performance of health facilities.</td>
<td>The study only focused on availability of physical facilities and ignored important aspects like adequacy, quality and maintenance of physical resources.</td>
<td>Availability, adequacy, quality and maintenance of physical resources were used as indicators of physical resources.</td>
</tr>
<tr>
<td>Wanjau, Muiruri and Ayundo (2012)</td>
<td>Factors affecting serviceQuality in Kenyatta National Hospital.</td>
<td>Positive link between information technology and financial resources on performance of public health institutions.</td>
<td>The study used self-reporting by service providers and ignored service receivers as respondents.</td>
<td>The study used outpatients as respondents and focused on parameters of customer satisfaction as depicted by ServQual model such as reliability, responsiveness empathy, tangibles and assurance.</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Title</td>
<td>Findings</td>
<td>Limitations</td>
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<tr>
<td>Saif and Saleh (2013)</td>
<td>Employee empowerment and hospital performance in Jordanian public hospitals.</td>
<td>Employee empowerment was not fully embraced by managers in Jordanian public hospitals leading to poor decision making by employees.</td>
<td>The study only focused on one aspect of human resources and ignored other important aspects of human resources such as work environment compensation, training and team work.</td>
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<tr>
<td>Abiro and Mbera (2014)</td>
<td>Gaps in universal health coverage in Malawi.</td>
<td>Shortage of medicines and other medical supplies were the main barriers to universal health coverage to rural Malawians.</td>
<td>Study only focused only on physical resources and ignored other critical resources such as information technology, financial and human resources which largely account for performance of public health institutions.</td>
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Source: Researcher (2016)
2.7 Conceptual Framework

The study adopted a conceptual model from the discussions presented in the literature review in chapter two which formed the basis of relationships of current study variables are shown in figure 2.1.

Source: Researcher (2016)

Figure 2.1 Conceptual Framework
The independent variables classified under resources included human resources, information technology resources, financial resources and physical resources. Organizational Capability and Organizational culture were the mediating and moderating variables respectively while performance of public health institutions was the dependent variable. Human resources were operationalized into five measurable constructs which included, training, employee empowerment, team work, work environment and compensation.

Information technology resources were operationalized into five measurable constructs which included, information technology integration, Information technology alignment, compatibility, ease of use and functionality. Financial resources were operationalized into five measurable constructs which included: adequacy of funds, timeliness of disbursement of funds, accessibility, collaboration and right allocation while physical resources was operationalized into four measurable constructs which included: availability, adequacy, quality and maintenance of physical resources.

Organizational capability was operationalized into five measurable constructs which included deployment of resources, coordination of resources, accumulated experiences, partnership with relevant stakeholders and organizational routines while Organizational culture was operationalized in three measurable constructs which included: collaborative, bureaucratic, and innovative culture. Performance of public health institution was operationalized into four measurable constructs which included: employee satisfaction, efficiency, innovativeness; and customer satisfaction.
CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction
This chapter presents research philosophy and study methodology used in addressing the research problem, objectives of the study and hypotheses stated in chapter one. The chapter comprises of the following sections research philosophy, research design, empirical model, operationalization and measurement of variables, target population of the study, sampling procedure and sample size, data collection instruments, validity and reliability, data collection procedure, data analysis and presentation and ethical considerations.

3.2 Research Philosophy

The study was guided by positivism research philosophy which premises that, knowledge is based on facts obtained from objective reality and expressed numerically with explanatory and predictive power and not on subjective status of an individual’s views (Newman, 2006; Furrer, Thomas & Gousserkaia, 2008). Research based on a positivist approach depends on testing and verification of empirical facts in order to identify the relationships between variables in a given phenomenon.

Saunders, Lewis and Thornhill (2007) contends that under positivism research philosophy, knowledge is only considered valid if it is based on values of reason and facts gathered through direct observations and measured empirically using quantitative methods and statistical analysis leading to development of theoretical models that can be generalizable.
to explain cause and effect relationships. The choice of positivistic approach for this study was ideal since the study involved collection of data and hypothesis testing using statistical techniques as recommended by Lewis and Thorn hill (2007).

3.3 Research Design

The study adopted explanatory and descriptive cross-sectional research design in order to help the researcher achieve optimal results. Maxwell and Miltapalli (2008) posits that, explanatory research design is used where the study in question is intended to explain the causal relationships between variables after analysis of quantitative data objectively collected from the field and empirical testing of hypotheses.

Cooper and Schindler (2014) who contends that descriptive research design is a scientific method that involves observing and describing the behaviour of subjects under study without influencing them in anyway. According to Sekeran and Bougie (2009) a good research design is the one which helps the researcher to obtain optimal results.

3.4 Empirical Model

The study used multiple linear regression model that involved analysing the relationship between the independent variables and dependent variable. Cooper and Schindler (2011) posits that multiple linear regression model is suitable for predicting values of dependent
variable where various independent variables are involved. The study used multiple linear regression model because it involved analysing the effect of a set of independent variables that is; human resources, information technology resources, financial resources and physical resources on dependent variable that is, performance of public health institutions.

The model also tested mediating and moderating effect of organizational capability and Organizational culture on the relationship between strategic resources and performance of public health institutions respectively. This is in line with recommendations of Brooks (2014) that multiple linear regression analysis is suitable for studies that involve more than one independent variables. The regression model is indicated below:

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon \]  

\[ \text{Where:} \]

\[ Y = \text{Performance of Public Health Institutions} \]
\[ \beta_0 = \text{Constant} \]
\[ \beta_1 - \beta_4 = \text{Coefficients of independent variables that is } X_1, X_2, X_3 \text{ and } X_4 \text{ respectively} \]
\[ X_1, X_2, X_3, X_4 = \text{Human Resources, Information Technology Resources, Financial Resources and Physical Resources Respectively.} \]
\[ \varepsilon = \text{Error term} \]

Model 3.1 was used to generate coefficients for each independent variable and their corresponding P-values. To determine whether each independent variable had significant effect on performance of public health institutions, the corresponding P-value of beta coefficient of each independent variable was compared with significance value of 0.05. If
P-value of the coefficient was less than 0.05, the study concluded that the independent variable was statistically significant, making the study reject the null hypothesis and vice versa. Therefore, objectives one to four and hypotheses one to four were addressed using model 3.1. The research hypotheses were tested at 95% level of confidence.

Composite index for strategic resources was computed using the method developed by Gupte, Bhama and Gupte (2012) to facilitate the application of joint effect of strategic resources in the regression model. The study used summations of Likert items in each section of the semi-structured questionnaire. The generated sum was used as a proxy for the given variable. The method was used by Kiiru (2015). Therefore, each index for strategic resources component was computed using the formula below.

\[ X_i = \frac{\sum q}{N} \]

Where

- \( X_i \) = Composite Index of Strategic Resources (for various components of strategic resources that is, human resources, information technology resources, financial resources and physical resources).
- \( q_i \) = Likert item in each section of the structured questionnaire.
- \( N \) = Number of likert items in each of the sections in the structured questionnaire.

3.4.1 Test for Mediation
The study tested for statistical mediation of organisational capability on the relationship between strategic resources and performance of public health institutions by using the four steps casual path analysis suggested by Baron and Kenny (1986). The choice of this
approach was made since it assesses the linear effects of the relationship between variables. Each of the four steps involved conducting a regression analysis and examining the significance of the coefficients. If coefficient had $P < 0.05$ it was concluded the coefficient was significant and vice versa.

The results of the four-step approach was used to address objective five and hypothesis five. The models in each of the steps is shown below.

**Step one:** Regression analysis with $X_i$ predicting $Y$

$$Y = \beta_0 + \beta_5 X_i + \epsilon$$

**Step two:** Regression analysis with $X_i$ predicting $T$

$$T = \beta_0 + \beta_6 X_i + \epsilon$$

**Step three:** Regression analysis with $T$ predicting $Y$

$$Y = \beta_0 + \beta_7 T + \epsilon$$

**Step four:** Regression analysis with $X_i$ and $T$ predicting $Y$

$$Y = \beta_0 + \beta_8 X_i + \beta_9 T + \epsilon$$

Where for models 3.3 – 3.6

$Y$ = Performance of Public Health Institutions

$X_i$ = Composite Index of Strategic Resources

$T$ = Organizational Capability

$\beta_5, \beta_6, \beta_8 =$ Coefficients for Composite Index of Strategic Resources (comprising of human resources, information technology resources, financial resources and physical resources).

$\beta_7, \beta_9 =$ Coefficients for Organizational Capability

$\beta_0 =$ Constant

$\epsilon =$ Error term
Step one to three were used to establish whether a relationship exists among the variables. If one or more of these relationships is non-significant the conclusion was that mediation was not likely (Baron and Kenny, 1986). The decision to progress to step four was determined when significant relationships was found to exist in steps one to three.

In step four the mediation is supported if the effect of strategic resources remains significant after controlling organizational capability. If organizational capability is not significant when strategic resources is controlled, there is full mediation and if both strategic resources and organizational capability significantly predict performance of public health institutions, there is partial mediation. The decision criteria is summarized in Table 3.1.

Table 3.1 Mediation Decision Making Criteria

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If $\beta_5$ in model 3.3 is significant If $\beta_6$ in model 3.4 is significant If $\beta_7$ in model 3.5 is significant If $\beta_8$ is not significant and $\beta_9$ in model 3.6 is significant</td>
<td>Complete mediation</td>
</tr>
<tr>
<td>2. If $\beta_5$ in model 3.3 is significant If $\beta_6$ in model 3.4 is significant If $\beta_7$ in model 3.5 is significant If $\beta_8$ and $\beta_9$ in model 3.6 are significant</td>
<td>Partial mediation</td>
</tr>
<tr>
<td>3. If $\beta_5$ in model 3.3 is not significant If $\beta_6$ in model 3.4 is not significant If $\beta_7$ in model 3.5 is not significant If $\beta_8$ and $\beta_9$ in model 3.6 are not significant</td>
<td>No mediation</td>
</tr>
</tbody>
</table>

Source: Baron and Kenny (1986)

3.4.2 Test for Moderation
The moderating effect of organizational culture on the relationship between strategic resources and performance of public health institutions was tested using the regression
equation recommended by Aiken & West (1991). The independent variables, that is, strategic resources was interacted with the moderating variable, that is, organizational culture. The model is shown below:

\[ Y = \beta_0 + \beta_1 X_i + \beta_2 K + \beta_3 X_i \times K + \varepsilon \] 

Where:

- \( Y, \beta_0, \varepsilon \) = As defined in 3.1
- \( X_i \) = Composite index of Strategic Resources
- \( K \) = Organizational Culture
- \( \beta_1 \) = Coefficient for Composite Index of Strategic Resources.
- \( \beta_2 \) = Coefficient for Moderator that is, Organizational Culture
- \( \beta_3 \) = Coefficient for Interaction of Composite Index of Strategic Resources and Moderator that is Organizational Culture.

The coefficient \( \beta_3 \) was used to indicate the effect of moderating variable that is, organizational culture on the relationship between strategic resources and performance of public health institutions. The study compared the p-value of \( \beta_3 \) with significance value of 0.05 to reject or fail to reject the null hypothesis. If the p-value of \( \beta_3 \) was higher than significance value of 0.05 the study failed to reject null hypothesis and vice versa. Therefore, objective six and hypothesis 6 (H06) were addressed by model 3.7.

3.5 Target Population
The study targeted all the five public hospitals in Embu County (Embub County, 2015). The study focused on various hospital staff cadres who included 63 doctors, 354 nurses, 50
clinical officers, 21 pharmacists, 27 laboratory technicians, 6 Hospital administrative officers, 15 health record officers and 14 nutritionists totalling to 550 respondents. The respondents were drawn from ten departments which were common to all the five public hospitals (County health office, 2015).

The ten common departments in the five public hospitals were Outpatient, Pharmacy, Laboratory, Inpatient, Administration, Health records, Maternal Child Health, Comprehensive Care and Counselling, Maternity and Nutrition. In order to obtain data on customer satisfaction the study targeted 10 outpatients (Two from each Hospital) visiting the hospitals for triangulation. The inpatients were not considered in this study because these are deemed to be too sick people who may not be in a position of being probed to give the required information. Table 3.2 shows target population of various Hospital cadres distributed across the five hospitals plus outpatients.

**Table 3.2 Distribution of Target Population**

<table>
<thead>
<tr>
<th>Name of the hospital</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Embu level five</td>
<td>234</td>
<td>43</td>
</tr>
<tr>
<td>Ishiara</td>
<td>111</td>
<td>20</td>
</tr>
<tr>
<td>Runyenjes</td>
<td>83</td>
<td>15</td>
</tr>
<tr>
<td>Siakago</td>
<td>84</td>
<td>15</td>
</tr>
<tr>
<td>Kianjokoma</td>
<td>38</td>
<td>7</td>
</tr>
<tr>
<td><strong>Sub total</strong></td>
<td><strong>550</strong></td>
<td><strong>100</strong></td>
</tr>
<tr>
<td>Out Patients</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>560</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: Embu County Health Office (2015)
3.6 Sampling Procedure and Sample Size

The study adopted census approach of the five public hospitals in Embu County. The researcher used 30% of the targeted employees to arrive at sample size of 165 employees. Mugenda and Mugenda (2003) contends that a sample size of between 10-30% is adequate representation of population where 10% is applied for large populations and 30% for small populations.

The study used 30% because the population was not large. Through stratified proportionate random sampling the respondents were selected from each category. In addition through purposive sampling the researcher ensured all the heads of departments were included in the 165 sample size. For triangulation the researcher selected two outpatients from each hospital through convenience sampling. Mugenda and Mugenda (2003) argues that subjects who have the required data can be selected as respondents. Table 3.3 shows distribution of sample size.

Table 3.3 Distribution of Sample Size.

<table>
<thead>
<tr>
<th>Name of the hospital</th>
<th>Employees (N)</th>
<th>Multiplier Factor</th>
<th>Sample Size (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Embu level five</td>
<td>234</td>
<td>0.3</td>
<td>70</td>
<td>42.4</td>
</tr>
<tr>
<td>Ishiara</td>
<td>111</td>
<td>0.3</td>
<td>33</td>
<td>20.0</td>
</tr>
<tr>
<td>Runyenjes</td>
<td>83</td>
<td>0.3</td>
<td>25</td>
<td>15.2</td>
</tr>
<tr>
<td>Siakago</td>
<td>84</td>
<td>0.3</td>
<td>25</td>
<td>15.2</td>
</tr>
<tr>
<td>Kianjokoma</td>
<td>38</td>
<td>0.3</td>
<td>12</td>
<td>7.2</td>
</tr>
<tr>
<td><strong>Sub total</strong></td>
<td><strong>550</strong></td>
<td>0.3</td>
<td><strong>165</strong></td>
<td><strong>100</strong></td>
</tr>
<tr>
<td>Out Patients</td>
<td>10</td>
<td>---</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>560</strong></td>
<td>---</td>
<td><strong>175</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: Researcher (2016)
3.7 Data Collection Instruments

The study collected both primary and secondary data. Primary data was collected for all the independent and dependent variables. The secondary data was collected from documented sources from County Health Office. Primary data was collected from heads of departments and employees (non heads of departments) plus outpatients who were selected using semi-structured questionnaire (Appendix III) which was developed in consultation with experts who included my supervisors and lecturers in School of Business. Mugenda and Mugenda (2003) contends that, expert opinion is critical when developing data collection tool.

Studies have shown that questionnaires are useful tools for data collection since they are easier to administer and analyze (Kiess & Broomquist, 1985; Gall, Gil & Borg, 1996; Mugenda & Mugenda, 2003; Babbie, 2010). One questionnaire was used for heads of department and employees. Who were not heads of departments. The questionnaire was divided into 8 sections that is A, B, C, D E, F, G and H all of which were under appendix III.

Section A sought to obtain background information of the respondent. Section B sought to obtain information on the effect of human resources on performance of public health institutions. Section C sought information on the effect of information technology resources on performance of public health institutions. Section D sought information on the effect of financial resources on performance of public health institutions.
Section E sought information on the effect of physical resources on performance of public health institutions. Section F sought information on the mediating effect of organizational capability on the relationship between strategic resources and performance of public health institutions. Section G sought information on the moderating effect of organizational culture on the relationship between strategic resources and performance of public health institutions. Section H sought information on performance of public health institutions based on employee satisfaction, efficiency, innovativeness and customer satisfaction.

Data from outpatients in regard to customer satisfaction was collected using interview guide (Appendix IV). Mugenda and Mugenda (2012) contends that an interview guide is an important tool which a researcher can use to collect data from a respondent by probing him or her to clarify issues in order to obtain information that enriches the study findings. An interview guide consisted of five questions covering five thematic areas which included responsiveness, empathy, reliability, tangibles and assurance. The study collected the secondary data such as the number of staff cadres in each of the five public hospitals from documented sources.

The independent variables of the study were classified under strategic resources that is, human resources, information technology resources, financial resources and physical resources. The study measured the effect of each of the independent variables on the performance of public health institutions in Embu County, Kenya. In addition, the study measured the effect of mediating and moderating variables that is, organizational capability
and organizational culture respectively on the relationship between strategic resources and performance of public health institutions. The operationalization and measurement scale of study variables is shown in Table 3.4.
Table 3.4 Operationalization and Measurement of Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Nature of Variable</th>
<th>Indicator (s)</th>
<th>Operationalization</th>
<th>Measurement Scale</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Resources</td>
<td>Independent</td>
<td>Training</td>
<td>Skill development through imparting of the required expertise, skills, attitudes and understanding of policies and procedures to healthcare workers.</td>
<td>Likert type scale 1-5</td>
<td>Appendix III Section B Que 7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Employee empowerment</td>
<td>Ability of health care workers to gain control and make the right decisions over the delivery of health care services.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Team work</td>
<td>Ability of health care workers to work together to achieve a common goal of provision of quality health care.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Work environment</td>
<td>Provision of an enabling environment by the hospital management to employees to perform their duties effectively and efficiently.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Compensation</td>
<td>Payment of fair and equitable salary to healthcare workers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information Technology Resources</td>
<td>Independent</td>
<td>IT integration</td>
<td>Connection of various departments in a hospital through network access to increase contact between the different health care workers in different departments in a hospital.</td>
<td>Likert type scale 1-5</td>
<td>Appendix III Que 8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IT alignment</td>
<td>Ability of a hospital to use information technology resources effectively to achieve her objectives of providing quality health service</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Compatibility</td>
<td>The extent to which ICT infrastructure is in line with existing work procedures, skills and experiences of health care workers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ease of use</td>
<td>The ability of the health care givers to use IT system easily.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resources</td>
<td>Category</td>
<td>Dimension</td>
<td>Description</td>
<td>Scale</td>
<td>Appendix III Section</td>
</tr>
<tr>
<td>----------------</td>
<td>--------------</td>
<td>---------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Financial</td>
<td>Independent</td>
<td>Adequacy of funds</td>
<td>Degree to which the funds allocated to the hospital are enough to cater for patient’s needs.</td>
<td>Likert type scale 1-5</td>
<td>Que 9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Timeliness</td>
<td>Promptness in receiving funds by hospitals from the government at the time they are required.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Accessibility</td>
<td>Ability of the hospital management to use the funds to cater for hospital needs as they arise.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Collaboration</td>
<td>Ability of a hospital to expand its financial base through partnership engagements with stakeholders.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Right allocation</td>
<td>Deployment of financial resources by hospital management to priority areas.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical</td>
<td>Independent</td>
<td>Adequacy of physical resources.</td>
<td>The degree to which buildings, medical equipment and medicines needed for health care are enough to serve the patients.</td>
<td>Likert type scale 1-5</td>
<td>Que 10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Quality of physical resources.</td>
<td>Degree to which the physical resources conform to the expected standards in regard to provision of quality health care.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance</td>
<td>The degree to which the buildings, medical equipment are repaired, serviced or replaced.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational</td>
<td>Mediating</td>
<td>Deployment of resources</td>
<td>Utilization of stock of assets owned by the health institution for the right purpose in delivery of quality health care.</td>
<td>Likert type scale 1-5</td>
<td>Que 11</td>
</tr>
<tr>
<td>Capability</td>
<td></td>
<td>Coordination of resources</td>
<td>Bringing the available resources together for realization of hospital strategic objectives of provision of quality health care.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Accumulated experiences</td>
<td>Stock of skills which have accumulated in the hospital over time and which is used to improve delivery of health service</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Partnership with</td>
<td>Creation of cordial ties with other hospitals and stakeholders for promotion of delivery of quality health care.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational culture</td>
<td>Moderating Culture</td>
<td>Collaborative Culture</td>
<td>Focus and emphasis on respect for relationships between health care workers, management, patients, and various stakeholders.</td>
<td>Likert type scale 1-5</td>
<td>Appendix III Section G Que 13</td>
</tr>
<tr>
<td>------------------------</td>
<td>--------------------</td>
<td>----------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Bureaucratic Culture</td>
<td>Continuous monitoring, administering, coordinating and enforcing defined rules and policies in pursuit for effectiveness and efficiency in delivery of health care.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovative culture</td>
<td>Extent to which the health care workers are flexible and adaptable to challenging health issues in order to continuously provide patients with quality health care.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Performance</th>
<th>Dependent</th>
<th>Employee satisfaction</th>
<th>Degree to which health care workers in a hospital feel that their needs are adequately catered for by their employer.</th>
<th>Likert type scale 1-5</th>
<th>Appendix III Section H Que 14</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Innovativeness</td>
<td>Degree to which the hospital develops new and better ways of serving the patients.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Efficiency</td>
<td>Ability of the hospital to offer a timely, affordable and quality health service to her patients.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Customer Satisfaction</td>
<td>Extent to which a patient receives expected health service from medical care workers</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Researcher (2016)
3.8 Validity and Reliability of Research Instrument

3.8.1 Validity of Research Instrument

Validity refers to the process of ensuring that the data collection instruments accurately measure the constructs of study variables (Field, 2009). The study ensured that the instruments of data collection possessed the four types of validity, that is, face, content, construct and internal validity. A pilot study was carried out with 21 respondents who were selected from the target population.

The 21 respondents of pilot testing did not form part of the final sample size. The purpose of the pilot study was to ensure the data collection instrument (Questionnaire) possessed face, content, construct and internal validity so that the instruments measure the constructs of study variables as recommended by Doodley (2003) and Field (2009).

The study ensured that data collection instrument possessed face and content validity by subjecting the questionnaires to double check and seeking expert opinion from my two supervisors and lecturers in the school of business and six medical experts working in public hospitals studied. This is in line with recommendations of Mugenda and Mugenda (2003) and Saunders et al (2007). The pilot study enabled the researcher to eliminate any ambiguities in the wording of questions. In addition, the respondents’ feedback enabled researcher to reduce the questions from 18 pages to 11 pages (Appendix III). This was because the editorial errors were corrected after double check of questionnaires was done after pilot testing.
In order to ensure construct validity, the researcher operationalized all the study variables so that the theoretical assumptions that anchor the conceptual framework is achieved as recommended by Rosenthal and Rosnow (2006). In order to ensure internal validity the researcher made sure that the questionnaires covered all the study variables which included the four independent variables classified under strategic resources that is, (human resources, information technology resources, financial resources and physical resources), the moderating variable (that is, organizational culture), mediating variable (that is, Organizational capability) and dependent variable (that is, Performance of public health institutions).

### 3.8.2 Reliability of Research Instrument

Reliability is critical component in data collection because it provides the estimates of degree to which research instruments yields the expected measure of consistency (Crano & Brewer, 2002). Huang, Lee, Kim and Judge (2013) contends that reliability can be established by conducting pilot testing in order to ensure research instruments yield consistent results after repeated trials. Gay and Airasian (2000) posits that Cronbach alpha coefficients can be used to determine how items of the research instruments are related to each other. Cronbach alpha coefficient ranges from zero to one. A good measure of reliability is where the alpha coefficients ranges from 0.7 and above. According to Ehlers (2000), a Cronbach alpha coefficient of 0.7on predictor variable is considered acceptable. The study used a threshold alpha coefficient of 0.7. The study ensured reliability of the research instruments by conducting pilot test and then carrying
out reliability tests with 21 questionnaires which were filled during the pilot study. The results of reliability test is shown in Table 3.5.

### Table 3.5 Results of Reliability Test

<table>
<thead>
<tr>
<th>Variables</th>
<th>Number of Items</th>
<th>Cronbach Alpha</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Resources</td>
<td>22</td>
<td>0.795</td>
<td>Reliable</td>
</tr>
<tr>
<td>Information Technology Resources</td>
<td>16</td>
<td>0.845</td>
<td>Reliable</td>
</tr>
<tr>
<td>Financial Resources</td>
<td>13</td>
<td>0.834</td>
<td>Reliable</td>
</tr>
<tr>
<td>Physical Resources</td>
<td>14</td>
<td>0.817</td>
<td>Reliable</td>
</tr>
<tr>
<td>Organizational Capability</td>
<td>17</td>
<td>0.738</td>
<td>Reliable</td>
</tr>
<tr>
<td>Organizational Culture</td>
<td>17</td>
<td>0.737</td>
<td>Reliable</td>
</tr>
<tr>
<td>Performance of Public Health Instructions</td>
<td>29</td>
<td>0.744</td>
<td>Reliable</td>
</tr>
<tr>
<td>Overall Instrument Reliability</td>
<td>118</td>
<td>0.787</td>
<td>Reliable</td>
</tr>
</tbody>
</table>

Source: Pilot study data (2017)

The Cronbach alpha coefficients for human resources, information technology resources, financial resources, physical resources, organizational Capability, Organizational culture and Performance of public health institutions were 0.795, 0.845, 0.834, 0.817, 0.738, 0.737 and 0.744 respectively. The overall instrument reliability had alpha coefficient of 0.787.

These alpha coefficients of reliability tests were in accordance to the rule of thumb recommended by George and Mallory (2003) for determining reliability of research instrument where alpha coefficient of 0.9 is considered excellent, 0.8 is considered good, 0.7 is considered acceptable, 0.6 is questionable and less than 0.5 is considered unacceptable. All the alpha coefficients for all the variables were above 0.7. Hence, the instrument was reliable.
3.9 Data Collection Procedure

After pilot testing of research instruments the researcher obtained research authorization letter from the Graduate School of Kenyatta University which was forwarded to National Commission for Science Technology and Innovation (NACOSTI) in order to obtain research permit. The research authorization letter and permit from NACOSTI were presented to County Commissioner and County Director of medical services who in turn issued the researcher with authority letters to collect data from public health facilities in Embu County. The interview guide was administered by the researcher assisted by researcher assistants.

Groves, Fowler, Couper, Lepowski, Singer and Tourangeau, (2009) posit that data collection is a critical component in production of the required data which can be subjected to empirical tests. In order to collect data which can be subjected to empirical testing, the researcher trained research assistants in order to ensure they understood clearly what was required. The questionnaires were serialized and recorded before they were distributed to respondents to enhance accurate collection of the same and to help identify unreturned questionnaires. Data collection took a maximum of six months.

3.10 Data Analysis and Presentation

Data preparation was done before data analysis, this was done by cleaning, coding and entry into SPSS version 16 software application. Data cleaning was done in order to remove any incomplete responses to ensure clarity, legibility, relevance, appropriateness, accuracy, completeness and consistency to enhance appropriate statistical analysis as
recommended by Saunders et al (2007). This was followed by data coding and then entry into SPSS software application.

Descriptive statistics such as aggregate scores and standard deviations were computed to describe the characteristics of study variables. Descriptive statistics provided the basic features of the data collected on the variables under study and provided the base for conducting further statistical analysis on the data (Mugenda and Mugenda 2003). The study used multiple linear regression to establish the magnitude of relationships between the study variables and to test hypothesized relationships at 95% confidence level.

Multiple linear regression model was used to generate coefficients of independent variables, and their corresponding P-values. This was in line with recommendations of Cooper and Schindler (2014). The study used analysis of variance (Anova) to determine whether the model could work in explaining the effect of independent variables on dependent variable. Anova is based on F-statistics and its corresponding p-values.

The criteria used in determining whether the model was significant in explaining the effect of independent variables on dependent variables was done by comparing the p-value of F statistics with significance value of 0.05. If the p-value of F statistics was less than 0.05 it was concluded that the model was statistically significant for further inferential statistical analysis and vice versa. The study used adjusted R² to measure the amount of variation in
the dependent variable explained by independent variables. The results of both descriptive
and inferential statistics were presented in tables.

The study used content analysis as recommended by Cooper and Schindler (2014) to
analyse qualitative data from the open ended question number 15 of the questionnaire
where common themes were used in order to draw inferences based on the themes that
emerged. Qualitative data from expert employees was grouped into four themes which
included human resource related measures, information technology resources related
measures, financial resources related measures and physical resources related measures.
Qualitative data from outpatients collected using interview guide was grouped into five
items of Servqual model which included responsiveness, empathy, reliability, tangible and
assurance related responses.

3.11 Diagnostic Tests

The study conducted four diagnostic tests namely test for normality, test for linearity, test
for homoscedasticity and test for multicollinearity in order to ensure the assumptions of
regression model are satisfied.

3.11.1 Test of Normality

The study used Shapiro – Wilk test to assess the actual degree of departure from normality
as a necessary condition for data analysis. According to Brooks (2014) if non normal data
is used it will lead to inflated statistics and underestimated standard errors. This test
compares distribution of independent variables within specified distribution (Conover,
The study used a significance level of 5% i.e. \( \alpha = 0.05 \). If p-value \( \geq 0.05 \) it signifies that the independent variables are normally distributed while if p-value < 0.05 it means the distribution of independent variables are not normally distributed.

### 3.11.2 Test for linearity

The study conducted linearity test using correlation coefficients as suggested by Cohen, West and Aiken (2003) and Field (2009). The criteria used was to compare the p-value of independent variables with 0.001. Where if p-value < 0.001 it was concluded that there was a linear relationship between independent and dependent variables and vice versa.

### 3.11.3 Homoscedasticity

The study used Levene test to test for the presence of homoscedasticity (assumption that the dependent variable exhibits similar amounts of variance across the range of values for an independent variable) as recommended by Hair, Anderson, Tatham and Black (1998). Levene test was done to test for homoscedasticity where the equality of variance was computed using one-way anova procedure (Levene, 1960).

The criteria used was comparison between the values of Levene test probability statistics with significance level of 0.05. Equality of variance was computed using one-way Anova procedure (Levene, 1960). Where the values of Levene test probability statistics are more than significance levels of 0.05, (p-value > 0.05). It means the variances are equal as recommended by Warner (2008).
3.11.4 Multicolinearity
Multicolinearity refers to the linear correlation between independent variables. Kothari (2009) and Brooks (2014) asserts that when the degree of correlation between regression coefficients increases, their reliability decreases leading to misleading conclusions and inability to make accurate prediction. Tolerance values and Variance Inflation Factor (VIF) were computed using regression analysis. The criteria used was that a VIF < 10 was interpreted to indicate there is no problem of multicollinearity implying that the independent variables were not correlated while independent and dependent variables were highly correlated. The study used 0.1 of tolerance values as the minimum acceptable limit as recommended by Menard (1995).

3.11.5 Kaiser-Meyer-Olkin Test for Sampling Adequacy
In order to make valid conclusion, Kaiser-Meyer-Olkin (KMO) test was done so as to measure sample adequacy. Before subjecting the data from the sample to inferential statistics, Field (2009) recommends that KMO statistic should be greater than 0.05 for data set to be adequate and therefore appropriate for statistical analysis
3.12 Ethical Considerations

The researcher undertook various measures to address ethical issues. First, the researcher obtained informed consent from respondents by making the exercise voluntary for the respondents. Second, the respondents were also explained that the data they give was to be used for academic purposes only. Thirdly, the researcher guaranteed the respondents of confidentiality and as a result the researcher did not have access to any information which revealed the names, telephone numbers, address or any other form of identification from the respondents. Fourthly, the questionnaire was designed to collect information directly related to research objectives. Finally, since the study required data from outpatients, the researcher obtained ethical clearance from Kenyatta University ERC (Appendix VIII).
CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction
This chapter presents research findings and the discussion in regard to the effect of strategic resources on the performance of public health institutions in Embu County, Kenya. The chapter comprises of the following sections: response rate, biographic characteristics, descriptive analysis, diagnostic tests, regression analysis and qualitative analysis.

4.2 Response Rate
The researcher administered 165 questionnaires out of which 150 were returned. Of the returned questionnaires, 9 were rejected due to incompleteness. Thus, the study analyzed 141 questionnaires. In addition, for triangulation ten respondents (two outpatients per Hospital) were interviewed which translated to 100% response rate. Table 4.1 presents the summary of response rate.

Table 4.1 Response Rate

<table>
<thead>
<tr>
<th>Responses</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Returned and correctly filled questionnaires</td>
<td>141</td>
<td>85.46</td>
</tr>
<tr>
<td>Rejected questionnaires</td>
<td>9</td>
<td>5.45</td>
</tr>
<tr>
<td>Unreturned questionnaires</td>
<td>15</td>
<td>9.09</td>
</tr>
<tr>
<td><strong>Total administered questionnaires</strong></td>
<td><strong>165</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: Survey Data (2017)

The response rate of 85.46% for this study was very good as per recommendations of Mugenda and Mugenda (2003) who contend that a response rate of 50% is adequate,
60% is good and 70% and above is very good. This response rate compares well with previous studies such as Muli (2014) who achieved a response rate of 65.80% and Mugo (2016) who achieved a response rate of 79.1%.

4.3 Respondents Biographic Characteristics
The researcher wanted to find out the biographic characteristics of the respondents who participated in the study before making conclusions on the study variables. The biographic characteristics of respondents was extracted from section A of the questionnaire. Table 4.2 shows the biographic characteristics of the respondents.
Table 4.2 Biographic Characteristics of the Respondents

<table>
<thead>
<tr>
<th>Sex</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>68</td>
<td>48.2</td>
</tr>
<tr>
<td>Female</td>
<td>73</td>
<td>51.8</td>
</tr>
<tr>
<td>Total</td>
<td>141</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 25 years</td>
<td>4</td>
<td>2.8</td>
</tr>
<tr>
<td>25 – 35 years</td>
<td>55</td>
<td>39.0</td>
</tr>
<tr>
<td>36 – 45 years</td>
<td>42</td>
<td>29.8</td>
</tr>
<tr>
<td>46 – 55 years</td>
<td>11</td>
<td>7.8</td>
</tr>
<tr>
<td>Over 55 years</td>
<td>29</td>
<td>20.6</td>
</tr>
<tr>
<td>Total</td>
<td>141</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate</td>
<td>15</td>
<td>10.6</td>
</tr>
<tr>
<td>Diploma</td>
<td>75</td>
<td>53.2</td>
</tr>
<tr>
<td>Bachelor’s degree</td>
<td>45</td>
<td>31.9</td>
</tr>
<tr>
<td>Master’s degree</td>
<td>6</td>
<td>4.3</td>
</tr>
<tr>
<td>Total</td>
<td>141</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hospital Cadres</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacist</td>
<td>8</td>
<td>5.7</td>
</tr>
<tr>
<td>Nurses</td>
<td>89</td>
<td>63.0</td>
</tr>
<tr>
<td>Doctors</td>
<td>13</td>
<td>9.2</td>
</tr>
<tr>
<td>Clinical Officers</td>
<td>8</td>
<td>5.7</td>
</tr>
<tr>
<td>Laboratory Technicians</td>
<td>8</td>
<td>5.7</td>
</tr>
<tr>
<td>Hospital Administrative Officer</td>
<td>1</td>
<td>0.7</td>
</tr>
<tr>
<td>Nutritionists</td>
<td>7</td>
<td>5.0</td>
</tr>
<tr>
<td>Health Records Officers</td>
<td>7</td>
<td>5.0</td>
</tr>
<tr>
<td>Total</td>
<td>141</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total of number of years worked</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 5 years</td>
<td>28</td>
<td>19.9</td>
</tr>
<tr>
<td>6 – 10 years</td>
<td>49</td>
<td>34.8</td>
</tr>
<tr>
<td>11 – 15 years</td>
<td>27</td>
<td>19.1</td>
</tr>
<tr>
<td>16 – 20 years</td>
<td>23</td>
<td>16.3</td>
</tr>
<tr>
<td>Over 20 years</td>
<td>14</td>
<td>9.9</td>
</tr>
<tr>
<td>Total</td>
<td>141</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Survey Data (2017)

Table 4.2 shows the biographic characteristics of respondents and summary statistics of their distribution across various characteristics. The respondents were fairly
distributed across the gender. Female respondents were 51.8% while male respondents were 48.2%. This shows that there was a gender parity and hence likelihood of obtaining balanced findings across the gender. Further the high percentage of female respondents indicates the implementation of government policy on affirmative action.

In regard to age, majority of the respondents were age between 25-35 years representing 39% of respondents. This was followed by 29.8% aged between 36-45 years while 20.6% of respondents were over 55 years. The respondents who were aged below 25 years were represented by 2.8% of the total sample. This implies that majority of the respondents who were involved in the study were young people who are the most active and creative.

The hospital management should therefore put in place human resource retention strategies in order to make the workforce put in their best to improve hospital Performance. The age structure of the respondents provides an insight to the management of hospitals to plan for succession so that the young employees can take over from older employees.

In regard to the level of education, 53.2% were diploma holders while those who had attained a bachelor’s degree were 31.9% and those who had attained a master’s degree were 4.3%. The respondents who had attained certificate level of education were
10.6%. This implies that all the respondents had relevant appropriate training in their area of specialization.

The respondents were drawn from various staff cadres with nurses being majority 63% followed by doctors at 9.2%, of the total sample. Pharmacists, laboratory technicians and clinical officers were each represented by 5.7% while nutritionists and health record officers were represented by 5.0% each. Hospital administrative officers were the fewest representing by 0.7%. This shows that the study obtained balanced findings because the data was collected from respondents drawn from different hospital staff cadres.

In regard to number of years the respondents had worked in their current station, 34.8% had worked for a period of between 6 and 10 years while 35.4% had worked for a period of between 11 and 20 years and 9.9 had worked for more than 20 years. Those who had worked for a period of below 5 years were only 19.9%. This shows that most respondents had reasonable experience and therefore good understanding of the working of public hospitals. The significant number of respondents with over 11 years’ experience represented 45.3% of the sample implying that the respondents had requisite knowledge and hence there was a good response from the point of understanding hospital systems and operations.
4.4 Descriptive Analysis

This section presents the descriptive analysis of the study variables namely; strategic resources (which included: human resources, information technology resources, financial resources and physical resources), organizational capability, organizational culture and performance of public health institutions. In all the variables studied, the respondents were asked to rate the extent to which they agreed to the statements regarding each study variable on a scale of 1-5 where 1 represented not at all (NAA), 2 represented Very small extent (VSE), 3 represented moderate extent (ME), 4 represented large extent (LE) while 5 represented Very large extent (VLE).

4.4.1 Human Resources

The respondents were asked to rate the statements on human resources on a scale of 1-5 where 1 represented ‘Not at all’ and 5 represented ‘Very large Extent’. Means and standard deviations were then computed. The results of responses on human resources are shown in Table 4.3 below.

<table>
<thead>
<tr>
<th>Statements</th>
<th>n</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The management of this hospital conducts employees training needs assessment.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.6312</td>
<td>1.0100</td>
</tr>
<tr>
<td>Training programs are organized as per employees’ needs assessment in various departments.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.8440</td>
<td>1.0842</td>
</tr>
</tbody>
</table>
The training programs have greatly improved the performance of this hospital.

Employees are encouraged by the hospital management to continually increase and develop their skills.

Employees are allowed to make decisions in regard to improvement of their work in their respective departments.

The management of this hospital provides employees with relevant information promptly regarding their work assignments at all times.

The hospital management values employees’ ideas and suggestions on ways of improving the quality of patient care.

Employees in this hospital are given equal opportunities for career advancement.

There is high team spirit among employees in this hospital.

The team working has greatly improved employees’ interpersonal relations in this hospital.

There functional / working teams in this hospital.

The management of this hospital usually organizes team building workshops / seminars for all employees at least once a year.

Team working has greatly improved customer service in this hospital.
The health and safety of employees is highly taken care of by the management of this hospital.

Employees in this hospital are provided with working medical equipment, devices and other tools.

The workload for employees in this hospital is manageable.

There is conducive working environment for employees in this hospital.

The management of this hospital is very supportive to employees in order to perform their tasks effectively.

Employees in this hospital are very satisfied with the salary they receive.

Employees receive their salary promptly in this hospital.

Employees in this hospital receive attractive non-financial rewards other than their monthly salary.

The policy on employee remuneration is clearly understood by all employees.

| Aggregate score | 2.6480 | 1.0829 |

Source: Survey Data (2017)

As shown in Table 4.3 the highest mean score is 3.0284 with a standard deviation of 0.9632. This reveals that the respondents agreed to a moderate extent that employees in the hospital are provided with medical equipment that are in working condition. This shows that the equipment enhance the performance of employees only to
moderate extent. The standard deviation of 0.9632 implies that there was no much variation in regard to respondents’ views.

The mean of 2.9078 with a standard deviation of 0.9849 regarding the issue on the prompt receipt of salaries by employees indicates that the respondents agreed to a moderate extent about receiving their salaries promptly. The standard deviation of 0.9849 shows the respondents had similar views. This implies that the salaries are not paid promptly leading to low morale of employees. The item with the lowest mean score of 2.3901 with a standard deviation 1.1005 was that employees in the hospital receive attractive non-financial rewards other than their monthly salary. This was rated to little extent implying that the hospital provides to a very minimal extent on non-financial benefits such as lunch, means of transport, trips, WIFI and recreation facilities among others. This situation can lead to low hospital performance.

The aggregate score based on respondents’ views on all statements regarding various issues on human resources was 2.6480 with a standard deviation of 1.0829. This implies that the issues on human resources regarding training of employees, employee empowerment, working environment and compensation were only implemented to a moderate extent by the management of public hospitals. The standard deviation of 1.0829 implies that there was no much variation regarding respondents’ views. This kind of scenario is likely to lead to low performance of public hospitals.
4.4.2 Information Technology Resources

The respondents were asked to rate the statements on information technology resources on a scale of 1-5 where 1 represented ‘Not at all’ and 5 represented ‘Very large Extent’. Means and standard deviations were then computed. The results of responses on information technology resources are shown in Table 4.4 below.

Table 4.4 Responses on Information Technology Resources

<table>
<thead>
<tr>
<th>Statements</th>
<th>n</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The various departments in this hospital are connected in terms of IT system.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.7021</td>
<td>.9910</td>
</tr>
<tr>
<td>IT system has greatly improved communication between various departments.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.7518</td>
<td>1.0223</td>
</tr>
<tr>
<td>IT system has greatly improved operations in the hospital.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.6454</td>
<td>1.0497</td>
</tr>
<tr>
<td>The IT system in this hospital has greatly improved decision making regarding patient care.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.6667</td>
<td>1.1381</td>
</tr>
<tr>
<td>IT systems of this hospital is in line with the hospital’s strategic goal of provision of quality patient care.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.6454</td>
<td>1.0832</td>
</tr>
<tr>
<td>IT system is in conformity with existing hospital procedures.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.8014</td>
<td>1.0016</td>
</tr>
<tr>
<td>IT systems has greatly enhanced the realization of hospital strategy of providing quality medical care to patients.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.6241</td>
<td>1.0793</td>
</tr>
<tr>
<td>IT system in this hospital is in line with existing employee skills and experiences.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.4184</td>
<td>.9722</td>
</tr>
</tbody>
</table>
IT system has greatly reduced employee workload in this hospital. 141 1.00 5.00 2.7589 .9921

The management of this hospital encourages employees to be ICT compliant by organizing ICT seminars and workshops. 141 1.00 5.00 2.3475 1.1211

IT system in this hospital is user friendly. 141 1.00 5.00 2.6383 1.1037
Employees of this hospital are very positive regarding the use of IT systems. 141 1.00 5.00 2.9220 .9861

The IT system in this hospital has greatly improved the hospital performance. 141 1.00 5.00 2.6028 1.0343

Employees are happy with the quality of IT systems of this hospital. 141 1.00 5.00 2.4823 .9305

The IT systems in this hospital are in good working condition. 141 1.00 5.00 2.7786 .9526

The IT systems in this hospital provide the expected outcome / results in regard to patient care. 141 1.00 5.00 2.6028 1.0273

<table>
<thead>
<tr>
<th><strong>Aggregate score</strong></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.6465</td>
<td>1.0289</td>
</tr>
</tbody>
</table>

Source: Survey Data (2017)

As shown in Table 4.4 the highest mean score of 2.9220 reveal that the respondents agreed to a moderate extent regarding the positivity of employees in regard to use of IT systems. This implies that many employees are not IT compliant and hence do not take full advantage of the hospitals IT infrastructure. The standard deviation of 0.9861 implies that there was low variation in respondents views. This was followed by mean score of 2.8104 in regard to specialisation of IT system with hospital’s work practices. This means that most respondents agreed to a moderate extent on this item implying that a significant proportion of hospital IT systems are not compatible with existing work procedures. This may result to poor hospital performance.
The item with the lowest mean score of 2.3475 with a standard deviation of 1.1211 was that the management of the hospital encourages employees to be ICT compliant by organizing ICT seminars and workshops. This was rated to a little extent implying that the hospital management puts minimal efforts to encourage employees to be IT compliant. This kind of scenario will affect hospital performance negatively. The standard deviation of 1.1211 implies that most of the respondents’ views were not varying significantly. The overall aggregate score of respondents’ views regarding various issues of IT systems was 2.6465 with a standard deviation of 1.0289. This implies that the hospital IT systems only possessed a moderate levels of IT systems attributes such as IT integration, IT alignment, compatibility, ease of use and functionality.

4.4.3 Financial Resources

The respondents were asked to rate the statements on financial resources on a scale of 1-5, where 1 represented ‘Not at all’ and 5 represented ‘Very large Extent’. Means and standard deviation were then computed. The results of responses on strategic financial resources are shown in table 4.5 below.
Table 4.5 Responses on Financial Resources

<table>
<thead>
<tr>
<th>Statements</th>
<th>n</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The money allocated to this hospital by the county government is adequate</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.2411</td>
<td>0.9629</td>
</tr>
<tr>
<td>to cater for the needs of various departments in regard to patient care.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The money allocated to this hospital by national government is adequate</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.5674</td>
<td>0.9806</td>
</tr>
<tr>
<td>to cater for the needs of various departments in regard to patient care.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The money received by this hospital from user fees greatly supplements the</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.7660</td>
<td>1.1442</td>
</tr>
<tr>
<td>government funding.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are adequate funds to run hospital operations and various health</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.2837</td>
<td>0.9586</td>
</tr>
<tr>
<td>programs throughout the year.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This hospital receives funds from the government promptly.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.3191</td>
<td>0.9660</td>
</tr>
<tr>
<td>There is efficient service delivery of various health programs throughout</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.5674</td>
<td>1.0022</td>
</tr>
<tr>
<td>the year.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The hospital management can easily access the hospital funds in order to</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.4468</td>
<td>1.0172</td>
</tr>
<tr>
<td>run various hospital operations.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The process of approval of funds by relevant authorities does not cause any</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.6809</td>
<td>1.0094</td>
</tr>
<tr>
<td>delay in accessing the funds by the hospital management in order to carry</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>out various hospital programs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quick accessibility of funds by the management has greatly improved the</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.3050</td>
<td>1.0484</td>
</tr>
<tr>
<td>performance of this hospital.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This hospital partners with other organizations to solicit for funds in</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.4643</td>
<td>1.0622</td>
</tr>
<tr>
<td>order to increase its financial resource base.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The funds received by this hospital from other organizations has greatly</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.6809</td>
<td>1.0442</td>
</tr>
<tr>
<td>improved its performance.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The funds received by this hospital from the various sources are put into the right uses by the hospital management.

<table>
<thead>
<tr>
<th>Source: Survey Data (2017)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate score</td>
</tr>
<tr>
<td>2.5306</td>
</tr>
<tr>
<td>1.0132</td>
</tr>
</tbody>
</table>

As shown in Table 4.5 the highest mean score of 2.8440 and standard deviation of 1.0020 indicates that the respondents agreed to a moderate extent that prudent use of funds in the hospitals had greatly improved the performance of the hospital. This implies that the available funds are used prudently only to moderate extent for hospital operations. The standard deviation of 1.0020 shows the respondents had similar views.

The item with a mean score of 2.7660 and a standard deviation of 1.1442 regarding the effect of user fees in supplementing government funding indicates that the respondents agreed to a moderate extent implying that the user fees only supplements moderately the funding by County governments. The lowest mean score was 2.2411 with a standard deviation of 0.9629. This implies that most respondents agreed to little extent that the money allocated to the hospital by the county government is adequate to cater for the needs of various departments in regard to patient care.

This implies that the performance of the hospitals is only at an average performance due to inadequate funds. The aggregate score was 2.5306 with a standard deviation of 1.0132 implies that the respondents rated to moderate extent the various issues
regarding financial resources. This implies that performance of the hospital was achieved moderately.

### 4.4.4 Physical Resources

The respondents were asked to rate the statements on physical resources on a scale of 1-5, where 1 represented ‘Not at all’ and 5 represented ‘Very large Extent’. Means and standard deviations were then computed. The results of responses on physical resources are shown in Table 4.6 below.

#### Table 4.6 Responses on Physical Resources

<table>
<thead>
<tr>
<th>Statements</th>
<th>n</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicines for patients are available in this hospital throughout the year.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.5461</td>
<td>0.9218</td>
</tr>
<tr>
<td>The necessary medical equipment and devices required for patient care are available in this hospital.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.8014</td>
<td>0.9428</td>
</tr>
<tr>
<td>The various treatment rooms for patient care are available in this hospital.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.6738</td>
<td>1.1052</td>
</tr>
<tr>
<td>Patients get all the medicines they are prescribed for by medical staff throughout the year.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.3688</td>
<td>0.9213</td>
</tr>
<tr>
<td>There are adequate medical equipment and devices required for patient care in this hospital.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.6525</td>
<td>0.9180</td>
</tr>
<tr>
<td>The various treatment rooms required for patient care are adequate in this hospital.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.6312</td>
<td>1.0651</td>
</tr>
<tr>
<td>Medical equipment and devices required for patient care in this hospital are in good working conditions.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.7021</td>
<td>0.9910</td>
</tr>
</tbody>
</table>
This hospital acquires her medical supplies from credible suppliers who supplies high quality medicines, equipment and devices.

Employees are happy with the quality of medicines, equipment and devices used for patient care in this hospital.

The medical equipment and devices are regularly serviced in this hospital.

The equipments and devices from various departments are taken to maintenance department for servicing regularly.

The building of this hospital is regularly maintained.

<table>
<thead>
<tr>
<th>Source: Survey Data (2017)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th></th>
<th>141</th>
<th>1.00</th>
<th>5.00</th>
<th>3.0922</th>
<th>0.9554</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate score</td>
<td>2.6759</td>
<td>0.9762</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As shown in Table 4.6 the highest mean score of 3.0922 reveals that the respondent agreed to moderate extent that, the hospitals acquires her medical supplies from credible suppliers who supplies high quality medicines and equipment. This implies that the issue of quality medicines and equipment is only addressed by the management moderately. This item was followed by a mean score of 2.8794 with a standard deviation of 1.0855. This means the respondents agreed to a moderate extent that technical personnel in maintenance have the required skills in regard to maintenance / servicing of various hospital equipment.
This implies that the personnel in the maintenance department are moderately skilled meaning that a number of equipment may not be serviced due to lack of personnel with requisite skills. This explains why some equipment may be lying idle and unserviced. The item with the lowest mean of 2.3688 reveal that the respondents agreed to little extent that patients got all the medicines they were prescribed for by clinicians throughout the year. This implies that most of the time patients do not get the medicines they are prescribed for by the clinicians. The low standard deviation of 0.9213 on this item implies that there was not much variation in respondents’ views.

The overall aggregate score on respondents’ responses regarding various issues of physical resources was 2.6759 with a standard deviation of 1.0855. This implies that, the issues such as availability, adequacy, functionality and maintenance in regard to physical resources are only addressed moderately by the hospital management leading to moderate hospital performance. The standard deviation of 1.0855 implies that the respondents’ views were homogenous.

**4.4.5 Organizational Capability**

The respondents were asked to rate the statements of organizational capability on a scale of 1-5 where 1 represented ‘Not at all’ and 5 represented ‘Very large Extent’. Means and standard deviations were then computed. The results of organizational capability based on respondent responses is shown in Table 4.7.
<table>
<thead>
<tr>
<th>Statements</th>
<th>n</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The various resources in this hospital are deployed in the right areas.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.5816</td>
<td>1.0082</td>
</tr>
<tr>
<td>The hospital resources are deployed in the right amounts in various</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.9149</td>
<td>.8823</td>
</tr>
<tr>
<td>departments.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The resources deployed in various</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.8511</td>
<td>1.1398</td>
</tr>
<tr>
<td>departments usually support the hospital strategies of provision of</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>quality patient care.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The various categories of resources in this hospital are well</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.7447</td>
<td>1.1046</td>
</tr>
<tr>
<td>coordinated by the hospital management.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coordination of resources contributes to achievement of hospitals strategic</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>3.0213</td>
<td>1.0033</td>
</tr>
<tr>
<td>objectives of provision of quality patient care.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This hospital utilizes the accumulated staff experiences to improve</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.4681</td>
<td>.9068</td>
</tr>
<tr>
<td>delivery of health care services.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This hospital uses the accumulated staff experiences to acquire quality</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.2766</td>
<td>.8290</td>
</tr>
<tr>
<td>resources required for patient care.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The hospital has put in place ways of developing health programs and</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.5674</td>
<td>.9204</td>
</tr>
<tr>
<td>services in reference to previous experiences in order to address</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>health emerging issues.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This hospital invests in storage of employee experiences in order to</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.4184</td>
<td>.9499</td>
</tr>
<tr>
<td>improve patient care.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This hospital engages in collaborative activities with other health</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.4752</td>
<td>1.0460</td>
</tr>
<tr>
<td>institutions in order to improve health care.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collaboration with other health care institutions has greatly improved</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.7305</td>
<td>.9991</td>
</tr>
<tr>
<td>the performance of this hospital.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Collaboration of this hospital with other stakeholders such as financiers, non-governmental organizations have enabled this hospital to acquire better resources leading to improved performance.

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>mean</th>
<th>SD</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is documented hospital manual in place which contains the</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.8156</td>
<td>1.1187</td>
</tr>
<tr>
<td>hospital routines in regard to various hospitals activities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employees in this hospital clearly understand the hospital</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.4539</td>
<td>1.1493</td>
</tr>
<tr>
<td>routines contained in the documented hospital manual.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The employees of this hospital consistently observe the hospital</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.7234</td>
<td>1.1533</td>
</tr>
<tr>
<td>routine contained in the hospital manual.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The hospital management enforces strict adherence to hospital</td>
<td>140</td>
<td>1.00</td>
<td>5.00</td>
<td>2.6786</td>
<td>1.1141</td>
</tr>
<tr>
<td>routines.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adherence to hospital routines have improved delivery of health</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.9078</td>
<td>1.2183</td>
</tr>
<tr>
<td>care services in this hospital.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aggregate score</strong></td>
<td></td>
<td><strong>2.6944</strong></td>
<td><strong>1.0318</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Survey Data (2017)

Table 4.7 reveals that the highest mean score was 3.0213 implying that the respondents agreed to moderate extent that coordination of resources contributes to achievement of hospital strategic objectives of provision of quality health care. The standard deviation of 1.0033 implies that there was no much variation regarding the respondent’s views on this item. This implies that coordination of strategic resources is achieved moderately.

The item with a mean of 2.9149 with a standard deviation of 0.8823 implied that the respondents agreed to moderate extent that the hospital resources are deployed in the
right amounts in various departments. This means that there is significant proportion of resources which are not deployed in the right amounts and this consequently affects performance. The low standard deviation of 0.8290 implies that the respondents were homogenous in their views.

The lowest mean score was 2.2766 with a standard deviation of 0.8290. This implies that the respondents agreed to a little extent that the hospital uses the accumulated experiences to acquire quality resources required for patient care. This implies that the hospital has not benefited much from the accumulated experiences because they are not exploited to the full.

The aggregate score of respondents’ responses regarding various issues of organizational capability such as deployment of resources, coordination of resources, accumulated experiences and partnership with relevant stakeholders and organizational routines was 2.6944 with a standard deviation of 1.0318. This scenario is likely to lead to poor hospital performance.

4.4.6 Organizational Culture

The respondents were asked to rate the statements of organisational culture on a scale of 1-5 where 1 represented ‘Not at all’ and 5 represented ‘Very large Extent’. The results of responses on organizational culture are shown in Table 4.8 below.
Table 4.8 Responses on Organizational Culture

<table>
<thead>
<tr>
<th>Statements</th>
<th>n</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff cohesion is highly emphasized by management of this hospital.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.631</td>
<td>.9213</td>
</tr>
<tr>
<td>There is a high staff cohesion in this hospital.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.650</td>
<td>.8727</td>
</tr>
<tr>
<td>There is strong emphasis on respect among employees by the management of this hospital.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.659</td>
<td>.9771</td>
</tr>
<tr>
<td>There is high respect that prevails in this hospital between employees of various cadres.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.773</td>
<td>.9443</td>
</tr>
<tr>
<td>There is strong group loyalty and sense of belonging among the employees of this hospital.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.369</td>
<td>.8897</td>
</tr>
<tr>
<td>The leaders of this hospital are highly seen as mentors or parental figures by the employees.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.560</td>
<td>1.1611</td>
</tr>
<tr>
<td>The management of this hospital embraces new innovations in order to bring changes of improving patient care.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.659</td>
<td>1.0679</td>
</tr>
<tr>
<td>There is remarkable improvement in provision of quality health care brought about by innovations introduced by management.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.844</td>
<td>.9804</td>
</tr>
<tr>
<td>Employees are very supportive to change innovations introduced by the hospital management.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.709</td>
<td>.9750</td>
</tr>
<tr>
<td>The management of this hospital rewards outstanding individual employee initiatives geared towards delivery of quality patient care.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.418</td>
<td>1.1962</td>
</tr>
<tr>
<td>Change innovations have greatly improved the performance of this hospital in regard to patient care.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.596</td>
<td>1.0280</td>
</tr>
</tbody>
</table>
The procedures, rules and policies in regard to discharge of employees’ duties and responsibilities are clearly defined in this hospital.

The employees of this hospital consistently adhere to the defined procedures, rules and policies when carrying out their work.

The management of this hospital continuously monitor and controls the employees’ conduct when carrying their duties.

The continuous monitoring and control of employee’s conduct by the management have greatly improved the performance of this hospital.

There is clearly defined requirement that all departments produce and submit periodical progress reports to management of this hospital.

The periodical progress reports from various departments have greatly improved the performance of this hospital.

<table>
<thead>
<tr>
<th>Aggregate score</th>
<th>2.6396</th>
<th>1.0470</th>
</tr>
</thead>
</table>

Source: Survey Data (2017)

Table 4.8 reveals that the highest mean score was 2.8511 with a standard deviation of 1.0950. This shows that the respondents agreed to a moderate extent that the management of the hospital continuously monitors and controls the employees in the hospitals. This indicates that monitoring and control of employees is done moderately by the management. This implies that the employees are left to do things on their own without being monitored or controlled fully. This can negatively affect performance of the hospital. The standard deviation of 1.0950 implies that the respondents’ views were not varying significantly.
The second highest mean score was 2.8440 with a standard deviation of 0.9804. This means that the respondents agreed to moderate extent that there is a remarkable improvement in provision of quality health care brought about by innovations introduced by the management. This means that there may be new medical equipment acquired by the hospital management but they are not being utilized fully for patient care leading to minimal hospital performance.

The lowest mean score was 2.3688 with a standard deviation of 0.8897. This means that the respondents agreed to little extent that there is a strong group loyalty and a sense of belonging among employees of the hospital. This implies that the employees are loyal to their hospital only to a little extent and that employee sense of belonging is only minimal. This in essence shows that the employees are demotivated leading to low levels of employee productivity. The aggregate score on respondents’ responses of statements on organizational culture was 2.6396 with a standard deviation of 1.0470. This indicates that the issues regarding organizational culture were only addressed moderately by hospital management. This means that the hospital performance is low. The standard deviation of 1.0470 shows that the respondents’ views were homogenous.

4.4.7 Performance of Public Health Institutions
The respondents were asked to rate the statements on performance on a scale of 1-5 where 5 represented ‘Very large extent’ and 1 represented ‘Not at all’. The means and standard deviation were then computed. The results are shown in Table 4.9

**Table 4.9 Responses on Performance of Public Health Institutions**

<table>
<thead>
<tr>
<th>Statements</th>
<th>n</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel very comfortable working in this hospital.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.5887</td>
<td>0.9789</td>
</tr>
<tr>
<td>This hospital has greatly contributed to my professional growth.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.7357</td>
<td>0.9339</td>
</tr>
<tr>
<td>I would be very happy to continue working in this hospital up to my retirement.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.6738</td>
<td>1.0316</td>
</tr>
<tr>
<td>I feel I have a personal obligation to improve delivery of health care in this hospital.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>3.0922</td>
<td>1.1826</td>
</tr>
<tr>
<td>I admire the way the management of this hospital handles employees on matters regarding promotion, work assignments and motivation.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.2553</td>
<td>.9212</td>
</tr>
<tr>
<td>The patients are attended promptly when they arrive in this hospital.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.7518</td>
<td>.9648</td>
</tr>
<tr>
<td>Patients are provided with all the treatment they are prescribed for.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.8214</td>
<td>.9312</td>
</tr>
<tr>
<td>The hospital responds to patient complain promptly.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.8511</td>
<td>1.1398</td>
</tr>
<tr>
<td>The hospital conducts regular reviews on patient service in order to improve quality of patient care.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.6950</td>
<td>1.0552</td>
</tr>
<tr>
<td>The hospital makes maximum use of the available resources to provide quality patient care.</td>
<td>141</td>
<td>1.00</td>
<td>5.00</td>
<td>2.5929</td>
<td>1.0921</td>
</tr>
</tbody>
</table>
Acquisition of modern health care equipment have greatly improved the provision of quality health patient care.

Employee initiatives like use of SMS to reach out patients have improved performance of this hospital.

Screening services have improved the performance of this hospital.

Investment in modern equipment and information technology have improved the delivery of health care in this hospital.

We usually get patients coming for reviews after first visit.

This facility follows strictly the policy on handling patient complaints.

Patients are encouraged to give their views on improvement of delivery of health care.

Analysis of patients’ views reveals commendations of medical care workers and areas of improvements in delivery of health care.

Patients suggestions on areas of improvement are implemented by the management of this hospital

| Table 4.9 reveals that the highest mean score was 3.0922 with a standard deviation 1.1826. This implied that the respondents agreed to moderate extent that employees feel personal obligation to improve delivery of health care in the hospitals they worked. This was followed by mean score of 2.9362 which implied that the respondents rated the implementation policy of handling patients’ complaints moderately. |
The lowest mean score was 2.2533 with a standard deviation of 0.9212. This implied that the respondents agreed to a little extent that employees admire the way the hospital management handles employees’ matter regarding promotion, work assignments and motivation. This implies that the employees’ morale is very low which consequently leads to average performance. The aggregate score of respondents’ responses of statements on performance was 2.6874. This indicates that the performance of public hospitals was moderate. The standard deviation of 1.0470 implies that there was no much variation among respondents’ views.

These findings are supported by the aggregate mean scores of the study variables, that is, human resources, information technology resources, financial resources and physical resources which were 2.6480, 2.6465, 2.5306 and 2.6759 respectively. This means that the respondents rated the statements of each of the independent variables moderately. This indicated average performance of public health institutions.

**4.5 Diagnostic Tests**

The study conducted diagnostic tests to ensure the basic assumptions of regression model as suggested by Green (2002) are satisfied. The study tested the diagnostic tests discussed below.

**4.5.1 Test for Normality**
In order to determine whether the multiple linear regression models was fit for quantitative data analysis, normality test was conducted using Shapiro-Wilk test to assess the actual degree of departure from normality. A significance level of 5% (ie P-value 0.05) was used. The criteria used was that if P-value is more than 0.05 it means the independent variables are normally distributed and vice versa. Table 4.10 shows the results of normality test conducted using Shapiro-Wilk test statistic.

Table 4.10 Results of Test of Normality

<table>
<thead>
<tr>
<th></th>
<th>Statistic</th>
<th>Df</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Resources</td>
<td>0.933</td>
<td>141</td>
<td>0.694</td>
</tr>
<tr>
<td>Information Technology Resources</td>
<td>0.960</td>
<td>141</td>
<td>0.812</td>
</tr>
<tr>
<td>Financial Resources</td>
<td>0.986</td>
<td>141</td>
<td>0.474</td>
</tr>
<tr>
<td>Physical Resources</td>
<td>0.967</td>
<td>141</td>
<td>0.372</td>
</tr>
<tr>
<td>Organization Capability</td>
<td>0.947</td>
<td>141</td>
<td>0.838</td>
</tr>
<tr>
<td>Organizational Culture</td>
<td>0.979</td>
<td>141</td>
<td>0.564</td>
</tr>
<tr>
<td>Performance of Public Health Institutions</td>
<td>0.953</td>
<td>141</td>
<td>0.513</td>
</tr>
</tbody>
</table>

Source: Survey Data (2017)

According to table 4.10 human resources, information technology resources, financial resources, physical resources, organization capability, organizational culture and performance of public health institutions had significance values of 0.694, 0.812, 0.474, 0.372, 0.838, 0.564 and 0.513 respectively all of which were more than 0.05. This implied that independent variables of strategic resources (that is, human resources, information technology resources, financial resources and physical resources), mediating variable (that is, organizational capability), moderating variable (that is, Organizational culture) and dependent variable (that is Performance of public
health institutions) came from normal population since all their P-values were more than 0.05 as suggested by Norusis (2007).

4.5.2 Test for Linearity

The study tested the linear relationship of the independent variables on the dependent variable using Pearson’s correlation coefficient as recommended by Cohen, West and Aiken (2003). This was to ensure the assumption of linearity is fulfilled as recommended by Yount (2006). Table 4.11 shows results for linearity test.

Table 4.11 Results of Linearity Test

<table>
<thead>
<tr>
<th>Variable</th>
<th>Performance of PHI</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Resources</td>
<td>Person correlation</td>
<td>0.534</td>
</tr>
<tr>
<td></td>
<td>Sig (2 tailed)</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>141</td>
</tr>
<tr>
<td>Information Technology Resources</td>
<td>Pearson correlation</td>
<td>0.428</td>
</tr>
<tr>
<td></td>
<td>Sig (2 tailed)</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>141</td>
</tr>
<tr>
<td>Financial Resources</td>
<td>Pearson Correlation</td>
<td>0.314</td>
</tr>
<tr>
<td></td>
<td>Sig (2 tailed)</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>141</td>
</tr>
<tr>
<td>Physical Resources</td>
<td>Pearson Correlation</td>
<td>0.528</td>
</tr>
<tr>
<td></td>
<td>Sig (2 tailed)</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>141</td>
</tr>
<tr>
<td>Organizational Capability</td>
<td>Pearson Correlation</td>
<td>0.636</td>
</tr>
<tr>
<td></td>
<td>Sig (2 tailed)</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>141</td>
</tr>
<tr>
<td>Organizational Culture</td>
<td>Pearson Correlation</td>
<td>0.518</td>
</tr>
<tr>
<td></td>
<td>Sig (2 tailed)</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>141</td>
</tr>
</tbody>
</table>

Source: Survey Data (2017)

Table 4.11 shows that correlation coefficients for human resources, information technology resources, financial resources, physical resources, organizational capability
and Organizational culture were 0.534, 0.428, 0.314, 0.528, 0.636 and 0.518 respectively. All their P-value at 2 tailed were 0.000 which is less than 0.001. This indicates that the relationship between the independent variables classified under strategic resources and the mediating and moderating variables is linear as recommended by Field (2009). This shows that the regression model is suitable for making further analysis.

4.5.3 Test for Multicollinearity

The study conducted multicollinearity test to ensure that the explanatory variables classified under strategic resources were not correlated with one another as suggested by Myer (1990). Multicollinearity problem exists when the independent variables are highly correlated with each other and can therefore lead to misleading results (Myers, 1990; Kothari, 2009). Table 4.12 shows the results of multicollinearity diagnostics for the study variables.

**Table 4.12 Results for Multicollinearity Test**

<table>
<thead>
<tr>
<th></th>
<th>Multicollinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tolerance Value</td>
</tr>
<tr>
<td>Human Resources</td>
<td>0.362</td>
</tr>
<tr>
<td>Information Technology Resources</td>
<td>0.381</td>
</tr>
<tr>
<td>Financial Resources</td>
<td>0.432</td>
</tr>
<tr>
<td>Physical Resources</td>
<td>0.450</td>
</tr>
<tr>
<td>Organizational Capability</td>
<td>0.406</td>
</tr>
<tr>
<td>Organizational Culture</td>
<td>0.651</td>
</tr>
</tbody>
</table>

Dependent variable: Performance of PHI

Source: Survey Data (2017)
Table 4.12 shows the tolerance values for human resources, information technology resources, financial resources, physical resources, organizational capability resources and organizational culture were 0.362, 0.381, 0.432, 0.450, 0.406 and 0.651 respectively. All these values were higher than the acceptable minimum limit of 0.1 as recommended by Menard (1995).

The VIF values for human resources, information technology resources, financial resources and physical resources, organization capability and organizational culture were 2.763, 2.626, 2.315, 2.221, 2.463 and 1.537 respectively which were all less than 10 as recommended by Kutner, Nachtshein and Neter (2004). This signified that the independent, Mediating and moderating variables were not correlated with each other and hence there was no multicollinearity problem among the study variables.

### 4.5.4 Homoscedasticity

The study conducted homoscedasticity tests using Levene statistic as recommended by Brooks (2014). Homoscedasticity is a regression assumption that states that there is a constant variance of dependent variable across range of values of independent variables. The criteria used was comparing the values of Levene test probability statistics with significance levels of 0.05. If the P-value > 0.05 it was concluded that the variances are equal. Table 4.13 shows results of Homoscedasticity Test.
Table 4.13 Homoscedasticity Test Results

<table>
<thead>
<tr>
<th>Test of Homogenity of Variance</th>
<th>Levene statistic</th>
<th>df₁</th>
<th>df₂</th>
<th>Sig</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance of PHI indicators</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee satisfaction</td>
<td>0.110</td>
<td>2</td>
<td>139</td>
<td>0.741</td>
<td>P &gt; 0.05, Equal variance</td>
</tr>
<tr>
<td>Efficiency</td>
<td>1.163</td>
<td>2</td>
<td>139</td>
<td>0.283</td>
<td>P &gt; 0.05, Equal variance</td>
</tr>
<tr>
<td>Innovativeness</td>
<td>1.182</td>
<td>2</td>
<td>139</td>
<td>0.261</td>
<td>P &gt; 0.05, Equal variance</td>
</tr>
<tr>
<td>Customer satisfaction</td>
<td>3.503</td>
<td>2</td>
<td>139</td>
<td>0.063</td>
<td>P &gt; 0.05, Equal variance</td>
</tr>
</tbody>
</table>

Source: Survey Data (2017)

Table 4.13 above shows the Levene test statistics for performance of public health institutions based on the four indicators were 0.110, 1.163, 1.182 and 3.503 for employee satisfaction, efficiency, innovativeness and customer satisfaction respectively. The P-values of the four indicators were 0.741 for employee satisfaction, 0.283 for efficiency, 0.261 for innovativeness and 0.063 for customer satisfaction all of which were higher than significance value of 0.05 as recommended by Warner (2008). Hence, the assumption of homogeneity of variance was fulfilled meaning that the variance for indicators of performance of public health institutions was constant.
4.5.5 Kaiser-Meyer-Olkin (KMO) Test for Sample Adequacy.

The study conducted Kaiser-Meyer-Olkin test for measuring sample adequacy in order to subject the data collected to inferential statistics. According to Field (2009), data set is considered adequate for appropriate statistical analysis when the value of KMO statistic is greater than 0.05. The table 4.14 summarizes results of KMO test.

**Table 4.14 KMO Test Results for Sample Adequacy**

<table>
<thead>
<tr>
<th>Kaiser-Meyer-Olkin (KMO) Measure of Sample Adequacy</th>
<th>KMO Statistic</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.784</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Source: Survey Data (2017)

Table 4.14 shows the KMO statistic for the sample used for the study was 0.784 which was higher than the threshold recommended by Field (2009), implying that the data set was adequate for inferential statistical analysis.

4.6 Hypotheses Testing

The study used multiple linear regression model to test the effect of independent variables classified under strategic organizational resources namely: human resources, information technology resources, financial resources and physical resources on dependent variable that is, performance of public health institutions. Cooper and Schindler (2011) contends that, multiple linear regression is suitable for studies involving many independent variables as was the case in this study.
The study sought to test six hypotheses. Hypotheses one to four sought to test direct effect of human resources, information technology resources, financial resources and physical resources on the performance of public health institutions. Hypotheses five and six sought to test the mediating and moderating effect of organizational capability and Organizational culture on the relationship between strategic resources and performance of public health institutions respectively.

The study sought to find out the extent to which the predictor variables explained variation in performance of public health institutions. Additionally the study established model significance by conducting anova test to find out whether it was suitable for further statistical analysis as recommended by Mokaya (2013). This was done by computing F statistics and its corresponding P-values.

The researcher used the criteria of comparing P-values of F statistics with significance value of 0.05. If P-value of F statistics was less than 0.05, the study concluded the model is significant and can be used for further statistical analyses and vice versa. This was followed by computation of coefficients of predictor variables. Table 4.15 shows the results of effects of resources that is human resources, information technology resources, financial resources and physical resources on performance of public health institutions.
Table 4.15 Results of Effects of Strategic Resources on Performance of Public Health Institutions

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R square</th>
<th>Adjusted R Square</th>
<th>Std error of the estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.665</td>
<td>0.443</td>
<td>0.426</td>
<td>0.2402496</td>
</tr>
</tbody>
</table>

Dependent Variable – Performance of Public Health Institutions

Anova

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>6.235</td>
<td>2</td>
<td>1.559</td>
<td>27.004</td>
<td>0.000</td>
</tr>
<tr>
<td>Residual</td>
<td>7.850</td>
<td>139</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>14.085</td>
<td>141</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Predictors: (Constant) Human Resources, Information Technology Resources, Financial Resources and Physical Resources.
Dependent Variable – Performance of Public Health Institutions

Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized coefficients</th>
<th>Standardized coefficients</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Beta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>1.199</td>
<td>0.162</td>
<td>7.398</td>
<td>0.000</td>
</tr>
<tr>
<td>Human Resources</td>
<td>0.233</td>
<td>0.291</td>
<td>3.373</td>
<td>0.001</td>
</tr>
<tr>
<td>Information Technology Resources</td>
<td>0.180</td>
<td>0.257</td>
<td>3.005</td>
<td>0.003</td>
</tr>
<tr>
<td>Financial Resources</td>
<td>0.159</td>
<td>0.199</td>
<td>3.001</td>
<td>0.004</td>
</tr>
<tr>
<td>Physical Resources</td>
<td>0.213</td>
<td>0.262</td>
<td>3.847</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Dependent Variable: Performance of Public Health Institutions

Source: Survey Data (2017)

As shown in Table 4.15, the adjusted $R^2$ was 0.426. This indicated that the four independent variables that is; human resources, information technology resources, financial resources and physical resources jointly explained 42.6% percent of variations in performance of public health institutions. Table 4.14 shows the F (2,139)
statistics was 27.004 with P-value of 0.000 (P-value < 0.05). This shows that the model was significant and could be used for further statistical analysis.

The results were summarized using the equation model shown below.

\[ Y = 1.199 + 0.233X_1 + 0.180X_2 + 0.159X_3 + 0.213X_4 + \varepsilon \]

Where

\( Y \) = Performance of Public Health Institutions

\( X_1, X_2, X_3, X_4 \) = Human Resources, Information Technology Resources, Financial Resources and Physical Resources respectively.

\( \varepsilon \) = Error term

The results are discussed below as per each objective and accompanying hypothesis.

4.6.1 Effect of Human Resources on Performance of Public Health Institutions

The first objective sought to determine the effect of human resources on performance of public health institutions. A null hypothesis \((H_0)\) was formulated with the assumption that there is no significant effect of human resources on performance of Public Health Institutions in Embu County Kenya. The regression results for hypothesis one shown in Table 4.14 indicated that the beta coefficient of human resources was 0.233 with a P-value of 0.001. This implies that a unit increase in human resources results to an increase of 0.233 in performance of public health institutions. Therefore at P < 0.05 level of significance, the null hypothesis \((H_0)\)is
rejected implying that human resources had a positive statistical significant effect on performance of public health institutions in Embu County.

The findings are consistent with Kebene, Orchard, Howard, Soriano and Leduc (2006) who found that there was a positive significant relationship between human resources and delivery of quality health care in Canada, USA and Germany. The findings further concur with Butt, Khan and Rasli (2012) who established that conducive work environment had significant relationship with nurses’ commitment leading to better customer service and hence improved performance of public hospitals in Pakistan. A study by Diab (2012) concluded that poor working conditions in Jordanian public hospitals led to high labour turnover of doctors.

This study collaborated with the findings of Saif and Saleh (2013) who established that employee empowerment in Jordanian public hospitals improved employee motivation making employees to participate in making high quality decisions and hence improved performance. Additionally, the findings concur with Ongori and Shuda (2008) findings that continuous skill development for health care workers through training and competitive reward schemes improved hospital performance.

The study further concurred with the findings of Rogers, Jiang and Intindola (2015) who found that there was significant positive relationship between human resources with patients’ satisfaction. The study findings further collaborated with Hanaysha (2016) who found that strategic human resources aspects such as employee
empowerment, team work and employee training were significantly related with employee productivity leading to overall organizational performance.

4.6.2 Effect of Information Technology Resources on Performance of Public Health Institutions.

The second objective sought to determine the effect of information technology resources on performance of public health institutions. A null hypothesis ($H_0$) was formulated with assumption that there is no significant effect of information technology resources on performance of Public Health Institutions in Embu County Kenya.

The regression results for hypothesis two shown in Table 4.14 indicated that the beta coefficient of information technology resources was 0.180 with a P-value of 0.003. This implies that a unit increase in information technology resources results to an increase of 0.180 in performance of public health institutions. Therefore, at $P<0.05$ level of significance, the null hypothesis ($H_0$) is rejected implying that information technology resources had a positive statistical and significant effect on performance of public health institutions in Embu County.

These findings are consistent with Azlan, Yusof and Razali (2012) who found that information technology resources improved efficiency and communication between clinicians and patients. In addition, information storage and retrieval were improved leading to improved overall performance of medical centres in Malaysia. Nairobi
County led to significant improvement in information storage and retrieval, business efficiency and customer service by improving communication between clinicians and patients and between employees in different departments consequently leading to improved performance of health care institutions studied.

The study concurs with Olatukum and Adeboyejo (2009) who established that investment in ICT led to improved hospital performance because of faster access to relevant information by hospital employees, easy exchange of information with colleagues leading to increased efficiency. These findings collaborated with Thrasher and Revels (2012) who found that there was a positive significant relationship of information technology and performance of health institutions in USA.

The findings of this study however contradicted with Getzen (2007) who found that investment in information technology resources does not lead to improved performance of health care organizations but rather increases the cost leading to alienation of poor people from accessing health care services.

4.6.3 Effect of Financial Resources on Performance of Public Health Institutions

The third objective sought to determine the effect of financial resources on performance of public health institutions. A null hypothesis (H0) was formulated with assumption that there is no significant effect of financial resources on performance of Public Health Institutions in Embu County Kenya.
The regression results for hypothesis three shown in Table 4.15 indicated that the beta coefficient of financial resources was 0.159 with a P-value of 0.004. This implies that a unit increase in financial resources results to an increase of 0.159 in performance of public health institutions. Therefore, at P<0.05 level of significance, the null hypothesis (H₀) is rejected implying that financial resources had a positive statistical and significant effect on performance of public health institutions in Embu County.

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

Additionally, the findings are consistent with Onyango and Wanyoike who found that, funds had significant positive relationship with employee training of health care workers which consequently lead to overall performance in public hospitals in Siaya County. The study collaborates with Miller, Moore, Richards, Kotelchuk and Kahtzzy (1998) who found that there was positive relationship between funds and improved hospital performance. Further the findings are supported by Mays, Megan, McHugh,
Shim, Perry, Lenaway et al. (2006) who found that, adequate government funding is significantly associated with improved performance of public health institutions.

The findings collaborated 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 also consistent with Immyxail and Takahashi (2010) who found that financial resources were significantly linked to firm performance irrespective of who heads the institutions.

**4.6.4 Effect of Physical Resources on Performance of Public Health Institutions.**

The fourth objective sought to determine the effect of physical resources on performance of public health institutions. A null hypothesis ($H_0$) was formulated with assumption that there is no significant effect of physical resources on performance of Public Health Institutions in Embu County Kenya.

The regression results for hypothesis four shown in Table 4.14 indicated that the beta coefficient of physical resources was 0.213 with a P-value of 0.000. This implies that a unit increase in physical resources results to an increase of 0.213 in performance of public health institutions. Therefore, at $P < 0.05$ level of significance the null
hypothesis \( (H_0) \) is rejected implying that physical resources have a positive statistical and significant effect on performance of public health institutions in Embu County.

The findings of this study are consistent with Sai, Prabbu and Reddy (2012) who established that there is a significant positive relationship between availability of physical resources and performance of public health facilities in Chittoor District of Andhra Pradesh in India. The finding collaborates 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 finding collaborates with Waithaka (2012) who established that there was positive relationship between availability and quality of pharmaceuticals and non-pharmaceuticals and performance of both public and private hospitals in Kenya. 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. The Study is consistent with Grimes (2004) who found that possession of physical resources does not automatically lead to good performance but availability of skilled technical staff who can service and maintain physical resources in order to guarantee improved performance.

4.6.5 Strategic Resources, Organizational Capability and Performance of Public Health Institutions

The fifth objective sought to determine the mediating effect of organizational capability on the relationship between strategic resources and performance of public
health institutions. A null hypothesis ($H_0$) was formulated with assumption that organizational capability has no significant mediating effect on the relationship between strategic resources and performance of Public Health Institutions. The fifth hypothesis was tested using Baron and Kenny (1986) four step approach. In the first step, composite index of strategic resources was regressed on performance of public health institutions (Equation 3.3). The results of regression of strategic resources on performance of public health institutions is shown in Table 4.16.

Table 4.16 Strategic Resources and Performance of Public Health Institutions

<table>
<thead>
<tr>
<th>Model Summary</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>R</td>
<td>R square</td>
<td>Adjusted R Square</td>
<td>Std error of the estimate</td>
</tr>
<tr>
<td>1</td>
<td>0.665</td>
<td>0.443</td>
<td>0.428</td>
<td>0.2402496</td>
</tr>
</tbody>
</table>

Predictors: (Constant), Strategic resources
Dependent Variable – Performance of Public Health Institutions

<table>
<thead>
<tr>
<th>Anova</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>Sum of squares</td>
<td>df</td>
<td>Mean Square</td>
<td>F</td>
</tr>
<tr>
<td>Regression</td>
<td>6.235</td>
<td>2</td>
<td>1.559</td>
<td>27.004</td>
</tr>
<tr>
<td>Residual</td>
<td>7.850</td>
<td>139</td>
<td>0.058</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>14.085</td>
<td>141</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Predictors: (Constant), - Strategic Resources
Dependent variable – Performance of Public Health Institutions

<table>
<thead>
<tr>
<th>Coefficients</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>Unstandardized coefficients</td>
<td>Standardized coefficients</td>
<td>T</td>
<td>Sig</td>
</tr>
<tr>
<td>B</td>
<td>Std Error</td>
<td>Beta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>1.680</td>
<td>0.130</td>
<td>12.889</td>
<td>0.000</td>
</tr>
<tr>
<td>Strategic Resources</td>
<td>0.385</td>
<td>0.049</td>
<td>0.552</td>
<td>7.795</td>
</tr>
</tbody>
</table>

Predictors: (Constant), – Strategic resources
Dependent Variable – Performance of Public Health Institutions.
Source: Survey Data (2017)

From Table 4.16, the adjusted $R^2$ is 0.428. This implies that strategic resources explained 42.8 percent of the variation in performance of public health institutions. The F (2, 139) statistics was 27.004 with a P-value of 0.000 (P value < 0.05). This indicates that the model is significant and can therefore be used for further inferential statistical analysis. The coefficient of composite index of strategic resources is 0.385 with a P-value of 0.000 (P-value < 0.05). This shows that strategic resources had a positive statistical and significant effect on performance of public health institutions. This implies that a unit increase of strategic resources will lead to 0.385 increase in performance of public health institutions. The results are summarised using the following equation model.

\[ Y = 1.680 + 0.385X_i + \varepsilon \]

Where

\begin{align*}
Y & = \text{Performance of Public Health Institutions} \\
X_i & = \text{Composite Index of Strategic Resources} \\
\varepsilon & = \text{Error term}
\end{align*}

The second step, strategic resources was regressed on organizational capability (equation 3.4). The results of regression of strategic resources on organizational capability is shown in Table 4.1
Table 4.17 Strategic Resources and Organizational Capability

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R square</th>
<th>Adjusted R Square</th>
<th>Std error of the estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.599</td>
<td>0.358</td>
<td>0.354</td>
<td>0.3290456</td>
</tr>
</tbody>
</table>

Predictors: (Constant), Strategic resources  
Dependent variable – Organizational Capability

Anova

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>8.403</td>
<td>2</td>
<td>8.403</td>
<td>77.609</td>
<td>0.000</td>
</tr>
<tr>
<td>Residual</td>
<td>15.050</td>
<td>139</td>
<td>0.108</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>23.453</td>
<td>141</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Predictors: (Constant), Strategic Resources  
Dependent variable – Organizational Capability

Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized coefficients</th>
<th>Standardized coefficients Beta</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.251</td>
<td>0.162</td>
<td>7.747</td>
<td>0.000</td>
</tr>
<tr>
<td>Strategic resources</td>
<td>0.540</td>
<td>0.061</td>
<td>0.599</td>
<td>8.810</td>
</tr>
</tbody>
</table>

Dependent variable: Organizational Capability  
Independent variable – Strategic Resources

Source: Survey Data (2017)

In Table 4.17 above adjusted R square was 0.354. This means that strategic resources explain 35.4 percent of the variation in organizational capability while 64.6 percent is accounted for by other factors not included in the study. From Table 4.17 F (2, 139) statistics was 77.609 with a P-value of 0.000 (P-value < 0.05). This shows that the
model is significant and can be used for further statistical analysis. In addition, Table 4.17 shows that the coefficient of strategic resources is 0.540 with a P-value of 0.000 (P-value < 0.05). This shows that strategic resources had a positive statistical and significant effect on organizational capability implying that a unit increase of strategic resources will lead to an increase of 0.540 organizational capability. This was summarised with the following equation model.

\[ T = 1.251 + 0.540X_i + \varepsilon \]

Where

\( T \) = Organizational Capability  
\( X_i \) = Composite index of Strategic Resources

Step three involved regression of organizational capability on performance of public health institutions. The results of regression of organizational capability on performance of public health institutions is shown in Table 4.18.
From Table 4.18 the adjusted $R^2$ is 0.423 implying that Organizational Capability explained 42.3% of variation in performance of public health institutions. The $F$ (2, 139) statistics was 103.523 with a $P$-value < 0.05. This implies that the model was statistically significant and therefore can be used for further statistical
analysis. The coefficient for organizational capability was 0.506 with a P-value of 0.000. This shows that Organizational Capability had a positive statistical and significant effect on performance of public health institutions. This implies that a unit increase of Organizational Capability lead to 0.506 increase in performance of public health. The results were summarised using the following equation model.

\[ Y = 1.338 + 0.506T + \varepsilon \]

Where

- \( Y \) = Performance of Public Health Institutions
- \( T \) = Organizational Capability
- \( E \) = Error term

Step four involved regression of strategic resources and Organizational Capability on performance of public health institutions. The results of regression of strategic resources and performance of public health institutions is shown in Table 4.19.
### Table 4.19 Strategic Resources, Organizational Capability and Performance

#### Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R square</th>
<th>Adjusted R Square</th>
<th>Std error of the estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.683</td>
<td>0.467</td>
<td>0.459</td>
<td>0.233405</td>
</tr>
</tbody>
</table>

Predictors: (Constant), Strategic Resources and Organizational Capability

Dependent variable – Performance of Public Health Institutions

#### Anova

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>6.577</td>
<td>2</td>
<td>3.289</td>
<td>60.450</td>
<td>0.000</td>
</tr>
<tr>
<td>Residual</td>
<td>7.507</td>
<td>139</td>
<td>0.054</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>14.085</td>
<td>141</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Predictors: (Constant), Strategic resources, Organization Capability

Dependent variable - Performance of Public Health Institutions

#### Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized coefficients</th>
<th>Standardized coefficients</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>1.192</td>
<td>0.137</td>
<td>8.696</td>
<td>0.000</td>
</tr>
<tr>
<td>Strategic Resources</td>
<td>0.390</td>
<td>0.060</td>
<td>0.504</td>
<td>6.492</td>
</tr>
<tr>
<td>Organizational Capability</td>
<td>0.175</td>
<td>0.054</td>
<td>0.250</td>
<td>3.223</td>
</tr>
</tbody>
</table>

Dependent variable: Performance of Public Health Institutions

Predictors: (Constant), Strategic Resources and Organizational Capability

Source: Survey Data (2017)

From Table 4.19, adjusted $R^2$ is 0.459 implying that strategic resources and organizational capability jointly explain 45.9 percent of variation in performance of public health institutions. The $F(2,139)$ statistics is 60.450 with a P-value of 0.000 (P-
value < 0.05). This shows that regression model is statistically significant and can be used for further statistical analysis.

The coefficient of composite index of strategic resources is 0.390 with p-value of 0.000 (P-value < 0.05) and that of organizational capability is 0.175 with a P-value of 0.002 (P-value < 0.05). This indicates that strategic resources and organizational capability were statistically significant in predicting performance of public health institutions. This implies that a unit increase of strategic resources results to an increase of 0.390 performance of public health institutions while a unit increase of organizational capability results to an increase of 0.175 in performance of public health institutions.

Table 4.19 shows that the regression of strategic resources and organizational capability on performance of public health explained 45.9% of variation in performance of public health institutions as depicted by adjusted $R^2$ of 0.459 than when the strategic resources alone was regressed on performance of public health institutions which resulted to 42.8% as depicted by adjusted $R^2$ of 0.428. The results were summarized using the following equation model.

$$Y = 1.192 + 0.390X_i + 0.175T + \varepsilon$$

Where

$Y =$ Performance of Public Health Institutions

$X_i =$ Composite Index of Strategic Resources

$T =$ Organizational Capability

$\varepsilon =$ Error term
4.6.5.1 Summary of Mediating Effect of Organizational Capability and Strategic Resources and Performance

Table 4.20 shows the summary of mediating effect of organizational capability on the Relationship between strategic resources and performance of public health institutions.

Table 4.20 Effect of Organizational Capability, Strategic Resources and Performance.

<table>
<thead>
<tr>
<th>Analysis</th>
<th>( R^2 )</th>
<th>Adjusted ( R^2 )</th>
<th>Beta Coefficients</th>
<th>P-value</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis of Step 1 Strategic Resources and Performance of Public Health Institutions.</td>
<td>0.665</td>
<td>0.428</td>
<td>0.385</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>Analysis of Step 2 Strategic Resources and Organizational Capability.</td>
<td>0.358</td>
<td>0.354</td>
<td>0.540</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>Analysis of Step 3 Organizational Capability and Performance of Public Health Institutions</td>
<td>0.427</td>
<td>0.423</td>
<td>0.506</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>Analysis of Step 4 Strategic Resources, Organizational Capability and Performance of Public Health Institutions</td>
<td>0.467</td>
<td>0.459</td>
<td></td>
<td></td>
<td>Significant</td>
</tr>
<tr>
<td>Strategic resources</td>
<td>-</td>
<td>-</td>
<td>0.390</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>Organizational Capability</td>
<td>-</td>
<td>-</td>
<td>0.175</td>
<td>0.002</td>
<td>Significant</td>
</tr>
</tbody>
</table>

Source: Survey Data (2017)

The decision making criteria (Table 3.1) confirms that organizational capability had partial mediating effect on the relationship between strategic resources and performance of public health institutions. The study therefore rejected the null hypothesis \( H_0 \) and concluded that organizational capability had a positive statistical and significant partial mediating effect on the relationship between strategic resources and performance of public health institutions. The study findings are consistent with Saint – Amant and Renard (2004) who found that organizational capability enhances
organizational performance through deploying and coordination of strategic resources and ability to prudently utilize the accumulated experiences and organizational routines overtime. Additionally the study concurs with Cameli and Tishler (2004) who found that organizational capability played key role on the relationship between strategic resources and organizational performance of industrial firms.

The study collaborates with King (2007) who established organizational capability had a significant mediating on the relationship between strategic resources and competitive advantage leading to improved organizational performance. Wheeler (2012) and Chen and Hung (2009) established that organizational capabilities facilitate an organization to integrate different resources in order to respond quickly to the changes in the dynamic environment and therefore gain ability to deliver goods and services of superior value to their customers.

Further, the findings are consistent with Ismail, Rose, Uli and Abelullah (2012) who found significant positive mediating effect of organizational capabilities on the relationship between, strategic resources and improved firm performance. The study findings concurs with Ouakouak (2007) who established that organizational capabilities have a positive mediating effect on the relationship between middle level managers involvement in strategy making process and their ability to take autonomous actions and company performance.

The study findings are consistent with Smith (2008) who found that organizational capabilities enhance an organization to utilize the resources at her disposal in a better
way leading to continuous and uninterrupted operations and thus consequently leading to improved performance. Additionally, the study find support in Gruber, Heinemann, Brettel and Hungeling (2010) who found that organizational capabilities had a positive significant effect on the relationship between resources and firm performance and that inimitability of resources may not necessarily lead to firm performance if they are not deployed and coordinated in the most optimal way.

4.6.6 Strategic Resources, Organizational Culture and Performance

Objective six sought to establish the moderating effect of organizational culture on the relationship between strategic resources and performance of public health institutions. A null hypothesis (H₀) was formulated with the assumption that organizational culture has no significant moderating effect on the relationship between strategic resources and performance of public health institutions. To analyse the moderating effect of organizational culture on the relationship between Strategic resources and performance of public health institutions, the study used multiple linear regression model as recommended by Aiken and West (1991). The equation model is shown below.

\[ Y = \beta_0 + \beta_1 X + \beta_2 K + \beta_3 X \times K + \epsilon \]

Where

\[ Y = \text{Performance of Public Health Institutions} \]
\[ \beta_0 = \text{Constant} \]
\[ \beta_1, \beta_2, \beta_3 = \text{Coefficients for Composite Index of Strategic Resources.} \]

Organizational Culture and interaction variable for Strategic Resources and Organizational Culture respectively.
K = Organizational Culture

$X_i=$Composite Index of Strategic Resources.

Table 4.21 below shows the effects of Organizational culture on strategic resources and performance of public health institutions.

### Table 4.21 Effects of Organizational Culture, Strategic Resources and Performance

<table>
<thead>
<tr>
<th>Model Summary</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>$R$</td>
<td>$R$ Square</td>
<td>Adjusted $R$ Square</td>
<td>Std Error of The Estimate</td>
</tr>
<tr>
<td>1</td>
<td>0.653</td>
<td>0.427</td>
<td>0.414</td>
<td>0.2427784</td>
</tr>
</tbody>
</table>

Predictors: (Constant), Strategic Resources and Moderator (Organizational Culture)
Dependent Variable – Performance of Public Health Institutions

### Anova

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of squares</th>
<th>Df</th>
<th>Mean square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>6.010</td>
<td>2</td>
<td>2.003</td>
<td>33.986</td>
<td>0.000</td>
</tr>
<tr>
<td>1. Residual</td>
<td>8.075</td>
<td>139</td>
<td>0.59</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>14.085</td>
<td>141</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dependent variable – Performance of Public Health Institutions
Predictor variables (Constant), Strategic Resources
Interaction Variable - Strategic Resources and Organizational Culture

### Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized coefficients</th>
<th>Standardized coefficients</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>1.076</td>
<td>0.177</td>
<td>-</td>
<td>6.088</td>
</tr>
<tr>
<td>Strategic Resources</td>
<td>-0.044</td>
<td>0.170</td>
<td>-0.063</td>
<td>-2.057</td>
</tr>
<tr>
<td>Organizational culture</td>
<td>0.002</td>
<td>0.185</td>
<td>0.002</td>
<td>0.010</td>
</tr>
<tr>
<td>Interaction variable</td>
<td>0.327</td>
<td>0.163</td>
<td>0.705</td>
<td>2.006</td>
</tr>
</tbody>
</table>

Dependent Variable: Performance of Public Health Institutions
Source: Survey Data (2017)
Table 4.21 indicates that Adjusted R square was 0.414. This implies that 41.4% of the variation in the dependent variable that is, performance of public health institutions was explained by predictor variable that is strategic resources and moderator, that is organizational culture. Table 4.20 above indicates that anova results reveal F (2,139) statistics was 33.986 with a P-value of 0.000 (P < 0.05). This shows that the model is statistically significant and can be used for further statistical analysis.

From Table 4.21 above, the coefficient of strategic resources was -0.044 with a P-value of 0.798, (P-value > 0.05), Organizational culture had a coefficient of 0.002 with a P-value of 0.992 (P-value > 0.05) while the coefficient of interaction variable (that is, strategic resources and organizational culture) was 0.327 with a P-value of 0.47 (P-value > 0.05).

The P-values for interaction variable was more than 0.05 implying that organizational culture had no statistical significant moderating effect on the relationship between strategic resources and performance of public health institutions. The study failed to reject the null hypothesis (H₀) and concluded that organizational culture had no statistical significant moderating effect on the relationship between strategic resources and performance of public health institutions.

The study findings are in line with Parker and Brandley (2000) who found that organizational culture had no significant effect on organizational performance. Additionally the results concur with Kiiru (2015) who found that public sector culture
had no moderating effect on the relationship between strategic human resource practices and performance of Parastatals in Kenya. The study findings are consistent with Davies Nutley and Mannion (2000) who found that organizational culture had no moderating effect on the relationship between strategic resources and Quality health care. Additionally the study findings are in agreement with Rousseau (1990) who found that there was no positive relationship between organizational culture and firm performance.

The findings collaborates with Lee, Shiue and Chen (2016) who found that there was no moderating effect of bureaucratic culture on the relationship between knowledge sharing and successful process improvement of software firms. The study is in disagreement with Rowena et al (2013) who established that organizational culture was linked to performance in public English acute hospitals and that bureaucratic culture had significant influence on hospital performance because it emphasised on controls, rules and professional protocols.

Further the study findings are inconsistent with Eynde et al (2015) who established that there was significant moderating effect of innovative culture on the relationship between human resources and performance of research and health care organizations because it improved employees creativity leading to improved customers service. The findings are inconsistent with Chuang, Morgan and Robinson (2012) who found that clan (Collaborative) culture significantly moderated the relationship between strategic orientation and new product performance.
4.6.7 Summary Results of Hypotheses Testing

The Summary results of hypotheses testing is shown in table 4.22.
<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Findings</th>
<th>Decision</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H₀₁</strong> Human Resources has no significant effect on Performance of Public</td>
<td>$\beta = 0.233$  \ $P = 0.001 \leq 0.05$</td>
<td>Reject $H₀$</td>
<td>Human Resources had a positive and statistical significant effect on Performance of Public Health Institutions, in Embu County, Kenya.</td>
</tr>
<tr>
<td>Health institutions in Embu County, Kenya.</td>
<td></td>
<td></td>
<td>------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>H₀₂</strong> Information Technology Resources has no significant effect on</td>
<td>$\beta = 0.180$  \ $P = 0.003 \leq 0.05$</td>
<td>Reject $H₀$</td>
<td>Information Technology Resources had a positive and statistical significant effect on Performance of Public Health Institutions in Embu County, Kenya.</td>
</tr>
<tr>
<td>Performance of Public Health Institutions in Embu County.</td>
<td></td>
<td></td>
<td>------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>H₀₃</strong> Financial resources has no significant effect on Performance of</td>
<td>$\beta = 0.159$  \ $P = 0.004 \leq 0.05$</td>
<td>Reject $H₀$</td>
<td>Financial Resources had a positive statistical significant effect on Performance of Public Health Institutions in Embu County, Kenya.</td>
</tr>
<tr>
<td>Public Health Institutions in Embu County.</td>
<td></td>
<td></td>
<td>------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>H₀₄</strong> Physical Resources has no significant effect on Performance of</td>
<td>$\beta = 0.213$  \ $P = 0.000 \leq 0.05$</td>
<td>Reject $H₀$</td>
<td>Physical resources had a positive and a statistical significant effect on Performance of Public Health Institutions in Embu County.</td>
</tr>
<tr>
<td>Public Health Institutions in Embu County.</td>
<td></td>
<td></td>
<td>------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>H₀₅</strong> Organizational Capability has no significant mediating effect on</td>
<td>$i)\ Y = β₀ + β₅X₁ + \epsilon..................(3.3)$  \ $β₅=0.385 \ P = 000 \leq 0.05$.</td>
<td>Reject $H₀$</td>
<td>$H₀₅$: There is evidence of partial mediation. Hence the study concludes that Organizational Capability has a statistical significant and positive partial mediating effect on relationship between Strategic Resources and Performance of PHI.</td>
</tr>
<tr>
<td>the relationship between Strategic Resources and Performance of Public</td>
<td></td>
<td></td>
<td>------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Health Institutions.</td>
<td></td>
<td></td>
<td>------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Model</td>
<td>Equation</td>
<td>Coefficients</td>
<td>P-values</td>
</tr>
<tr>
<td>-------</td>
<td>----------</td>
<td>--------------</td>
<td>----------</td>
</tr>
<tr>
<td>(ii)</td>
<td>$T = \beta_0 + \beta_6 X_i$</td>
<td>$\beta_6 = 0.540$</td>
<td>$P = 0.000 \leq 0.05$</td>
</tr>
<tr>
<td>(iii)</td>
<td>$Y = \beta_0 + \beta_7 T + \epsilon$</td>
<td>$\beta_7 = 0.506$</td>
<td>$P = 0.000 \leq 0.05$</td>
</tr>
<tr>
<td>(iv)</td>
<td>$Y = \beta_0 + \beta_8 X_i + \beta_9 T + \epsilon$</td>
<td>$\beta_8 = 0.390$</td>
<td>$P = 0.000 \leq 0.05$</td>
</tr>
<tr>
<td>$\beta_9 = 0.175$</td>
<td>$P = 0.000 \leq 0.05$</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**H$_{00}$**: Organizational Culture has no significant moderating effect on the relationship between Strategic Resources and Performance of Public Health Institutions in Embu County.

$Y = \beta_0 + \beta_1 X_i + \beta_2 K + \beta_3 X_i \bullet K$

<table>
<thead>
<tr>
<th>Coefficients</th>
<th>P-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\beta_1 = -0.044$</td>
<td>$P=0.798&gt;0.05$</td>
</tr>
<tr>
<td>$\beta_2 = 0.002$</td>
<td>$P=0.992&gt;0.05$</td>
</tr>
<tr>
<td>$\beta_3 = 0.163$</td>
<td>$P=0.47&gt;0.05$</td>
</tr>
</tbody>
</table>

Fail to reject $H_0$

Organizational Culture has no statistical significant moderating effect on the relationship between Strategic Resources and Performance of Public Health Institutions.

Source: Survey Data (2017)
4.7 Qualitative Data Analysis

The study used content analysis to analyse qualitative data. There were two sets of qualitative data which included data from an open-ended question number 15 of the questionnaire and data from outpatients collected using interview guide. The data from the open-ended question 15 was analysed using four themes which included human resources related measures, Information technology resources related measures, financial resources related measures and physical resources related measures. Data on customer satisfaction from outpatients was analysed using five themes which included responsiveness, empathy, reliability, tangibles and assurance.

4.7.1 Measures Hospital Management and Performance

The study sought the views of respondents regarding the measures the management can put in place to improve the performance of public health institutions. The responses were analysed in regard to four themes.

4.7.1.1 Theme One: Human Resource Related Measures

An analysis of the respondents’ suggestions indicated that most respondents suggested that the performance of public health institutions can be improved by organizing training for all staffs without discrimination in all departments in order to equip them with most current skills so as to be able to handle various medical conditions. Regular salary reviews for staff should be conducted so as to pay health care workers competitive pay package in order to increase their motivation. In addition, the salary should be paid promptly. As one respondent remarked: “I am very demotivated as I have worked for 20 years in this hospital and yet my salary is very low in regard to the
cost of living”. The respondents also suggested that promotion of staff should be treated with utmost fairness to avoid discrimination. One respondent commented: “The promotions in this hospital are done with a lot of discrimination because they are not based on merit but who knows who”. Many of the respondents were of the opinion that the management should organize teambuilding workshops in order to promote teamwork in the hospital.

The respondents were also concerned about the improvement of working conditions so as to create conducive working environment. The respondents felt that provision of safety equipment to healthcare workers to protect them from health risks will improve working conditions. In addition, the respondents suggested that management should be holding regular meetings with staff so as to improve communication between management and staff. In order to improve employee empowerment, the respondents felt that the management need to involve employee in making critical hospital decisions regarding delivery of healthcare.

4.7.1.2 Theme Two: Information Technology Resource Related Measures

Analysis of respondents’ responses indicated that most respondents suggested that all departments should be computerised and connected to each other to enhance efficiency of hospital operations. In addition, the respondents suggested that computers in the hospitals should be functional to make sure that the processes and systems are carried out continuously. One respondent remarked: The computer in our department has been out of order for the last two months”. The respondents felt that the management of the hospital should acquire information technology systems that employees can use with ease and with the skills they already possess.
The analysis of the respondents’ responses further indicated that the respondents suggested that management should organize information technology in-service training programs and sponsor health care workers. In all departments, some respondents suggested that to ensure that employees are information technology compliant, the management should sponsor health care workers for information technology courses. This will increase the use of ICT resources by employees leading to efficiency of hospital operations and thus improved performance. One respondent said: “I have never been trained on IT and I cannot afford to pay for an IT course and hence even if computers are there in our department I cannot be able to use them”.

4.7.1.3 Theme Three: Financial Resources Related Measures

Majority of the respondents suggested that the management should prepare comprehensive hospital budget and present it to County Government on time so as ensure hospital gets adequate funds and on time. To increase hospital financial base, the respondents suggested that the money raised by the hospital through user fees should not be taken to county government but should be banked in the hospital bank account where it can be easily accessed by the hospital management rather than being taken to health county office. The respondents felt that in order to increase financial base to address hospital needs throughout the year, the hospital management can make proposals for raising money from business community, various stake holders such as banks, companies and government bodies like CDF among others.
4.7.1.4 Theme Four: Physical Resources Related Measures

An analysis of respondents’ responses indicated that the majority of the respondents suggested that the management should ensure steady supply of medicines to avoid turning the patients down which has caused a lot of patient dissatisfaction at the moment. One respondent remarked: “I feel very frustrated when I prescribe medicines to a patient and then he or she is advised to buy and yet I can see he or she is not in a position to buy”. The respondents further suggested that the management should ensure that in all departments there are enough medical equipment and devices that are in working order.

The analysis further revealed that, there is need to employ skilled personnel in the maintenance department so that medical equipment and devices can be serviced or repaired regularly. Some respondents suggested that the equipment that are irreparable should be replaced immediately to ensure constant provision of quality health care. With regard to handling specialized medical cases, the respondents suggested that the management should acquire more modern equipment. Finally, some respondents suggested that more treatment rooms should be increased and the existing ones should be painted regularly.

4.7.2 Customer Satisfaction

The study sought views of outpatients regarding their satisfaction based on the services they received. The responses were discussed under five common themes which included responsiveness, empathy, reliability, tangibles and assurance.
4.7.2.1 Theme One: Responsiveness

An analysis of responses on responsiveness indicated that majority of the respondents complained of delays and long queues before being attended by clinicians. As remarked by one respondent: “I waited for two hours before I was attended by the clinician. Some respondents suggested that the hospital should employ more health workers to address the issue of shortage of medical workers which was evidenced by respondent’s observations on clinicians who looked tired and exhausted. One respondent expressed his dissatisfaction at the exhaustion of clinicians. “The clinician who attended me was looking sleepy and generally looked tired because he was the only one in the consultation room and patients were very many”. This shows that the public hospitals are understaffed posing serious challenge to service delivery.

4.7.2.2 Theme Two: Empathy

An analysis of responses on empathy indicated that some clinicians were unfriendly and disinterested in understanding patients’ problems. One respondent remarked: “I was quarrelled by the clinician for not having an exercise book for prescription of the medicine and even after buying the exercise book he was in hurry and did not record some of the complaints regarding my condition.” While another expressed her dissatisfaction with clinicians as she remarked: “The clinician who attended me was not attentive and did not record many of the complaints I told him regarding my disease.”

The analysis however revealed that some clinicians were commended for being very friendly, attentive, courteous and reassuring. For example, one respondent noted, “The clinician who attended me was very friendly since he gave me enough time to explain my condition and even gave me an aide to show me where the laboratory was, where I
required to go for some tests”. The findings reveal the need of training the clinicians on customer relations.

4.7.2.3 Theme Three: Reliability

Analysis of respondents’ responses revealed that most of the respondents complained that they did not receive the treatment they expected since many drugs were out of stock in the pharmacy. For example, one respondent said “I am very frustrated because I have been told that all the medicines I was prescribed for, are out of stock in the pharmacy and therefore I should go and buy them and yet I have no money.”

Very few respondents interviewed said they got all the treatment they expected. for instance, one respondent remarked “I have only been given one type of medicine out of the four types I was prescribed for and have been advised to buy the other three types from chemist in town.” Another respondent said “I expected the clinician to send me to the laboratory for further investigation but he only prescribed some medicines which were not available in the pharmacy.” Additionally, another respondent remarked, “I do not know whether I got the treatment I expected since the clinician who attended me appeared disinterested as he served me.”

4.7.2.4 Theme Four: Tangibles

An analysis of respondents’ responses indicated that many of the respondents complained of lack of medicines and medical equipment. For instance, one respondent remarked, “I do not know what I will do because I have been told to go to Karatina hospital where I can be taken an X-ray of stomach since it is not available here.” Some respondents, commended cleanliness of the hospital facilities while some suggested that the improvement of the toilets in necessary to eliminate bad smell.
4.7.2.5 Theme Five: Assurance

Analysis of respondents’ responses indicated that many respondents complained of discrimination by clinicians while attending patients (that is, not following the order in which the patients arrived to hospital such that some who came later were treated before those that came early) and use of harsh language by clinicians casting doubts on credibility of the hospital.

One respondent remarked: “I told the doctor that I had gone to a private hospital and I would like to get different medicines from those I had been given because they never cured me, but he (the doctor) responded to me rudely that I should treat myself if I am a doctor” However, there was a reasonable number of respondents who commended some clinicians for being very kind inspiring and reassuring.
CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary, conclusions, contribution of the study to knowledge, recommendations of policy and practice and recommendations for further study.

5.2 Summary

Health care is one of the most critical aspects in Kenya’s economy because it contributes to the wellbeing of the country’s citizens leading economic growth and development. Indeed, the performance of health sector is a prerequisite for the realization of Kenya’s vision 2030. However empirical evidence reveals that the health sector has witnessed pertinent issues which has seriously stifled the performance of public health institutions in the country. Prompted by this scenario, the study sought to investigate the effects of strategic resources on performance of public health institutions in Embu County, Kenya.

The study adopted positivism research philosophy as it aimed at testing the hypotheses based on data collected from the public health institutions. The study used explanatory and descriptive cross-sectional research designs where quantitative data was collected by use of questionnaire while the qualitative data was collected by use of open ended question and interview guide. The questionnaire was administered to 165 respondents all drawn from the five public hospitals. However, only 150 questionnaires were returned out of which 9 questionnaires were rejected due to incompleteness leaving 141 questionnaires for statistical analysis. The study used interview guide to collect
qualitative data from 10 out patients. The qualitative data from employees was contained in an open-ended question number 19 of the questionnaire.

The study used descriptive statistics to explain the biographic characteristics of respondents’ while multiple linear regression model was used to test the hypotheses. Before testing the hypothesis, the study conducted diagnostic tests in order to ensure the assumptions of multiple linear regression model were fulfilled. Content analysis was used to analyse qualitative data, according to themes that emerged.

The first objective was to determine the effect of human resources on performance of PHI. The study revealed that human resources played key role in improving performance of public health institutions. The second objective was to establish the effect of information technology resources on performance of public health institutions. The inferential statistics indicated that information technology resources had a positive contribution on performance of public health institutions.

The third objective of the study was to determine the effect of financial resources on the performance of public health institutions. The study revealed that there was a positive contribution of financial resources to performance of public health institutions. The fourth objective was to establish the effect of strategic physical resources on performance of public health institutions. The study established that physical resources had a positive effect on the performance of public health institutions.
The fifth objective was to determine the effect of organizational capability on the relationship between strategic resources and performance of public health institutions. The study revealed that organizational capability had a positive partial mediating effect on the relationship between strategic resources and performance of public health institutions. The sixth objective was to establish the moderating effect of organizational culture on the relationship between strategic resources. The study revealed that culture had no moderating effect on relationship between strategic resources and performance of public health institutions.

5.3 Conclusion

In order to boost performance of public health institutions investment in human resources in regard to training, team building, improvement of working conditions, competitive and prompt compensation and employee empowerment practices are of critical importance. Public health institutions which invest in information technology resources will improve communication between clinicians and patients and between employees in different departments. This will consequently lead to improved performance. In addition, the public hospital that encourage employees to be ICT compliant by organizing and sponsoring employees for ICT courses will improve service delivery.

The public health institutions which get timely and adequate funds from the County government will realize improved performance because they will be able to acquire the necessary facilities and at the same time finance various hospital operations. Public
health institutions with inadequate funds or which do not receive funds from county government on time will witness poor performance. Public health institutions which invest in adequate and quality physical resources (that is, pharmaceuticals and non-pharmaceuticals) will enhance improved hospital performance. In addition, the public hospitals which will ensure constant supply of medicines and adequate well maintained medical equipment will improve the provision of quality health care leading to improved hospital performance.

The public health institutions which prudently deploy, develop, combine and coordinate the strategic resources at their disposal will realize better performance. The institutions that effectively and efficiently utilize the accumulated experiences overtime and organizational routines will be in a position to deliver quality healthcare to their clients.

Further, public health institutions that engage in mutual partnerships with other health care organizations will be in a position to deal with the emerging medical issues in a better way. Finally, the study concludes that organizational culture has no moderating effect on the relationship between strategic resources and performance of public health institutions. This could be due to the fact that organizational culture is within the control of various public health institutions.
5.4 Contribution of the Study to Knowledge

The study investigated the effect of strategic resources on the effect of public health institutions in Embu County. The study makes a contribution to knowledge in the area of Strategic Resources and performance of public health institutions in a number of ways. First, most of the prior studies that have investigated the effect of strategic resources on performance have focused on single resources in one study. The current study contributes to knowledge by showing the effect of four independent variables, that is, human resources, information technology resources, financial resources and physical resources on performance of public health institutions in one study. The study supports the assumptions of resource based view that organizational performance is a function of bundle of resources at the disposal of the organization.

Most of the previous studies assumed a linear relationship between resources and performance. The current study contributes to knowledge by demonstrating that organizational capability had a partial mediating effect on the relationship between strategic resources and performance of public health institutions. On the theoretical perspective, the current study contributes to literature on strategic resources by supporting the assumptions of dynamic capability theory which postulates that the ability of the organization to prudently deploy, develop, combine and coordinate strategic resources in the changing environments will facilitate the organization to survive in the long run.

The study has made practical contributions by developing empirical models that indicate how strategic resources contribute towards improving performance of public health institutions. The models developed can be used by management of PHI, county
and national governments in health sector to make better decisions in regard to improving performance using strategic resources and which resources to give priority to.

5.5 Recommendations for Policy and Practice

The findings of this study forms the basis of several policy formulation as discussed below. The county government should procure adequate and visionary human resources for health who will improve performance of public health institutions. The county government should enforce policies which will facilitate retention of human resources so that they can put in their best. Such policies include relevant training in order to create human resource base that has the necessary requisite skills, improvement of working conditions, competitive compensation schemes, team building in order to create functional teams and employee empowerment practices.

Effective and efficient implementation of human resource retention strategies will prevent occurrence of brain drain in Public health institutions. This is in line with the study findings which established that there was a positive and a statistical significant effect of human resources on performance of public health institutions.

The county government should procure user friendly ICT infrastructure for public hospitals which can improve communication between clinicians and patients and between employees in different departments and also improve storage and retrieval of information, for instance patient’s records. The management of public hospitals should enforce and strengthen the policy of maintenance of ICT infrastructure. Further the
public health institutions should develop and implement the policy of ensuring that employees in public health institutions are ICT compliant in order to improve service delivery.

The county government should increase budgetary financial allocation for the public hospitals so as to be able to acquire the requisite physical resources. Further, the county government should review and enforce policy on disbursement times and ensure adequate amount is disbursed. This will ensure the public hospitals receive adequate funds and on 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 financial base of the hospital in order to ensure programmes are carried out effectively and efficiently throughout the year.

In order to provide the clients of public hospitals with quality health care, the county government should enforce and strengthen policies on acquisition of the right adequate and quality physical resources in public hospitals at all times. The hospital management should enforce and strengthen the policy on maintenance of physical resources such as medical equipment’s in order to ensure functionality at all times. This is in line with the findings of the study which established that physical resources had a positive and a statistical significant effect on performance of public health institutions.

Lastly the county government should strengthen and enforce policies that enhance prudent deployment, development, combination and coordination of strategic resources
specifically human resources, information technology resources, financial resources and physical resources at the disposal of a hospital.

The county government should develop, implement and enforce policies that encourage preservation and use of accumulated experiences and hospital routines overtime in soft and hard copies for better hospital performance. Thus keeping the hospital abreast of the changing customer needs. In order to make public hospitals be at a position to be able to handle emerging disease trends, the county government should liaise with other Public health institutions outside the County which hospitals in the county can partner with.

5.6 Recommendations for further study

The study investigated the effect of strategic resources on the performance of public health institutions in Embu County. The study therefore recommends the following areas for further study. First, replicate the study in three areas which includes: Faith based and private health care organizations; public health institutions in other counties in Kenya; and in manufacturing and other service industries.

Second, similar study with performance measures which were not used in this study such as average patient length of stay (APLS), bed occupancy rate (BOR), bed turnover and corporate image. Third, the influence of leadership on performance of public health institutions. Fourth, a longitudinal study on the effect of strategic resources on performance of public health institutions since the current study was based on cross section research design.
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Appendix IA: Informed Consent for Employees

Dear Participant

Ref: Informed Consent

My name is Njagi Elias Njeru. I am a Ph.D Student from Kenyatta University. I am conducting a study on “Strategic Resources and Performance of Public Health Institutions in Embu County, Kenya”. The information provided will be used for academic purposes and will also be useful to both county and national government to improve delivery of health care in public health institutions in Embu County as well as other counties in Kenya.

Procedures to be followed

Participation in this study will require that I give you a questionnaire to fill at your convenience. You have the right to refuse participation in this study. Participation in this study will not affect the terms of your employment contract. Your decision to participate or not to participate in this study will not affect in any way your relationship with your employer. Please remember the participation in this study is voluntarily. You may seek clarification from the researcher Mr. Elias Njagi either face to face or through mobile number 0715717182 on areas related to the study at any time. You have the right to fill or not to fill the questionnaire and that you may stop being participant of the study at any time without any consequences.

Benefits

If you participate in this study you will help us make recommendations on how to provide quality health care that can improve the health of people of Embu County. You will also benefit when delivery of health care is improved in this hospital and those in the county and country at large.

Confidentiality

Please do not write your name or any of your contacts in the questionnaire. The filled questionnaire will be kept on locker and key by the researcher and no other person will have access to it. The information from questionnaires will therefore be treated with utmost confidentiality and will exclusively be treated for academic purposes.

Contact Information

Dr. Muathe on tel 0732797927 or Dr. Muchemi on 0721323578 or the Kenyatta University Ethical Committee Secretariat on kuerc.chairman@ku.ac.ke, kuerc.secretary@ku.ac.ke.

Participant’s Statement

The above information regarding my participation in the study is clear to me. I have been given a chance to ask questions and my questions have been answered to my satisfaction. My participation in this study is entirely voluntary. I understand that my name and any of my contacts will not be captured in any of the records and that the records of the information I give will be kept private under locker and key by the researcher. I clearly understand that I will still get the same services from my employer whether I decide to leave the study or not and that my decision will not affect in any way my relationship with my employer.

Name of Participant ……………………………………………………………………………

____________________________

Signature or Thumbprint

Date

Investigators Statement

I, the undersigned, have explained the participant of the study in a language he / she understands and the procedures to be followed in the study and benefits involved.

Name of researcher - Njagi Elias Njeru
Contact :Mobile - 0715717182
Email – njagi Elias92@yahoo.com
Appendix IB: Informed Consent for Outpatients

Dear Participant

Ref: Informed Consent

My name is Njagi Elias Njeru. I am a Ph.D Student from Kenyatta University. I am conducting a study on “Strategic Resources and Performance of Public Health Institutions in Embu County, Kenya”. The information provided will be used for academic purposes and will also be useful to both county and national government to improve delivery of health care in public health institutions in Embu County as well as other counties in Kenya.

Procedures to be followed

Participation in this study will require that I ask you some questions and I will record the information from you. You have the right to refuse participation in this study. You will get the same care and medical treatment whether you agree to join in the study or not and your decision will not change the care you will receive from this hospital or from any other hospital at any other time.

Please remember the participation in this study is voluntarily. You may seek clarification from the researcher Mr. Elias Njagi either face to face or through mobile number 0715717182 on areas related to the study at any time. You may refuse to respond to any questions and you may stop the interview at any time. You may also stop being in the study at any time without any consequences.

Benefits

If you participate in this study you will help us understand the effect of strategic organizational resources on performance of public health institutions in Embu County. This will help us make recommendations on how to provide quality health care that can improve the health of people of Embu County. You will also benefit when delivery of health care is improved in this hospital and those in the county and country at large.

Confidentiality

The interview will be conducted in a private setting within the hospital. Your name or any of your contacts will not be recorded anywhere. Any information you give will be treated with utmost confidentiality by keeping it under locker and key by the researcher and will not be accessible to any other person(s) and will be exclusively be treated for academic purposes.

Contact Information

Dr. Muathe on tel 0732797927 or Dr. Muchemi on 0721323578 or the Kenyatta University Ethical Committee Secretariat on kuerc.chairman@ku.ac.ke, kuerc.secretary@ku.ac.ke.

Participant’s Statement

The above information regarding my participation in the study is clear to me. I have been given a chance to ask questions and my questions have been answered to my satisfaction. My participation in this study is entirely voluntary. I understand that my records will be kept private and that I can leave the study at any time. I understand that I will still get the same care and medical treatment whether I decide to leave the study or not and my decision will not change the care that I will receive from this hospital or any other hospital in future.

Name of Participant

………………………………………………………………………………..

Signature or Thumbprint

__________________________________________  __________________

Date

Investigators Statement

I, the undersigned, have explained to the volunteer in a language he / she understands and the procedures to be followed in the study and benefits involved.

Name of Interviewer - Njagi Elias Njeru
Contact: Mobile - 0715717182
Email – njagielias92@yahoo.com
Appendix II: Questionnaire Cover Letter

ELIAS NJAGI
P.O BOX 936-60100
EMBU

Email: njagielias92@yahoo.com

Dear Participant

Ref: Questionnaire Cover Letter

My name is Njagi Elias Njeru and I am a student of Kenyatta University currently undertaking a Ph.D research in Strategic Management entitled: Strategic resources and performance of Public Health Institutions in Embu County, Kenya.

I am kindly requesting you to find time and complete the attached questionnaire. The information provided for this research will be treated with utmost confidentiality and will purely be used for academic purposes. The data provided in the questionnaires will be kept private by the researcher and no other person will have access to it. If you require any clarification please feel free to contact the undersigned.

Thanking you in advance.

Yours faithfully,

Njagi Elias Njeru

Reg D86/25171/2011

Mobile No. 0715 717 182

njagielias92@yahoo.com
Appendix III: Questionnaire

This study is meant to investigate the effect of strategic resources on the performance of public health institutions in Embu County. You have been selected to participate in the study and the information you give will be treated with utmost confidentiality and will exclusively be used for academic purposes. Please fill the questionnaire as honestly as possible by filling the spaces provided and putting a tick (√) where appropriate.

SECTION A: BACKGROUND INFORMATION

1. Category of hospital   Level 5 Hospital ( ) Level 4 ( )
2. Your gender       Male ( ) Female ( )
3. Your age bracket. Below 25 years ( ) 25 - 35 years ( ) 36 – 45 years ( )
                      46 - 55 years ( ) Over 55 years ( )
4. Your highest level of education.
       Certificate ( ) Diploma ( ) Bachelor Degree ( ) Master Degree ( ) Ph .D ( )
5. Your Job Title.   ___________________________________________
6. On scale of 1-5 please indicate with tick (√) the appropriate range of years you have worked in your current station.

<table>
<thead>
<tr>
<th>Years worked</th>
<th>Years worked</th>
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<tr>
<td>Below 5 years ( )</td>
<td>16 – 20 years ( )</td>
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<tr>
<td>6 – 10 years ( )</td>
<td>Over 20 years ( )</td>
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<tr>
<td>11 – 15 years ( )</td>
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</table>

SECTION B Effect of Human Resources on the Performance of Public Health Institutions

7. Indicate with a tick (√) to what extent you agree to the following statements on a scale of 1-5

Where

1 = Not at all          2 = Little extent          3= Moderate extent
4= Large extent         5 = Very large extent
<table>
<thead>
<tr>
<th>S/N</th>
<th>Statements</th>
<th>Score</th>
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<tbody>
<tr>
<td>i.</td>
<td>The management of this hospital conducts employees training needs assessment.</td>
<td></td>
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<tr>
<td>ii.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii.</td>
<td>Training programs are organized as per employees needs assessment in various departments.</td>
<td></td>
</tr>
<tr>
<td>iv.</td>
<td>The training programs have greatly improved the performance of this hospital.</td>
<td></td>
</tr>
<tr>
<td>v.</td>
<td>Employees are encouraged by the hospital management to continually increase and develop their skills.</td>
<td></td>
</tr>
<tr>
<td>vi.</td>
<td>Employees are allowed to make decisions in regards to improvement of their work in their respective departments.</td>
<td></td>
</tr>
<tr>
<td>vii.</td>
<td>The management of this hospital provides employees with relevant information promptly regarding their work assignments at all times.</td>
<td></td>
</tr>
<tr>
<td>viii.</td>
<td>The hospital management values employees’ ideas and suggestions on ways of improving the quality of patient care.</td>
<td></td>
</tr>
<tr>
<td>ix.</td>
<td>Employees in this hospital are given equal opportunities for career advancement.</td>
<td></td>
</tr>
<tr>
<td>x.</td>
<td>There is high team spirit among employees in this hospital.</td>
<td></td>
</tr>
<tr>
<td>xi.</td>
<td>The team working has greatly improved employees interpersonal relations in this hospital.</td>
<td></td>
</tr>
<tr>
<td>xii.</td>
<td>There functional / working teams in this hospital.</td>
<td></td>
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<tr>
<td>xiii.</td>
<td>The management of this hospital usually organizes team building workshops / seminars for all employees at least once a year.</td>
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</tr>
<tr>
<td>xiv.</td>
<td>Team working has greatly improved customer service in this hospital.</td>
<td></td>
</tr>
<tr>
<td>xv.</td>
<td>The health and safety of employees is highly taken care of by the</td>
<td></td>
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</table>
management of this hospital.

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<tbody>
<tr>
<td>xvi.</td>
<td>Employees in this hospital are provided with working medical equipments, devices, and other tools.</td>
</tr>
<tr>
<td>xvii.</td>
<td>The workload for employees in this hospital is manageable.</td>
</tr>
<tr>
<td>xviii.</td>
<td>There is conducive working environment for employees in this hospital.</td>
</tr>
<tr>
<td>xix.</td>
<td>The management of this hospital is very supportive to employees in order to perform their tasks effectively.</td>
</tr>
<tr>
<td>xx.</td>
<td>Employees in this hospital are very satisfied with the salary they receive.</td>
</tr>
<tr>
<td>xxi.</td>
<td>Employees receive their salary promptly in this hospital.</td>
</tr>
<tr>
<td>xxii.</td>
<td>Employees in this hospital receive attractive non financial rewards other than their monthly salary.</td>
</tr>
<tr>
<td>xxiii.</td>
<td>The policy on employee remuneration is clearly understood by all employees.</td>
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<td>S/N</td>
<td>Statements</td>
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<tr>
<td>---</td>
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</tr>
<tr>
<td>i.</td>
<td>The various departments in this hospital are connected in terms of IT system.</td>
</tr>
<tr>
<td>ii.</td>
<td>IT system has greatly improved communication between various departments.</td>
</tr>
<tr>
<td>iii.</td>
<td>IT system has greatly improved operations in the hospital.</td>
</tr>
<tr>
<td>iv.</td>
<td>The IT system in this hospital has greatly improved decision making</td>
</tr>
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</table>

### SECTION C: Effect of Information Technology Resources on the Performance of Public Health Institutions

8. Indicate with a tick (√) to what extent you agree to the following statements on a scale of 1-5

**Where**

1 = Not at all  
2 = Little extent  
3= Moderate extent  
4= Large extent  
5 = Very large extent

<table>
<thead>
<tr>
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<th>Score</th>
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<tr>
<td></td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>i.</td>
<td></td>
</tr>
<tr>
<td>ii.</td>
<td></td>
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<tr>
<td>iii.</td>
<td></td>
</tr>
<tr>
<td>iv.</td>
<td></td>
</tr>
</tbody>
</table>
v. IT systems of this hospital is in line with the hospital’s strategic goal of provision of quality patient care.

vi. IT system is in line with existing work practices in the hospital

vii. IT systems has greatly enhanced the realization of hospital strategy of providing quality medical care to patients.

viii. IT system in this hospital is in line with existing employee skills and experiences.

ix. IT system has greatly reduced employee workload in this hospital.

x. The management of this hospital encourages employees to be ICT compliant by organizing ICT seminars and workshops.

xi. IT system in this hospital is user friendly.

xii. Employees of this hospital are very positive regarding the use of IT systems.

xiii. The IT system in this hospital has greatly improved the hospital performance.

xiv. Employees are happy with the quality of IT systems of this hospital.

xv. The IT systems in this hospital are in good working condition.

xvi. The IT systems in this hospital provide the expected outcome / results in regard to patient care.

### SECTION D

**Effect of Financial Resources on Performance of Public Health Institutions**

9. Indicate with a tick (√) to what extent you agree to the following statements on a scale of 1-5

**Where**

1 = Not at all  
2 = Little extent  
3= Moderate extent  
4= Large extent  
5 = Very large extent

<table>
<thead>
<tr>
<th>S/N</th>
<th>Statements</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>i.</td>
<td>The money allocated to this hospital by the county government is adequate to cater for the needs of various departments in regard to patient care.</td>
<td></td>
</tr>
<tr>
<td>ii.</td>
<td>The money allocated to this hospital by national government is adequate to cater for the needs of various departments in regard to patient care.</td>
<td></td>
</tr>
<tr>
<td>iii.</td>
<td>The money received by this hospital from user fees greatly supplements the government funding.</td>
<td></td>
</tr>
<tr>
<td>iv.</td>
<td>There are adequate funds to run hospital operations and various health programmes throughout the year.</td>
<td></td>
</tr>
<tr>
<td>v.</td>
<td>This hospital receives funds from the government promptly.</td>
<td></td>
</tr>
<tr>
<td>vi.</td>
<td>There is efficient service delivery of various health programs throughout the year.</td>
<td></td>
</tr>
<tr>
<td>vii.</td>
<td>The hospital management can easily access the hospital funds in order to run various hospital operations.</td>
<td></td>
</tr>
<tr>
<td>viii.</td>
<td>The process of approval of funds by relevant authorities does not cause any delay in accessing the funds by the hospital management in order to carry out various hospital programmes.</td>
<td></td>
</tr>
<tr>
<td>ix.</td>
<td>Quick accessibility of funds by the management has greatly improved the performance of this hospital.</td>
<td></td>
</tr>
<tr>
<td>x.</td>
<td>This hospital partners with other organizations to solicit for funds in order to increase its financial resource base.</td>
<td></td>
</tr>
<tr>
<td>xi.</td>
<td>The funds received by this hospital from other organizations has greatly improved its performance.</td>
<td></td>
</tr>
<tr>
<td>xii.</td>
<td>The funds received by this hospital from the various sources are put into the right uses by the hospital management.</td>
<td></td>
</tr>
<tr>
<td>xiii.</td>
<td>The prudent use of funds in this hospital has greatly improved its performance.</td>
<td></td>
</tr>
</tbody>
</table>
**SECTION E: Effect of Physical Resources on Performance of Public Health Institutions**

10. Indicate with a tick (√) to what extent you agree to the following statements on a scale of 1-5

Where

1 = Not at all    2 = Little extent    3 = Moderate extent
4 = Large extent  5 = Very large extent

<table>
<thead>
<tr>
<th>S/N</th>
<th>Statements</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>i.</td>
<td>Medicines for patients are available in this hospital throughout the year.</td>
<td></td>
</tr>
<tr>
<td>ii.</td>
<td>The necessary medical equipment and devices required for patient care are available in this hospital.</td>
<td></td>
</tr>
<tr>
<td>iii.</td>
<td>The various treatment rooms for patient care are available in this hospital.</td>
<td></td>
</tr>
<tr>
<td>iv.</td>
<td>Patients get all the medicines they are prescribed for by medical staff throughout the year.</td>
<td></td>
</tr>
<tr>
<td>v.</td>
<td>There are adequate medical equipment and devices required for patient care in this hospital.</td>
<td></td>
</tr>
<tr>
<td>vi.</td>
<td>The various treatment rooms required for patient care are available in this hospital.</td>
<td></td>
</tr>
<tr>
<td>vii.</td>
<td>Medical equipment and devices required for patient care in this hospital are in good working conditions.</td>
<td></td>
</tr>
<tr>
<td>viii.</td>
<td>This hospital acquires her medical supplies from credible suppliers who supplies high quality medicines, equipment and devices.</td>
<td></td>
</tr>
<tr>
<td>ix.</td>
<td>Employees are happy with the quality of medicines, equipment and devices used for patient care in this hospital.</td>
<td></td>
</tr>
<tr>
<td>x.</td>
<td>The medical equipment and devices are regularly serviced in this hospital.</td>
<td></td>
</tr>
<tr>
<td>xi.</td>
<td>Equipment and devices are taken to maintenance department for</td>
<td></td>
</tr>
</tbody>
</table>
xii. The building of this hospital is regularly maintained.

xiii. There are adequate personnel who provide technical support to maintenance department.

xiv. Technical personnel in maintenance department have the required skills in regard to maintenance / servicing of various hospital equipment and devices.

SECTION F: Effect of Organizational Capability on the Relationship between Strategic Resources and Performance of Public Health Institutions.

11. Indicate with a tick (√) to what extent you agree to the following statements on a scale of 1-5

   Where
   1 = Not at all  2 = Little extent  3 = Moderate extent
   4 = Large extent  5 = Very large extent

12.

<table>
<thead>
<tr>
<th>S/N</th>
<th>Statements</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>i.</td>
<td>The various resources in this hospital are deployed in the right areas.</td>
<td></td>
</tr>
<tr>
<td>ii.</td>
<td>The hospital resources are deployed in the right amounts in various departments.</td>
<td></td>
</tr>
<tr>
<td>iii.</td>
<td>The resources deployed in various departments usually support the hospital strategies of provision of quality patient care.</td>
<td></td>
</tr>
<tr>
<td>iv.</td>
<td>The various categories of resources in this hospital are well coordinated by the hospital management.</td>
<td></td>
</tr>
<tr>
<td>v.</td>
<td>Coordination of resources contributes to achievement of hospitals strategic objectives of provision of quality patient care.</td>
<td></td>
</tr>
<tr>
<td>vi.</td>
<td>This hospital utilizes the accumulated staff experiences to improve delivery of health care services.</td>
<td></td>
</tr>
<tr>
<td>vii.</td>
<td>This hospital uses the accumulated staff experiences to acquire quality resources required for patient care.</td>
<td></td>
</tr>
</tbody>
</table>
viii. The hospital has put in place ways of developing health programs and services in reference to previous experiences in order to address health emerging issues.

ix. This hospital invests in storage of employee experiences in order to improve patient care.

x. This hospital engages in collaborative activities with other health institutions in order to improve health care.

xi. Collaboration with other health care institutions has greatly improved the performance of this hospital.

xii. Collaboration of this hospital with other stakeholders such as financiers, non-governmental organizations have enabled this hospital to acquire better resources leading to improved performance.

xiii. There is a documented hospital manual in place which contains the hospital routines which shows when and how various hospital activities will be carried out.

xiv. Employees in this hospital clearly understand the hospital routines contained in the documented hospital manual.

xv. The employees of this hospital consistently observes the hospital routine contained in the hospital manual.

xvi. The hospital management enforces strict adherence to hospital routines.

xvii. Adherence to hospital routines have improved delivery of health care services in this hospital.

SECTION G: Effect of Organizational Culture on the Relationship between Strategic Resources and Performance of Public Health Institutions.

13. Indicate with a tick (✓) to what extent you agree to the following statements on a scale of 1-5

Where

1 = Not at all  
2 = Little extent  
3 = Moderate extent  
4= Large extent  
5 = Very large extent
<table>
<thead>
<tr>
<th>S/N</th>
<th>Statements</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>i.</td>
<td>Staff cohesion is highly emphasised by management of this hospital.</td>
<td></td>
</tr>
<tr>
<td>ii.</td>
<td>There is a high staff cohesion in this hospital</td>
<td></td>
</tr>
<tr>
<td>iii.</td>
<td>There is strong emphasis on respect among employees by the management of this hospital.</td>
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<tr>
<td>iv.</td>
<td>There is high respect that prevails in this hospital between employees of various cadres.</td>
<td></td>
</tr>
<tr>
<td>v.</td>
<td>There is strong group loyalty and sense of belonging among the employees of this hospital.</td>
<td></td>
</tr>
<tr>
<td>vi.</td>
<td>The leaders of this hospital are highly seen as mentors or parental figures by the employees.</td>
<td></td>
</tr>
<tr>
<td>vii.</td>
<td>The management of this hospital embraces new innovations in order to bring changes of improving patient care.</td>
<td></td>
</tr>
<tr>
<td>viii.</td>
<td>There is remarkable improvement in provision of quality health care brought about by innovations introduced by management.</td>
<td></td>
</tr>
<tr>
<td>ix.</td>
<td>Employees are very supportive to change innovations introduced by the hospital management.</td>
<td></td>
</tr>
<tr>
<td>x.</td>
<td>The management of this hospital rewards outstanding individual employee initiatives geared towards delivery of quality patient care.</td>
<td></td>
</tr>
<tr>
<td>xi.</td>
<td>Change innovations have greatly improved the performance of this hospital in regard to patient care.</td>
<td></td>
</tr>
<tr>
<td>xii.</td>
<td>The procedures, rules and policies in regard to discharge of employees’ duties and responsibilities are clearly defined in this hospital.</td>
<td></td>
</tr>
<tr>
<td>xiii.</td>
<td>The employees’ of this hospital consistently adhere to the defined procedures, rules and policies when carrying out their work.</td>
<td></td>
</tr>
<tr>
<td>xiv.</td>
<td>The management of this hospital continuously monitor and controls the employees’ conduct when carrying their duties.</td>
<td></td>
</tr>
</tbody>
</table>
xv. The continuous monitoring and control of employees’ conduct by the management have greatly improved the performance of this hospital.

xvi. There is clearly defined requirement that all departments produce and submit periodical progress reports to management of this hospital.

xvii. The periodical progress reports from various departments have greatly improved the performance of this hospital.

SECTION H: Performance of Public Health Institutions

14. Indicate with a tick (✓) to what extent you agree to the following statements on a scale of 1-5

Where

1 = Not at all  
2 = Little extent  
3 = Moderate extent  
4 = Large extent  
5 = Very large extent

<table>
<thead>
<tr>
<th>S/N</th>
<th>Statements</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>i.</td>
<td>I feel very comfortable working in this hospital</td>
<td></td>
</tr>
<tr>
<td>ii.</td>
<td>This hospital has greatly contributed to my professional growth</td>
<td></td>
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<tr>
<td>iii.</td>
<td>I would be very happy to continue working in this hospital up to my retirement.</td>
<td></td>
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<tr>
<td>iv.</td>
<td>I feel I have a personal obligation to improve delivery of health care in this hospital.</td>
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<tr>
<td>v.</td>
<td>I admire the way the management of this hospital handles employees on matters regarding promotion, work assignments and motivation.</td>
<td></td>
</tr>
<tr>
<td>vi.</td>
<td>The patients are attended promptly when they arrive in this hospital.</td>
<td></td>
</tr>
<tr>
<td>vii.</td>
<td>Patients are provided with all the treatment they are prescribed for.</td>
<td></td>
</tr>
<tr>
<td>viii.</td>
<td>The hospital responds to patient complain promptly.</td>
<td></td>
</tr>
<tr>
<td>ix.</td>
<td>The hospital conducts regular reviews on patient service in order to improve quality of patient care.</td>
<td></td>
</tr>
<tr>
<td>x.</td>
<td>The hospital makes maximum use of the available resources to provide quality patient care.</td>
<td></td>
</tr>
<tr>
<td>xi.</td>
<td>Acquisition of modern health care equipment have greatly improved</td>
<td></td>
</tr>
</tbody>
</table>
Please suggest two measures you think the management of this hospital can put in place to improve the performance of this hospital.

______________________________________________________________________
______________________________________________________________________

Thank you very much
Appendix IV: Interview Guide

1. Please comment on the time taken between when you arrived in this hospital and when you were served by the clinician.
2. Explain briefly how the clinician related with you as he or she served you.
3. Kindly explain whether you received the treatment you expected in this hospital.
4. Kindly comment on the resources and cleanliness in this hospital.
5. Based on your interaction with clinicians in this hospital please comment on whether they are kind, inspiring and reassuring.
Appendix V : List of Public Hospitals in Embu County

1. Embu Level 5 Teaching and Referral Hospital
2. Kianjokoma Sub-County Hospital
3. Runyenjes Sub- county Hospital
4. Mbeere Sub-County Hospital
5. Ishiara Sub-County Hospital
Appendix VI: Research Authorization

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,
2241349, 33310571, 2219420
Fax: +254-20-318245, 318249
Email: dg@nacostii.go.ke
Website: www.nacostii.go.ke
when replying please quote

Ref: No. NACOSTII/P/17/44793/16802

Date 28th April, 2017

Elias Njeru Njagi
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on “Strategic organizational resources and performance of public health institutions in Embu County, Kenya,” I am pleased to inform you that you have been authorized to undertake research in Embu County for the period ending 28th April, 2018.

You are advised to report to the County Commissioner and the County Director of Education, Embu County before embarking on the research project.

On completion of the research, you are expected to submit two hard copies and one soft copy in pdf of the research report/thesis to our office.

GODFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO

Copy to:
The County Commissioner
Embu County.

The County Director of Education
Embu County.
Appendix VII: Research Permit
Appendix VIII: KUERC Research Approval

KENYATTA UNIVERSITY
ETHICS REVIEW COMMITTEE

Fax: 8711242/11575
Email: kuerc.chairman@ku.ace
Kuerc.secretary@ku.ace
Secretariat.kuerc@ku.ac.ke
Website: www.ku.ac.ke

P.O Box 43844,
Nairobi, 00100
Tel: 8710901/12

Our Ref: KU/ERC/APPROVAL/VOL.1 (89)
Date: 28th September, 2017

Njagi Elias Njeru
Kenya University
P.O. Box 43844-00100
NAIROBI

Dear Njagi,

APPLICATION NUMBER’ PKU/683/1759 “STRATEGIC ORGANIZATIONAL RESOURCES AND PERFORMANCE OF PUBLIC HEALTH INSTITUTIONS IN EMBU COUNTY, KENYA

1. IDENTIFICATION OF PROTOCOL
The application before the committee is with a research topic Application Number: PKU/683/1759 “strategic organizational resources and performance of public health institution’s in Embu County, Kenya” 27th June 2017 and approved on 28th September 2017.

2. APPLICANT
Njagi Elias Njeru

3. SITE
Embu County Kenya

4. DECISION
The committee has considered the research protocol in accordance with the Kenyatta University Research Policy (Section 7.2.1.3) and the Kenyatta University Review Committee Guidelines AND APPROVED that the research may proceed for a period of ONE year from 28th September, 2017.

Advice / conditions
i. Progress reports are submitted to the KU-ERC every six months and a full report is submitted at the end of the study.
ii. Serious and unexpected adverse events related to the conduct of the study are reported to this committee immediately they occur.
iii. Notify the Kenyatta University Ethics Committee of any amendments to the protocol
iv. Submit an electronic copy of the protocol to KUERC
When replying, kindly quote the application number above
If you accept the decision reached and advice and conditions given please sign in the space provided below and return to KU-ERC a copy of the letter.

[Signature]
Dated this day of 31/10/2017

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