

INEQUALITY AND HIV PREVALENCE IN SUB-SAHARAN AFRICA.

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ABSTRACT

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This study examines inequality and HIV prevalence in sub-Saharan Africa using World Bank data from 1990-2017 across 43 countries. Findings indicate that income inequality exerted a positive and significant impact on HIV prevalence. Secondly, poverty was also positively associated with HIV prevalence. Interestingly, educational inequality demonstrated a negative impact on HIV prevalence. Recommendations include enhancing education, employment, and financial access to mitigate disparities and combat HIV/AIDS effectively.

EMPIRICAL REGRESSION RESULTS

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SUMMARY STATISTICS

Variable	Obs	Mean	Std. Dev.	Min	Max
PREV	1,204	45460.95	85646.81	1,558776	668334
GINI	1,203	44.92425	9.251231	20.18658	65.75557
POV	1,204	46.84876	24.08202	2099293	95.29149
EDU	1,204	61.56913	20.04788	13.45343	115.1847

NOTE: PREV= HIV prevalence rate; GINI= Income inequality; POV= Poverty; EDU= Educational inequality.

BACKGROUND OF THE STUDY

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HIV/AIDS remains a critical public health challenge and a leading cause of morbidity and mortality in sub-Saharan Africa. To curb HIV transmission effectively, both in this region and globally, a renewed commitment and innovative strategies are imperative (Dwyer-Lindgren et al., 2019). While some nations have made significant strides in their fight against HIV, others continue to grapple with the epidemic's relentless spread (Murphy et al., 2021). It is increasingly recognized that structural determinants such as socioeconomic conditions and living environments play a more substantial role in disease transmission than individual behaviors alone. Historically, advancements in living and working conditions have had a more profound impact on health outcomes than public health interventions and clinical care (Dwyer-Lindgren et al., 2019). This underscores the necessity of addressing the broader social determinants of health to achieve meaningful and sustainable progress in the fight against HIV/AIDS.

EMPIRICAL REGRESSION RESULTS

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VARIABLES	(1)	(2)	(3)	(4)
	Fixed Effect	Random Effect	Fixed Effect	SYS-GMM
LIPREV				1.003*** (0.000)
GINI	0.434664*** (0.1285)	0.329001 (0.075)	0.331993 (0.0553)	0.7253*** (0.745)
POV	0.207805*** (0.1674)	0.155836* (0.0759)	0.159818* (0.0790)	0.3948*** (0.540)
EDU	-0.278933*** (0.24280)	-0.195028*** (0.1229)	-0.195028*** (0.1279)	-0.1281*** (0.253)
Constant	-23.071346*** (8.535740)	36.041730*** (8.173970)	36.717221*** (4.598459)	-1.897736*** (0.975)
Observations	1,203	1,203	1,203	1,160
R-squared	0.039		0.034	
Year Dummies	Yes	Yes		
No. of Countries				43
No. of Instruments				32
No. of groups				43
Prob>F				2740.007
AR(1) p-value				0.000
AR(2) p-value				0.334
Sargan(chi2) p-value				0.297
Hansen(chi2) p-value				0.003
				0.123

PROBLEM STATEMENT

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Despite the prevalence of HIV infection among the poorest populations in Africa, the relationship between inequality and HIV is complex and multifaceted (Mbirimengereji, 2007). It is evident that social and structural drivers significantly influence the HIV epidemic beyond the simplistic correlation with poverty. Empirical evidence suggests that economic inequality exacerbates the likelihood of HIV infection (Anno, 2011; Fox, 2012; T. Lim et al., 2012; Luan et al., 2021; Wabiri & Taffa, 2013). However, much of this research relies on demographic health survey data from individual countries, thus lacking a comprehensive, cross-national perspective. This study aims to fill this gap by providing a holistic analysis of how economic inequality affects HIV prevalence rates across sub-Saharan Africa. By addressing this critical gap in the literature, we seek to enhance our understanding of the broader socio-economic determinants of HIV and inform more effective policy interventions to combat the epidemic across the region.

The absence of cross country studies in this study area is the main contribution this current study seeks to bridge. Therefore, the findings of this study will present a holistic picture of how inequality exacerbates the HIV prevalence rate across the sub-region. This study, therefore, sought to examine the impact of inequality on the probability of being HIV prevalence rate across sub-Saharan Africa.

SUMMARY OF FINDING

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The results showed that there was a positive and significant impact of income inequality on the HIV prevalence rate. This implies that all things being equal an increase in income inequality leads to an increase in the HIV prevalence rate.

Also, the results revealed that poverty has a positive and significant impact on the HIV prevalence rate. This suggests that an increase in the poverty rate has a positive association with the HIV prevalence rate.

Lastly, the results showed that educational inequality had a negative impact on the HIV prevalence rate. This implies that all things being equal, an increase in educational inequality has a negative impact on the HIV prevalence rate. Therefore, an increase in educational inequality decreases the HIV prevalence rate. This is, however, surprising since literature indicated that, higher education reduces the HIV prevalence rate.

RESEARCH OBJECTIVES & HYPOTHESIS

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RESEARCH OBJECTIVES

The specific objectives are:

- To determine the impact that income inequality has on HIV prevalence in sub-Saharan Africa.
- To establish the impact that poverty has on HIV prevalence in sub-Saharan Africa.
- To evaluate the impact of educational inequality on HIV prevalence in sub-Saharan Africa.



HYPOTHESIS

To answer the research objectives, the null hypothesis is stated as follows:

- H₀₁ = Income inequality does not have a significant impact on HIV prevalence in sub-Saharan Africa.
- H₀₂ = Poverty does not have a significant impact on HIV prevalence in sub-Saharan Africa.
- H₀₃ = Educational inequality does not have a significant impact on HIV prevalence in sub-Saharan Africa.



CONCLUSIONS

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The following conclusions are reached in this study:

First, income inequality had a favorable and considerable impact on the HIV prevalence rate. The implication is that, everything else being equal, rising income disparity leads to a rise in HIV prevalence.

Similarly, poverty has a favorable and significant impact on the HIV prevalence rate. This shows that an increase in the poverty rate is associated with an increase in the HIV prevalence rate.

Finally, educational disparities had a negative impact on HIV prevalence rates. All else being equal, an increase in educational inequality has a detrimental influence on the HIV prevalence rate. As a result, increasing educational inequality lowers the HIV prevalence rate. This is surprising given that research has shown that better education reduces HIV prevalence.

LITERATURE REVIEW

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The theory of Social Darwinism

Social Darwinism opposed government measures to help the poor, believing that poverty was the product of intrinsic inferiority that should be bred out of the human race. The goals of the transnational organizations tasked with steering the global economy may be focused on eradicating poverty, but the neoclassical policies that underpin them send an increasingly loud message that the impoverished masses are mostly to blame for their condition. If this theory is anything to go by, then it can be argued that, the government should not intervene in reducing poverty among the citizenry.

The functionalist theory

According to the functionalist theory of social stratification, poverty serves a significant social, economic, and political purpose for society as a whole, and for the middle and upper classes in particular (Singh & Rabindranath, 2020). Functionalist theory explains for the reasons of poverty among particular persons and groups in society based on labour wages. Many positions and roles in society necessitate the use of specialized skills and knowledge. They argue that social stratification serves various beneficial purposes. Believes it helps in ensuring that the individual doing a certain position is the best competition. Poverty and economic disparity are seen from opposing perspectives. In line with this view, functionalist theorists in sociology assume that stratification exists because it also serves important functions for society.

EMPIRICAL LITERATURE REVIEW

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Leung et al. (2019) conducted meta-analyses to estimate the global prevalence of HIV, revealing higher prevalence among women who inject drugs compared to men, with regional variations. Okhovat-Isfahani et al. (2019) found that HIV incidence and prevalence are concentrated in countries with lower Human Development Index (HDI). Magadi (2013) highlighted that urban poverty in sub-Saharan Africa (SSA) is associated with higher HIV infection odds, particularly among the urban poor and women. Schur et al. (2015) discovered elevated HIV prevalence in poorer households and lower prevalence among men in professional households during economic decline. Bradley et al. (2007) identified a significant inverse relationship between educational attainment and HIV infection, with higher education linked to lower HIV prevalence among both male and female clients. Kayeyi et al. (2009) showed that neighborhood educational attainment strongly determines HIV infection rates among young women in urban and rural Zambia. David et al. (2020) found an inverse association between educational attainment and HIV risk among Indian women across different age groups. Price et al. (2019) noted that household support for female education does not correlate with HIV prevalence.

RECOMMENDATIONS

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The following recommendations are made:

- Introduce higher taxes on the wealthy and increase social spending on healthcare, education, and social protection programs to reduce income inequality.
- Focus on redistributing wealth more equitably to mitigate the socioeconomic conditions that exacerbate HIV transmission.
- Increase funding for universal access to quality education, emphasizing digital literacy and gender equality to reduce educational disparities.
- Ensure marginalized groups, including women and girls, have equal access to educational opportunities, thereby empowering them to make informed health decisions.
- Develop policies that enhance civic engagement, ensure transparency and accountability in governance, and expand social safety nets to protect against economic shocks.
- Foster inclusive, participatory governance to address political polarization and promote social justice through comprehensive support systems.

METHODOLOGY

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METHODOLOGY

Research design

The study employed quantitative research design since it helped the researcher determine the magnitude and form of relationship existing between dependent variable and the independent variables and to enable the researcher make appropriate inferences in line with the objectives of the study.

- The estimated model, taking the logarithm of the HIV prevalence rate as dependent variable is:
- $Y_{it} = \alpha + \beta_1 Y_{it-1} + \beta_2 X_{it} + U_i + V_{it} \dots \dots \dots 3.1$
- The equation above, Y denotes the dependent variable, X is all the possible independent variables introduced in model, V_{it} account for the stochastic error term. The U_i represent the unobserved country specific time variant effect, β, γ are the parameters that would be estimated in the model, 't' is time and 'i' is stand for a particular country.

LIMITATIONS OF THE STUDY & SUGGESTIONS FOR FUTURE RESEARCH

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Despite the rigorous literature review and data analysis that enables the achievement of the study objectives. There was inadequate data from the various countries to enable a detailed individual country analysis.

This study proposed that further studies should Conduct comparative studies across different regions within sub-Saharan Africa to assess how variations in economic conditions and healthcare systems contribute to differences in HIV prevalence rates. Also, other factors mediating the relationship between inequality and HIV prevalence should be examined.



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