

Budget Execution and Service Delivery of Public County Health Facilities

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Received: Nov 11, 2019

Accepted: Dec 02, 2019

Published: Dec 30, 2019

Abstract: The health sector has the overall goal of providing equitable and affordable health care to Kenyans at the highest affordable standards. Therefore, this study examined the influence of budget execution on the service delivery of devolved County Health Facilities. The study was anchored on the tenets of the Resource-Based Theory. An explanatory survey research design was adopted for this study. The ideal target population in the study comprised of 15,160 doctors and clinical officers (COs) and nurses from 1423 hospitals in Kenya. The study employed stratified sampling technique to select the 390 respondents from three levels of public hospitals in Kenya. This included 14 doctors, 24 COs, and 352 nurses. The study used a questionnaire as a research instrument. Data analysis was conducted using Mean, Standard Deviation, Frequencies and Percentages. Factor Analysis and Structural Equation Modelling were used to identify the significant indicators of budget execution and service delivery. The path coefficients obtained show that the path coefficient was positive and significant at 0.05 level of significance. The study recommends that enough budgetary allocations ought to be given to the hospitals. When budgetary allocations do not meet the remuneration demands of the healthcare workers, service delivery is paralyzed through strikes, reduced motivation of work and other skilled staff are forced to pull out of the hospitals. Service delivery will only be achieved with enough allocations done on time.

Keywords: Healthcare, Budget Execution, Service Delivery, Public County Health Facilities

1. Introduction

The health sector is made up of the people, institutions and resources, arranged together in accordance with established policies, whose primary purpose is to promote, restore and maintain health. It includes government ministries and departments, hospitals and other health services, health insurance schemes, voluntary and private organizations in health, as well as the pharmaceutical industry and drug

wholesale companies (Nzinga et al., 2013). In many developing countries, private not-for-profit health care providers constitute an important part of the health sector, sometimes owning up to half of a country's hospitals. The health sector has been undergoing tremendous transformation globally. Health sector reform is a process that seeks major changes in national health policies, programs and practices through changes in health sector priorities, laws, regulations, organizational structure and financing arrangements, such as user fees. The central goals are most often to improve access, equity, quality, efficiency and/or sustainability (World Bank, 2014).

Devolution of government service delivery has opened up more opportunities to improve health care at the local levels in other countries (Kimathi, 2017). For instance, in the Philippines, devolution has made local government units to become more empowered to make extensive and quicker decisions about health concerns. In addition, resources have relatively increased due to more national transfers through the Insurance Regulatory Authority (IRA) while other sectors such as civil society have more institutionalized venues to participate in health service delivery (Atienza, 2014).

In Kenya, it has been found that devolution provides an opportunity to rationalize the service delivery framework for increased efficiency and accountability. This will be 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 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 devolution in healthcare and the factors that influence this implementation (Kubai, 2015; Omondi, 2016; Miriti and Keiyoro, 2017). A study by Gimoi (2017) examined the influence that devolution has had on the Kenyan healthcare system while a study by Muchomba (2015) examined the influence of devolution on the performance of the overall health sector in Nairobi County. Therefore, the study examined the contribution of budget execution on the Service delivery of Public County Health Facilities in Kenya.

2. Method

The study was guided by positivism research philosophy. Through this positivism research approach, the study came up with hypotheses on the basis of existing empirical studies and theories. To test the hypotheses, the study translated human capital development into measurable form. The study adopted an 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 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

Hospital Level	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 stratified sampling technique to select the respondents from the three levels of public hospitals in Kenya. Kothari (2004) argued that through stratified sampling it is easier to select respondents especially if they can be classified into different groups. This is especially important in this study which focused on different cadres comprising of doctors, clinical officers, administrators and nurses. Stratified sampling was therefore suitable since the study had different strata of respondents. The study adopted Yamane (1967) formula for simple random sampling of the medical officers following the nature and the characteristic of the target population in order to achieve the required sample for the population.

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

Hospital Level	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. This included 14 doctors, 24 COs, and 352 nurses. This study used primary data which was collected by administering questionnaires as an instrument to the respondents in all the three levels of public hospitals. The questionnaires collected quantitative data using Likert style questions. The questionnaires were dropped and the researcher picked up the questionnaires after they were filled. The researcher took 10% (n=39) of the population to participate in the pilot study test in testing of data collection instrument for internal consistency (reliability) and validity. The respondents for pilot test were selected from Nairobi County which is suitable because it has a huge number of the targeted levels 3, 4 and 5 hospitals and the county has diversified characteristics which could reflect the situation in the whole country. The questionnaire contained 47 items measuring the variables of the study. The overall Cronbach alpha value for the 8 items was 0.838, which is more than 0.7, showing the overall reliability of the indicators under budget execution as indicated in Table 3.

Table 3. Overall Cronbach's Alpha

Cronbach's Alpha	N of Items
.838	8

The ability of a research instrument to be a true measure of what it claims to measure is known as validity (Bryman & Cramer, 2012). In ensuring validity, the final copy of the questionnaire was discussed with an expert so as to establish both content and face validity. 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 measuring as per the research questions. The expert opinion was used to identify 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. In this section, a variety of statistical procedures were used in the analysis of the data starting with descriptive statistics followed by inferential statistics such as exploratory factor analysis and tests for normality, linearity, multicollinearity and homoscedasticity. 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 examined the influence of budget execution on the service delivery of public county health facilities in Kenya. The study found that the respondents agreed with the following statements on budget execution: There are budgetary allocations for the purchase of hospital equipment (M = 3.13, SD = 0.912); there are budgetary allocations for the purchase of drugs (M = 3.06, SD = 0.936); there are budgetary allocations for the maintenance and renovation of health facilities (M = 3.12, SD = 0.962) and there are health financing schemes in my county (M = 3.13, SD = 1.316). The respondents however disagreed to the following statements: my hospital receives enough budgetary allocation (M = 2.53, SD = 1.153); the county plans and prioritizes the budgetary allocations to various hospitals in the county (M = 2.86, SD = 1.160); and there are budgetary allocations for the remuneration of hospital staff (M = 2.92, SD = 1.359). The findings are shown in Table 4.

Table 4. Descriptive Statistics on Budget Execution

	Mean	SD
My hospital receives enough budgetary allocation	2.53	1.153
The county plans and prioritizes the budgetary allocations to various hospitals in the County	2.86	1.160
There are budgetary allocations for the purchase of hospital equipment	3.13	.912
There are budgetary allocations for the purchase of drugs	3.06	.939
There are budgetary allocations for the maintenance and renovation of health facilities	3.12	.962
There are budgetary allocations for the remuneration of hospital staff	2.92	1.359
There are health financing schemes in my county	3.13	1.316

Factor analysis was conducted to reduce items of budget execution, which was measured using seven items thereby the construct was factor analyzed in order to come up with an appropriate measure. The study found a KMO value of 0.636 and Bartlett's test, $\chi^2(21, N = 316) = 663.022, p = .000$. The results are presented in Table 5. This shows that sampling was adequate for the variable.

Table 5. KMO and Bartlett's Test for Budget Execution

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.636
Bartlett's Test of Sphericity	Approx. Chi-Square	663.022
	df	21
	Sig.	.000

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

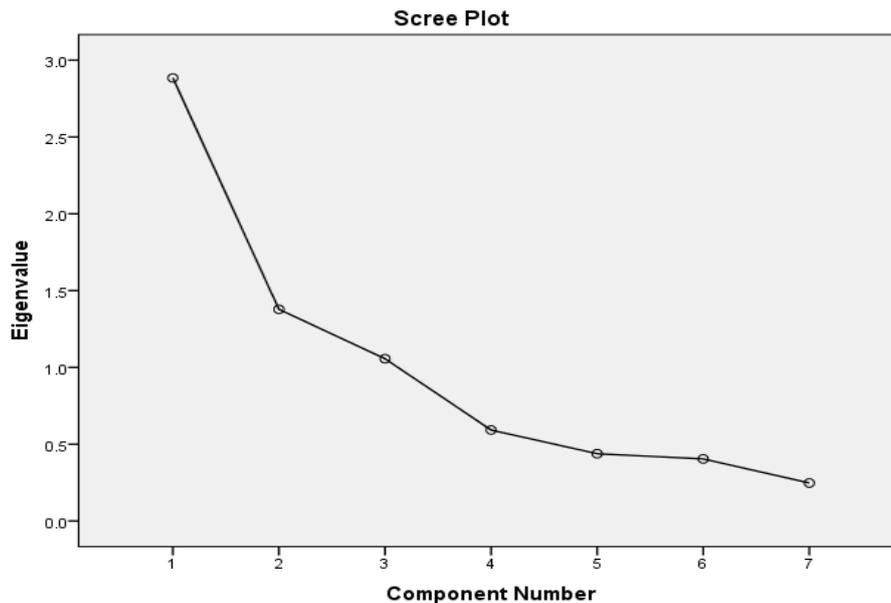


Figure 1. Scree Plot for Budget Execution Construct

The factor loadings for budget execution were obtained in the study as shown in Table 6. The acceptable threshold was set at 0.6. The acceptable threshold was set at 0.6. All the loadings were more than 0.6 except the second component (the county plans and prioritizes the budgetary allocations to various hospitals in the County) and the

seventh component (there are health financing schemes in the county), therefore the two questions were dropped for budget execution.

Table 6. Component Matrix for Budget Execution Construct

	Component	
	1	2
My hospital receives enough budgetary allocation	.670	.196
The county plans and prioritizes the budgetary allocations to various hospitals in the County	.438	.664
There are budgetary allocations for the purchase of hospital equipment	.686	.146
There are budgetary allocations for the purchase of drugs	.642	.459
There are budgetary allocations for the maintenance and renovation of health facilities	.763	-.179
There are budgetary allocations for the remuneration of hospital staff	.696	-.483
There are health financing schemes in my county	.543	-.635

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

3.1. Hypothesis Testing

The hypothesis in the study was stated as; RH: Budget execution has a positive influence on the service delivery of public county health facilities in Kenya. Before path coefficients were obtained, confirmatory factor analysis was conducted and subjected to maximum likelihood CFA. The study found that the relative normed Chi square value of 62.902 (p value = 0.000) indicating an acceptable fit between the hypothesized model and the sample data. In addition, the NFI = .822, TLI = .663, CFI = .831 indicated an acceptable fit as they were approximately 0.7. The analysis yielded the path diagram presented in Figure 2 and Table 7.

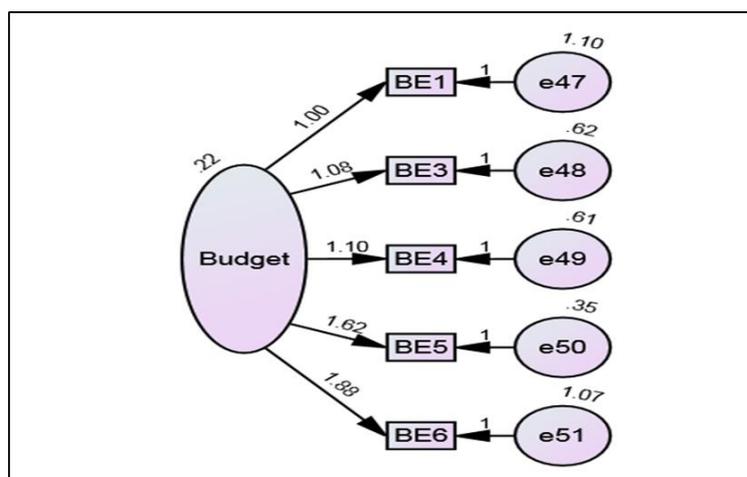
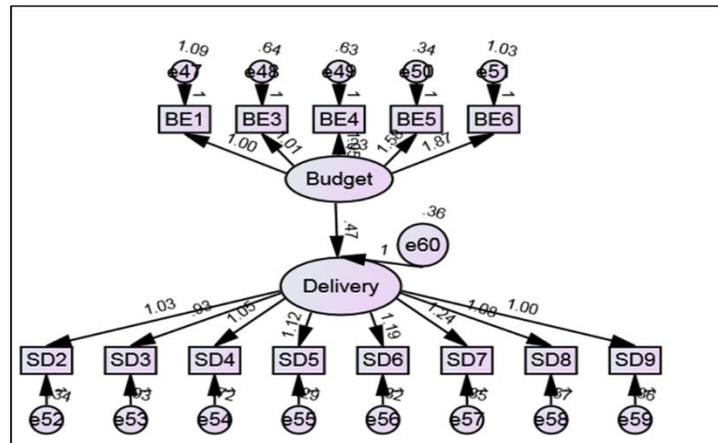


Figure 2. Budget Execution CFA

Table 7. Baseline Comparisons for Budget Execution

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.822	.644	.834	.663	.831
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. Path coefficient beta value was obtained as $\beta = 0.47$. These findings indicate that for every 1-unit increase in budget execution, service delivery is predicted to increase by 0.47 in public county health facilities in Kenya. In addition, all the factor loadings were well above 0.5 and therefore they were within the acceptable threshold. The findings are shown in Figure 3.

**Figure 3. Path Coefficients for Budget Execution**

The overall table with path coefficients, standard errors, and p values was therefore summarized as shown in Table 8. As presented, all the p values 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 the budget execution and service delivery was 4.080, and its p value is 0.000, which is less than 0.05. This p value tested the fourth hypothesis in the study at 5% significance level. Therefore, the null hypothesis that budget execution has no positive influence on the service delivery of public county health facilities in Kenya was rejected.

Table 8. Regression Coefficients for Budget Execution and Service Delivery

	Path	Standardized Estimate	Unstandardized Estimate	S.E.	C.R.	P Label
SD	<--- BE	.352	.469	.115	4.080	***
BE1	<--- BE	.418	1.000			
BE3	<--- BE	.520	1.013	.179	5.656	***
BE4	<--- BE	.537	1.045	.182	5.738	***
BE5	<--- BE	.793	1.581	.246	6.437	***
BE6	<--- BE	.663	1.870	.300	6.234	***
SD9	<--- SD	.570	1.000			
SD8	<--- SD	.673	1.075	.117	9.168	***
SD7	<--- SD	.804	1.237	.121	10.209	***
SD6	<--- SD	.804	1.186	.116	10.208	***
SD5	<--- SD	.802	1.120	.110	10.198	***
SD4	<--- SD	.624	1.052	.121	8.705	***
SD3	<--- SD	.525	.926	.121	7.679	***
SD2	<--- SD	.496	1.028	.140	7.352	***

4. Discussion

The findings of the study are in line with those of Gwatkin et al. (2013) and Bonilla-Chacin et al. (2015) that there are financial constraints experienced in health care facilities which have led to the decrease of healthcare quality, the collapse of the already inefficient public health activities, and the increased incidence of out-of-pocket expenditures. In addition, Frisina and Gotze (2011) agree that in developing countries particularly Africa, health financing reforms have been motivated by growing demand for better health care at a time when governments are faced with shrinking resources and can no longer honor its traditional commitment to providing free care. Economic crises are said to challenge welfare states by forcing them to cut expenditure by pursuing reforms aimed at cost containment and efficiency-enhancing strategies.

The null hypothesis that budget execution has no positive influence on the service delivery of public county health facilities in Kenya was rejected. Borghi et al. (2014) agree with these findings while Filmer and Pritchett (2009) do not agree.

5. Conclusions

The study concluded that the hospitals had budgetary allocations for the purchase of hospital equipment, drugs, maintenance and renovation of health facilities as well as health financing schemes. This contributed to the positive relationship between

budgetary allocations and service delivery in the facilities, as more budgetary allocations would ensure efficient and effective service delivery.

The study found that that the hospitals did not receive enough budgetary allocation as the counties did not plan and prioritize the budgetary allocations to various hospitals. The study therefore recommends that enough budgetary allocations ought to be given to the hospitals, as any facility cannot run without enough finances. In addition, when budgetary allocations do not meet the remuneration demands of the healthcare workers, service delivery is paralyzed through strikes, reduced motivation of work and other skilled staff are forced to pull out of the hospitals. Service delivery will only be achieved with enough allocations which are done on time.

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