Effect of Healthcare Financing on Performance of Sub County Hospitals in Trans Nzoia County, Kenya

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ABSTRACT

The main purpose of the study was to examine the effect of Healthcare Financing on Performance of Sub County Hospitals in Trans Nzoia County, Kenya. The study focused on the following specific objectives: To assess the effect of public health insurance scheme on Performance of Sub-County Hospitals in Trans Nzoia County, Kenya., and to examine the effect of devolved health services financing on Performance of Sub-County Hospitals in Trans Nzoia County, Kenya. The study was anchored on the Systems Theory by Kataz and Khan, and governance theory. The study targeted the 164 healthcare providers and patients of sub-county hospitals in Trans Nzoia County using census method since the target population was small and reachable. A descriptive research design was adopted with the questionnaire used as a data collection instrument which include both qualitative and quantitative data. The SPSS v26 software was used in establishing the effect of the independent variables on the dependent variable through the employment of ANOVA, regression and correlation analysis techniques in data analysis. The study findings indicated a statistically significant effect between the variables that led to the prediction of the dependent variable. The F-ratio (F=10.578) which was greater than the significance level of .05 depicted an overall regression model that was used to measure the dependent variable by the predictor variables. The results of the study will be expected to contribute towards the existing findings as well as forming a basis for future scholarly work in the field of healthcare financing on performance of the health facilities. This research will be important to the county governments, and in particular management of sub-county hospitals and in improving the scholarly literature reservoir.

Keywords: [*Health Care Financing, Financing Challenges, Universal Healthcare, Performance*]

INTRODUCTION
Background of the Study
Governments have been increasing, at a faster rate compared to their GDPs, global health spending both before and during the COVID-19 crisis more so in middle and low income countries at 6% p.a. Political will has however been the greatest challenge to increased health budget allocations (Warner and Baruah, 2021). Health budgets in different countries are geared towards the financing of the health systems in order to ensure a health society/citizenry.

Financing is at the centre of efforts to improve health and health systems. It is only when resources are adequately mobilized, pooled and spent that people can enjoy robust health systems and sustained progress towards universal health coverage – that is, all people receiving high-quality health services that meet their needs without exposing them to financial hardship in paying for the services.

In research from Røttingen, Ottersen, Ablo (2014), unprecedented transitions, and new and persisting challenges call for a new global approach to health financing. These transitions include profound changes in the global economy, changes in health and risk factors for disease, and transformation of the institutional landscape in the global health arena. Significant challenges include poor health outcomes, poor access to health services, and financial risks to patients stemming from out-of-pocket health service payments. They are compounded by profound inequalities in these three dimensions both between and within countries and by the uneven distribution of recent improvements.

In research from Ottersen *et al.,* (2017), to strengthen domestic financing of national health systems, the working group concluded that at least every government should meet its primary responsibility for securing the health of its own people. This involves a responsibility to oversee domestic financing for health and ensure that it is sufficient, efficient, equitable and sustainable. In addition, every government should commit to spend at least 5% of GDP on health and move progressively towards this target, and every government should ensure government health expenditures (GHE) per capita of at least $861 whenever possible. Most middle-income countries should be able to reach both targets without external support. Every government should ensure that catastrophic and impoverishing out of-pocket payments (OOPPs) are minimized. Specifically, governments should commit to the targets of OOPPs representing less than 20% of total health expenditures (THE) and no OOPPs for priority services or for the poor. Every government is therefore permitted to improve its revenue generation and achieve reduction of OOPPs through effective, equitable and sustainable ways of increasing mandatory prepaid pooled funds for health services.

Global Perspective of Healthcare Financing

In a study on health financing in Tokyo, Japan, Hyun *et al.,* (2015) discovered that the health of a country's citizenry depends on how the particular country finances its health care system. Adequate and efficient financing methods together with the organizational health services delivery structure are essential for the country to achieve its national health objective of universal health care (Hyun *et al.,* 2015). The Japanese government finances healthcare by tax revenue, out-of-pocket payments, donors, and health insurance (social and community). The National Primary HealthCare Development Fund (NPHCDF) is adopted for increasing resource allocation to primary healthcare which was as a result of the enacted National Health Act (Kithinji, 2019).

Healthcare financing in Yugoslavia, public hospitals, according to Van Servellen, Brown and Lombardi (2014) is mainly sources of financing are from government subvention, internally-generated funds, and donor-pooled funds. Several sources of financing are still being sourced for purposes of ensuring an effective, efficient and equitable healthcare financing system that positively impacts service delivery in Yugoslavia (Lombardi, 2014).

Regional Perspective of Healthcare Financing

In a study focusing on the impact assessment on Botswana's health financing system, Patcharanarumol and Tangcharoensathien (2014) described how healthcare functions are carried out to achieve its objectives to make an impact on the general health system performance. The study indicated that Botswana's health financing system operates primarily through the Ministry of Health by collecting revenue from general and earmarked taxes (Kithinji, 2019).

Local Perspective of Healthcare Financing

Provision of health care services in Kenya is through the public and private sector, with the central government through the Ministry of Health being the largest provider (Munyao, 2013). Kenya has had a predominantly tax-funded health system, which has gradually undergone a series of healthcare financing policy changes. According to Hyun *et al*., (2015), healthcare financing is the management of funds for medical resources to the beneficiaries. While on an individual level, it is the payments towards hospital care, physician care, dental care, prescriptions and other personal medical services. Munyao (2013) added that when patients can not pay out-of-pocket medical expenses, healthcare financing works as credit to enable them receive care.

The Kenyan health sector depends on several funding sources; private firms, donors, health insurance schemes and the government (GoK, 2017). despite the many health financing options, the funds have remained disproportionately distributed across the health system. The MoH (2017) indicated that the health budget was allocated funds in a skewed manner that favored tertiary and secondary care facilities to the tune of 70% of health expenditures instead of the primary healthcare which is the first line of contact with the masses providing cost effective and dealing with the disease conditions prevalent within communities.

According to Gikonyo (2011), the challenges facing the Ministry of Health the implementation of public healthcare financing strategies in Kenya basically originate from structure, organizational system and procedures, cultural beliefs and traditions, technological challenges, leadership, human resources and finally sourcing for deficit fund. Due to these bottlenecks, Kenya's implementation of public healthcare financing strategies indicated clearly that there is a possibility that the country may not have adopted the most appropriate strategy for financing healthcare.

Kithinji (2019) averred that devolved units in Kenya have access to limited resources together with experiencing greater difficulty in accessing funding sources and are therefore more dependent on the national government. The income/revenue from the locally levied taxes at the county level is low and also suffer from limited innovation in sourcing for more funds and also lack economies of scale in their operations.

Statement of the Problem

Like in most low-income countries, healthcare financing policies in Kenya have gone through three successive phases (Audibert, Mathonnat, and De Roodenbeke, 2014). In the first phase, the dominant approach was based on free access to healthcare with a focus on the necessity of providing primary care to all. The second policy phase, introduced user fees while emphasizing accessibility to primary care and tried to incorporate healthcare programs into district-based healthcare structures. In the third phase concern has been on the relationship between healthcare and development, one of the objectives of the Millennium Development Goals (MDGs).

Most policies have negatively affected health care provision by the state; the cost-sharing (Out-Of-Pocket Costs) programme introduced in 1989 being one of the most contentious. This is an indication that health financing in Kenya has faced numerous challenges, including inadequate funding (Deloitte, 2011). Limited funding by the government means out-of-pocket spending remains a key source of funding healthcare and ultimately this negatively affects acquisition of health care by the populace. Likewise, high poverty levels among the population have also impacted negatively on health financing. With 46% of Kenyans live on less than a dollar per day (Deloitte, 2011), there has been a reciprocal relationship between poverty and health status.

There are currently profound challenges in domestic and external financing, and in the financing of global public goods for health (GPGHs). These challenges concern resource mobilization, pooling of funds and spending. With respect to domestic financing of national health systems, current challenges for many or most countries include: Insufficient total funds: Total available funds for health from domestic sources are insufficient and fall short of most or all needs-based targets that have been proposed for health expenditure. According to WHO Report (2015), over-reliance on out-of-pocket payments: Out of pocket payments (OOPPs) by users of the health system play too large a role, and this is particularly the case for OOPPs that tend to be catastrophic and impoverishing. Rudimentary mechanisms for mandatory prepayment with pooling of funds: Mandatory prepayment mechanisms are not used to their full extent, and existing mechanisms are often inadequately designed. Problematic priorities and inefficient health spending: Priorities among groups and services are unbalanced and problematic from the perspective of UHC. At the same time, health spending is often very inefficient. Inadequate accountability: Accountability mechanisms in public financing in general and in health financing in particular are weak or lacking, something that is linked to inadequate systems for monitoring and evaluation, for stakeholder participation and for fighting corruption and economic crimes. This is what informed the study in respect to the study area.

Research Objectives
General Objective
The overall objective of the study was to examine the effect of Healthcare Financing on Performance of Sub County Hospitals in Trans Nzoia County, Kenya.

Specific Objectives
1. To assess the effect of public health insurance scheme on Performance of Sub-County Hospitals in Trans Nzoia County, Kenya.
2. To examine the effect of devolved health services financing on Performance of Sub-County Hospitals in Trans Nzoia County, Kenya.

Research Questions
1. What is the effect of public health insurance schemes on Performance of Sub-County Hospitals in Trans Nzoia County, Kenya?
2. What is the effect of devolved health services financing on Performance of Sub-County Hospitals in Trans Nzoia County, Kenya?

LITERATURE REVIEW
Theoretical Review
It is important to situate the argument within a theoretical context. The study examine d the Systems Theory by Kataz and Khan and the governance theory. These theories were interrogated within the health-care indicators.

Systems Theory
According to systems theory by Katz and Khan (1966) a system is a collection of parts unified to accomplish an overall goal. If one part of the system is removed, the nature of the system is changed as well. A system is also open and interacts with the environment. A system can be looked at as having inputs (e.g., resources such as raw materials, money, technologies, and people), processes (e.g., planning, organizing, motivating, and controlling), outputs (products or services) and outcomes (e.g., enhanced quality of life or productivity for customers/clients). Systems share feedback among each of these four aspects of the system (Mele, 2010). An organization depends on its supporting environment for continued inputs to ensure its sustainability and processes these inputs through the recurring and patterned activities and interactions of individuals to yield outputs. The use of this theory to back this study was justified from its ability to explain the role

of health financing system in raising adequate funds for healthcare service delivery. The health financing system of Sub-County Hospitals (SCH) in Kenya, and Trans Nzoia in particular, is composed of many components and affected by various factors which have to be considered as a whole in order to enhance performance of healthcare service delivery. This theory anchors on the factors like sources of healthcare financing, financing challenges, prioritization of funds and allocation of funds which should be addressed as part of a system and not in isolation in order to enhance healthcare service delivery.

Governance Theory
According to the WB (1991), governance refers to an activity of opinionated authority and the utilization of organizations' funds to execute the society's troubles and activities. The theory elucidates the controlling activities of political governments as they on purpose try to transform socio-economic formations and activities (Hussein, 2018). Governance provides guidance for casual authority of complex enhancements and displacement of the proper power of the administration by investigating the dynamic frontiers linking the community and the government, (Harris, 1990). This was important to this study on the devolved health services financing variable because the theory hypothesizes that the state can concentrate on the design of public strategy and delegate the execution to other entities, private institutions or NGOs and in return

spurring a stronger importance on market apparatus, in the context of Kenyan governance structure, devolution of services by the national government to the county government (Kickert, 1997; Hussein, 2018). The hypothesis is that, the greater the isolation of strategy application from the policy design, the more the contribution by diverse participants in the execution procedure, and the higher the actualization of the success on the process effect. The relevance in the study comes in play in that the association between the diverse governments tasked with the performance/delivery of services in the health sector will lead to synergy, information distribution, relying on each ones' vigor to create more inventive traditions and improve the facilities for delivering the services in a well-financed healthcare arrangement.

Conceptual Framework
A conceptual framework is a postulated model which classifies the study variables into dependent and independent variables and highlights the relationship between them (Bryman and Bell, 2015). For this study the dependent variable was Performance of Sub County Hospitals in Trans-Nzoia County while the independent variables were: Public Health Insurance Scheme, Financing Challenges, Out-of-Pocket Costs and Devolved Health Services Financing (DHSF). The conceptualized relationship between the variables of interest was as shown in the diagram below;
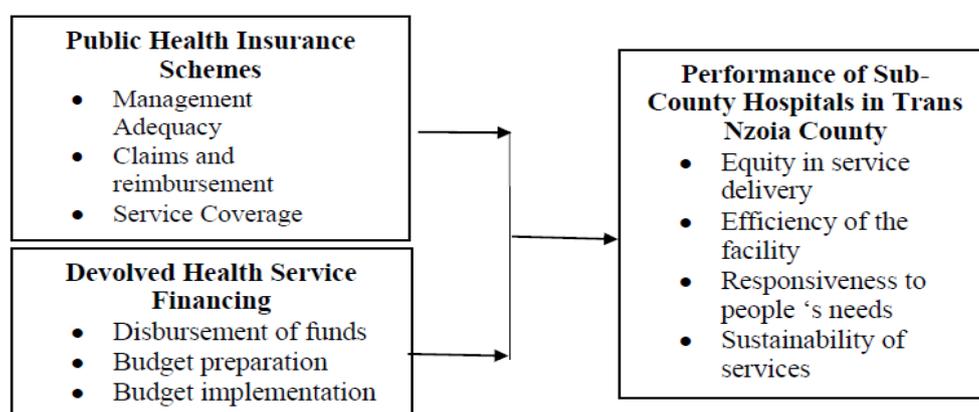
Review of Variables
Public Health Insurance Scheme
The government of Kenya has prioritized expansion of health insurance through the social health insurance model as the main strategy towards achievement of Universal Health Coverage targets (Dutta, *et al.*, 2018). According to the *Road-map Towards Universal Health Coverage (2018-2022)*, the country intends, through a single-payer, to achieve universal coverage through the Social Health Insurance Fund (SHIF) by 2022 (Ongiri, 2015). the government intends to use the current NHIF coverage, which is estimated to be less than one-fifth of the population is what will be scaled-up and used to advance the UHC (MOH, 2018).

In Kenya, the primary provider of health insurance and the primary vehicle through which expansion of insurance coverage is premised is the NHIF (MOH, 2018). NHIF was established in Kenya in 1966 by an Act of parliament called NHIF Act of 1966 to provide insurance coverage to the formal sector employees. This scheme has since evolved to cover the formal sector as well as the informal sector. The contribution rates have since been adjusted to make the scheme a viable social health insurance provider. The low rates paid by formal employees limited the package to inpatient benefits only (NHIF, 2017). According to the increased contribution rates, the informal sector coverage relies on voluntary contributions from the willing individuals contribution, which has however recorded high numbers of informal sector registrations, and the scheme now covers both outpatient and inpatient services to the reprieve of the patients (Ongiri, 2015).

Devolved Health Services Financing
The promulgation of the 2010 constitution ushered in the adoption of decentralized resource utilization and increased power to the forty seven regional governments from the national government (Hussein, 2018). This was however actualized after the 2013 general elections whereby healthcare services were decentralized to the regional governments essentially making them devolved functions. Regionally, Ethiopia and Ghana have gained rapidly from the devolution of healthcare services hence providing a genuine case for Kenya to borrow from. Globally, Thailand has also gained rapid profits after devolving healthcare services (KPMG Report, 2015).

In his study on the impact of budget participation on managerial performance via organizational commitment, Melek (2013) carried out a comparative study between private and public hospitals that were funded by NGOs. The study reported that healthcare devolution only thrives where good governance and proper financing systems exist. The devolution ensured that the county governments took charge of the primary healthcare service delivery through health centers making it mandatory for the day-to-day operations the responsibility of devolved units including financial and human resource management while technical policy, supervision, training and regulation of health professionals remained the responsibility of the ministry of health in Kenya.

Performance of Sub County Hospitals
Mwancha (2018) opined that Healthcare corporation utility performance is crucial in the provision of healthcare satisfaction to patients since it directly affects patient needs, loyalty and financial gain of utility businesses. Mwancha (2018) quoted Kotler and Armstrong (2010) definition of satisfaction, as a person's feelings of pleasure that results from comparisons perceived performance in relation to the person's expectations. And therefore satisfaction gained from the health services is considered a function of performance of the health facility.

According to Sachdev and Verma (2014), performance is a related notion that can be rated high if the implicit characteristic of a utility meets specifications of the client/patient. Jain and Gupta (2014) posited that there are specific subjective and

objective laws that define performance/ service delivery. Performance in healthcare constitutes modern technology, proper medication and enough healthcare providers to patient ratio, affordable, efficient and effective system of service delivery (Gyani, 2017).

The public health sector consists of the following levels of health facilities: National Referral Hospitals (at the summit of the health care system, providing complex and advanced, therapeutic, rehabilitative and diagnostic services), County General Hospitals, Sub-County hospitals, Health Centers, and Dispensaries. Health services are unified as one descends the National to the County and Sub-County levels (RoK, 2010). Mwancha (2018) explained that County level hospitals act as intermediaries between National Level and Sub counties. They also provide very specialized care. They oversee the implementation of health policy at the county level, maintain quality standards, coordinate and control all sub-county health activities (RoK, 2015).

Coulthard (2014) noted that proper and timely financing of healthcare services impacts favorably of performance. Performance is therefore a result of the strong emphasis on human resources selection for the provision of the highest level of quality service within well designed and implemented highly effective systems that fully address client/patient needs with a strong attention to detail.

It is worth noting however, that health centers lack basic equipment for proper performance or service delivery. With the few or lack of health equipment, the health centers have been overwhelmed by overcrowding patients, shortage of supplies, weakness in management and absence of proper controls and systems. These deficits have greatly affected the performance of the health facilities.

RESEARCH METHODOLOGY
Research Design
A research design is the plan and structure of investigating so conceived as to obtain answers to research questions Kothari, (2014). A research design functions as the research blue print for measurement and analysis of data. As such, it is used to show how the major parts of the research project i.e., the samples, measurement of variables, treatments or controls, and methods of assignment work together to try to address the core research questions. The study adopted a descriptive research design. Lee (2015) classified descriptive survey studies as typical, or selective. Descriptive research method is used when the researcher wants to describe specific behavior as it occurs in the environment. According to Mugenda and Mugenda (2013), a descriptive research design is used to determine who, what, when and how a research topic which is a concern for this study.

Target Population
A population is the entire set of relevant units of analysis or data. Mugenda and Mugenda (2013) say that target population refers to the population to which a researcher wants to study. The targeted population for the study was as shown in the table below;

Table 1: Sampling Frame

S/NO.	CATEGORY	TOTAL
	Health Management	
1	Medical Superintendent	6
2	Health Administrators	16
3	Nursing Service Managers	5
4	Accountants	5
	Health Workers	
5	Clinical Officers	99
6	Physicians	5
7	Doctors	78
8	Social Workers	24
9	Nutritionist	40
10	Nurses	258
	Support Staff	
11	Human resource officers	2
12	Hospital Clerks	7
	Total	**545**

Source: County Health Staff Establishment (2022)

Sample Size and Sampling Technique
Sampling refers to the systematic selection of a limited number of elements out of a

theoretically specified population of elements. The rationale is to draw conclusions about the entire population. According to Orodho and Kombo (2015), the ultimate test of a sample design is how well it represents the characteristics of the population it purports to. Cooper and Schindler (2013) defined a sampling frame as a list of elements from which the sample is actually drawn and closely related to the population. The target population, for this study was 545 respondents comprising of health providers in the sub-county hospitals in Trans Nzoia county. The table below depicted the sample size of the study;

Table 2: Sample Size

S/NO.	Category	Total Population	Sample Size (30%)
	Health Management		
1	Medical Superintendent	6	2
2	Health Administrators	16	5
3	Nursing Service Managers	5	2
4	Accountants	5	2
	Health Workers		
5	Clinical Officers	99	30
6	Physicians	5	2
7	Doctors	78	23
8	Social Workers	24	7
9	Nutritionist	40	12
10	Nurses	258	77
	Support Staff		
11	Human resource officers	2	1
12	Hospital Clerks	7	2
	Total	**545**	**164**

In order to get each and every respondents' version on the required data, the study used the sample size as a whole since it was considered to be small and hence the decision to employ census method in data collections. Census method is adopted for data collection where the research population is considered small or where every item of the population is individually unique and its feedback is essential for data analysis and eventual findings (Cooper and Schindler, 2013).

Data Collection Instrument
According to Kiprotich (2017), data collection instruments are tools used to collect data from respondents. In addition to the secondary data, self-administered likert-scale questionnaires were used to collect primary data that formed part of the analysis and eventual presentation of the study results. The researcher adopted a drop-and-pick-later approach which was agreed with the respondents before implementing in order to give them enough time and space for proper capturing of the required data. A questionnaire is a device used for securing the feedback to questions/statements from the target respondents for research purposes (Dwivedi, 2006; Kiprotich, 2017). The reasons given by the two scholars for using questionnaires were that they reduce the biasness of the researcher, are cost effective, can be easily analyzed and that they are less intrusive.

Data Analysis and Presentation
The researcher checked for completeness of the questionnaires immediately they were returned. The excel software was used to capture and store the raw data from the questionnaires. Data from the four sample groups, Health Management, Health Workers and Support Staff was stored separately and treated independently throughout the process of analysis. Data from the health workers was the primary basis for analysis while data from the rest of the categories provided secondary support to the findings. The raw data was then cleaned and coded for ease of analysis. Thereafter, the cleaned data was exported to the Statistical Package for Social Sciences (SPSS) version 26 for analysis.

Data collected was analyzed using both quantitative and qualitative methods. Qualitative data was derived from the open ended questions in the questionnaire. Once the themes, categories and patterns are identified, narratives were developed, frequencies and percentages were used to summarize the data. Quantitative data was analyzed using both descriptive and inferential statistics. Frequencies, percentages, mean and standard deviation were used to summarize the responses of the Likert-type questions and results were presented using tables. In addition, multiple regression model, at significance level of 0.05, were used to assess the predictive power of the financing factors on the performance of Sub-County hospitals in Trans Nzoia County.

The analyzed data was presented in a multiple regression model of the form;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon_i$$

Where:

Y the dependent variable (Performance of the sub-county hospitals)

β_0 the regression constant

β_1, β_2, β_3 and β_4 the coefficients of independent variables X_1, X_2, X_3 and X_4

X_1 Public Health Insurance Scheme

X_2 Devolved Health Services Financing

ε the error term.

RESEARCH FINDINGS AND DISCUSSION

Response Rate

For data collection purposes, the questionnaires were distributed among the targeted respondents and the response rate recorded as shown in the table below;

Table 3: Response Rate

Response	Frequency	Percentage
Filled Satisfactorily	147	90
Partially/Unsatisfactorily filled	6	3
Not Returned	11	7
TOTAL	**164**	**100**

A total of one hundred and sixty four (164) questionnaires were distributed to the respondents for purposes of research data collection. Of the distributed questionnaires, 147 were filled satisfactorily and returned which constituted 90% response rate, 3% of the questionnaires were either not satisfactorily filled or were partially filled though returned while 11 questionnaires were not returned at all. Te response rate of 90% was considered convenient and acceptable for data analysis. A response rate of 70% and above is well recommended for research purposes (Mugenda and Mugenda, 2003).

Analysis of Performance of Sub County Hospitals in Trans Nzoia County

Research data was collected on Performance of Sub County Hospitals in Trans Nzoia County, Kenya analyzed and presented as shown in the table below;

Table 4: Performance of Sub County Hospitals in Trans Nzoia County

Statement	SD %	D %	U %	A %	SA %
Devolution has provided for an avenue for timely provision of services for better performance	5	8	14	33	40
Sub-County hospitals in Trans Nzoia County offer satisfactory services	7	12	16	29	36
Timely and organized healthcare financing has improved performance in Trans Nzoia sub county hospitals	6	9	12	39	33
Patient and supplier satisfaction is experienced in the Trans Nzoia County Sub-County hospitals	7	11	13	32	37

The table above presented the findings on the dependent variable (Performance of Sub County Hospitals in Trans Nzoia County). of the respondents on whether devolution has provided for an avenue for timely provision of services for better performance, 5% of the respondents strongly disagreed, 8% of the respondents disagreed, 14% remained undecided on the statement. 33%

of the respondents agreed while 40% strongly agreed that indeed devolution has provided for an avenue for timely provision of services for better performance. The respondents indicated clearly that devolution has provided for an avenue for timely provision of services for better performance as confirmed by 73% being the majority. However, close to 30% of the

respondents thought otherwise requiring some further investigation on the service delivery levels before and after devolution and required measures taken accordingly.

The respondents reacted on the statement that Sub-County hospitals in Trans Nzoia County offer satisfactory services, 7% strongly disagreed, 12% disagreed with 16% remained undecided. 29% of the respondents agreed that Sub-County hospitals in Trans Nzoia County offer satisfactory services while 36% strongly agreed. With 35% of the respondents not looking satisfied, there is need for the county leadership and other concerned management authorities to look in to this position. As to whether timely and organized healthcare financing has improved performance in Trans Nzoia sub county hospitals, 6% of the respondents strongly disagreed, 9% disagreed and 12% remained undecided. 39% agreed while 33% strongly agreed that timely and organized healthcare financing has actually improved performance in Trans Nzoia sub county hospitals. Majority of the respondents affirmed that the timely and organized healthcare financing has improved performance in Trans Nzoia sub county hospitals.

The final question posed to the respondents was whether patient and supplier satisfaction is experienced in the Trans Nzoia County Sub-County hospitals, 7% of the respondents strongly disagreed, 11% disagreed and 13% remained undecided. 32% of the respondents while 37% strongly agreed that patient and supplier satisfaction is experienced in the Trans Nzoia County Sub-County hospitals. This feedback indicated clearly that majority of the respondents (69%) felt that patient and supplier satisfaction is experienced in the Trans Nzoia County Sub-County hospitals, however, 31% of the respondents who felt that the situation was different is a relatively material percentage worth investigating.

Analysis of Specific Objectives
Effect of Public Health Insurance Scheme on Performance

Data on public health insurance scheme in sub county hospitals in Trans Nzoia county was collected from the respondents and its analyzed findings presented as shown in the table below;

Table 5: Effect of Public Health Insurance Scheme on Performance

Statement	SD	D	U	A	SA
	%	%	%	%	%
The public health insurance scheme plays a key role in healthcare financing	6	9	5	41	39
The public health insurance scheme covers substantial amount on patient bills	3	8	5	44	40
Public Insurance scheme is the back-borne of healthcare financing	7	9	7	37	40
The Public Health Insurance Scheme benefits in-patients fully	8	7	12	41	32

Data on the first independent variable (Public Health Insurance Scheme) was collected, analyzed and findings presented as shown above. On whether the public health insurance scheme plays a key role in healthcare financing; 6% of the respondents strongly disagreed, 9% disagreed with 5% undecided. The remaining respondents had 41% agreeing while 39% strongly that the public health insurance scheme plays a key role in healthcare financing. It was evident that majority (80%) of the respondents were in agreement that the public health insurance scheme plays a key role in healthcare financing.

Asked whether the public health insurance scheme covers substantial amount on patient bills, 3% of the respondents strongly disagreed, 8% disagreed, 5% of the respondents were undecided, 44% agreed while 40% of the respondents strongly agreed that the public health insurance scheme covers substantial amount on patient bills. The overall feedback from the respondents indicated that 84% of the respondents affirmed that indeed the public health insurance scheme covers substantial amount on patient bills.

When the respondents were required to react on whether public insurance scheme is the

back-borne of healthcare financing, 7% strongly disagreed, 9% disagreed and 7% were undecided as to whether public insurance scheme is the back-borne of healthcare financing, 37% agreed while 40% strongly agreed. 77% of the respondents were in agreement that the public insurance scheme is the back-borne of healthcare financing in Trans Nzoia County. Of the respondents approached, 8% strongly disagreed that the public health insurance scheme benefits in-patients fully, 7% disagreed, 12% were undecided, 41% agreed while 32% strongly affirmed that indeed the public health insurance scheme benefits in-patients fully. This feedback reflected a 73% vote of confidence by the respondents in the public health insurance scheme services to the in-patients in Trans Nzoia County.

Effect of Devolved Health Services Financing on Performance

The table below was used to present the analyzed data and its findings on the effect of devolved health services financing on performance of sub-county hospitals in Trans Nzoia County.

Table 6: Devolved Health Services Financing on Performance

Item	SD	D	U	A	SA
	%	%	%	%	%
Devolved units receive a required share from the national government	19	17	14	25	25
Devolved units receive policy and financial support for performance towards expected health standards	7	9	16	35	33
Devolved resources distribution has positively impacted performance in Trans Nzoia Sub-County Hospitals	8	14	19	28	31
Devolved units have managed the healthcare well	19	14	21	37	19

The final independent variable (devolved health services financing) was also placed before the respondents for their reaction on the sub-points on the variable. The feedback was analyzed and findings presented in the table above. On whether devolved units receive a required share from the national government, 19% of the respondents strongly disagreed, 17% disagreed, 14% were undecided, 25% of the respondents agreed while 25% strongly agreed that devolved units receive a required share from the national government. From the feedback, it was evidenced by the respondents that 50% of them were not convinced whether the national government releases the required share of finances to the county government. Whether devolved units receive policy and financial support for performance towards expected health standards, 7% of the respondents strongly disagreed, 9% disagreed, 16% were undecided, 35% of the respondents agreed while 33% strongly agreed that devolved units receive policy and financial support for performance towards expected health standards. Majority of the respondents were in the affirmative to this statement.

As to whether devolved resources distribution has positively impacted performance in Trans Nzoia Sub-County hospitals, 8% of the respondents strongly disagreed, 14% disagreed, 19% were undecided, 28% agreed while 31% of the respondents strongly agreed that devolved resources distribution has positively impacted performance in Trans Nzoia Sub-County Hospitals. It was however noted that 41% of the respondents were not convinced that indeed devolved resources distribution has positively impacted performance in Trans Nzoia Sub-County Hospitals and of particular mention was the high percentage of the undecided respondents at 19% which was considered material in relation to the study. And finally, the respondents were required to comment on the statement whether devolved units have managed the healthcare well, 19% strongly disagreed, 14% disagreed, 21% remained undecided with 37% agreeing while 19% of the respondents strongly agreed that devolved units have managed the healthcare well. The feedback indicated that 54% of the respondents were dissatisfied with the way the devolved unit (Trans Nzoia County) has managed the healthcare sector.

Inferential Analysis

Inferential analysis is the act of making inferences from data to more general conditions (Onyango, 2019). They are used for testing hypothesis making estimations using sample data. This study conducted through the use of correlation analysis and regression analysis in determining the relationship between the dependent variable and independent variables.

Correlation Analysis

Correlation analysis was used in measuring the direction and strength of the relationship between independent variables (Public Health Insurance Scheme and Devolved Health Services Financing) and the dependent variable (Performance of Sub-County Hospitals in Trans Nzoia County) by using the SPSS version 26 software from which the analysis results were extracted and presented as shown in the table below:

Table 7: Correlation Matrix

Variables	Public Health Insurance Scheme	Devolved Health Services Financing	Performance
Public Health Insurance Scheme	1		
Financial Challenges	.549		
Out-Of-Pocket Costs	.564		
Devolved Health Services Financing	.516	1	
Performance	.765**	.516**	1

**Correlation is Significant at the 0.01 level (2-tailed). *Correlation is Significant at the .05 level (2-tailed)

The reliability of the study variables was acceptable as depicted by the correlation results shown in table above. The findings were also considered significant for purposes of the study. There was a reflection of strong and direct correlation between the dependent and independent variables of the study. The dependent variable (Performance of Sub-County Hospitals in Trans Nzoia County) correlated with the independent variables at the following coefficients, arranged in an ascending order; Devolved Health Services Financing at r = .516; and Public Health Insurance Scheme at r = .765, all variables measured at P<.05 significance level. The correlation results above indicated that public health insurance scheme exhibited the strongest association with the dependent variable (Performance of Sub-County Hospitals in Trans Nzoia County). In line with Onyango (2019), the correlation analysis results were utilized in the measurement of the strength of the

relationship among the variables and in eventual recommendations and conclusions of the study.

Multiple Regression Analysis

The study used the multiple regression model to examine the effect of Healthcare Financing on Performance of Sub County Hospitals in Trans Nzoia County, Kenya. The multiple regression analysis as an inferential statistics measure was used to analyze the extrapolative capability of the set of independent variables on the dependent variable. The validation of the application of the multiple regression technique by the study was grounded on the fact that the multiple predictors were reflected to have the extrapolative ability on the dependent variable. For purposes of explaining the relationship between the dependent and independent variables, a model summary was extracted as per the table below;

Table 8: Model Summary

Model	R	R-Square	Adjusted R-Square	Std. Error of the Estimate
1	.812ᵃ	.659	.656	.015364
a. Predictors (Constant), Public Health Insurance Scheme, and Devolved Health Services Financing				

The model summary results indicated that independent variables affected the dependent variable significantly. From the

results above, the adjusted R-Squared value of .656 was interpreted that when all variables are combined, the model explained

65.6% of the variations in the dependent variable by the independent variables with 34.4% of the variations in the dependent variable being explained by variables not covered under the study.

4.8.3 Analysis of Variances (ANOVA)

The results from the research data analysis, that enabled the prediction of the variables to be made, were presented in the ANOVA table below;

Table 9: ANOVAᵃ

Model		Sum of Squares	df	Mean Square	f	Sig.
1	Regression	79.925	1	79.925	10.578	.05ᵇ
	Residual	1103.242	146	7.556		
	Total	1183.167	147			
a. Dependent Variable: Performance of Sub County Hospitals in Trans Nzoia County, Kenya						
b. Predictors (Constant), Public Health Insurance Scheme and Devolved Health Services Financing						

The ANOVA table above indicated that the regression model used was found to be fit for the study in the analysis and prediction of the results as well as model fitting. This verdict was arrived at supported by F-ratio/statistic of 10.578 which was found to be greater than the table value (critical value) at a significance level at $p < .05$.

Regression Analysis

The study analyzed data on the nature of the relationship among the variables and presented it in the table below;

Table 10: Regression Coefficientsᵃ

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		β	Std. Error	βeta		
1	(Constant)	9.235	2.640		3.677	.000
	Public Health Insurance Scheme	.594	.051	.603	1.547	.214
	Devolved Health Services.Financing	.358	.327	.375	2.340	.057

P<.01 95% Confidence level, N=147

from the results above, the multiple regression model extracted took the form:

$Y = 9.235 + .594X_1 + .358X_2$

From the regression results above, the dependent variable (Performance of Sub-County Hospitals in Trans Nzoia County, Kenya) was influenced significantly by the independent variables (Public Health Insurance Scheme and Devolved Health Services Financing) in a linear relationship as depicted by the multiple linear regression model above. The regression results indicated that a unit increase in Public Health Insurance Scheme led to a .594 unit increase in Performance of Sub-County Hospitals in Trans Nzoia County; and a unit increase in Devolved Health Services Financing led to a .358 unit increase in Performance of Sub-County Hospitals in Trans Nzoia County. While, when all other factors are held constant at zero, Performance of Sub-County Hospitals in Trans Nzoia County was at 9.235.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary of Study Findings

Performance of Sub County Hospitals in Trans Nzoia County

The study established that devolution has provided for an avenue for timely provision of services for better performance as confirmed by majority of the respondents. The respondent's reaction was that over a third of them were not convinced that Sub-County hospitals in Trans Nzoia County offer satisfactory services, however, majority respondents affirmed to the statement. Timely and organized healthcare financing has improved performance in Trans Nzoia sub county hospitals in line with majority of the respondents who affirmed that indeed timely and organized healthcare financing has improved performance in Trans Nzoia sub county hospitals. And finally; patient and supplier

satisfaction is experienced in the Trans Nzoia County Sub-County hospitals, majority of the respondents felt that patient and supplier satisfaction is experienced in the Trans Nzoia County Sub-County hospitals, however, with a third of the respondents feeling that the situation was different.

Public Health Insurance Scheme

From the study analysis results, it was established that the respondents were in agreement that the public health insurance scheme plays a key role in healthcare financing. This was evidenced by the majority of the respondents who affirmed the statement. As to whether the public health insurance scheme covers substantial amount on patient bills, the overall feedback from the respondents indicated that they affirmed that indeed the public health insurance scheme covers substantial amount on patient bills.

When reacting on whether public insurance scheme is the back-borne of healthcare financing, majority of the respondents were in agreement that the public insurance scheme is the back-borne of healthcare financing in Trans Nzoia County. The same case was experienced when reacting on whether public insurance scheme is the back-borne of healthcare financing in Trans Nzoia County where respondents appeared to be passing a vote of confidence by overwhelmingly endorsing the statement.

Devolved Health Services Financing

The study established that the half of the respondents were not convinced whether the national government releases the required share of finances to the county government. majority of the respondents on the other had confirmed that devolved units receive policy and financial support for performance towards expected health standards. On the third statement on this variable, it was noted that almost half of the respondents were not convinced whether devolved resources distribution has positively impacted performance in Trans Nzoia Sub-County Hospitals and of particular mention was the

high percentage of the undecided respondents which was considered material in relation to the study. And finally, the respondents indicated dissatisfied with the way the devolved unit (Trans Nzoia County) has managed the healthcare sector.

Conclusion

On the basis of the study findings, the following conclusions were arrived at:

The correlation matrix findings showed the existence of correlation between the independent variables (Public Health Insurance Scheme and Devolved Health Services Financing) and the dependent variable (Performance of Sub County Hospitals in Trans-Nzoia County). From the results, the relationship between the dependent variable (Performance of Sub County Hospitals in Trans-Nzoia County) and the predictor variables a number of findings are indeed significant.

There was a reflection of strong and direct correlation between the dependent and independent variables of the study. The dependent variable (Performance of Sub-County Hospitals in Trans Nzoia County) correlated with the independent variables at the following coefficients, Devolved Health Services Financing at $r = .516$; and Public Health Insurance Scheme at $r = .765$, all variables measured at $P<.05$ significance level. According to Wafula (2020), the results were employed in the measurement of the direction and strength of the relationship between the variables and drawing of conclusions and recommendations thereof in conjunction with the regression results.

Recommendations

For purposes of laying a foundation for future study and literature review in the study of Performance of Sub-County Hospitals in Trans Nzoia County, a number of recommendations from the findings were drawn:

Performance of Sub-County Hospitals in Trans Nzoia County

That there was need for further investigation/comparison of the service delivery levels before and after devolution and required measures taken accordingly since a third of the respondents felt dissatisfied on whether devolution has provided for an avenue for timely provision of services for better performance. The the county leadership and other concerned management authorities to look in to reasons as to why more than a third of the respondents were not convinced that Sub-County hospitals in Trans Nzoia County offer satisfactory services. Since majority of the respondents confirmed that timely and organized healthcare financing has improved performance in Trans Nzoia sub county hospitals, the management to ensure that they maintain the standards and only strive to improve on them. Although majority of the respondents (69%) felt that patient and supplier satisfaction is experienced in the Trans Nzoia County Sub-County hospitals, a third of the respondents feeling unconvinced is such a significant portion that ought to be investigated and corrective measures put in place accordingly.

Public Health Insurance Scheme

That the public health insurance scheme plays a key role in healthcare financing and should just be improved or expanded to cover a wider scope patient services sought at the sub-county hospitals. The ministry of health management to maintain or strive to improve on the public health insurance scheme since it was affirmed by the respondents to be the back-borne of healthcare financing which has been expanded to benefit in-patient services fully in Trans Nzoia County.

Devolved Health Services Financing

That half of the respondents were not convinced whether the national government releases the required share of finances to the county government required some engagement between the two levels of government to engage and improve the state of funds transfer on time. That only two-thirds of the respondents affirmed that devolved units receive policy and financial support for performance towards expected health standards necessitated a need for auditing the system to ensure that policy and financial support from the national government to the devolved units is fully implemented for performance towards expected health standards. Devolved resources distribution ought to be positively impacting performance in Trans Nzoia Sub-County hospitals, yet its not since close to half of the respondents felt otherwise, and therefore need for corrective measures to be undertaken/implemented. And finally, devolved units have to manage the healthcare well by ensuring that the right and qualified personnel are recruited to ensure that healthcare is well managed in Trans Nzoia County.

Areas for Further Research

This study covered only one county out of the 47 counties in the country. There was need for the researcher to recommend that a similar research is carried out either in a number of counties and findings compared to determine the real position in the country or a research be carried out in the entire country and conclusions and recommendations drawn therefrom. Future scholars therefore are required to carry out studies on a similar field using different variables and if possible in different scopes for comparison purposes

Conflict of Interest: None

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