International Journal of Commerce and Finance, Vol.6, Issue 1, 2020, 50-60

HUMAN CAPITAL DEVELOPMENT AND SERVICE DELIVERY OF PUBLIC HEALTH FACILITIES

Agnes Kabithe CHEGE,

California Miramar University, California, USA

Dominic MWENJA,

California Miramar University, California, USA

Kellen KIAMBATI,

Karatina University, Nairobi Kenya

Levi MBUGUA,

3The Technical University of Kenya, Nairobi, Kenya

Abstract

Healthcare provision stipulated by Sustainable Development Goals (SDGs) is a relatively new concept in many developing countries Sub-Saharan Africa part of Asia. Therefore, this study examined the influence of human capital development on the service delivery of devolved County Health Facilities. The path coefficients were positive and significant at 0.05 level of significance. The path coefficient beta value was $\beta = 0.50$. These findings indicate that for every 1-unit increase in human capital development, service delivery is predicted to increase by 0.5 in public county health facilities in Kenya. The study concluded that measures contributed to the positive relationship between human capital development and service delivery in these facilities. As the hospitals lacked funding of further training for their staff and also failed to pay competitive salaries and allowances, the study recommends that for improved service delivery within these facilities, promotions should be on performance, as well remuneration. Most employees will work hard when they know that they get rewards for it. The hospitals should also promote staff and offer scholarships for training to the high performing staff.

Keywords: *Healthcare, Human Capital Development, Service Delivery, Public County Health Facilities*

1. Introduction

The rationale for devolved healthcare is to allow county governments to design innovative models and interventions that suit the unique health needs in their contexts, encourage citizen participation and make autonomous and quick decisions on resource mobilization and the management of possible issues (Kimathi, 2017). Devolution is the substantial transfer of powers and authority and functions from higher or central government to local units, upon which the local governments subsequently acquire significant and autonomous financial and powers to function without reference to central government (Hazell and Rawlings, 2015). Devolved healthcare is the transfer of the management of healthcare services to counties and other local governments. According to Mohammed, North, and Ashton (2016), devolved healthcare is a way to improve the efficiency in the delivery of health services and their responsiveness to community needs. In developing countries, for example, decentralization is seen as a means to improve access to healthcare. However, to realize these benefits, a localized decision space needs to be created in terms of finance, service organization, human resources, access rules, and governance rules.

Although devolved healthcare has been accepted globally as a means to improve the efficiency and responsiveness of the health system, each country adopts and implements this policy differently (Stubbs, 2015). Devolved healthcare in Thailand is done through Local Administrative Organizations (Laos). The devolution of health services are focused on primary health centers and the transition of ownership from the Ministry of Health to Laos. The Ministry of Health of Thailand continues to be responsible for the technical, policy, supervision and training aspect, and

regulation of health professionals (Hawkins, 2009). According to Jongudomsuk and Srisasalux (2012), in Thailand, health-care decentralization could not be implemented effectively without the support of the central government. Also, local government staff needed to have their capacity strengthened to handle the new responsibilities. This is best done by the central ministry staff that was previously responsible for these.

In Ethiopia, the concept of healthcare devolution was introduced in 1996 and was the primary strategy to improve health service delivery. It formed part of a broader devolution strategy across different sectors. Devolution first took place at the regional level and was further extended to the district in 2002 (El-Saharty et al., 2009). Through devolution, a four-tiered system of care facilities was created. National referral hospitals, regional referral hospitals, district hospitals, and primary healthcare facilities were created. The devolution mechanism entailed districts receiving block grants from the Regional government. They, in turn, are entitled to set their priorities and determine further budget allocations to healthcare facilities based on local needs. As such, the district levels were responsible for human resources management, health facility construction, and supply chain processes (Assfaw, 2010). El-Saharty et al. (2009) report that impressive improvements in service delivery existed despite some challenges in the initial stages.

In Kenya, devolution provides an opportunity to rationalize the service delivery framework for increased efficiency and accountability. This is achieved by making counties the hub for organizing services at the local level (Khaunya et al., 2015). A report by KPMG (2014) states that the success of the devolution of health care services in Kenya depends to a great extent on the presence of an enabling environment, an environment that is marked by the will and commitment of all health stakeholders. Previous studies on the subject of the devolution of healthcare have focused on the implementation of the devolution in healthcare and the factors that influence this implementation (Kubai, 2015; Omondi, 2016; Miriti and Keiyoro, 2017). As observed by Gimoi (2017), the devolution significantly influences healthcare systems in Kenya while Muchomba (2015) posited a positive influence of the devolution on the performance of healthcare. Therefore, the study examined the contribution of human capital development on the Service delivery of Public County Health Facilities in Kenya.

2. Method

The study was based on the research philosophy of positivism. Through this positivism research approach, the study came up with hypotheses based on existing empirical studies and theories. In hypotheses testing, the study translated human capital development into a measurable form.

The study adopted the explanatory survey research design. Saunders and Lewis (2012) noted that a research design helps to foster a smooth research operation which is aimed at making the research efficient, cost-effective and time-effective. This study used the research design to help conduct the research on the relationship between human capital development, and the dependent variable – service delivery of public county health facilities.

The ideal target population in our study was comprised of doctors and clinical officers (COs) and nurses from the 1423 level 3, 4, and 5 hospitals in Kenya (MOH, 2014). Therefore, the total target population was 15,160 among the medical staff.

Table 1 Medical Staff

• **Level of Hospital**	• **Doctors**	• **COs**	• **Nurses**	• **Total**
• Three (3)	• 47	• 112	• 456	• 767
• Four (4)	• 297	• 417	• 8,917	• 9,733
• Five (5)	• 234	• 389	• 4,291	• 4,926
• **Total**	• **578**	• **918**	• **13,664**	• **15,160**

In the study, the sampling frame constituted of 15,160 medical staff comprising of doctors, COs, and nurses (GOK, 2018). The study employed a stratified sampling technique to select the respondents from the three levels of public hospitals in Kenya. Kothari (2004) argued that by use of strata, it is easier to choose participants if they can be classified into different groups. That is especially important in this study that focused on different cadres comprising doctors, clinical officers, and nurses. Stratified sampling was, therefore, suitable since the research had different strata of respondents. The study adopted Yamane's (1967) formula for simple random sampling of the medical officers following the nature and the characteristic of the target population to achieve the required sample.

Yamane (1967) Formula

$$n = \frac{N}{1 + N(d)(d)}$$

Where:
N = target (total) population of medical officers (15,426)
n = desired sample size
d= confidence interval (0.05 testing at 5% significant level)

$$n = \frac{15,160}{1 + 15,426\ (0.05)(0.05)}$$

n= 390

Table 2 Sample Population

Level of Hospital	Doctors	Sample	COs	Sample	Nurses	Sample
Three (3)	47	1	112	3	456	12
Four (4)	297	7	417	11	8,917	230
Five (5)	234	6	389	10	4,291	110
Total	**578**	**14**	**918**	**24**	**13,664**	**352**

The sample size for the study was 390 respondents from level 3, 4, and 5 public hospitals in Kenya. That included 14 doctors, 24 COs, and 352 nurses.
This study used primary data collected by administering questionnaires as an instrument to the respondents in all three levels of public hospitals. The instrument collected quantitative data using Likert style questions. The researcher picked up the instruments after filling it by the participants. The researcher took 10% (n=39) of the population to participate in the pilot study test in the testing of the data collection instrument for internal consistency (reliability) and validity. The respondents for the pilot test were chosen from Nairobi County which is suitable because it has a big number of the targeted levels 3, 4 and 5 hospitals and the county has diversified characteristics that could reflect the situation in the whole country. The questionnaire contained 47 items measuring the variables of the study. The study found an overall Cronbach's Alpha of 0.797 for the 11 querries, which show the overall reliability of the instrument as shown in Table 3.

Table 3 Overall Cronbach's Alpha

Cronbach's Alpha	N of Items
.797	11

The ability of a research instrument to be a measure of what it claims to measure is known as validity (Bryman & Cramer, 2012). In the content validity examination by the experts, they checked and identified the shortfall of the research instrument in anticipation of what it ought to be measured as per the research questions. The expert opinion was used to ensure the face validity by checking on its structure, grammar, alignment as per margin, and any other issue which may minimize the chances of the questionnaires being responded to or fall short of collecting the desired data.

Data analysis was executed using descriptive and inferential statistics. Descriptive statistics adopted the mean, standard deviation, percentages, and frequency of response while inferential statistics used Structural Equation Modeling (SEM) using Analysis of Moment Structures (AMOS) version 26 as the tool of analysis.

3. Results

The study assessed the influence of human capital development on the service delivery of public county health facilities in Kenya. The study found that the hospital trained staff when they were in service (M = 3.46, SD = 0.930); hospital staff were given study leave (M = 3.21, SD = 1.248); the hospital endeavored to provide a conducive working environment for its workers (M = 3.73, SD = 1.033); the hospital offered permanent contracts to its workers (M = 3.35, SD = 1.163); and the hospital had a set out mechanism for dealing with the grievances of staff (M = 3.47, SD = 0.903). The participants, however, disagreed with the rest of the statements.

Table 4 Descriptive Statistics on Human Capital Development

	Mean	SD
My hospital trains staff when they are in service	3.46	.930
Study leave	3.21	1.248
The hospital funds further training for its staff	2.74	1.276
The hospital pays competitive salaries and allowances	2.82	1.341
The hospital promotes staff who perform well	2.89	1.400
The hospital endeavors to provide a conducive working environment for its employees	3.73	1.033
The hospital that it is equipped so as to attract highly qualified employees	2.91	1.195
The hospital has a high turnover of staff	2.91	1.159

The hospital offers permanent contracts to its employees	3.35	1.163
The hospital has a set-out mechanism for dealing with the grievances of staff	3.47	.903
The hospital has a human resources officer who deals with staff welfare	2.87	1.219

Factor analysis was conducted to reduce items of human capital development. The construct was measured using eleven questions thereby the construct was factor analyzed to come up with an appropriate measure. The study found a KMO value of 0.705 and Bartlett's test, x2(55, N = 316) = 1927.262, p = .000 (Table 5), showing that sampling was adequate for the human capital development.

Table 5 KMO and Bartlett's Test for Human Capital Development

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.705
Bartlett's Test of Sphericity	Approx. Chi-Square	1927.262
	df	55
	Sig.	.000

The results for the scree plot indicated that two components had Eigen Value that was greater than one. This finding corroborates the total variance explained results for equipped health facilities (Figure 1).

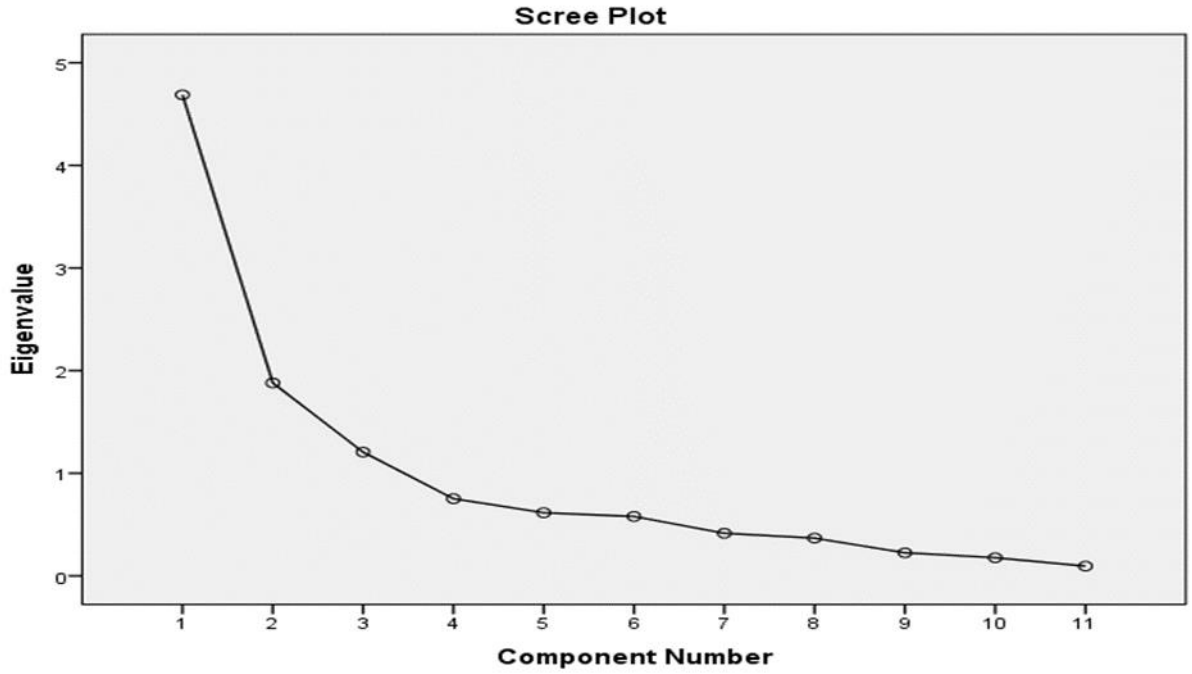

Figure 1 Scree Plot for Human Capital Development Construct

The factor loadings for human capital development were obtained in the study as shown in Table 6. The acceptable threshold was 0.6. All the queries exceeded 0.6, except for the last three components, therefore, the three questions were dropped for human capital development.

Table 6 Component Matrix for Human Capital Development

	Component	
	1	2
My hospital trains staff when they are in service	.606	.173
Study leave	.786	-.162
The hospital funds further training for its staff	.796	-.361
The hospital pays competitive salaries and allowances	.783	-.306
The hospital promotes staff who perform well	.863	-.195
The hospital endeavors to provide a conducive working environment for its employees	.708	-.144
The hospital ensures highly qualified employees	.710	-.041
The hospital has a high turnover of staff	.607	.346
The hospital offers permanent contracts to its employees	.432	.688
The hospital has a set-out mechanism for dealing with the grievances of staff	.175	.760
The hospital has a human resources officer who deals with staff welfare	.344	.607

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Hypothesis Testing

RH: Human capital development has a positive influence on the service delivery of public county health facilities in Kenya. Before path coefficients, confirmatory factor analysis was conducted and subjected to maximum likelihood CFA. The study found that the relative normed Chi-square value of 418.448 (P-value = 0.000) indicating an acceptable fit between the hypothesized model and the sample data. In addition, the NFI = .725, TLI = .626, CFI = .733 indicated an acceptable fit as they were approximately 0.7. The analysis yielded the path diagram presented in Figure 2 and Table 7.

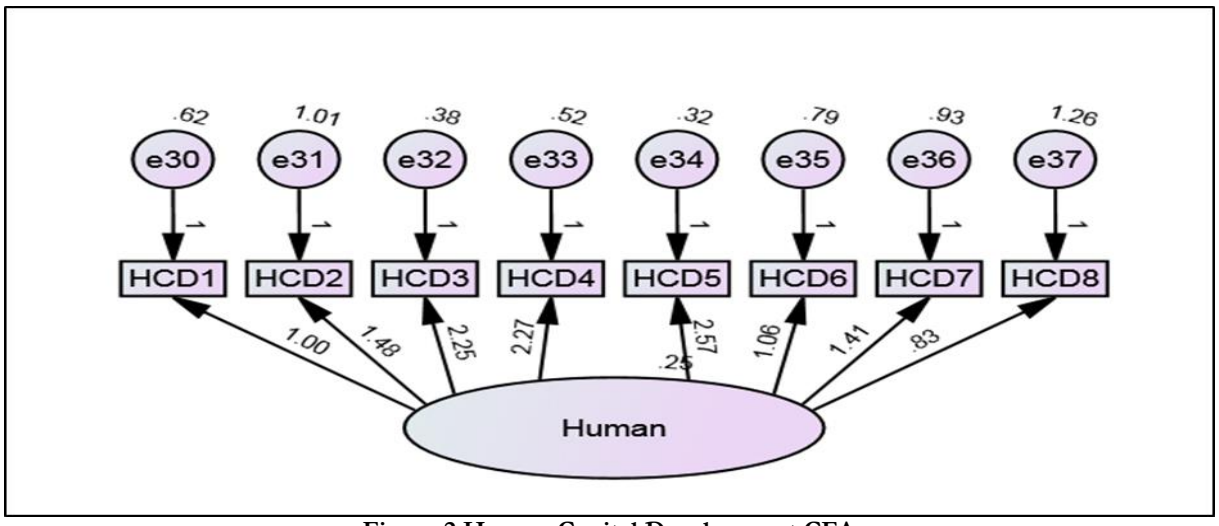

Figure 2 Human Capital Development CFA

Table 7 Baseline Comparisons for Human Capital Development

Model	NFI Delta1	RFI rho1	Comparative Fit Index Delta2	TLI rho2	CFI
Default model	.725	.614	.734	.626	.733
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

The path coefficients obtained show that the path coefficient was positive and significant at 0.05 level of significance. The path coefficient beta value, $\beta = 0.50$. These findings indicate that for every 1-unit increase in human capital development, service delivery is predicted to increase by 0.5 in public county health facilities in Kenya. Additionally, all the factor loadings were well above 0.5 and, therefore, they were within the acceptable threshold (Figure 3).

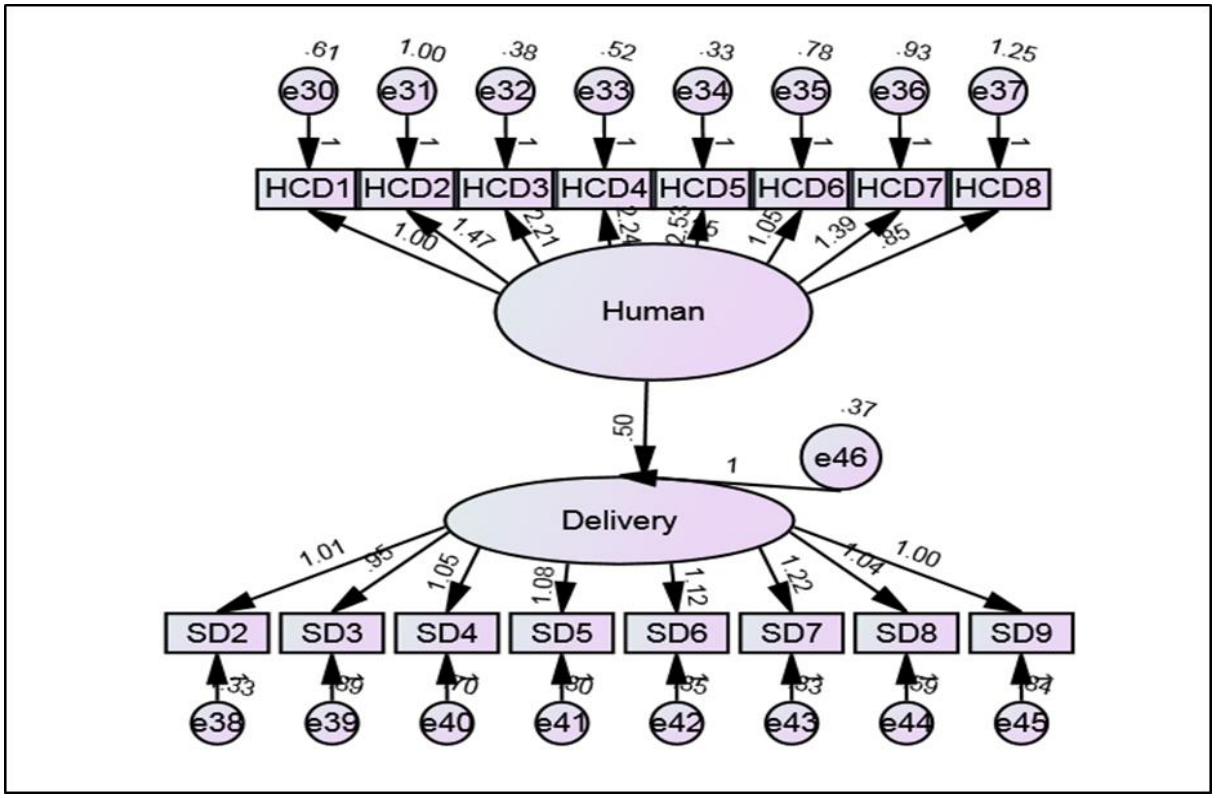

Figure 3 Path Coefficients for Human Capital Development

The overall table with path coefficients, standard errors, and P-value s was therefore summarized (Table 8). As presented, all the P-value s for the paths in the model were less than 0.05 and thus significant at 0.05 level of significance. In particular, the CR value for human capital development and service delivery was 5.160, and its P-value is 0.000, which is less than 0.05. This P-value tested the third hypothesis in the study at a 5% significance level. Therefore, the null hypothesis that human capital development has no positive influence on the service delivery of public county health facilities in Kenya stood.

Table 8 Regression Coefficients for Human Capital Development and Service Delivery

Path			Standardized Estimate	Unstandardized Estimate	S.E.	C.R.	P Label
SD	<---	HCD	.384	.502	.097	5.160	***
HCD1	<---	HCD	.542	1.000			
HCD2	<---	HCD	.594	1.472	.178	8.276	***
HCD3	<---	HCD	.874	2.214	.215	10.306	***
HCD4	<---	HCD	.842	2.240	.221	10.125	***
HCD5	<---	HCD	.912	2.535	.242	10.491	***

Path			Standardized Estimate	Unstandardized Estimate	S.E.	C.R.	P Label
HCD6	<---	HCD	.513	1.052	.141	7.473	***
HCD7	<---	HCD	.586	1.388	.169	8.197	***
HCD8	<---	HCD	.357	.848	.151	5.609	***
SD9	<---	SD	.584	1.000			
SD8	<---	SD	.666	1.038	.112	9.287	***
SD7	<---	SD	.811	1.218	.116	10.525	***
SD6	<---	SD	.781	1.124	.109	10.296	***
SD5	<---	SD	.794	1.082	.104	10.403	***
SD4	<---	SD	.639	1.052	.117	9.022	***
SD3	<---	SD	.551	.950	.117	8.092	***
SD2	<---	SD	.500	1.013	.135	7.498	***

5. Discussions

The findings obtained in the study agree with those of Zinnen et al. (2012) that offering training opportunities to health workers would most likely improve the competence and performance of the health care workers. The interesting case scenario is from a study in Tanzania, which revealed that upgrading opportunities and training were postulated to enrich the work performance of the health workers after decentralization even better than financial incentives. However, a hindrance cannot be ruled out in such a set-up due to the challenge of money to train staff and identifying those who qualify for the opportunities, as observed by Kyaddondo and Whyte (2013) as evident in the study.

Willis-Shattuck et al. (2008) disagree with the findings of the study that healthcare workers were well motivated. The main themes regarding the motivation of health workers include finance in terms of salaries; career development, education, infrastructure; work environment; resource availability; and personal recognition or appreciation. Mbindyo et al. (2009) and Kruse et al. (2009), however, established that healthcare workers were not given motivation, as determined in the study.

The study also found that human capital development has no positive influence on the service delivery of public county health facilities in Kenya stood. Similar findings are given by Son (2010) and Mathauer and Imhoff (2012).

6. Conclusion

The study concluded that human capital development measures had been put in place in the hospitals such as training of the staff when they are in service, giving them study leave, and, offering permanent contracts to the employees. The study also concluded that measures contributed to the positive relationship between human capital development and service delivery in these facilities.

As the hospitals lacked funding of further training for their staff and also failed to pay competitive salaries and allowances, the study recommends that for improved service delivery within these facilities, promotions should be on performance as well remuneration. Most employees will work hard when they know that they get rewards for it. The hospitals should also promote staff who perform well and offer them scholarships for further training.

The study examined the contribution of human capital development on the service delivery of public county health facilities in Kenya. The study proposes studies the same subject area, especially in private and mission-based

hospitals, for comparative results. Also, other studies can focus on the other concerned parties in healthcare, such as the county government, national government, and even the hospitals' management.

References

Assfaw, Y. T. (2010) "Determinants of antenatal care, Institutional delivery and skilled birth attendant utilization in Samre Saharti District, Tigray, Ethiopia." Doctoral dissertation, Umeå International School of Public Health.

El-Saharty, S., Kebede, S., Olango Dubusho, P., & Siadat, B. (2009), "Ethiopia: improving health service delivery." Addis Ababa, Ethiopia.

Government of Kenya (2018), "Kenya Health Policy 2012-2030 Revised." Nairobi: Ministry of Medical Services and Ministry of Public Health and Sanitation.

Hawkins, L. (2009), "Devolution of Health Centers and Hospital Autonomy in Thailand: a rapid assessment." Washington DC: World Bank.

Hazell, R., & Rawlings, R. (2015), "Devolution, law making and the constitution." Andrews UK Limited.

Jongudomsuk, P., & Srisasalux, J. (2012), "A decade of health-care decentralization in Thailand: what lessons can be drawn." WHO South-East Asia Journal of Public Health 1 (3): 347–56.

Khaunya, M. F., Wawire, B. P., & Chepng'eno, V. (2015), "Devolved Governance in Kenya; Is it a False Start in Democratic Decentralization for Development." International Journal of Economics, Finance and Management, 4(1), 12-21.

Kimathi, L. (2017), "Challenges of the Devolved Health Sector in Kenya: Teething Problems or Systemic Contradictions?" Africa Development, 42(1), 55-77.

Kothari, C. R. (2004), "Research methodology: Methods and techniques." New Age International.

KPMG (2014), "Devolution of healthcare services in Kenya." Retrieved from kpmgafrica.com 27/11/2016.

Kruse, G. R., Chapula, B. T., Ikeda, S., Nkhoma, M., Quiterio, N., Pankratz, D., ...& Reid, S. E. (2009), "Burnout and use of HIV services among health care workers in Lusaka District, Zambia: a cross-sectional study." Human Resources for Health, 7(1), 55-67.

Kubai, M. M. (2015), "Factors influencing effective implementation of devolution: a case of Meru County, Kenya." Nairobi, Kenya.

Mathauer, I., & Imhoff, I. (2012), "Health worker motivation in Africa: the role of non-financial incentives and human resource management tools." Human resources for health, 4(1), 24.

Mbindyo, P., Gilson, L., Blaauw, D., & English, M. (2009), "Contextual influences on health worker motivation in district hospitals in Kenya." Implementation Science, 4(1), 43-53.

Ministry of Health. (2014), "Kenya Health Policy 2012–2030." Nairobi: Ministry of Health.

Miriti, A. K., & Keiyoro, P. (2017), "Influence of devolution of government service delivery on provision of healthcare: A case of level five hospital in Meru County, Kenya." International Academic Journal of Information Sciences and Project Management, 2(1), 316-334.

Mohammed, J., North, N., & Ashton, T. (2016), "Decentralization of health services in Fiji: a decision space analysis." International journal of health policy and management, 5(3), 173-179.

Muchomba, F. G. (2015), "Influence of devolved governance and performance of the health sector in Kenya." Strategic Journal of Business & Change Management, 2(2), 23-31.

Olang'o, C. O., Nyamongo, I. K., & Aagaard-Hansen, J. (2010), "Staff attrition among community health workers in home-based care programmes for people living with HIV and AIDS in western Kenya." Health Policy, 97(2), 232-237.

Omondi, K. B. (2016), "Factors influencing service delivery in public hospitals: a case of Nairobi county, Kenya." MBA Thesis. University of Nairobi.

Saunders, M. N., & Lewis, P. (2012), "Doing research in business & management: An essential guide to planning your project." Pearson.

Son, H. (2010), "Human Capital Development." Asian Development Review, 27(2), 29-56.

Stubbs, E. (2015), "Road to healthcare devolution." Civitas.

Willis-Shattuck, M., Bidwell, P., Thomas, S., Wyness, L., Blaauw, D., & Ditlopo, P. (2008), "Motivation and retention of health workers in developing countries: a systematic review." BMC health services research, 8(1), 247.

Yamane, T. (1967), "Elementary sampling theory." Sage Publications. New York: USA.

Zinnen, V., Paul, E., Mwisongo, A., Nyato, D., & Robert, A. (2012), "Motivation of human resources for health: a case study at rural district level in Tanzania." The International journal of health planning and management, 27(4), 327-347.