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1 author:

Naftaly Mose
University of Eldoret
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The Effect of Macroeconomic Determinants on Public Health Expenditure in Kenya

Cynthia Kwamboka Nyaboga
Post Graduate Student, Department of Economics, University of Eldoret, Kenya
Matundura Erickson
Lecturer, Department of Economics, University of Eldoret, Kenya
Naftaly Mose
Lecturer, Department of Economics, University of Eldoret, Kenya

Abstract:
Health spending remains a significant concern in low and middle-income countries due to limited financial resources allocated to the health sector. In Kenya, one of the key objectives of the government's Big Four development agenda, which is targeted for completion by 2022 and partially realized in some counties by 2023, is achieving universal health coverage. Over the years, health has remained a top priority and a focal point in political campaign agendas, with the government consistently investing substantial funds in the sector. A majority of Kenyans rely on public health insurance, while only a small percentage can afford private insurance or out-of-pocket healthcare payments. This has contributed to increased poverty levels and a higher dependency ratio. Despite these efforts, Kenya continues to face challenges in the allocation of public health expenditure. This study aimed to examine the impact of macroeconomic factors on Kenya's public health spending. This study aimed to examine the effects of corruption, unemployment, and tax revenue on public health expenditure in Kenya. The research was anchored on public expenditure theory, and an explanatory research design was adopted. Secondary data from the Kenya National Bureau of Statistics (KNBS) was utilized, covering annual time series data from 1990 to 2023. Stationarity testing was conducted using the Augmented Dickey-Fuller (ADF) test, Phillips-Perron (PP) test, and Kwiatkowski–Phillips–Schmidt–Shin (KPSS) test to check for unit roots. The study employed the Autoregressive Distributed Lag (ARDL) model to assess the relationship among the variables. The long-run ARDL analysis revealed that corruption (-2.231, p-value = 0.002 < 0.05), tax revenue (0.075, p-value = 0.025 < 0.05), and unemployment (0.227, p-value = 0.03 < 0.05) had a significant impact on public health expenditure in Kenya. To enhance prudent public health expenditure, the study recommends strengthening anti-corruption laws, optimizing tax revenue through efficient policies and broadening the tax base to support public services. Addressing unemployment through job creation and investment in education is essential for maximizing labor force utilization and ensuring sustainable public health financing.

Keywords: *Public health expenditure in Kenya, corruption, unemployment and tax revenue autoregressive distributed lag*

1. Background Information to the Study

According to the World Health Organization (WHO), there remains a significant disparity in global health spending. While over 80% of the world's population resides in low- and middle-income countries (LMICs), these nations account for only 20% of total health expenditures. Limited health financing in LMICs poses a major barrier to achieving Universal Health Coverage, leading to high out-of-pocket expenses and inadequate healthcare services (Behera & Dash, 2019).

Public health expenditure plays a critical role in Kenya's healthcare system, accounting for approximately 46% of total health spending, while households contribute 29% through out-of-pocket (OOP) payments, donors cover 19%, and the private sector accounts for 6%. Despite government efforts, healthcare access remains unequal due to financing challenges, infrastructure gaps, and workforce shortages staff (Kimalu et al., 2004)

Kenya has transitioned from the National Hospital Insurance Fund (NHIF) to the Social Health Insurance Fund (SHIF) under the Social Health Authority (SHA) to enhance universal health coverage (UHC). However, issues such as inefficient fund management, inequitable access, and high OOP expenditures persist. Many low-income households still rely on local clinics that are often not integrated into national insurance schemes, exacerbating financial strain and increasing the poverty rate (Kimalu et al., 2004).

Over time, healthcare funding has been impacted by policy shifts, including the introduction, removal and reintroduction of user fees. The abolition of fees in 2013 improved access, but uneven government spending has continued to push OOP costs higher. Despite an increase in health sector funding, Kenya still falls short of the Abuja Declaration target of allocating 15% of GDP to healthcare, with expenditure per capita remaining below WHO's recommended $41 per person (Nyamwange, 2012).

Macroeconomic factors such as corruption, unemployment, tax revenue, and GDP per capita significantly influence Kenya's public health spending. Addressing these factors through anti-corruption reforms, job creation, tax base expansion, and efficient resource allocation is crucial for improving healthcare financing and achieving Sustainable Development Goals (SDGs) by 2030.

1.1. Statement of the Problem

The majority of Kenyans, over 80%, rely on government funding for their medical needs, while only 20% can afford to pay for healthcare out of pocket. Access to private insurance remains limited to a small fraction of the population.

A 2018 World Bank report indicated that out-of-pocket (OOP) expenses accounted for 26.1% of Kenya's total health financing in 2017. This is significantly higher than in other African nations such as Seychelles (2.3%), Botswana (5.2%), and South Africa (6.3%) (Nkatha, 2019).

Despite government efforts to lower public health costs, a large portion of the population continues to bear high OOP expenses, especially those not covered by the National Hospital Insurance Fund (NHIF). According to the World Bank (2018), high OOP spending reduces household consumption of essential goods and services, increasing poverty levels(Nkatha et al., 2020).

Over time, healthcare funding in Kenya has been shaped by policy changes, including the introduction, removal, and reintroduction of user fees. While the abolition of fees in 2013 improved access to healthcare, uneven government spending has continued to drive out-of-pocket (OOP) costs higher. Despite increased health sector funding, Kenya still falls short of the Abuja Declaration target of allocating 15% of GDP to healthcare. Additionally, per capita health expenditure remains below the WHO-recommended $41 per person (Nyamwange, 2012).

Sustainable Development Goal (SDG) 3 seeks to ensure healthy lives and promote well-being for all at all ages. While Kenya has made significant efforts to improve health outcomes, several challenges persist, hindering the realization of this goal. One major obstacle is inadequate healthcare funding, which affects both the quality and accessibility of medical services.

1.2. Specific Objectives of the Study

The specific objectives of the study were:

- To determine the effect of tax revenue on public health expenditure in Kenya
- To assess the effect of corruption on public health expenditure in Kenya
- To determine the effect of unemployment on public health expenditure in Kenya

1.3. Significance of the Study

This study's findings will be valuable to policymakers, insurance providers, and other stakeholders in the health industry. It will help them develop strategies and products that promote the increased adoption of insurance services in Kenya.

2. Literature Review

2.1. Dynamic Theory of Public Expenditure

According to the Dynamic Theory of Public Expenditure, governments utilize budget deficits and surpluses as a mechanism to stabilize tax rates and prevent excessive fluctuations. This theory suggests that governments run budget surpluses during periods of low public spending demands and deficits when spending needs are high. The approach is based on three key assumptions: governments tend to act benevolently in managing public finances, and the expenditure requirements fluctuate over time, and lastly, the deadweight costs of income taxes increase disproportionately as tax rates rise (Battaglini & Coate, 2008).

This theory supports the tax smoothing literature but differs in that fiscal decisions are made by a legislature rather than a social planner. An insight from this perspective is the potential for lawmakers to engage in pork-barrel spending, directing government funds to benefit their own constituencies. The theory also informs debates on balanced budget requirements, which impose fiscal constraints by ensuring that government tax revenues match public expenditures within each period. If a government begins without debt, such restrictions would limit spending on public goods and transfer payments. Therefore, the sustainability of public expenditure depends on the size of the tax base relative to the desired economic growth rate.

The Dynamic Theory of Public Expenditure remains highly relevant in contemporary fiscal policy discussions concerning the implementation and effectiveness of fiscal rules aimed at managing public debt and ensuring economic stability.

2.2. Unemployment and Public Health Expenditure

Barasa et al. (2017a) explored how out-of-pocket healthcare costs affect household spending, using data from the 2013 Kenya Household Health Expenditure and Utilization Survey (KHHEUS). The findings revealed that households with an unemployed head were 75% more likely to face catastrophic healthcare expenses than those with an employed head.

Fronstin (2007) highlighted the importance of employment in obtaining health insurance. A household survey conducted in Kenya revealed that most unemployed individuals lacked health insurance. The study also found that one-third of workers were engaged in retail and wholesale trade, and 41% of them did not have health insurance coverage.

Overall, the research concluded that both unemployed individuals and those in private businesses face limited access to health insurance due to their relatively lower disposable income.

2.3. Corruption and Public Health Expenditure

According to Gupta et al. (2001), there is an estimate that between 10% and 25% of global spending on public health expenditure is lost through corruption. The study further states that although it is recognized that corruption results from government action, corruption can have a negative effect on meeting expectations of social services that are funded by the public, including the health sector. First, in many nations, corruption can increase the cost and decrease the quality of government output and services, such as the delivery and funding of health care and education. Second, investing in human capital may be decreased by corruption. Lastly, corruption can lower government revenue. Corruption hinders the provision of services and quality standards in the private and public sectors. In the Kenyan healthcare sector, corruption has frequently been seen throughout the implementation of projects; this has led to power abuse, wasteful spending, poor service delivery, and poor quality standards of medical facilities and equipment.

Gupta et al. (2001) estimated that corruption accounts for the loss of 10% to 25% of global public health spending. While corruption is often linked to government actions, it negatively impacts the delivery of publicly funded social services, including healthcare. It drives up costs, lowers the quality of government services such as healthcare and education and reduces investments in human capital. Corruption weakens government revenue. In both the public and private sectors, it disrupts service provision and quality standards. In Kenya's healthcare system, corruption has been a recurring issue during project implementation, leading to power abuse, wasteful spending, poor service delivery and substandard medical facilities and equipment.

According to Kagotho et al. (2016), the study of corruption and public health expenditure found that Kenya was ranked 139 out of 168 countries in a global corruption perceptions index (CPI), with 43% of respondents perceiving that corruption only exists in the health care sector. Kenyans have a wealth of firsthand knowledge of corruption; of those polled about it, 77% said that someone in their home had bribed the police, 54% public register agencies, and 35% healthcare providers. Corruption, at whatever level, has a negative impact on low-income Kenyans' health spending and can directly result in poor health results.

Kagotho et al. (2016) examined the relationship between corruption and public health expenditure, revealing that Kenya ranked 139th out of 168 countries on the global Corruption Perceptions Index (CPI). The study found that 43% of respondents believed corruption was limited to the healthcare sector. However, corruption was widely experienced across different public services—77% of surveyed households reported paying bribes to the police, 54% to public registry agencies and 35% to healthcare providers. Corruption at any level negatively affects health spending for low-income Kenyans and directly contributes to poor health outcomes.

2.4. Tax Revenue and Public Health Expenditure

Kooshkebaghi et al. (2022) conducted a study in Iran between 2020 and 2021, which revealed that taxes are the most significant source of revenue that could be leveraged in the health sector. Most countries depend on tax revenues to fund and expand their healthcare systems. While taxes are essential economic tools for improving public health, they have been less effective in Iran, impacting healthcare spending. The study found that for every $100 per capita increase in tax revenue annually, approximately $10 per capita is added to health spending. Tax funds can be used to cover medical expenses or supplement other government revenue sources.

Kiminyei (2018) investigated the relationship between taxation and government spending in Qatar using annual data spanning 1980 to 2011. The study found that these variables were co-integrated, meaning they had a long-term relationship, after determining they were stationary in their first differences. A Granger causality analysis was conducted to assess the direction of influence, revealing evidence that taxation drives government expenditure.

In Kenya, as in many developing countries, tax revenue serves as the primary source of government funding and plays a crucial role in determining overall public expenditure. However, the funds allocated to the health sector are often insufficient to support effective healthcare services. More than 70% of the Ministry of Health's recurrent budget is spent on staff salaries and allowances, leaving only 30% for medical supplies and other essential expenses (Seitio-Kgokgwe et al., 2016).

The study by Ndajiwo (2020) proved that in many African countries, tax revenue has constantly grown to be a significant source of government funding. Between 2008 and 2017, the average tax-to-GDP ratio increased by 1.5% of GDP on average. Therefore, tax money serves as the government's primary source of funding for healthcare. However, there are still many obstacles that face taxation in many African nations, including a weak social contract, losses from inefficient tax incentives, a sizable unreported sector, illicit money flows and generally low tax compliance.

3. Research Methodology

3.1. Study Area

This study determined the effect of macroeconomic drivers on public health expenditure for the period 1990 – 2023 in Kenya.

3.2. Research Design

Schoonenboom and Johnson (2017) define research design as the structured approach used to collect and analyze data in a way that aligns with the research question. This study employed an explanatory research design to examine macroeconomic drivers and public health expenditure.

3.3. Data Types and Source

This study utilized secondary time series data from 1990 to 2023, focusing on public health expenditure, fiscal deficit, GDP per capita, unemployment, corruption, and tax revenue. The data was sourced from the Kenya National Bureau of Statistics.

3.4. Model Specification

The study adopted a multivariate model that include macroeconomic drivers affecting public health expenditure, unemployment, corruption and tax revenue. The relationship among the variables can be written as:

PHE = f (U$\mathcal{NM}$, $\mathcal{CRT}$, $\mathcal{TR}$)

Where:

PHE: Public Health Expenditure,

UNM: Unemployment,

CRT: Corruption,

TR: Tax Revenue

PHEt = β0 + β1 $\mathcal{UNM}$t +β2$\mathcal{CRT}$t + β3$\mathcal{TR}_t$ + **μ**t

Where the β's represent the population parameters, **μ** denotes error term, and t is the time trend. The study employed Autoregressive Distributed Lag (ARDL) Model because ARDL model accommodates different orders of co-integration hence it is consistent and efficient. The above equation was modeled in ARDL as form as indicated in equation below. If co-integration is present, the ARDL includes the long- and short-term relationships as shown:

$\nabla Y_t = \alpha + \sum_{i=1}^{p} \beta_i \Delta Y_{t-i} + \sum_{j=0}^{q} \gamma_j \Delta X_{t-j} + \phi Y_{t-1} + \lambda X_{t-1} + \varepsilon_t$ ……..3.5

Where:

∇Y_t= The change in the explanatory variable Y at time t.

α = alpha, the constant term (intercept).

β_i =The coefficient of the lagged difference of the dependent variable ΔY_{t-1}.

ΔY_{t-i}= The change in the lagged dependent variable.

p = The maximum lag length of the dependent variable.

Δ = Denotes the first difference, capturing short-run changes.

Φ = the coefficient that represents the speed of adjustment towards the long-run equilibrium. It indicates how quickly the dependent variable returns to its long-run equilibrium after a change.

Y_{t-1}= The lagged level of the dependent variable Y at time $t-1$, representing the long-run relationship for the dependent variable.

λ = The coefficient of the lagged level of the independent variable X_{t-1}

3.5. Operationalization of Variables

Table 1 presents a description and measurement of the variables and their relationships with the dependent variable.

Abbreviation	Name of the Variable	Description and Measurement	Expected Sign	Source
PHE	Public Health Expenditure	The provision of health services is known as health expenditure, and it encompasses all costs related to nutrition, family planning, and health care. It will be measured by total expenditure on health as a percentage of gross domestic product (GDP)		KNBS
UNM	Unemployment	This refers to people who want to do work and are actively seeking jobs but cannot find employment, measured by the number of unemployed people as a percentage of the labor force.	Negative	KNBS
CRT	Corruption	Refers to engaging in dishonesty or committing a crime with the intent of obtaining illegal benefits or abusing the position for their personal gain. It is measured by the Corruption Perceptions Index (CPI)	Negative	KNBS
TR	Tax Revenue	Income that is collected by governments through taxation which is a source of government revenue. It is measured as a percentage of GDP.	Positive	KNBS
μ_t	is the stochastic error term	Factors that affect health expenditure but are not captured in the model		

Table 1: Description and Measurement of Variables
Source: Author's Conceptualization, 2025 Unit Root Test

Augmented Dickey-Fuller procedure, Phillips-Perron and Kwiatkowski–Phillips–Schmidt–Shin (KPSS) tested the null hypothesis. If we reject the null hypothesis, this will imply that the series is stationary. If the study fails to reject the null hypothesis, it is concluded that the series has a unit root, meaning that it is non-stationary (Gujarati, 2009).

3.6. Co-integration Test

A time series variable is said to be integrated of order $d, I(d)$ if stochastic trends or unit roots can be removed by differentiating a series d times and stochastic trend remains after differencing only $d-1$ times (Gujarati, 2009). A variable without a stochastic trend or unit root is said to be integrated of order zero, $I(0)$.

4. Results, Analysis and Interpretation

The secondary data collected was characterized using the following descriptive statistics;

Variable	Observations	Mean	Std. Dev.	Minimum	Maximum
PHE	34	14.05328	15.08679	3.627142	42.73556
TAXR	34	16.89563	6.017338	13.26486	49.9
CRPT	34	-1.010077	.1315275	-1.165813	- .7358834
UNMP	34	3.311647	.9807833	2.6	5.69

Table 2: Descriptive Statistics
Source: Author (2025)

Where:
PHE=Public Health Expenditure,
UNM=Unemployment,
CRT=Corruption,
TR=Tax Revenue

Public health expenditure over a period of time has a mean of 14.05 percent and a standard deviation of 15.09 percent. Its minimum value is 3.63 percent, and the maximum is 42.74 percent. Over the years, the rise in public health expenditure has had an effect on the economy's ability to mobilize resources, thereby hindering the growth of the health sector.

Tax Revenue (TAXR), being one of the significant sources of funding for health, has discovered a standard deviation of 6.02 percent with a minimum of 13.26 percent and a maximum of 49.9 percent. Tax revenue has a mean of 16.90 percent.

The mean corruption index is -1.0101, suggesting that, on average, corruption levels are relatively low. The standard deviation of 0.1315 shows that corruption levels do not vary widely across observations. The minimum value of -1.1658 represents the least corrupt case, while the maximum value of -0.7359 represents the most corrupt case in the dataset. The negative values indicate more corrupt periods, while positive values show less corruption.

Unemployment (UNMP) recorded a mean of 3.31 percent, minimum of 2.6 percent and a maximum of 5.69 percent. Unit Root Test without Structural Breaks

Unit Root Test at Level						
			Critical Values			
Variables	Mackinnon p-values	Test Statistic	1%	5%	10%	Remark
PHE	0.3310	-1.893757	-3.646342	-2.954021	-2.615817	Unit root
TR	0.0927	-2.658485	-3.661661	-2.960411	-2.619160	Unit root
UNM	0.5634	-1.413426	-3.653730	-2.957110	-2.617434	Unit root
CRPT	0.6752	-1.170493	-3.646342	-2.954021	-2.615817	Unit root
Unit Root at First Difference						
PHE	0.0005	-4.816504	-3.653730	-2.957110	-2.617434	I (1)
TR	0.0000	-6.372384	-3.661661	-2.960411	-2.619160	I (1)
UNM	0.0003	-5.077843	-3.661661	-2.960411	-2.619160	I (1)
CRPT	0.0000	-6.035626	-3.661661	-2.960411	-2.619160	I (1)

Table 3: Augmented Dickey-Fuller Test for Unit Root at Levels and at First Difference
Source: Authors Compilation from STATA Output, 2025

At the first difference, all p-values for the variables in the study were found to be below 0.0500, indicating stationarity: PHE (0.0005 < 0.0500), UNM (0.0003 < 0.0500), TR (0.0000 < 0.0500), and CRPT (0.0000 < 0.0500). As a result, we failed to reject the alternative hypothesis, and the null hypothesis of a unit root was rejected, demonstrating that the variables are stationary and integrated in order one I (1).

4.1. Determination of Optimum Lag Length

Lag selection in table 4 indicates the use of four lags as the most appropriate lag length to minimize the value of the selection criteria.

Lag	LL	LR	Df	P	FPE	AIC	HQIC	SBIC
0	-451.605				1.4e+06	31.2052	31.2948	31.4854
1	-292.879	338.4	36	0.000	210.724	22.3253	22.9528	24.2869
2	-240.498	104.76	36	0.000	96.9158	21.2332	22.3986	24.8763
3	-162.509	155.98	36	0.000	15.9622	18.4339	20.1373	23.7585
4	493.651	1312.3*	36	0.000	3.6e-16*	-22.9101*	-20.6688*	-213.916*

Table 4: Optimum Lag Selection Criteria
Source: Research Data, 2025

4.2. Long Run Auto Regressive Distributed Lag Model with Error Correction

Table 5 shows the results of the Auto Regressive Distributed Lag (ARDL) Model with Error Correction Term (ECT) for the sample period from 1990 to 2023. The model aims to determine the long-run relationship between fiscal deficit, gross domestic product, unemployment, corruption, and tax Revenue and their effect on public health expenditure (PHE) in Kenya. Key statistics from the model include a log-likelihood of 35.961934, a number of observations at 30, an R-squared value of 0.9436, an adjusted R-squared value of 0.8366, and a Root Mean Squared Error (MSE) of 0.1264. These statistics indicate a high explanatory power of the model, with 94.36% of the variation in the dependent variable (public health expenditure) explained by the independent variables. The adjusted R-squared value of 83.66% accounts for the degrees of freedom and provides a more accurate measure of the model's explanatory power.

Sample 1994 – 2023 Log-likelihood = 35.961934				**Number of Observations = 30 R-squared= 0.9436 Adj R-squared = 0.8366 Root MSE= 0.1264**	
	D.exp	Coef.	Std. Err	T	P > |t|
ADJ	EXP				
	L1	-.8834715	.1854703	-4.76	0.001
LR	CORPN	-2.230679	.5558094	-4.01	0.002
	TR	.0754945	.0286606	2.63	0.025
	UNM	.2270987	.2182744	3.48	0.003

Table 5: Auto Regressive Distributed Lag Model with Error Correction Term
Source: Authors' Compilation from STATA Output, 2025

4.3. The Effect of Tax Revenue on Public Health Expenditure in Kenya

Tax revenue (TR) exhibited a positive and significant coefficient of 0.0754945 (p-value 0.025 < 0.0500), indicating that a unit increase in tax revenue leads to a 0.0754945 unit increase in public health expenditure. This positive relationship demonstrates that higher tax revenues provide the government with more funds to allocate towards public health and efficient tax collection for enhanced public services. These findings align with recent trends on the role of tax revenue in public spending. Berembo and Igonikon (2020) carried out a study on "Tax Revenue and Public Expenditure: Implications for Economic Growth in Nigeria" and recommended enhancing tax collection mechanisms to ensure sufficient funds for public services.

Supporting this view is a study by Ouma (2019), who conducted a study on "Revenue effects of tax reforms, economic growth and political environment in Kenya." found that increased tax revenue significantly boosts public health expenditure. The study recommended improvements in tax administration to ensure higher revenue collection and allocation towards essential services like health. Similarly, Muriithi and Moyi (2003) highlighted that efficient tax collection systems correlate with increased public spending on health and education. The study recommends that governments invest in better tax policies and infrastructure.

4.4. The Effect of Unemployment on Public Health Expenditure in Kenya

In the long run, Unemployment (UNM) showed a positive and significant coefficient of 0.2270987 (p-value 0.003 < 0.0500). This shows that other factors held constant; a unit increase in unemployment leads to a 0.2270987 unit increase in public health expenditure. This positive correlation indicates that higher unemployment rates could lead to greater demand for public health services, resulting in a need for increased spending to meet this demand. The findings corroborate with studies that show a link between economic downturns and increased public health expenditure.

In line with this study, Barasa et al. (2017b), in their research on "Assessing the Impoverishing Effects and Factors Associated with the Incidence of Catastrophic Health Care Payments in Kenya," found that households with an unemployed head had 75% more odds of incurring catastrophic expenditure due to direct healthcare costs compared to households with an employed head 1.75%. This study highlights the significant financial strain unemployment places on households, further supporting the link between higher unemployment and increased public health expenditure. The study recommended targeted social protection interventions to mitigate the financial burden on unemployed households.

4.5. The Effect of Corruption on Public Health Expenditure in Kenya

Corruption has a significant negative effect on Public Health Expenditure in the short run. This corruption (CORPN) exhibited a negative and significant coefficient of -2.230679 (p-value 0.002 < 0.0500), indicating that a unit increase in

corruption levels leads to a 2.230679 unit decrease in public health expenditure. This negative relationship can be clarified by the misallocation of resources and inefficiencies caused by corruption, which diverts funds away from public health. The results support recent studies showing the detrimental impact of corruption on public spending efficiency (Ernst, 2020). The study carried out by Malyniak et al. (2019) found that higher corruption levels are associated with lower public spending on health and education, corroborating the negative impact of corruption on public health expenditure. However, a contrasting view is presented by Reinikka and Svensson (2006), who argue that increased accountability and transparency mechanisms can mitigate the adverse effects of corruption, suggesting that the relationship between corruption and public spending may not always be straightforward.

5. Conclusion

The following conclusions were drawn from the study findings: corruption has a significant negative impact on public health expenditure in Kenya.

Tax revenue positively affects public health expenditure in Kenya, emphasizing the role of effective tax policies and revenue collection in public health development

Surprisingly, unemployment was found to have a positive effect on public health expenditure in Kenya, which may be due to increased labor availability or other contextual factors in Kenya like increased government expenditure on health programmes like Linda mama.

6. Recommendations

Based on ARDL model regression results, the study recommends that Kenya adopt strong anti-corruption measures, such as implementing an integrated electronic management system for procurement, similar to Rwanda's. This would increase transparency and help monitor health sector expenditures in real-time, ensuring more efficient use of funds.

The study also suggests improving tax collection by adopting a digital tax administration system similar to Estonia's. This would reduce administrative costs, enhance tax compliance, and ultimately increase revenue for public health, ensuring more sustainable financing for healthcare.

Lastly, the study emphasizes the importance of skills development and job creation. By implementing programs like those in Canada, which align with labor market needs, Kenya could enhance productivity and improve the management of health expenditure, benefiting both the economy and healthcare system in the long term.

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